Social prescribing for mental health and well-being: mechanisms of action, active ingredients, and barriers & enablers to effective engagement

Thesis for examination for PhD

Henry Aughterson

Department of Behavioural Science & Health

University College London

Supervisors:

Dr Daisy Fancourt

Dr Alexandra Burton

Prof Helen Chatterjee

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Declaration

I, Henry Aughterson, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Correspondence to this thesis should be addressed to henry.aughterson@gmail.com

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Abstract

Social prescribing involves the referral of individuals to community activities, often to support their mental health and well-being. There is growing evidence on the efficacy of social prescribing to improve mental health, however less is known about *how* these groups bring about beneficial effects, or about barriers or enablers facing referrers.

I addressed three distinct but complementary objectives. In Study 1 I conducted a review of 'mechanisms of action' underlying the impact of leisure activities on health, producing a multi-level 'theory of change' framework. I found leisure activities act through biological, psychological, social and behavioural mechanisms, to produce mental and physical health benefits.

In Study 2, I used ethnographic methods to explore how four social prescribing community groups produced mental health benefits for individuals, often with severe mental health problems. Shared active ingredients included excellent facilitator inter-personal skills, high regularity of activities, creation of a safe space, high affordability/accessibility, and shared lived experience of mental health problems. Shared mechanisms were increased purpose/meaning, experience of pleasure/joy, increased social support, increased structure/routine, formation of friendships and reduced loneliness, and enhanced sense of community and belonging.

Study 3 used qualitative interviews to explore barriers and enablers for GPs in engaging with social prescribing for individuals with mental health problems, mapping them onto the Capability, Opportunity, Motivation-Behaviour (COM-B) change model. My findings highlighted the need for increased formal GP training on how to engage with social prescribing effectively, and the benefits of active inter-organisational partnerships and hand-holding opportunities to accompany individuals to initial sessions.

My findings support the conceptualisation of social prescribing as a complex intervention. Social prescribing however is not a single, clearly defined intervention and different community groups/activities will involve different mechanisms and active ingredients. In its broadest sense social prescribing reflects a more salutogenic, personalised, biopsychosocial and less individualised approach towards mental health.

Impact Statement

Impact on individuals with mental health conditions – This PhD provides evidence for the benefits of social prescribing community groups/activities on mental health and *how* these groups bring about benefits. This contributes to increased awareness and understanding of social prescribing and may encourage individuals to engage in social prescribing to support their mental health. Further, in my ethnography, I worked closely with individuals with severe mental illnesses and am sharing my findings with them to aid their understanding of the benefits of attending their respective groups, using easy-to-understand thematic summaries.

Impact on clinicians/referrers – My research has highlighted the barriers and enablers for GPs in engaging with social prescribing for individuals with mental health conditions. I proposed multiple behavioural change interventions for GPs targeted towards those barriers and enablers which may be harnessed by General Practices to increase their engagement with social prescribing. The findings may have broader utility for other referrers into social prescribing groups and can help referrers understand the benefits of social prescribing groups in a more evidence-based, systematic way and help them frame this to their patients/clients. Further, utilising my own research and other knowledge gained throughout my PhD, I regularly teach UCL medical school students about social prescribing and was Vice-Lead of the NHS National Student Social Prescribing Scheme, a network of over 200 UK medical students increasing awareness and teaching of social prescribing in medical schools.

Impact on community groups – The leisure mechanisms framework can be used by community groups to help them frame the support they offer their participants and identify gaps for better practice, as well as improve quality of evidence for potential funders. I am providing easy-to-read/use 'summaries of findings' for each of the four community groups in my ethnographic study, which they may utilise for their members or in funding applications. My findings may also help community groups design or adapt services to maximise the impact on individuals with mental health problems.

Academic impact – A version of Study 1 was published in Lancet Psychiatry (1) and Study 3 in BMJ Open (2). Findings from Study 2 are being submitted to Social Science & Medicine. Study 1 made an important methodological and theoretical contribution to the field of social prescribing, producing the most extensive framework to-date of mechanisms underlying the health benefits of leisure activities. This framework can support the design of theory-driven, cross-disciplinary studies that explicitly consider the mechanisms underlying the effects of social prescribing on health. I have presented my research at International Social Prescribing, Qualitative Health Research Network and National Beyond Psychiatry conferences, and I created and presented a podcast for the MARCH research network (3), regularly interviewing researchers in social prescribing and reaching a national audience of researchers, community practitioners, clinicians and those with lived experience. During the pandemic I worked on the Covid-19 Social Study, the UK's largest study exploring the psychosocial impacts of Covid-19, publishing papers as lead author (4) and co-author (5–8). Finally, I co-authored a government report for the Department of Culture, Media and Sport (DCMS) on the evidence for arts activities on health and wellbeing, leading on the social prescribing section (9).

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Abbreviations

BCT – Behaviour Change Theory

CCG – Clinical Commissioning Group

COM-B – Capability, Opportunity, Motivation and Behaviour

GP – General Practitioner

ICS – Integrated Care System

INNATE – Ingredients in arts in health (framework)

INF – Informal conversation

INT – Interview

IT – Information Technology

NHS – National Health Service

PCN – Primary Care Network

RCT – Randomised Controlled Trial

SDT – Self-Determination Theory

SP – Social Prescribing

STP – Sustainability Transformation Partnership

TDF – Theoretical Domains Framework

UK – United Kingdom

US – United States

UCL – University College London

UCLH – University College London Hospital

VCS – Voluntary and Community Sector

WHO – World Health Organisation

YLL – Years of life lost

Contributions

Chapter 1: I conducted all aspects of the historical and theoretical overview and wrote all versions of this chapter myself.

Chapter 2: I conducted all aspects of the literature review and wrote all versions of this chapter myself.

Chapter 3 (Study 1): The findings from this first study are published in a broader paper looking at individual and societal level mechanisms linking leisure activities to health, co-authored with Prof Daisy Fancourt and PhD students Emma Walker and Saoirse Finn, whereas this thesis chapter only includes individual level mechanisms since this is the focus of this PhD. All the parts of this broader study that are included in this thesis chapter are those which I led on or contributed to substantially. Specifically, my work involved the finding, collating and writing up of theories, processes and mechanisms of action on individual level mechanisms, and writing this chapter.

Chapter 4 (Study 2): Prof Daisy Fancourt, Prof Helen Chatterjee and Dr Alex Burton provided guidance in the development of the research question and feedback on the draft manuscript. I conducted the entire ethnographic fieldwork, conducted all the interviews, managed the dataset and wrote all versions of the chapter myself.

Chapter 5 (Study 3): Prof Daisy Fancourt and Dr Louise Baxter provided guidance in the development of the research question and feedback on the draft manuscript. I conducted all the interviews, managed the dataset and wrote all versions of the chapter myself.

Chapter 6: I conducted all the research for, and wrote, the entire thesis discussion myself.

Prof Daisy Fancourt, Prof Helen Chatterjee and Dr Alexandra Burton provided feedback and approved the final version of each chapter.

Summary

Underlying a significant proportion of GP consultations are psychosocial problems such as loneliness, bereavement, financial difficulties, and mental health conditions. Loneliness, social issues, and mental health problems all increase the risk of physical ill-health and lead to significant strain on the National Health Service (NHS). 'Social prescribing' - the referral of individuals to sources of support within the community such as walking groups, arts activities, community gardening, and peer support – is part of the NHS long-term plan for delivering personalised care to improve the health and well-being of individuals with complex care needs. Social prescribing often involves a GP and 'link worker' consultation, however referrals can also be made via social care, mental health services, third sector groups or through word-of-mouth. Whilst there is growing research on the effectiveness of social prescribing, there is a lack of evidence for *how* engagement in activities commonly prescribed within social prescribing cause mental health benefits. Second, few studies have explored barriers and enablers to effective engagement in social prescribing for referrers, e.g. GPs. Therefore, this PhD uses qualitative methods to explore the theoretical links between social prescribing activities and mental health, and the barriers and enablers to effective social prescribing for GPs.

Structure of this thesis

Chapter 1 provides a historical and theoretical background to the subject area of social prescribing for mental health. Chapter 2 is a literature review of the evidence underlying social prescribing for mental health. Chapter 3 contains a multi-level theory review on how activities commonly used within social prescribing may produce mental (and physical) health benefits. Chapter 4 contains an ethnography of social prescribing, exploring the mechanisms and active ingredients underlying its impact on mental health. Chapter 5 contains a qualitative interview study with general practitioners on the barriers and enablers to social prescribing for individuals with mental health problems. Finally, Chapter 6 considers the findings of the thesis as a whole and implications for policy and practice.

Chapter 1 - Historical & theoretical overview

Before assessing the potential utility of social prescribing, it is helpful to have a historical, contemporary, and theoretical understanding of population health in England to understand the scale and type of health challenges facing society, and some of the main human factors contributing to this. Any grand-scale, new approach to health (addressing multiple, complex health and social needs and accessible to a large proportion of the population) e.g. social prescribing, should be judged on its suitability in relation to this. The focus of this thesis is on social prescribing's impact on *mental health*, however the following section (1.1) will also explore physical health, due to its intimate relationship with mental health, as will be discussed. Moreover, given how modern mental healthcare and our conceptualisation of mental health falls within the wider bracket of health and medicine, a broader understanding is helpful. Section 1.2 (page 20) will then discuss the history of current, mainstream models and philosophies within healthcare, the degree to which these are suited to contemporary health challenges, and explore potential alternative approaches. Again, an understanding of approaches in health more broadly is helpful since these ideas infiltrate the field of mental health. Thus, the following sections aim to provide some historical and theoretical background and justification for the consideration of social prescribing as a suitable approach to support mental health and well-being. Chapter two will then provide an overview of social prescribing and its evidence.

1.1 Historical & contemporary overview of population health in England and contributing human factors

Over the past century, the health challenges facing England and its healthcare system have undergone significant change. Data from *The Health of Adult Britain* shows that infectious diseases were the most common cause of death from 1848-72, with some estimates putting the percentage of total death from infectious causes in England & Wales at 48% (10). Most common were tuberculosis, scarlet fever, and diphtheria (11). However, it is estimated that life expectancy in Victorian London nearly doubled in this period (12). This was largely attributable to mass vaccination programmes and rising living standards: particularly improvements in hygiene,

sanitation and nutrition, which helped this trend of decreasing infections and therefore overall mortality, continue into the 1970s (13). Life expectancy continued to rise across the 20th century (14), and the leading causes of death underwent a shift from infectious diseases to chronic, non-communicable ones (15). This shift is summarised in Abdel Omran's theory of epidemiological transition (16), which is a widely adopted model describing the population health transitions many developing nations have broadly followed. Although this model has faced some criticisms, especially in its application to contemporary development (17,18), it is still broadly indicative of population health in Victorian Britain onwards (19).

As a result of this shift, the epidemiological demographics of England are drastically different today compared to 100 years ago – however, it is not clear that our approaches to tackling current complex health needs have updated suitably (see section 1.2). The population has been steadily and consistently ageing over the last century, and in 2007 16% of the population in England were aged 65 and over, compared to 5% in 1901 (19). Today, the most common cause of death in males is heart disease and in females dementia and Alzheimer's disease (20). The top causes of 'Years of Life Lost' (YLL) in England in 2016 were ischaemic heart disease, lung cancers, cerebrovascular disease, and chronic obstructive pulmonary disease (21). Further, the prevalence of diabetes more than doubled from 1995 to 2011 in the UK (22). So, although people live longer now and are less likely to die from an infection, they are more likely to develop a chronic disease, with around 15 million people in England having a chronic health condition in 2020 – about 27% of our population (23). Perhaps a more nuanced measure to 'Years of Life Lost' is 'Years Lived with Disability' (YLD), with the leading causes in England in 2016 including lower back and neck pain, skin diseases, migraine and - most relevant to this thesis - depressive disorders (21).

A large part of this increase in chronic disease is likely caused by people living longer, and our ability to stay alive with a chronic illness through life-long treatment and support, but other human factors are important, especially addictive/unhealthy lifestyle behaviours, mental health, and social relationships (24). It is these human factors that underpin the work of my thesis and the following sections will present evidence as to how unhealthy lifestyle behaviours, poor mental health and social isolation/loneliness contribute to the high levels

of chronic, physical disease that I have just highlighted, and so lead to rising pressure on the NHS and society-at-large. This helps give an understanding of the wider benefits of tackling these issues – and thus provides further justification for research in this topic area.

1.1.1 Addictive/unhealthy behaviours

The leading population risk factors for chronic disease ("attributable factors") in England are smoking (19%), poor diet (14%), high blood pressure (13%), high body mass index (10%), alcohol and drug use (10%), and high total cholesterol (%7) (21). Addiction underlies some of the behavioural risk factors listed here, most obviously smoking and alcohol and drug use, but also poor diet. There is now much neuroimaging and hormonal pathway evidence demonstrating that obese individuals share many of the same reward mechanisms seen in those addicted to alcohol or drugs, lending weight to the hypothesis of widespread 'food addiction' (25–27). The following sub-section (1.1.2 'Mental Health') will provide evidence for the close relationship between these behavioural risk factors and poorer mental health.

In recent decades, certain population-level health behaviours have improved. For example, 14.4% of adults in England smoked in 2018, compared to 45.6% in 1974 (28). This is thought to be largely due to wide-reaching public health policies and an increased focus on risk factors to chronic disease (29). However, for other health behaviours, the trend is in the opposite direction. For example, with diabetes, its vast increase in prevalence in recent years has been strongly linked to rising levels of obesity (30). The Health Survey England in 2015 estimated that 68% of men and 58% of women were above normal weight for their height (31). The NHS spent £6.1 billion on overweight and obesity-related health problems in 2015 and obesity costs to wider society that year were £27 billion (31). Other chronic conditions such as cardio-vascular disease and gastro-intestinal cancers also share many of the same behavioural risk factors as diabetes and have very similar underlying disease processes of inflammation and metabolic disturbances – to which weight gain contributes significantly (32). There are also challenges relating to drug addiction, as shown by the recent "epidemics" in the UK and US of cocaine, heroin, and other opioid addictions due to the lower costs and increased availability of these drugs (26,33,34).

These behavioural risk factors for chronic disease can be considered within the context of sociocultural and economic "modernisation", loosely defined as the combination of society's urbanisation-industrialisation, consumerism, technological progression and tendencies towards secularism, broadly shared across most Western nations (35). Human beings have evolved relatively insignificantly over the past few millennia, yet over the same period and especially over the last 300 years our cultural and technological environment has changed drastically (36). Referring to our 'evolutionary adaptedness', some biological anthropologists have contended there is a mismatch between our physical bodies, which are arguably still most suited to hunter-gatherer lifestyles, and the modern western environment as seen in England – this mismatch may provide some theoretical underpinning as to the rise in these chronic diseases (37). For example, the human genome has changed very little in the past century but the availability of low-cost, high carbohydrate foods has increased exponentially – and so our bodies have not evolved to accommodate this (26).

Poor health behaviours not only have consequences for physical health, but also mental health. A systematic review suggested that 30% of those with a chronic condition also have a mental health problem (38). Indeed, between 12 and 18% of all NHS spending on long-term conditions is linked to poor mental health, with people with a chronic condition 2 to 3 times more likely to suffer from mental health problems than the general population (39). This effect is heightened in areas of socioeconomic deprivation (40). A wide range of behavioural risk factors for physical disease such as smoking, low fruit and vegetable consumption and high alcohol usage are also more common in those with worse mental health (41).

This relationship between mental and physical health is complex and multi-directional. If we take the example of obesity, being obese is associated with psychological distress and lower quality of life, even amongst children (42). Emotional damage associated with obesity can lead to lower self-esteem, social isolation, and binge-eating, creating a negative physical and psychological spiral (43). Mental health problems themselves can also lead to obesity, as well as other eating-related disorders (44). Psychosocial stressors in childhood (which are linked to the development of mental health problems (45,46)), seen more in lower-income families, have been linked to obesity via unhealthy, maladaptive behaviours such as over-eating as well as direct metabolic

changes such as the disruption of cardiovascular reactivity and hormone dysregulation (47–49). But anti-depressants, anti-psychotics and other medication intended to reduce psychological symptoms can also cause weight gain (e.g. due to increased appetite) (50,51). This highlights the challenge of intervening in the complex, multi-directional relationship between physical and mental health.

1.1.2 Mental health

Alongside its relationship with physical health, mental health should clearly be of central concern intrinsically. There are perhaps few things more fundamental to a good life than one's psychological state from day to day. The WHO (World Health Organisation) mantra "there is no health without mental health" acknowledges this (52). And, alongside the considerable rise of lifestyle-mediated chronic physical health conditions, mental health patterns in England have also changed considerably in the past few decades. Prevalence in common mental disorders (especially anxiety and depression) has risen by 20% from 1993 to 2018, with around 1 in 6 adults in England now having a common mental health disorder (53). Over the past decade self-harm and suicide have also increased in England, though rates of psychoses have remained broadly stable (54,55). Mental health problems account for 23% of the total disease burden in the UK (56). The impact of this on people's lives is profound, e.g. leading to feelings of low self-esteem and confidence, hopelessness, difficulty carrying out daily activities and relating with other people, and often a sense of not being fully part of society (57). From an economic perspective, whilst the exact figure is unknown, the cost of mental health problems according to Government's own figures is around £105 billion per year (58). Given its indirect effect on health behaviours and physical health, however, the true cost is likely far higher.

The relationship between mental and physical health also has strong biological underpinnings (alongside behavioural ones outlined in the previous section). For example, depressed mood is linked to increased inflammatory markers within the immune system including cytokines and C-reactive protein levels, as well as prolonged stress response and deficient immune responses after vaccination; processes associated with the development of heart disease, diabetes, Alzheimer's, infection and a wide range of other conditions (59,60). Similarly, literature on 'allostatic load' (wear and tear on the body as a result of exposure to repeated

or chronic stress) has demonstrated similar inflammatory biological mechanisms as well as behaviours associated with stress such as risk-taking activities (61).

However, positive mental health can be protective against physical ill-health. A meta-analysis has shown positive psychological wellbeing is protective against mortality in both those with and without physical illness (62). The positive correlation persists even when controlling for behavioural influences, suggesting that as with mental ill-health, the role of psychobiological as well as behavioural factors is important for wellbeing. For example, research shows that positive affect can reduce inflammation and blood pressure, which are critical in the development of cardiovascular disease and many other common conditions (63). The effect is maintained even when controlling for negative affect, suggesting that it is not just the absence of negative mood that is important, but the experience of these positive wellbeing factors. There is also evidence good physical health is protective against the development of mental health problems (64).

1.1.3 Social relationships

Loneliness is becoming increasingly common, and is often closely related to depression, low self-esteem and feelings of hopelessness (65). 5% of English adults "feel lonely often", equating to around 2.8 million chronically lonely adults (66). Loneliness is a subjective emotional state, when one feels a discrepancy between their desired and actual social relationships (67). This is different to social isolation which can be more readily quantified objectively, e.g. by a lack of social contacts. Loneliness can have substantial consequences on daily life. For example, lonely people are more likely to be hyper-vigilant and perceive and remember other people's behaviour to be unfriendly, thus increasing social anxiety and causing them to withdraw further, in a "vicious cycle" (68). Perhaps in part due to Britain's cultural reverence for individual self-reliance (scoring very strongly towards the side of individualism on Hofstede's individualism-collectivism scale (69)), there exists significant stigma associated with loneliness, with 30% of adult Britons saying they would be embarrassed to admit they were lonely, which creates a barrier to seeking help (70).

Furthermore, loneliness and physical health are related. The physical health impact of loneliness and social isolation has now been demonstrated to have a public health impact on mortality similar to that of obesity

or smoking (67). There is also a gradient of loneliness across the 'level of physical health spectrum', with only 3% of those with "excellent health" being lonely often, compared with 23% of those who had "poor health" (67). There are multiple mechanisms linking loneliness to poor physical health. Both social isolation and loneliness are independently linked to poorer health behaviours including smoking and physical inactivity (71), but also directly to health-damaging biological processes such as high blood pressure, C-Reactive protein and worse immune functioning (72,73). However, positive social relationships can be protective for physical health both through 'main effects' (i.e. having directly positive effects on biology and health behaviours) and 'stress-buffering' (i.e. reducing the adverse psychological effects of poor mental health) (74). Meta-analysis data from over 300,000 individuals followed over 8 years demonstrates that individuals with adequate social relationships have a 50% greater likelihood of survival compared to those with insufficient social relationships, and that high-quality social relationships were *the* most important determinant of good health when compared to other factors including diet, exercise and medication adherence (75).

In considering why we are seeing growing problems linked to social factors such as loneliness and social isolation, again theories suggest that human beings' innate, psychological needs are not being met by contemporary society, resulting in the manifestation of loneliness as well as poor mental health (76,77). For example, increasing secularisation and reduction in memberships in religious and community groups has been linked to a decrease in meaningful social connections in the past century (78). Moreover, there is some evidence from longitudinal studies suggesting that increased internet use and time spent on screens has led to smaller 'real-life' social circles and greater feelings of loneliness – leading to some academics arguing that though people are more connected than ever online, this has come at the price of in-person human connection (79). There is also evidence that loneliness and lack of positive social connections increase risk of drug, alcohol and food addictions, wherein substances are used as a substitute for social connection, a relationship which becomes self-reinforcing and bi-directional (80,81).

Overall, therefore, there is significant evidence that at least part of the high prevalence of non-communicable diseases and growing pressure on the NHS is influenced by rising poor health (/addictive) behaviours, mental health problems, and other social factors e.g. loneliness. Certain addictive behaviours have worsened in recent years, alongside rises in loneliness and mental health problems. As has been demonstrated, these factors are also inextricably linked, reinforcing one another. It is important to interrogate whether the current mainstream models and philosophies within healthcare are suitably adapted at addressing these key psychosocial problems, or whether new approaches may be warranted. The next section will provide an overview of mainstream conceptualisations towards health, which in turn have influenced our understanding and approaches towards *mental* health.

1.2 Conceptualisations and approaches to health

1.2.1 Biomedical era

Throughout history, across nearly all cultures, there has been the concept of 'sickness', culturally agreed upon explanatory models for this 'sickness', and the offer of therapeutic solutions – a 'healing framework' - to reduce pain and suffering (82). The primary theoretical model in the West, since 5th century Greece, was that of Humoralism, whereby all illness was considered an imbalance between different types of fluid in the human body, and various treatments were said to restore this balance (83). Despite the growing professionalisation of physicians throughout the Renaissance period, there was very much a pluralism of healers including domestic and folk ones, utilised to varying but significant degrees by citizens (82). Ancient Chinese, Roman and Greek medicine all also recognised the relationship between disease and the wider social and material environment (84).

This approach to Medicine in Britain and across "the West" then radically transformed, with what has been labelled as the era of Biomedicine. The 'biomedical model' is typically described as the "historical and ideological underpinning" behind current beliefs into the causes and cures of illness (85). Its roots lie strongly

in Cartesian dualism - belief in the separation of the body and mind - and academics have argued this led to the physical body being the remit of health professionals; the mind a spiritual and religious matter. This philosophy laid the foundations for rationalism and later empiricism, which drove the Scientific Revolution that itself heavily influenced the Enlightenment intellectual and social movement. It was from this that 'Scientific medicine' began to exert its dominance in the mid to late 19th century, spearheaded by research led by Pasteur, Koch, Lister and the advent of autopsy, microbiology, germ theory and its emphasis on experimentation and objectivity in understanding, classifying and treating disease (86). All diseases became understood as caused by cellular pathology, known as 'the doctrine of specific aetiology' (87). The assumption, then, was that all symptoms were a result of physical malfunction caused by this pathology.

It is important to recognise that the developments in these ways of conceptualising health and organising services and treatments, reflect the health climate of the time, where high levels of infection were the largest driver of morbidity and mortality. The therapeutic revolution, largely occurring after the Second World War, involving the exponential development of new antibiotics and vaccines did bring substantial benefits to population health (88). Though, many of the improvements in population health up to that point had been due to social medicine rather than curative medicine, such as the environmental public health movement including sanitary reforms, and social and economic development leading to rising living standards (13,89). However, with the success of clinical advancements emphasised, social medicine received less prominence and from the latter half of the 18th century onwards science became deeply connected to medical knowledge in the institutions of medical schools, hospitals, and research centres. 'Hospital medicine' replaced 'bedside medicine', now emphasising an object-orientated approach over a person-centred one, and the "sick-man" became increasingly subordinated to the doctor (90).

Reinforced by the rise in 'laboratory medicine' and later the therapeutically relevant research industry, a 'monopolisation of knowledge' developed within the medical profession over laypersons. This also applied to mental health (see 1.2.3 Medicalisation, page 23). This, combined with the broad general public assumption of doctors' altruistic motivations, led to interest in the qualities of the whole person being downplayed compared

to studies on specific organs and pathological malfunctions, and the whole-body system understanding dissolved into that of specialised anatomical regions (91). The biomedical focus also encouraged the individualisation of health, reductively locating problems in individual pathology as opposed to social and environmental causes.

1.2.2 Medical dominance

Emphasis on biomedicine and, following that, the development of large health institutions, increasing specialisation, expansion of biomedical research and growth of the pharmaceutical industry, led to a 'medical dominance', over the control of knowledge and resources around health (and thus mental health). Medical dominance is defined as the power of doctors to control the actions of others through the authority of their specialised and superior knowledge (92). At the root of this dominance is the biomedical theory of ill-health, providing an intellectual rationale for medicine's dominance over health, and a justification for the use of medical interventions (93).

Biomedically-centred language and signs pass between members of institutions, which then reproduce meaning through various social and institutional rules (91). These shape the production of knowledge (within the profession and down to lay persons), based on "truth-effects" (94). Stemming from this, it is argued, micro-practices of power occurring between doctors and patients, enable social control over the patient's body (94). This medical dominance was at the root of the 'medical paternalism' that held prominence at least into the 1990s (95). It has been argued Medicine holds power in terms of i) its social organisation, ii) how people conceptualise and act regarding health care, and iii) its control of practical medical work (96). Whilst the way in which power flows has changed in recent years, with some pushback to medical dominance for example, reductions in aspects of doctors' autonomy through increased managerialist and bureaucratic pressures, the 'biomedical model' and broader medical dominance have been largely retained (97).

1.2.3 Medicalisation

The combination of biomedicine and medical dominance has also led to a trend in increased medicalisation over the mid to late 20th century (98). This means that increasing amounts of everyday life have come under medical dominion, influence and supervision (99). Ivan Illich was a leading critic of society's increasing dependence on medicine to solve (what he deemed) social problems. In his influential book "Medical Nemesis" (1976) he argues that the medical profession was building an even larger market for their services, while bringing about "iatrogenesis" (harm done by medicine) (100). He outlines the harm done at the *clinical level* through inefficacious treatments and side effects, the *social level* in that individuals were becoming increasingly dependent on drugs, and the *structural level* in removing meaning from illness and death. The medicalisation process has evolved beyond just the medical profession, with now consumers, biotechnology and healthcare markets playing a key role in shaping and maintaining it (101). The concept of the 'Risk Society' (102) (a society increasingly aware of safety and risks) has also contributed to persistent existential anxieties and increased patients' demands for pharmacological 'quick fixes' (103).

Medicalisation might not always be problematic, for example it might lead to a validation of suffering and enable routes to effective treatment. However, it is problematic when it leads to *over*-diagnosis or *over*-treatment. The over-medicalising and the 'medicalisation of everyday life' are of primary concern. The medicalisation of homosexuality, being officially classified as a mental disorder in England until the 1970s, is a stark example of this (104). It is a reminder of the fact that our definitions of mental illnesses are often evaluative categories based on what is considered 'desirable' or 'acceptable' in specific sociocultural and temporal contexts, as opposed to objective pathological fact (98). This may be especially relevant with common mental health conditions where we still have limited evidence for their biological causation. For example, the 'chemical imbalance theory' of depression, which was highly influential in the explosion of anti-depressants such as Prozac into the market in the 1980s, is now demonstrated to be largely unsupported by substantial evidence (there is limited evidence that naturally low serotonin *causes* depression, even if it is likely the reverse is true: that prolonged sadness leads to lowered serotonin levels) (105).

The medicalisation of largely social problems, such as labelling someone with depression who is simply experiencing dire social circumstances (e.g. extremely social isolated, or living in poverty) and primarily responding by giving them pharmacological treatment, can be problematic for several other reasons. In some instances, it can lead to disempowerment and a sense that one is consigned to this state and cannot do anything to change it, thereby reducing autonomy, self-efficacy and ability of the individual to create meaningful, sustainable change long-term (106). Moreover, by promoting biomedical, individualised explanations and solutions, there is a tendency to play down the social causes of ill-health (107,108). This can lead to other options, such as efforts to improve social circumstances, not being fully exhausted. The prescription of anti-depressants in the UK rose by 108% from 1995 to 2011 (109). Yet, though potentially having an important role in severe depression, data from meta-analyses provide increasing evidence that they are not particularly effective for those with mild to moderate depression (Cohen's d-type effect size < 0.20) and they have substantial possible side effects and common withdrawal reactions (110).

To conclude, whilst alternative models of health (which I will describe in more detail in the following chapter) have been influential, there is clearly evidence that the dominance of Biomedicine continues to this day. Moreover, the emphasis on the individual over the social, rooted in the English and Western tradition of individualism over collectivism continues to dominate. So too does the dominance of Medicine as the profession most in the control of health (and thus mental health) in society. Arguably, all of this has resulted in the design of a health system that has become increasingly focused on pathogenesis, medicalisation, and tendencies to individualise the perception and treatment of health problems. The main health challenges we face today, including that of mental health, loneliness, addiction, and chronic illness, may warrant new approaches. The following section will outline some alternative approaches and philosophies, which also underlie some of the principles of social prescribing thus providing some theoretical backing to the topic area.

1.3 Alternative conceptualisations and approaches to health

1.3.1 The Biopsychosocial model

The American psychiatrist George Engel argued that the conceptual models of health and disease that doctors use, around which their knowledge and experiences are formed, very much influence how they approach healthcare for their patients (111). It effects the professional boundaries beyond which they consider their responsibility, their attitudes and behaviour with patients, as well as patient attitudes and behaviours. As described in the previous section, medicine's dominant model over the last century has been biomedical. The biomedical model defines all disease as a deviation from the norm in pathophysiological terms. It was developed as a scientific model to *study* disease, however soon dominated the *practice* of medicine (112). In doing so, it has often neglected the social and psychological explanations and treatments of ill-health, and at times may neglect the patient as a person. Engel argued for a more humane medicine, and that ignoring the social and behavioural components of disease was not only ethically wrong but also "bad science".

Engel argued that although the biomedical model was a legitimate scientific model, it had become a "dogma", in that it finds ways to forcefully fit illness explanations and treatments into its model, and resists approaches that challenge its authority and power (111). Pathological findings may not always result in disease, and someone might feel very unwell with no pathological findings – these dilemmas do not fit well into the biomedical model – as perhaps seen in the previously mentioned chemical imbalance theory of depression (105).

Engel argued it is not the technical expertise in the biomedical approach that is the problem, but our "conceptual thinking". The biopsychosocial view was proposed to include more of the patient's subjective experience, provide a more comprehensive model of causation than the reductive biomedical model, and to accord more power in the hands of the patient in a doctor-patient consultation (113). Engels said: "The proposed biopsychosocial model provides a blueprint for research, a framework for teaching, and a design for action in the real world of health care". The aim of the theory was to broaden the domain of medical knowledge and practice to better address the needs of patients.

1.3.2 Patient-centred medicine and personalisation

Indications that attention to the psychological and social needs of patients might be improving in recent decades, is the rise of the concept of patient-centred medicine, influenced by the psychoanalysis movement but arguably only having significantly affected policy and clinical training since the 1990s in the UK and US (114,115). Patient-centred care argues for a shift from the medical paternalism that has traditionally dominated the doctor-patient relationship. Medical paternalism, which dominated 19th and 20th century medicine and is perpetuated by biomedical dominance, represents a 'doctor knows best' attitude that pervades consultations. Increasingly, with the acknowledgement of the importance of social and psychological determinants of disease, and other factors such as the rising need for self-management in chronic disease and the increasing role of the Internet and thus patient knowledge, this approach is being seen as out-dated.

There is evidence that patient-centred care is more efficient, improves patient well-being as well as doctor satisfaction, increases patient adherence to medications, and enhances outcomes in chronic conditions such as diabetes (116–118). Mead and Bower describe 5 components of true patient-centred care: the biopsychosocial perspective, 'patient-as-person', shared power and responsibility (i.e. shift from medical paternalism to a more equal relationship), the therapeutic alliance (i.e. how the relationship between doctor and patient influences outcomes such as adherence to treatment, etc), and the 'doctor-as-person' (i.e. the influence of the doctor's personal qualities) (119). Thus, patient-centred care is in theory about shifting power from doctor to patient in favour of a more egalitarian ratio, encouraging a more humane approach to medicine, moving beyond the reductive focus on disease and supporting the biopsychosocial approach. In practice, however, consultations can often remain paternalistic in nature. But I will discuss very recent NHS policy changes regarding personalisation of care that arguably develop patient-centredness even further, in the following chapter (section 2.1.1, page 32).

1.3.3 Systems thinking and complexity science

Another important development in the conceptualisation of health has been the application of General Systems Theory (1968); a theory proposing that all scientific reductivisms need to take a more holistic approach

(120). A system consists of a set of components, and a set of relationships between these components. The manifestation of disease is a result of a complex interplay of factors, whereby a change at any one point affects change at a connected point, and so on. Systems thinking highlights that the individual cannot be wholly understood in linear, biomedical terms, without an understanding of their environmental, cultural, and social influences. The system concept also applies to the *treatment* of illness and pathways to wellness. It has been argued that public health approaches need to move away from simple, linear causal models of disease and interventions, towards a focus on complex systems (121). If problems are caused by a multitude of interacting factors, solutions are unlikely to be successful if they do not acknowledge this or focus on solely one component e.g. the biomedical.

1.3.4 Social determinants of health

Work on the 'Social Determinants of Health' around the turn of the 21st century has also been highly influential. Social determinants of health get to the "causes of the causes" and are the conditions in which we live, work, play, relate to others and grow old (122). From their extensive research, leading proponents of social determinants Michael Marmot and Richard Wilkinson produced 10 'Solid Facts' or social circumstances strongly linked to health outcomes including stress, social exclusion, work, food, transport and social support. These conditions influence health and well-being through our social structure and material circumstances. Material circumstances, e.g. food, water and shelter, impact health directly as well as indirectly via our social structure. The social structure consists of our social and work environments. These in turn influence our psychological processes and health behaviours. Our health behaviours cause pathophysiological changes leading to changes in health. As evidenced previously, psychological processes can impact health indirectly through health behaviours, or directly, e.g. through their effects on neuroendocrine and immune responses (65,71).

People's social and economic circumstances affect health throughout the entire life-course. Marmot and Wilkinson provide substantial evidence for social determinants being the primary drivers behind health and thus health inequalities (123). This is demonstrated in the 'social gradient' they found consistently across most health conditions as well as risk factors for poor health. In other words, the social and environmental

conditions which you are born in, through arguably no choice or action of your own, determine to a significant degree how happy you will be, how many years of ill-health you will endure, and how long you will live for. In mental health, for example, this social gradient impacts both risk of mental disorder and access to services, and thus outcomes (124). The social determinants of health lens sits in stark contrast to biomedical individualisation. Their work has been vital in making the political and moral argument for tackling health inequalities, having been taken to the global stage with the creation of the WHO commission on Social Determinants of Health (125). However, options in England that directly address social determinants for individuals with mental health problems, remain limited.

1.3.5 Salutogenesis, positive psychology, and asset-based approaches

A paradigmatic dictum linked to the biomedical model has been *pathogenic* thinking. In short, that the human body is a mechanistic organism which is occasionally attacked by a pathogen (or figurative equivalent) and physically damaged. Even health promotion and preventative fields are dominated by the language of *risk factors* that cause *disease* such as smoking, drinking, lack of exercise and over-nutrition – this has also permeated the mental health discourse (126). In opposition to this pathogenic 'deficit' model, sociologist Aaron Antonovsky has proposed a new orientation known as 'salutogenesis', which encourages thinking about 'salutatory factors' (that which makes us well), rather than solely risk factors (that which makes us sick), to inform more research and practice (127).

Antonovsky's ideas were heavily influenced by his research on Holocaust survivors, exploring how some people retained health and well-being, despite such stressful life events (128). He developed these observations into a 'Sense of Coherence' (SOC) theory which consists of 'comprehensibility, manageability and meaningfulness' – i.e. if a person can understand their situation, has the tools or resources to make change, and can find meaning and purpose in life to move in a positive direction, health will ensue (129). The SOC scale measures these concepts and has achieved an acceptable level of validity, having a mild-moderate correlation with health scales, and is strongly correlated with decreased anxiety and depression and increased self-esteem

(130). Despite its validity and potential utility, the salutogenic philosophy is relatively under-explored within the practice of medicine, dialogue within consultations, or preventative or treatment approaches.

Some of the principles of salutogenesis are however supported by the recent Positive Psychology movement. Pioneers in this field, Martin Seligman (former president of the American Psychological Association) and Mihaly Csikszentmihalyi argued that the field of psychology and mental health had focused for too long on the negative aspects of mental health, deficits, and pathology (131). Whilst acknowledging these to be important, they pushed for the balance of research and interventions to shift in the direction of that which promotes positive mental health, rather than just reducing pathology. This has included exploring personality traits such as optimism, hope, creativity as well as increasing therapies that harness personal strengths and deploy techniques such as practicing kindness, goal setting, and gratitude. A meta-analysis has demonstrated significant beneficial effects of positive psychology interventions (those aimed at raising positive behaviour and feelings as opposed to reducing negative behaviour or symptoms) on mental health outcomes (standardised mean difference compared to control groups was 0.34 for subjective well-being, 0.20 for psychological well-being and 0.23 for depression) (132). However, the quality of studies varied significantly and the high level of heterogeneity limits the conclusions.

Positive psychology has its roots in the work of William James (1902), and later the humanistic psychology movement (e.g. Abraham Maslow, Carl Rogers) (133). There are a number of critiques of Positive Psychology's claims, one of which is that it has embraced Western individualism in its focus on personal fulfilment and self-help and thus puts less emphasis on our social relations with one another, and our social, economic and cultural experiences (134,135). The salutogenic approach, indicating its sociological roots perhaps (and in systems thinking), incorporated these broader social forces to a greater degree, with Antonovsky demonstrating how social structure influences the strength of one's 'sense of coherence' (136). Some authors have argued for a 'salutogenic positive psychology' that uses Antonovsky's sense of coherence as the mediator through which positive psychology traits affect mental health (137).

Alongside calls for more salutogenic thinking within healthcare, researchers Kretzman and McKnight have called for approaches to health interventions to be more asset-based (rather than 'needs-based' which they argue most current approaches are, and which leads to conceptualisations of individuals as 'deficient') (138). Asset-based approaches derive from the theory of salutogenesis, the concept of 'health assets', and learning from asset-based community development (139). Health assets are any factors or resources that enhance and sustain health and well-being – these might come from individual capabilities/skills, community organisations, or state institutions (140). They include a 'family' of community-centred approaches to health, grouped around strengthening communities, volunteer & peer roles, partnerships with communities, and access to community resources - many of which incorporate an asset-based approach (141). A meta-analysis of 131 studies evaluating community engagement and health, found there was solid evidence that community-centred interventions positively impacted health behaviours (effect size d = 0.33, 95% CI 0.26 to 0.4), self-efficacy (d = 0.41, 95% CI 0.16 to 0.65) and perceived social support (d = 0.41, 95 % CI 0.23 to 0.65) (142).

'Social Prescribing' (SP) is potentially one way in which more biopsychosocial, salutogenic, patient-centred and asset-based approaches that more readily address the social determinants of health and acknowledge 'complexity', are being operationalised; as well as being a strategy which may help tackle some of the key psychosocial issues I have highlighted, including addictive behaviours, mental health problems and loneliness. The three studies I conduct as part of this thesis will seek to provide evidence for this, however before doing so, it is important to consider the existing evidence base related to social prescribing's impact on mental health.

Chapter 2 - Literature Review: overview of evidence related to social prescribing & mental health

2.1 Overview of Social Prescribing in England

The term 'social prescribing' has appeared mostly over the past decade and been popularised by recent policy developments within the NHS. There is no single, agreed upon definition of 'social prescribing'. The UK Government website defines it as 'community referral' by health and care professionals to local, non-clinical services (143). The King's Fund uses a similar definition and states that social prescribing generally but not exclusively comes through primary care (144). The NHS website describes social prescribing as "a way for local agencies (including general practice, social care, job centres, pharmacies, voluntary organisations, etc.) to refer people to a link worker", who then connects individuals to community groups and activities (165). In academic studies, the term 'social prescribing' refers almost exclusively to the referral of individuals to local community groups and activities by *healthcare professionals* – normally *GPs* and usually involving a *link worker*. As a result, social prescribing as defined this way is typically considered to have three components: the GP-patient consultation and referral onto a link worker; a link worker session with the individual; and referral onwards to a community group or other social support**.** The form of social prescription will vary depending on the individual's personal needs and choice but often involves a referral to community groups or voluntary organisations that provide activities such as walking, dance, arts and crafts, sports, singing, computer skills, financial advice, peer-support, group reading, adult learning, or community gardening.

Relevant to Chapter 1 of this thesis, social prescribing is arguably an acknowledgement that resources for healing lie not only within health services, but also in the wider community, thus embracing the biopsychosocial model and wider social determinants of health. But more than this, social prescribing recognises that patients often present to General Practice with primarily social needs. As mentioned above, this figure is estimated to take up as much as 20% of GP appointments in England (145). In relation to this, and other evidence on rising loneliness and psychosocial problems laid out previously, academics have argued that social

prescribing may be one way to address such psychosocial and socioeconomic issues, reduce loneliness, and thus alleviate some pressure off General Practice and the NHS (145–147). Social prescribing may also address challenges relating to the short 10-minute appointments that GPs have with patients, during which there is typically insufficient time to address the psychosocial elements fully (2,148). Link workers can spend more time with patients exploring these issues and can facilitate integration of General Practice with community groups and other services.

2.1.1 The policy context of social prescribing

Social prescribing in its broadest sense has existed in certain General Practices around England for several decades but has been gathering momentum in recent years. In 2019, a major development in social prescribing took place with the national roll-out of the scheme in England. NHS England committed to creating over 1000 link worker positions by the period 2020/21 (149), providing every General Practice with access to a link worker, via their Primary Care Network, to whom they can refer patients to. While variation in the format of new link worker roles was permitted to remain flexible across England, there were guidelines on some of the core principles and preferable attributes of a link worker e.g. motivational interviewing skills, highly empathetic and non-judgemental, active listening skills, ability to take a personalised approach and successfully engage with local community groups and referring professionals (150).

There has been widespread political and health-system support for social prescribing, with a National Social Prescribing Network set up in 2017, as well as a governmental National Academy for Social Prescribing. The General Practice forward view contains social prescribing as one of 10 key action points to transform General Practice (2016) and social prescribing forms a core part of the new GP contract (2019) - where it is stated that social prescribing can relieve pressure from general practice, reduce health inequalities and work particularly well for people with long-term illnesses including mental health conditions, those who are lonely, and those with complex social needs (58,151).

This support (both politically and across the NHS) must be understood in the context of recent policy changes in the NHS more broadly. Social prescribing plays a significant role in the wider 'personalisation' agenda

across the NHS. The aim is for the NHS Comprehensive Model for Personalised Care to reach 2.5 million people by 2023/24, with Social Prescribing to reach over 900,000 of those people (152). Key philosophies behind this movement are shared decision making (co-production), personalised care and support planning. Other structural components of this model alongside social prescribing and community-based support include the roll-out of Personal Health Budgets and Supported Self-Management (152). Alongside link workers, there are several other professional roles being expanded including clinical pharmacists, physician associates, first contact physiotherapists and first contact community paramedics – which will all form an "integral part of the core general practice model throughout England" (151). Personalised care is said to be about people having more choice and control over their care, based on 'what matters' to them. In relation to the evidence laid out in Chapter 1 of this thesis, this is arguably an acknowledgement that medical paternalism ('doctor knows best') does not meet the needs of all patients with complex and non-medical needs. Also, this demonstrates an attempt at a more joined up, whole-systems (and thus 'complex') approach, integrating services such as health, social care and community groups around the needs of the person.

The recent creation of Primary Care Networks (PCNs) also reflects the personalisation movement, and represents a drive towards more localised, place-based care and greater collaboration between GPs (153). They serve between 30-50,000 patients, based on GP registration lists, led by local GPs but also other health, social care, and community groups. Previously, official collaboration between practices and other services occurred mostly at the Clinical Commissioning Group (CCG) level, which normally serves over 200,000 people. The PCNs form an essential building block of each "Integrated Care System", the new proposed model linking primary care with the wider system, including social care, local government and community organisations (154). The new link workers are being employed by each network, hence the Primary Care Networks will be at the centre of design of social prescribing in each locale.

2.1.2 Variations in social prescribing

The precise model of social prescribing within healthcare has taken many different forms, based around specific local circumstances and needs. It also occurs at varying levels of intensity, sometimes referred to as

light, medium and holistic social prescribing (155). Light involves referring patients on to community groups directly (a little more than signposting), without any linking person, and up until recently has been the most common model. Medium is more likely to involve a 'linking' person, but still addresses needs largely based on the doctor's opinions. Holistic models are ones that evolve organically and are run as a partnership between General Practices and the local community and voluntary sector, addressing patients' wide-ranging social and psychological needs, based on 'what matters' to the person – a well-known example of this is the Bromley-By-Bow centre in East London (156).

Social prescribing schemes have also varied significantly around the type of patients they are targeted towards. This has depended on local needs, assets, and priorities. Indeed, most social prescribing schemes that existed prior to 2019 came about through a highly localised, organic evolution and so varied substantially across different practices and geographical regions. Currently, however, the NHS recommends social prescribing for adults with long-term conditions including mental health problems, social needs, and those experiencing loneliness (157,158). Different levels of support are needed for individual patients, based on their specific needs and varying levels of patient activation (159). There have also been variations in the role of the link worker within social prescribing. For practices that do involve a linking person, there have been differences in the number of practices per link worker, where the link worker is based (e.g. in the GP practice or within a charity), and what the expectancies of their role are (e.g. simply signposting, health coaching case load, duration of and number of sessions with patients). The 'linking' role has also had different names in different areas e.g. link worker, community care navigator, community champion, care coordinator, etc. (160).

Therefore, social prescribing within healthcare is part of a new movement in England that looks to alternative conceptualisations of health and takes a more personalised approach with patients. But it is important to assess its evidence base and this is the focus of the following section.

2.2 Social prescribing and mental health and well-being

As explained above, 'social prescribing' is not a single, agreed upon concept. Thus, measuring the impact or efficacy of 'social prescribing' as though it is a unified concept, is challenging. In this section, I will explore the evidence for GP-link worker social prescribing (since this has been the focus of most academic studies, and at the centre of the recent national roll-out), and its impact on mental health and well-being outcomes for patients. I will then explore the evidence focusing on the end point of social prescribing, examining the evidence of the community groups and activities themselves (that are used in social prescribing). Then I will summarise results from studies that have looked at *how* social prescribing is thought to bring about benefits to mental health and wellbeing.

2.2.1 Evidence of the impact of 'social prescribing' on mental health and well-being

Search strategy & selection criteria:

I used a literature review format (161) for the following sections 2.2.1.1 and 2.2.1.2, conducting searches in the following databases: PsychINFO, Medline/Ovid, Embase, Cochrane library, PubMed Central, UpToDate, and Google Scholar. I also conducted searches for additional information within grey literature sources, e.g. government papers and websites (e.g. third sector organisations). All the searches were limited to the English language and publications between 2000 and 2022 (initial search March 2021; updated search April 2022). Search terms for section 2.2.1.1 (evidence of GP-link worker social prescribing: impact on mental health and well-being) included a combination of: "social prescribing" AND ("primary care" OR "GP" OR "GP referral" OR "link worker" OR "community referral" OR "community groups" OR "community activities") AND ("mental health" OR "well-being" OR "mental illness" OR "psychosocial" OR "impact" OR "effect"). I excluded evidence from non-primary care referrals in this section (which form only a very small proportion of what is defined as 'social prescribing' in the academic literature), including only GP-link worker or GP referrals in social prescribing. Search terms for section 2.2.1.2 (evidence of social prescribing community activities: impact on mental health

and well-being) included a combination of: ("leisure" OR "community" OR "exercise" OR "sports" OR nature" OR "gardening" OR "arts" OR "singing" OR "reading" OR "poetry" OR "dance" OR "music" OR "volunteering") AND ("groups" OR "activities" OR "interventions") AND ("mental health" OR "well-being" OR "mental illness" OR "psychosocial" OR "impact" OR "effect"). I included only group activities, excluding individual ones (e.g. doing physical exercise alone). In both these sections, I also conducted searches on synonyms and words related to these search terms. I included only published articles in peer-reviewed journals or high-quality third sector or government reports containing primary research data. My review included studies deploying qualitative and/or quantitative methodologies, and participants with mental health conditions or psychosocial issues. I excluded social prescribing schemes and activities that were non-UK based, since the focus of this thesis is on UK social prescribing, and also due to potentially substantial differences in healthcare delivery and community infrastructure between different countries.

2.2.1.1 Evidence of GP-link worker social prescribing: impact on mental health and well-being

High-quality quantitative evidence assessing the effectiveness of social prescribing has been sparse. A randomised controlled trial (RCT) was conducted involving 161 patients in Bristol with psychosocial problems; 90 were randomly assigned to receive social prescribing and 71 were allocated to routine general practitioner care (162). This study demonstrated that the social prescribing group had significant reductions in anxiety and improvements in quality of life, ability to carry out daily activities and feelings about general health. Despite critiques at the lack of randomised controlled trials in social prescribing (163), there are various criticisms raised at their validity in this context, e.g. the impossibility of blinding GPs, link workers and patients, the difficulty of applying RCT methodology to 'complex interventions', poor external validity, ethical issues and the logistical challenges of setting up RCTs in the community sector (164,165). So, it is important to question whether the same necessity and utility for RCTs in the biomedical world (e.g. in simple drug vs placebo trials) is transferable to the complex landscape of social prescribing (166).

In the only systematic review of social prescribing's impact on overall health and well-being, Bickerdicke et al. (2017) found 15 studies (1 RCT, 1 non-RCT, 2 qualitative studies, 4 uncontrolled before and after studies and 7 descriptive evaluation reports) that met quality criteria and involved referral from GP to a link worker and then onto the community sector, e.g. physical activities, befriending and arts groups (163). Even within the included studies, they found examples of high risk of bias, often small sample sizes, and significant loss to follow-up. However, of the studies using validated measures, all reported some improvements in mental health (well-being, depression and anxiety scores), although there is very little evidence beyond 6 month follow-up (157,162,167). Studies deploying "non-validated measures" also reported improvements in outcomes such as anxiety and depression after 4-month follow-up (168,169). Patient experience was largely positive in these studies, with improvements in loneliness, social isolation and mental health being observed consistently (157,167,170). GP experiences, when explored, were mostly in favour of social prescribing and perceived it to be a useful tool, however some were worried about the sustainability of the third sector to support social prescribing (167,170,171). Cost evaluations were mixed, some showing a reduction, others an increase, and some no difference (162,169,172).

Since Bickerdicke's systematic review, a number of important studies with higher-quality study designs have emerged. For example, a mixed methods study of social prescribing for those experiencing loneliness or anxiety found it reduced primary care usage through increasing social connectedness (defined as group membership plus community belonging) and reducing loneliness (effect size = -0.04, confidence interval -0.005 to -0.09) (147). A quasi-experimental cluster-randomised controlled trial of social prescribing for those with complex needs in socioeconomically deprived areas in Glasgow, found no difference between two groups for health outcomes, but sub-group analyses found that those patients who saw the link worker on three or more occasions had significant improvements in anxiety (effect size = 0.113, confidence interval 0.035 to 0.192), depression (0.272, 0.075 to 0.470), quality of life (0.211, 0.048 to 0.374) and exercise levels (0.323, 0.068 to 0.579) (173). This lends evidence to the hypothesis that ongoing engagement with link workers for the most in-need patients might be of crucial importance to successful results.

A qualitative study, exploring the experience of 24 patients with long-term conditions one to two years after their initial social prescribing referral, found they experienced reductions in social isolation and improvements in condition management (174). The study also found that this group of patients, who had complex needs, experienced many setbacks due to social and economic difficulties, and required longer-term support. Another qualitative study interviewing 30 patients (mostly with multi-morbid combined mental and physical health conditions) in a socioeconomically deprived part of Newcastle on their experience of link worker social prescribing, found patients had improved self-confidence, reduced social isolation, and better self-management of their long-term physical and mental health conditions (175).

A recent systematic review on social prescribing's impact on loneliness found 9 studies reporting improvements in loneliness, however a lack of control groups make it difficult to draw conclusions (176). A mixed methods study found the majority of service users (72.6%, n = 1634/2250) of a national social prescribing programme felt less lonely after receiving support, with additional benefits including improved well-being, increased confidence and having more purpose in life (177). Having skilled link workers and personalised support tailored to individual needs was found to be crucial. A study analysing changes in mental well-being post-intervention (n = 63) found statistically significant improvements using the Warwick-Edinburgh mental well-being scale, however these were considered below the level of clinical relevance (178).

The studies explored here have examined social prescribing as it appears in the academic literature and in relation to recent NHS policy developments. This is mostly research involving GPs and often link workers. However, considering a broader conceptualisation of social prescribing, it's important to understand that individuals access these groups via many different routes (although there is a lack of evidence on other types of referral models), and it is not always "prescribed" – e.g. someone might join a group via word-of-mouth or seeing a leaflet in a library. Thus, to capture a broader evidence base on social prescribing, it is important to examine the evidence of social prescribing community groups/activities themselves (separate to any specific referral pathway, e.g. the GP-link worker model). The following section will provide an overview of this.

2.2.1.2 Evidence on social prescribing community activities: impact on mental health and well-being

Although the referral of patients to community groups and activities as part of social prescribing has become more common in recent years, literature on the mental health benefits of these activities has been accumulating for the last three decades, and there is a strong, growing evidence base. In the UK, a systematic review found these can be grouped into several categories: arts activities, bibliotherapy, education, exercise, nature activities, welfare advice, and volunteering (179). Social prescribing includes both leisure activities and non-leisure activities (e.g. financial advice groups), however the focus of this thesis will largely explore leisure activities – that is (as defined and outlined in more detail in Chapter 3), "voluntary activities not related to employment responsibilities that are engaged in during free-time, predominantly for enjoyment".

For example, group arts activities have a strong evidence base for their beneficial effects on mental health. Arts interventions including singing, arts & crafts, dancing and group drumming have been shown to improve individual well-being among mental health service-users and older people (180–183). Arts activities have also been shown to increase quality of life, resilience and sense of purpose in those with chronic health conditions and older adults (184,185). Systematic reviews of arts activities have found they can lower levels of stress (significant reductions in 81.1% of studies but limited data on effect size) (186) and depression (48% reduction; OR = 0.52, 95% CI 0.34–0.80, $P = 0.003$) (187). A systematic review evaluating the impact of UK arts programmes for those with common mental health conditions found participants had significantly reduced social isolation and exclusion (7.1% change, $p<0.01$), greater empowerment (9.2% change, $p<0.01$) and improved well-being (15.2% change, $p<0.03$) (188).

There is a substantial evidence base for the role of physical exercise or sports activities in supporting people's mental health. For example, a systematic review of exercise groups for those with depression found large to moderate reductions in depression ($g = –0.79$, 95% confidence interval = –1.01 to –0.57, $P < 0.00$) (189). A meta-analysis on regular engagement with sports groups found decreases in alcohol and drug use (OR 0.73, 95% CI 0.69-0.77) and improvements in depression and anxiety rates (OR 0.59, 95% CI 0.54-0.64) (190). A meta-

analysis of the effect of exercise on anxiety demonstrated improvements in anxiety, greatest in individuals experiencing high levels of stress (weighted mean effect size -0.24 to -0.45 showing low to moderate effect) (191,192). A review of randomised controlled trials of exercise interventions, however, although finding reductions in depression symptoms (-1.1, 95% CI -1.5 to -0.6) did find problems with study quality, including low levels of both intention to treat analyses and concealing of randomisation (193).

The effects of nature groups on mental health and well-being is less researched but has a growing evidence base. For example, a review of gardening interventions has demonstrated reductions in symptoms of anxiety and depression (194). A systematic review evaluating the benefits of nature interactions in teenagers found improvements in overall mental health, stress, resilience, self-esteem, depression and health-related quality of life (195). Further, outdoor walking groups have also been demonstrated to significantly lower depression, perceived stress and negative affect (196).

Volunteering is another area that has substantial evidence behind its beneficial impact on mental health and well-being. 'Giving' forms one of the five 'Ways to Wellbeing' in research conducted by the New Economics Foundation, where thousands of individuals across the UK were asked what key factors kept them mentally well (the other four: connecting with others, learning, being active, noticing/being mindful, are also well covered across many social prescribing activities) (197). The UK has seen the growth of 'time banks' which are mutual volunteering schemes where participants deposit time spent helping others and withdraw time when they need help themselves (198). A review of volunteering among older adults demonstrated lower rates of depression, through building self-esteem and social resources (199). Ethnographic and interview studies have demonstrated that volunteering can help re-integrate individuals into society, overcome personal trauma and enrich their lives (200). A systematic review and meta-analysis of UK volunteers found favourable effects on depression, life satisfaction and well-being (201).

There are many other types of activities which social prescribing can refer patients on to, that also have a growing evidence base. For example, adult learning has been shown to lead to improvements in depression, anxiety and psychosis (202). Welfare and financial advice improves people's mental health outcomes (203). A

review of befriending schemes elucidates their role in improving mental health (204). A study of reading groups also found reductions in levels of depression (205). A complete analysis into each of the many different social prescribing activities is beyond the scope of this chapter, but it serves to highlight that whilst the evidence base on the GP-link worker social prescribing model is still preliminary (though encouraging), there is a strong foundation of previous research on the community activities that patients are commonly referred to within social prescribing, and this constitutes an important part of the evidence base.

2.2.2 Evidence on *how* social prescribing impacts mental health and well-being

I have provided an overview of evidence of the impact of social prescribing on mental health and well-being outcomes, as social prescribing is defined in the academic literature – which is mostly a narrow, medical definition focusing on the GP-link worker model. There is a relatively weak but growing evidence base that this model may be an effective one for supporting individuals towards better mental health. I have also broadened the conceptualisation of social prescribing, providing evidence for the impact of social prescribing community activities on mental health and well-being. Here, there is a much wider evidence base, that has been developing over several decades on a range of different group activities. However, despite the growing strength of this literature on efficacy, what remains less well understood is *how* social prescribing leads to mental health improvements.

Social prescribing is a 'complex intervention' in that it contains several interacting components that can contribute to a variety of outcomes at both an individual and group level (206). This applies to any social prescribing *activity or group* (which may better be described as a complex 'system' rather than intervention (207)) just as it does to a social prescribing referral *pathway*. Thus, researching its effects involves an understanding of the '**active ingredients'** (or the specific components involved in an activity or intervention, e.g. structured social time, facilitator skills, performances, etc.), the causal processes these ingredients then set in motion (the **'mechanisms'**, by which they affect mental health, e.g. increased confidence, friendship formation, etc.), and how responses vary depending on individual characteristics and the wider context in which they

engage (the **'moderators'**, e.g. age, ethnicity, geography, etc.) (208). If we do not understand these, we risk falling into the trap of the 'lift and drop' phenomenon (209), whereby it is assumed the results of 'social prescribing' (describing either an activity or a pathway) in one location automatically dictates the same results in another location, where active ingredients and moderators and thus mechanisms might be very different.

The terms active ingredients, mechanisms and moderators have roots in pharmaceutical research, in explaining the components of a drug intervention that are responsible for its therapeutic effects (210). They have been used increasingly in non-pharmacological health research, especially in behavioural science wherein rich frameworks and taxonomies have evolved (211). Given social prescribing's expansion within the NHS and healthcare, it is helpful for the audience of healthcare professionals and health researchers to frame some of the benefits of social prescribing activities using such medically-rooted theories of change. Moreover, examining active ingredients, mechanisms and moderators allows a far greater degree of specificity and depth than other potential theory of change frameworks such as the realist model (a useful and relevant framework, but which encompasses wider-level processes, not e.g. how a football group could reduce anxiety symptoms through the biological mechanism of reduced stress hormones) (224).

So, social prescribing 'activities' themselves are complex systems, involving many different active ingredients activating multiple mechanisms of action. Adding further layers of complexity, when conceptualising social prescribing as a pathway, e.g. in the GP-link worker model, there will also be active ingredients, moderators and mechanisms at play during the initial GP and link worker consultations with patients – in addition to those of the community activities themselves (thus occurring at different points of a social prescribing 'pathway'). All these stages require exploration and a strong evidence base. However, it is also important to broaden our conceptualisation of social prescribing, since individuals can enter these groups through many different routes, not just via GPs and link workers. It is also essential to challenge the heavily medicalised lens that has arguably underlain much of the social prescribing discourse in recent years – which has meant much research therein has been almost entirely focused on primary care (valuable though this research is).

As laid out in the previous section (2.2.1.2), social prescribing community activities can be split into several categories. However, even within these categories, there are many different activities, e.g. 'arts' may involve singing groups, drawing classes, arts & crafts, pottery, poetry groups, etc. Each of these may contribute to mental health in different ways, activating different mechanisms in doing so. Moreover, within each specific type of activity, e.g. a singing group, there is further diversity – no two singing groups are exactly the same - they will have different designs, facilitators, people and numbers within each group, meet at differing levels of frequency and length of lessons, involve different levels of responsibility and participation, etc. And so, we must understand this complexity when ascertaining the evidence base of merely 'social prescribing', or even 'arts activities', or further still 'singing groups'.

And so, in a similar way that one must be careful of the 'lift and drop' phenomenon of evidence in the GP-link worker model in a specific locale, one must consider this with regards to the assumption that strong evidence for a particular social prescribing community activity in one location, means it will be as successful elsewhere (where various key factors such as the people in the community group, the group leader, location, number of people within the group, or frequency and length of group sessions might be different). However, it may be possible to make the case for the benefits of a certain activity when we look at the strength of its overall evidence base and look at shared characteristics or findings between studies that may elucidate underlying 'active ingredients' within certain activities that support mental health. This approach is strongest when triangulating evidence from different methodologies e.g. longitudinal cohort studies, controlled trials, qualitative interview studies and ethnographies.

I will now outline some of the key, current evidence on active ingredients, mechanisms of action, and moderators as they relate to social prescribing. The focus will be on social prescribing 'community activities' but I will also provide some evidence related to 'social prescribing' as it appears in the academic literature which mainly refers to the GP-link worker pathway.

Search strategy & selection criteria for social prescribing active ingredients, mechanisms and moderators of action

I used a literature review strategy (161) for the following sections 2.2.2.1-3, conducting searches in the following databases: PsychINFO, Medline/Ovid, Embase, Cochrane library, PubMed Central, UpToDate, and Google Scholar. I also conducted searches for additional information from grey literature sources, e.g. government papers and websites (e.g. third sector organisations). All the searches were limited to the English language and published between 2000 and 2022 (initial search April 2021; updated search May 2022). Search terms included a combination of: ("social prescribing" OR "primary care" OR "GP" OR "GP referral" OR "community referral" OR "link worker") AND ("community groups" OR "leisure" OR "community activities" OR "exercise" OR "sports" OR nature" OR "gardening" OR "arts" OR "dance" OR "music" OR "volunteering" OR "singing" OR "reading" OR "poetry") AND ("groups" OR "interventions" OR "activities") AND ("mental health" OR "well-being" OR "mental illness" OR "psychosocial") AND (("mechanisms" OR "process" OR "theory" OR "impact" OR "mechanisms of action") OR ("active ingredients" OR "components") OR ("moderators" OR "sub-group analyses" OR "gender/sex" OR "ethnicity" OR "race" OR "socioeconomic status" OR "class" OR "income" OR "age" OR "geography" OR "area" OR "location")). I also conducted searches on synonyms and words related to these search terms. I included only published articles in peer-reviewed journals or high-quality third sector or government reports containing primary research data. My review included studies deploying qualitative and/or quantitative methodologies, and participants with mental health conditions or psychosocial issues. I excluded social prescribing schemes and activities that were non-UK based, since the focus of this thesis is on UK based social prescribing and there may be substantial cultural and structural differences in social prescribing between different countries making grouping studies together more problematic.

2.2.2.1 Active ingredients

The phrase 'active ingredients' comes from pharmacological research in describing the components of a drug treatment that are responsible for its therapeutic effects (210). It refers to the 'what' rather than the 'how' (mechanisms) of an intervention, or in this case a social prescribing community group/activity. In recent

decades the phrase has become increasingly used within non-pharmacological health research, particularly in the field of behavioural science where rich taxonomies and frameworks have been developed (211). Such frameworks have been used to compare why some interventions are more effective than others, with differing active ingredients (212). Thus, from a research perspective, these frameworks could be used to compare the factors underlying effectiveness of different social prescribing groups and pathways. From a practice perspective, research that helps social prescribing community groups to map the active ingredients of their activities may help them to maximise the effectiveness of what they offer. Similarly, when conceptualising social prescribing as a 'pathway', research into the active ingredients of the referral process e.g. link worker consultations, can help inform best practice.

Again, it is important to emphasise all social prescribing activities are different, e.g. a singing, gardening, or walking group, will all contain different active ingredients. Further still, there will be differences in active ingredients between two singing groups, which have different contexts, designs and individuals involved. Despite this complexity, research into active ingredients is still valuable. There may be key, shared active ingredients among the most effective singing groups (e.g. performances), or key, shared active ingredients across the most effective social prescribing activities (e.g. social support). With the view of social prescribing activities as complex interventions (or systems) it is unlikely there is a simple, linear 'cause and effect' relationship between active ingredients and specific mechanisms and outcomes (207). Instead, there exists a network of active ingredients within any social prescribing activity, which interact with each other and wider moderating factors, increasing the likelihood that certain mechanisms (e.g. increased self-esteem) will be activated in individuals thus contributing to improved mental health (213–215).

Academic research systematically investigating active ingredients in most categories of social prescribing activities is limited, with arts activities being the exception. A recent study has developed a framework of active ingredients of arts activities, identifying 139 potential active ingredients (216). The study authors categorised these active ingredients into *Project*, *People* and *Contexts* – forming the INNATE (INgredieNts in ArTs in hEalth) framework. *Project* refers to the content of the activity itself (examples including

long-term availability, goal-focused, use of performances). *People* refers to the make-up of individuals involved in the activity including facilitators, and how people interact with one another (e.g. small group size, highly compassionate facilitator, shared lived experience of mental health). *Contexts* represents the activity setting, comprising place, things, and surroundings (e.g. referral pathway into the group, welcoming atmosphere, presence of healthcare professionals). The review is focused on arts activities, however the categories and sub-categories are suitably broad, and so, as the authors acknowledge, the framework may have utility for other social prescribing activity categories. Further research is needed to explore this, as there are no systematic frameworks for active ingredients in other social prescribing activity categories – so it is likely important active ingredients across these groups are being missed.

There are studies evaluating social prescribing activities that have identified key active ingredients, though not in a systematic way, or using a framework (e.g. the INNATE framework) to ensure all categories of active ingredients are being captured. However, these studies still provide insight into some important active ingredients across social prescribing activities. A review looking into group nature-based interventions found the key factors (or active ingredients) underlying the groups to be engagement, flexibility, 'managing the introduction', practitioner skills, timings, and applicability (217). A qualitative interview study into farm-assisted interventions for individuals with clinical depression also found 'flexibility' to be a key active ingredient of the intervention (218). A realist review into greenspace interventions for mental health identified shared experiences, physical activity, relationship with facilitator, space to reflect and sensory stimuli as key active ingredients (219). A review of gardening interventions however found a lack of research into the active ingredients ("what is it specifically about a gardening mental health intervention that makes it effective?") (194).

A study exploring active ingredients within community-based physical activity programmes for socially vulnerable groups identified skilled and familiar facilitators, collaboration with key actors and accessible location (220). A program theory developed from a realist evaluation of a community sports program for health and well-being proposed active ingredients such as: structured and regular activities, credible role models and

freedom to make mistakes; and identified negative active ingredients such as an over-focus on competition (221). A study into 'Shared Reading' groups found that its benefits lie in 'the emotional', 'the personal', 'liveness', 'creative inarticulacy', and 'the group' – which might all be considered active ingredients (222). Another study into shared reading groups for common mental health problems identified 'catalysts for change' (which again could be considered active ingredients) which included 'literary form and content, including balance between prose and poetry'; 'group facilitation, including social awareness and communicative skills'; 'group processes, including reflective and syntactic mirroring'; and 'the physical environment' (223).

Husk's realist review of social prescribing is useful for thinking about active ingredients across an entire social prescribing 'pathway'. It included 80 studies (17 generic social prescribing/other studies, 55 exercise on prescription, 4 green prescriptions and 4 arts on prescription studies). Some of these studies included a link worker, although many (e.g. most of the exercise on prescription studies) involved direct community referral from primary care. Despite the variety of models, the review is still very helpful in exploring from an individual's perspective what factors moderate their motivation to engage. It suggests that the social prescribing pathway from a patient/individual perspective can be split up into 'enrolment' (patient initial interest and agreement to social prescribing), 'engagement' (patient initial engagement with community group or activity) and 'adherence' (patient ongoing engagement with the group or activity). From their analysis of the selected studies, key active ingredients seem to be: the acceptability of the type of social prescribing offered, accessibility of the group, and highly skilled facilitators.

Several studies have found the 'holistic' nature of GP-link worker social prescribing to be important for patients, and that they benefit from feeling listened to and valued by the link worker (174,203). Bertotti's realist (224) evaluation of social prescribing in Hackney, London, provides useful evidence as to the process underlying effective social prescribing (225). Interviewing link workers, GPs, patients and community groups it found the factors underlying effective social prescribing to be: number of sessions and time spent with the link worker, the skills mix of the link worker (e.g. active listening and empathy), the location of the link worker (e.g. co-location within a GP practice was considered useful), availability and suitability of local community

organisations, and the location of and type of activity being offered. Again, most of these can be considered as active ingredients in the context of a social prescribing pathway.

Further research into the GP-link worker model has highlighted good communication between GPs and link workers, resources being made available to support coordination between GPs and the community sector, the scheme being clearly explained to and understood by all GPs involved, and regular feedback on participants' progress back to GPs as important for successful social prescribing integration (157,170,226). Moreover, factors influencing the engagement and longer-term adherence of patients to community groups and activities include: patient confidence, appropriateness of activities on offer, literacy and travel difficulties (157,167,170). According to several studies, relationships throughout the social prescribing pathway are also of vital importance. For example, Kellezi's mixed methods study demonstrated the importance of building working and trusting relationships between the patient and all three of GP, link worker and community group staff (147). A qualitative interview study found the relationship between the patient and link worker was of central importance, as was a highly personalised approach that focuses on the individual's goals and gradual, holistic change (174). Further studies have also highlighted the essential role of the link worker and the importance of a person-centred, highly personalised approach – this can help facilitate trust and control and readiness to implement positive changes (175,203). Motivational skills of the link worker are key here, in order to help build independence (instead of dependence) for patients (175).

2.2.2.2 Mechanisms

Similar to 'active ingredients', the roots of the term 'mechanism of action' comes from pharmacological research, referring to 'how' an intervention works, rather than 'what' components it comprises (active ingredients). In this section, I will provide a brief overview of studies examining mechanisms of action impacting mental health that have been identified within GP-link worker social prescribing. There are relatively few studies that have done this in relation to this specific social prescribing model (however there are many more if we broaden our conceptualisation of social prescribing, as I do in Study 1 in Chapter 3).

A qualitative interview study of 12 patients with complex mental and physical health needs (and often experiencing social isolation) who received a social prescribing referral, found that Self-Determination Theory (SDT) helped to explain some of the key mental health benefits (227). SDT suggests that an individual's three core psychological needs are autonomy (sense of control over own behaviours and activities), relatedness (sense of connection with others) and competence (sense of mastery, skill) (228). It sets out that if these are sufficiently fulfilled, an individual is more likely to experience 'intrinsic motivation', which is connected with positive mental health (229). Intrinsic motivation towards social prescribing activities may mean that patients will be more likely to engage with such activities longer term (230) – those in this study who experienced most mental health benefits scored highly on the three core attributes of SDT and experienced high levels of intrinsic motivation towards the social prescribing activity.

Another study found weight in the Social Cure theory (that social group membership can enhance well-being) to explain well-being benefits of social prescribing (147). This study uses mixed methods and found that patients' (who were experiencing loneliness or anxiety) well-being, as well as reductions in primary care usage, were mediated by increased 'social connectedness'. This was defined as group membership combined with sense of community belonging, alongside reductions in loneliness. This sense of identification with a group, in line with social identity theory, is thought to bring well-being benefits through numerous mechanisms such as reduced loneliness, enhanced self-esteem and belief that social support would be available during crises (231,232). Supporting this, several other social prescribing studies demonstrated reduced social isolation, increased sense of community and the formation of friendships (168,169,233)

Bertotti's realist evaluation theorises various mechanisms of action behind the mental health benefits of social prescribing, such as increased self-esteem, increased (patient) activation, increased social networks and reduced loneliness (225). Some of these were considered outcomes within the study, however they can also be interpreted as mechanisms of action, all having a strong evidence base for their positive impact on mental health (1). A mixed methods study involving 342 survey participants and 26 interview participants found evidence for mechanisms such as improved social networks, reductions in loneliness, and a more optimistic

outlook because of the social prescribing opportunities available to them (234). Some studies found social prescribing led to improvements in health-related behaviours (which can be considered mechanisms towards improved mental health), e.g. reduced drug and alcohol consumption (233), or increased exercise (168); however in contrast a quantitative study found no statistical differences in healthy-eating behaviour (235).

Further, a qualitative study interviewing 30 adults with multi-morbidity combined with mental health problems, identified that mental health benefits of social prescribing were achieved through engendered feelings of control, heightened self-confidence, improved health-related behaviours and reductions in loneliness (175). Another qualitative interview study found that social prescribing brought improvements in self-esteem and self-efficacy as it enabled participants to better access help and enhance their support networks (170). Several studies also demonstrated social prescribing's beneficial impacts on individuals' daily, practical functioning which could have positive implications for their mental health, for example improved job-seeking behaviours (168,233,236), ability to access financial and housing support (168,175), and ability to carry out daily activities (162).

2.2.2.3 Moderators

Moderators are the personal characteristics and wider contextual processes that influence the degree to which an individual may engage with or benefit from social prescribing. They include micro-, meso-, and macro-level factors, as eco-social theory explains (237). These may influence individuals' enrolment, engagement, and adherence in social prescribing activities, thus the activation of various mechanisms of action. They may also directly mediate whether certain mechanisms are activated upon engagement (i.e. between different individuals experiencing similar interventions but different moderators). Micro-level factors may include physical, social, and psychological traits (e.g. age, ethnicity, class, gender, disability, personality type) whose impact is 'embodied' in the individual, in the present moment and over a life course (238). Meso-level factors may include factors to do with 'Space & Place', e.g. local transport infrastructure, policing, and quantity, quality, diversity, accessibility, and sustainability of local activities available, and 'People' (e.g. wider social networks, peer pressure, socialisation, community integration). Macro-level factors may include socioeconomic

factors such as economic instability or poverty, cultural factors such as discrimination, and political factors such as national policies and restrictions affecting the voluntary sector. It is important to note that these factors are not static, but evolve across the 'life course', interacting with broader life events (238). Thus, the timing and sequence of social prescribing activities, as they appear in individuals' lives, can lead to different responses.

We have limited evidence exploring these moderators, both for social prescribing pathways (e.g. GP-link worker), and social prescribing 'activities'. However, there is growing epidemiological evidence into the moderators of arts and cultural engagement across the UK, which may help guide future research into social prescribing activities and models. For example, propensity-score matching from 2 nationally representative surveys in England found that higher levels of neighbourhood deprivation were associated with lower arts, culture and heritage engagement, independent of individuals' socio-economic characteristics, demographic backgrounds and regional locations (239). Neighbourhood features such as poor transport or unsafe streets may make it less likely for individuals in deprived communities to engage (240). Studies suggest that that those from more deprived areas might also experience barriers such as fear of fitting in or lack of self-confidence (241). Various 'neighbourhood effects' may also influence whether individuals will engage in social prescribing activities, such as collective socialisation, social networks and social contagion (240). Work from Bourdieu suggests people's engagement could be influenced by financial resources, acquired tastes or cultural exclusion (242). Further research has found that there are gender and ethnic differences in engagement, with women (243) and individuals that are part of the ethnic majority more likely to engage in arts activities (244). However, more research is needed into why these differences exist.

Fixed-effects regressions analyses of the UK Household longitudinal study (UKHLS) found that mental health benefits of volunteering were more pronounced in older adults than younger generations, finding evidence that generational social attitudes and how volunteering is portrayed could influence not only whether people volunteer but also whether doing so improves their mental health (245). A review looking into barriers to volunteering in the UK found many moderating factors among different groups, for example, for older people: poor physical functioning, poor transport and caring responsibilities; for those with a disability: fear of

potentially unsafe spaces; and for those from minority ethnic backgrounds: feeling alienated from certain groups, having fewer resources to volunteer and experiencing less positive outcomes from volunteering (246). Socialisation, i.e. norms, values, habits gained from social networks, may also explain why some people are more likely to volunteer (or engage in other social prescribing activities) or more likely to gain the most mental health benefits, both at present but also over one's entire life course (247,248).

An ethnographic study explored how processes of classed inequality relate to engagement in a social prescribing intervention, using case studies into 4 individuals of differing levels of socioeconomic status. The study used a Bourdesian class analysis to show how the 4 participants' 'habitus' (described by Bourdieu as 'embodied history, internalised as second nature and so forgotten as history') shapes their ability to engage effectively with the social prescribing intervention. It found that those of lower socioeconomic status had less capacity or 'capital' (economic, social, and cultural) to help them engage fully in the social prescribing activity long-term. Several GP-link worker social prescribing studies, however, that have conducted sub-group analyses have found no significant differences in effect between different groups, e.g. by gender, age, ethnicity, relationship status, educational background, or working status (147,178,249). However, these studies only involved participants who had already enrolled onto social prescribing interventions, not testing the effect of covariates on initial uptake, and so there is a risk of selection bias. Studies exploring GP-link worker social prescribing schemes have frequently found the availability and sustainability of local community groups and activities to be a barrier to engagement (2,250,251).

Further, a realist review into greenspace interventions for mental health identified moderating factors influencing engagement such as: cultural differences (and corresponding acceptance of greenspace programmes), weather, previous experience, systemic understaffing, funding, gender and age (219). A study looking at community-based physical activity programmes for socially vulnerable groups identified moderators such as: strong sense of community in the neighbourhood, national transition policy reshaping social welfare policies locally, availability of necessary resources, cultural dispositions and habits in target groups (220). Lastly, one study into GP-link worker social prescribing identified specific barriers related to being a migrant in

accessing social prescribing (252). For example, referral onto the social prescribing programmes often take place within GP surgeries, and some migrants may not access primary care services, e.g. due to language issues, responsibilities of work, stigma, or belief accessing healthcare can negatively impact their immigration application.

2.2.3 Summary

This chapter has provided an overview of evidence on social prescribing and mental health and well-being. I laid out the evidence related to social prescribing's mental health impact; specifically, that of the GP-link model of social prescribing, and also social prescribing community activities. I also outlined research into *how* social prescribing impacts mental health and well-being: the active ingredients, moderators, and mechanisms. The GP-link worker social prescribing has a growing evidence base for improving mental health and psychosocial outcomes for individuals, in particular anxiety, depression, and loneliness outcomes. However, there is a lack of evidence into the barriers facing GPs, link workers and other professionals referring those individuals into social prescribing groups. There is also a need for more evidence on alternative referral pathways into social prescribing community groups, e.g. via mental health or social care professionals.

There is a strong evidence base for social prescribing 'community activities' (e.g. arts activities, exercise groups, nature interventions, etc.) and their role in improving mental health and well-being, in particular anxiety, depression, loneliness, quality of life, stress and addiction issues. However, there is limited systematic research into *how* these groups produce their benefits (via which mechanisms, moderators, and active ingredients). Studies that have explored these have tended to focus on only a few mechanisms (or moderators or active ingredients), whereas given social prescribing's nature as a complex intervention it is likely many different mechanisms, moderators and ingredients are involved and interact with one another. Most of these activities constitute 'leisure activities' in which there is a richer history of data exploring mechanisms, hence being the focus of the next chapter (Study 1). Few studies have also directly compared mechanisms and active

ingredients between different types of social prescribing community groups/activities, e.g. singing vs football groups (focus of Study 2, Chapter 4).

My studies aim to address a number of these core gaps: in particularly producing a unifying framework of mechanisms of action, illuminating and comparing active ingredients and mechanisms across different social prescribing community activities and groups in a more systematic way, and identifying barriers for GPs in engaging with social prescribing. Despite lack of agreement over the exact boundaries of social prescribing, common to all definitions and referral pathways is engagement by an individual with a community group or activity. Thus, this PhD will focus on the community activities and groups themselves, as will be explored extensively through studies 1 and 2. Referral routes into these groups are still a vitally important part of social prescribing, and Study 3 focuses on the GP route while study 2 also explores various referral pathways.

2.3 Aims of the PhD

This PhD contains three aims:

1) To identify and understand the 'mechanisms of action' underlying the mental health impacts of social prescribing activities at the level of the individual
2) To identify key 'active ingredients' in social prescribing community groups, that lead to improved mental health and well-being in people with mental health problems
3) To identify the 'barriers and enablers' for General Practitioners (GPs), to effective social prescribing for individuals with mental health problems

To achieve these aims, the PhD contains three projects:

- A literature review and development of a multi-level framework of mechanisms of action to explain the impact of leisure activities on mental health (addressing aim 1)

- An ethnographic study of 4 social prescribing community groups, exploring mechanisms of action among individuals in these groups that lead to improved psychosocial well-being, and the active ingredients involved in activating those mechanisms (addressing aims 1 and 2)
- A qualitative, semi-structured interview study exploring the barriers and enablers to social prescribing for individuals with mental health problems from the GP perspective (addressing aim 3)

A complexity theory lens underlies each of the 3 studies, conceptualising social prescribing as complex interventions/systems (as explained on pages 41-43) (206). The first study does this by illuminating the hundreds of different mechanisms involved in the health benefits of the many types of leisure activities of social prescribing (instead of, say, focusing on one type of activity, e.g. football, and a few key mechanisms – as studies often do). The second study centres complexity again by examining the multiple mechanisms and active ingredients across 4 different social prescribing group categories (thus capturing the breadth and complexity of the different types of social prescribing activities). This study also deploys a highly open, inductive approach which embraces complexity further, rather than testing pre-defined, simple theories. The final study deploys a behavioural change framework (COM-B) that is itself rooted in complexity science, being systematically derived from multiple existing behaviour change frameworks (826). Across all studies, I have also captured perspectives across multiple important 'players' in the social prescribing complex system or pathway, e.g. participants/patients, community group staff, GPs, link workers, and other referring professionals.

Chapter 3 - How leisure activities affect health: A review and multi-level theoretical framework of mechanisms of action using the lens of complex adaptive systems science

A version of this study has been published at: Daisy Fancourt, Henry Aughterson, Saoirse Finn, Emma Walker, Andrew Steptoe: How leisure activities affect health: a narrative review and multi-level theoretical framework of mechanisms of action; The Lancet Psychiatry, Volume 8, Issue 4, 2021, Pages 329-339, ISSN 2215-0366, https://doi.org/10.1016/S2215-0366(20)30384-9. The published version is provided in **Appendix 1 (page 263).**

3.1 Introduction

As outlined in Chapter 2, the literature lacks a unifying theoretical framework explaining *how* social prescribing activities affect health: what the mechanisms of action are by which engagement with social prescribing activities lead to improvements in mental and physical health. Social prescribing can include a broad range of activities from practical support (e.g. in claiming benefits, applying for work and learning employment skills) to engagement in leisure activities (e.g. engagement in the arts, sports, volunteering, community groups etc.). The mechanisms linking practical support with health are more straight-forward and have been explored previously (253). But the specific gap in the literature relates to understanding *how* leisure activities that participants can be referred to as part of the social prescribing pathway affect mental health. Whilst social prescribing is a relatively new concept, evidence has been developing on the health benefits of 'leisure' for several decades. Therefore, in this review I focus specifically on leisure activities and the mechanisms that can connect these activities with health. Whilst the focus of my PhD is on mental health, health mechanisms inter-connect and so I reviewed all physical and mental health mechanisms here. However, in Chapter 4 and 5 my studies have a stricter focus on mental health. Understanding these mechanisms is highly pertinent to the roll-out of social prescribing so that SP interventions can be appropriately designed to maximise the opportunities for mechanisms to be activated and for evaluations of SP interventions to measure the full impact of an activity.

I utilised a narrative review format for this study (271), which was suitable as it was able to capture the significant *breadth* of potential mechanisms across many different leisure activities, affecting multiple mental and physical health outcomes. This methodology also helps demonstrate the complexity of leisure-based social prescribing interventions. This approach may limit a certain degree of *depth* into, for example, the strength of evidence for specific mechanisms underlying specific leisure activities (e.g. if only examining singing groups) and their impact on a specific outcome e.g. reduced anxiety symptoms – which might be more suited to e.g. a systematic review; however, such a narrow focus - though useful - was not the aim of this review, which aimed to capture complexity.

Defining "leisure activities" included within social prescribing

Leisure activities are normally thought of as activities undertaken in one's free time when not working, but no single definition exists. Early categorisations of leisure diverged into 'relaxed' (e.g. reading, socialising), 'serious' (e.g. sports and hobbies) and 'unclassified' (e.g. resting, studying) (254). But multiple other categorisations have now been set out. Some of these have focused on the goal of the activity, such as 'time-out' leisure (including any solitary, passive activities) vs 'achievement' leisure (including activities that provide challenges for individuals) (255,256). Others have focused on the nature of leisure activities (e.g. active or passive) (257), or between 'high-demand leisure activities' (e.g. sports and gardening), 'low-demand leisure activities' (e.g. sewing and reading), and 'instrumental activities' (e.g. shopping) (258). Many categorisations have focused specifically on social elements of leisure activities. Some have seen social leisure activities as simply another category of leisure (258,259). But others have distinguished social leisure activities from 'leisure' and instead focused on them within wider 'social engagement', which includes both social activities carried out for enjoyment and formal social activities carried out, e.g. for work (260–264).

Classifying leisure activities may help identify activities which are 'substitutable': activities that either contain common ingredients, such that engaging in similar activities would produce similar experiences, or identify activities that are preferred by individuals who have similar traits or preferences (265). This is especially

related to research within social prescribing if it is thought that different categories of community activities could have different effects on mental health. However, as outlined in the previous paragraph, there is no real consensus on how such activities group together. Moreover, 'leisure' is defined and valued differently in different cultures (266,267). Therefore, it is difficult to determine whether specific leisure activities could have more health benefits than others when the membership of these categories is so blurred.

Whilst these activities can seem highly varied, they are all **voluntary activities not related to employment responsibilities that are engaged in during free-time, predominantly for enjoyment.** Many of them also often contain certain similar 'active ingredients', such as social interaction or gentle physical activity (even if just leaving one's home). Whilst certain activities may be more likely to activate certain mechanisms in individuals than others, given their similarities as leisure activities and given that social prescribing often involves referrals to multiple different activities with selection largely based on participant choice, for this review I consider "social prescribing leisure activities" collectively. This helps provide a comprehensive review and framework of mechanisms, such that future studies focusing on specific SP interventions can then select the appropriate mechanisms from this master list. For simplicity, these will be referred to for the rest of this chapter as "leisure activities".

Defining "mechanisms of action"

Leisure activities are 'complex interventions' - containing several active components that interact and contribute to a variety of outcomes at both an individual and group level (206). Thus, as mentioned previously in Chapter 2, researching their effects involves understanding their '**active ingredients'** (the specific components involved in an activity or intervention), the causal processes these ingredients then set in motion (the **'mechanisms'** through which they affect outcomes), and how responses vary depending on individuals and the context in which they engage (the **'moderators'**). This review specifically focuses on the second of these: *how* leisure activities lead to mental (and physical health) outcomes, which I will refer to as '**mechanisms of action'**.

Understanding mechanisms of action provides the theoretical underpinnings linking leisure activities (and thus much of social prescribing) with health, which is central to rigorous research. The UK's Medical Research Council guidance on complex interventions outlines that "a good theoretical understanding is needed of how the intervention causes change" and researchers should "develop a theoretical understanding of the likely process of change by drawing on existing evidence and theory" (206).

There has been rich academic debate on the emphasis on theory-driven approaches in complex intervention research. There are many examples of it improving the design and evaluation of interventions, but there have recently been concerns that theory-based approaches can lead to researchers adopting 'off-the-shelf' theories without considering in detail their applicability to the specific intervention being explored (268). It has been argued that the application of simple theoretical frameworks can narrow the lens used in studies – this could mean that important mechanisms are excluded if they lie outside of chosen frameworks (268). This problem is worsened by the fact that research on leisure activities often takes place disciplinary silos, often leading to narrow considerations of relevant theory (269). And so, there has been demand for health researchers to incorporate a wider range of theoretical perspectives within complex intervention research, cross-disciplinarily, and moving beyond focusing on individual specific theories to explain complex effects (268). Certain disciplines, such as behaviour change research, have been developing taxonomies of theories to encourage more sophisticated theory-driven research (270), however such approaches are still rare and have not been carried in the examination of leisure activities or social prescribing.

Therefore, in this review I take a highly cross-disciplinary approach to explore potential mechanisms of action (those that have been either empirically tested or theoretically discussed in relation to leisure) and propose a new theoretical framework for understanding social prescribing leisure activities - the **"Multi-level Leisure Mechanisms Framework"**. This is aimed at:

- Supporting our understanding of the effects of leisure activities (and so, social prescribing) on mental and physical health

- Supporting the design, development, implementation and replication of leisure programmes for health improvements

3.2 Searching and categorisation strategy

3.2.1 Key text searches

First, I worked with three other researchers to develop a list of disciplines that were likely to have explored mechanisms between leisure activities and health. The lists were then combined and duplicates excluded to provide a complete list, including the following:

aesthetics, affective psychology, architecture, arts in health, behavioural economics, behavioural science, bioacoustics, biological anthropology, clinical psychology, cognitive psychology, community psychology, computational psychiatry, cultural anthropology, cultural psychology, cultural studies, ecological psychology, ecology, economics, education, engineering, evolutionary psychology, genetics, health economics, health geography, health humanities, health promotion, heath psychology, health sociology, leisure studies, medical humanities, medicine, music psychology, nature studies, neuroscience, occupational therapy, performance science, philosophy, positive psychology, psychiatry, psychobiology, psychophysics, psychotherapy, public health, recreational therapy, social epidemiology, social geography, social psychology, social work, sociology, sport psychology

For each discipline, three key textbooks were identified that were either general disciplinary textbooks (where the discipline as a whole was felt relevant to understanding leisure and health), or ones that focused specifically on that discipline's cross-over with leisure and health. These textbooks were identified through personal experiences in respective fields of expertise and consultation with experts in each field from the MARCH Mental Health Research Network (see below: 3) Expert opinion). Suggestions for key texts were pooled and discussed until a consensus was reached on which texts were most appropriate.

Within these texts, whenever a mechanism was either (i) theoretically discussed as a mechanism of action connecting one or more types of leisure activities with health, or (ii) empirically tested as a mechanism, it was added to an Excel spreadsheet 'master database of mechanisms'.

3.2.2 Database searches

Second, I conducted database searches for key papers examining leisure and mechanisms of action using these key terms:

Leisure	*Mechanisms*	*Outcome*
Activity(ies)	*Mechanism(s) of action*	*Health*
Art(s)	*Mechanism*	*Mental health*
Club(s)	*Theory*	*Physical health*
(Community) group(s)	*Pathway*	*Health behaviour(s)*
Craft(s)	*Causal*	*Wellbeing*
Creative(ity)	*Affect*	
Culture	*Effect*	
Dance	*Impact*	
DIY	*Psychological*	
Exercise	*Biological*	
Free time	*Social*	
Game(s)	*Behavioural*	
Green space(s)		
Heritage		
Hobby(ies)		
Leisure		
Libraries		

Music
Nature
Outdoor(s)
Reading
Religion
Social engagement
Socialising
Sport(s)
Volunteer(ing)

All leisure activities, mechanisms and outcomes were combined with the Boolean operator (OR) (e.g. activity(ies) OR art(s) OR club(s)) then combined with AND e.g. activity(ies) OR art(s) OR club(s) AND mechanism OR theory OR pathway; before finally being combined with AND e.g. health OR mental health OR physical health. Keyword searches were conducted within the following databases: Google Scholar, Scopus, Web of Science, PubMed, ScienceDirect, Europe PMC, and PsycINFO. Studies were included that had been published since 1950 in English, up until 31st January 2020. As this work has now been published externally as a comprehensive review and model, I have not updated the searches.

3.2.3 Expert opinion

Third, the MARCH Mental Health Network Disciplinary Expert Group was consulted (271). The MARCH Network is one of the UK's national mental health research networks funded by UK Research and Innovation. The network focuses on the role of social, cultural and community engagement on mental health (including all leisure activities included within this review) and comprises over 1,300 member researchers and community organisations. Of these, 42 members are part of the Disciplinary Expert Group, with each specialising in a different field related to social, cultural and/or community engagement and mental health.

The Disciplinary Expert Group members were all contacted and recommended further important texts that examined mechanisms of action. The additional texts were then screened and further mechanisms identified were also added to the database. The Disciplinary Expert Group also provided support during the screening process to clarify terminology and support the identification and definition of mechanisms in the review.

3.2.4 Mechanism screening

Once the mechanisms had all been added to the master database, I worked with the other three researchers to determine whether each mechanism should be included in the review. For a mechanism to be included, it had to be deemed a) relevant to the research question (i.e. clearly within the context of a leisure activity), b) definable and distinct from other mechanisms, and c) either theoretically proposed or empirically shown to act as a mechanism of action linking one or more leisure activities with health (i.e. a "potential mechanism of action", as described in the review). Where there was disagreement on any of these three criteria, we either returned to literature on that mechanism or sought expert advice from the Disciplinary Expert Group, and had active discussion with one another until a consensus formed.

3.2.5 Thematic grouping

All included mechanisms were then arranged into themes with other similar mechanisms and approved by myself in collaboration with the other three researchers. This was done in rounds, in an iterative process, involving active discussion until consensus was reached.

3.3 Results

3.3.1 Mechanisms of action

In total, this review identified 612 proposed mechanisms of action by which leisure activities can impact health. Some of these mechanisms operate at micro-levels (affecting individuals or very small groups), whilst others operate at wider levels (either at meso-levels - affecting larger groups, communities and institutions; or

macro-levels - affecting societies and cultures at large). Here, I will only include the micro-level mechanisms, since this PhD's focus is more on the mental health impact of social prescribing activities on *individuals*, though the wider group-level and societal effects are, of course, important **(these are provided in Appendix 1 page 265-266).** Each mechanism is presented here in terms of the direction of effect that is most likely to promote health, but in the discussion section I consider the potential for reverse effects in more detail. A list of all of the themes, sub-themes and mechanisms is provided in tables 3.1-3.4 below (e.g. theme: affective states; sub-theme: responses; mechanism: increased experience of positive emotions). Tables 3.1-3.4 provide definitions and key references for each mechanism identified and table 3.5 provides citations of literature linking each group of mechanisms to (i) engagement in leisure and (ii) health behaviours and outcomes.

3.3.1.1 Psychological Processes

At an individual level, leisure activities can have an impact on affective states (Mechanisms 1a), build resilience (Mechanisms 1b), develop a sense of self (Mechanisms 1c), support individuals' personal transformation (Mechanisms 1d), help individuals to flourish (Mechanisms 1e), build psychological capabilities (Mechanisms 1f), and build psychological resources (Mechanisms 1g). As such, social prescribing leisure activities could affect mental and physical health by activating these different psychological processes. The specific mechanisms identified within each of these themes are shown in Table 3.1.

Table 3.1 – Psychological processes

Mechanism	Definition
1a AFFECTIVE STATES	
Responses	
Increased experience of positive emotions	Pleasant or desirable situational responses ranging from interest and contentment to love and joy
Decreased experience of negative emotions	Unpleasant situational responses such as hate, anger, jealousy and sadness
Decreased stress	A state of bodily or mental tension resulting from factors that alter an existent equilibrium
Increased eustress	A positive form of stress that has beneficial effects on health, motivation, performance and wellbeing
Changes in valence	An evaluation of an experience as intrinsically attractive (positive valence) or averse (negative valence)
Experience of pleasure	Agreeable or enjoyable feelings that can form the basis for more elaborate emotions or evaluations

Mechanism	Definition
Emotion regulation	
Improved attention-focused emotion regulation	The regulation of emotions via techniques that deploy attention (e.g. concentration, distraction or suppression)
Improved knowledge-focused emotion regulation	The regulation of emotions via techniques that involve cognitive change (e.g. reflection or reappraisal)
Improved expression-focused emotion regulation	The regulation of emotions via techniques such as venting or physiological self-regulation
Increased self-soothing	The ability of an individual to comfort themselves without the need for others (especially seen amongst young children when crying)
Changes in mood	Pervasive, sustained and less-specific feelings, states or prolonged emotions
Broadening of momentary thought-action repertoire	Whereby the experience of positive emotions such as joy, interest, contentment and love sparks a recurring cycle of positive emotions (aka broaden-and-build theory)
1b RESILIENCE	
Coping	
Increased emotion-focused coping	The management of external or internal demands that are appraised as taxing or exceeding one's resources through dealing with the emotional response
Increased problem-focused coping	The management of external or internal demands that are appraised as taxing or exceeding one's resources through looking at solutions
Increased stress buffering	The reduction of the impact of life stress on oneself through the protective effect of psychosocial resources or engagement in diversified activities
Decreased catastrophising	The tendency to irrationally believe something is far worse than it actually is (aka awfulising)
Reduced suicidal ideation	Thinking about, considering or planning suicide
Increased terror management	Whereby one overcomes one's fear of adverse events (e.g. death) through pursuing activities that promote self-esteem
Improved management of grief	The response to loss, particularly to the loss of someone or something to which a bond or affection was held
Development of supportive internal dialogue	The voice in one's head that comments on life, events and one's thoughts either consciously or sub-consciously (aka use of self-talk)
Increased adjustment	One's ability to find a resolution to a situation through achieving coordinated balance across multiple domains including feelings and actions
Increased accommodation	Whereby one is able to accommodate changes in their life (such as illness) through the pursuit of modified goals
Greater availability of cognitive bandwidth	Whereby the regulation of emotions frees up mental space and thereby leads to more rational thinking and behaviours (bounded rationality)
Psychological strength	
Increased self-confidence	A feeling of trust in one's abilities, qualities, and judgement
Increased resilience	One's ability to recover from or adjust easily to change
Increased vitality	A state of being full of life and both mental and physical energy
Improved psychic homeostasis	A state of emotional balance that can be markedly altered during psychic disturbances
Increased sense of continuity	A sense of maintaining patterns and behaviours from the past in the face of disruptive unexpected and unwanted change
Improved tolerance of uncertainty	The assessment of uncertainty as desirable versus threatening
Decreased submissiveness	Whereby one obeys or yields to another's will, putting one's own desires lower than another's
Decreased denial	An attempt to fight against a situation by minimising events and/or the implications of events (crisis theory)
Decreased resignation	Whereby one feels overwhelmed by events and feels subject to vicissitudes
Reduced subjective weathering	A social psychological or perceived component of accelerated ageing
Increased conservation of resources	Whereby one seeks to obtain, retain and protect individual resources (e.g. self-esteem and control), in particular in the face of loss
1c SENSE OF SELF	
Identity	
Formation & affirmation of self-identity	The perception or recognition of one's characteristics as a particular individual
Improved self-knowledge	Understanding of oneself or one's own motives or character
Improved self-concept	The perception or mental image one has of oneself
Decreased self-discrepancy	Whereby discrepancies between different self-beliefs or self-state representations produce emotional vulnerabilities

Mechanism	Definition
Decreased de-individuation	Whereby one loses one's sense of individual identity
Increased self-expression	The expression of one's feelings, thoughts, or ideas (aka voice)
Development of a future self	How one imagines oneself in the future and the degree of continuity between a present self and that future self
Increased self-awareness	An awareness of one's own personality or individuality
Self-acceptance	
Increased self-esteem	One's sense of self-worth or personal value (either general or domain specific such as body-related self-esteem)
Increased self-enhancement	Whereby an individual places emphasis on their virtues ahead of their shortcomings
Increased self-protection	Whereby an individual construes events in a way that places their attributes in a favourable light
Reduced self-stigmatisation	Whereby the sense of self projected by others does not negatively affect one's perceived self
Increased self-affirmation	The ability to affirm one's own worthiness and value in the face of information or experiences that threaten one's self concept
Decreased self-derogation	The tendency to disparage oneself, often unrealistically (aka self-damning)
Increased authenticity	The ability to be true to oneself and one's beliefs
Acceptance of personal fallibility	Whereby one comes to terms with and embraces one's tendency to make mistakes or be wrong such that they do not disrupt one's sense of self
1d PERSONAL TRANSFORMATION	
Changing identity	
Reduced 'loss of self'	A loss of subjective self-identity sometimes experienced in the face of an illness or other adverse event
Reduced biographical disruption	The way that one makes sense of an illness or other adverse event in the context of their lives
Increased reminiscence	The act of recollecting past experiences or events
Increased self-restoration	Re-affirmation of a previous identity and reinforcement of valued aspects of one's previous life (e.g. prior to illness)
Provision of alternative identities	Whereby an individual can define themselves both according to any changes in their life (e.g. assuming a 'sick role') but also according to their leisure engagement
Building of new narratives	The way one views and understands one's life story. Contingent narratives address beliefs about the origins of an event (e.g. illness), while moral narratives help to constitute changes between an individual, their illness and their identity, and core narratives connect an individual's experience with deeper cultural levels of meaning.
Development of personal pathography	The formulation of an understanding of one's experience of illness (or other adverse event)
Personal evolution	
Increased openness	A personality trait involving characteristics such as imagination and insight
Increased agreeableness	A personality trait involving characteristics such as trust, altruism, kindness, affection and other prosocial behaviours
Increased conscientiousness	A personality trait involving characteristics such as thoughtfulness, good impulse control, and goal-directed behaviours
Increased extroversion	A personality trait involving characteristics such as excitability, sociability, talkativeness, assertiveness, and high amounts of emotional expressiveness
Decreased neuroticism	A personality trait involving characteristics such as sadness, moodiness, and emotional instability
Increased optimism	An inclination to put the most favourable construction upon future events or actions
Personal transformation	Changes in one's life such as restructuring of life goals and commitments, new activity interests and greater attention to the present in the wake of negative life events
Increased growth	Personal change and development associated with life events including, but not limited to, grief
Increased regulatory focus	Whereby an individual self-regulates in order to bring oneself into alignment with one's standards and achieve one's goals
Self-transcendence	A decreasing reliance on external factors for one's definition of self, increasing interiority and spirituality, and a greater sense of connectedness with past and future
1e FLOURISHING	
Meaning	
Provision of meaning	Whereby an individual feels their life has significance

Mechanism	Definition
Increased sense of life being worthwhile	A feeling that one's life is useful, important or good enough
Improved life satisfaction	A favourable attitude towards one's life
Increased sense of coherence	How manageable, meaningful and comprehensible one finds the world to be
Formation and affirmation of central values	Principles or standards of behaviour and judgement of what is important in life
Increased gratitude	The quality of being thankful and a readiness to show appreciation for and to return kindness
Increased purpose	The courage to envisage and pursue valued goals
Autonomy	
Increased self-locus of control	The ability to regulate oneself and the world around (internal locus of control) rather than events being due to chance or others (external locus of control)
Increased self-attribution / reduced self-serving bias	Perceiving oneself to be responsible for situations and events rather than blaming failures on factors outside of our control
Increased autonomy	Self-directing freedom and independence
Increased agency	The capacity to act on one's own behalf
Increased empowerment	Personal control and ability to effect change
Compensation for imbalanced demand-control in other life domains	Whereby an individual feels high psychological demands but low control, for example in work settings
1f PSYCHOLOGICAL CAPABILITIES	
Cognitive learning	
Enhanced information processing	The ability to retain information over time through encoding, storage and retrieval
Enhanced semantic memory	Knowledge of facts, concepts, words, definitions, and language rules
Enhanced episodic memory	Knowledge of specific events, personal experiences (episodes), or activities
Enhanced procedural memory	Memory for motor and some cognitive skills, as well as emotional behaviours learnt through conditioning
Enhanced convergent thinking	The weighing of alternatives in solving a problem or answering a question
Enhanced divergent thinking	Creative thinking that leads to generation of new and original solutions to problems
Improved reasoning	A mental process that involves using and applying knowledge to solve problems/achieve goals
Expansion of perceptual sets	One's tendency to perceive or notice some aspects of available sensory data and ignore others (includes auditory discrimination)
Increased use of heuristics	Practical mental shortcuts that ease the cognitive load of making decisions
Enhanced non-trained cognitive functions	Whereby effects on other aspects of cognition transfer to have an effect on non-trained cognitive functions (aka transfer effects)
Enhanced aesthetic judgement	Sensory, emotional and intellectual responses to and reflections on art, culture and nature
Enhanced attention	The cognitive and behavioural process of selectively concentrating on a discrete aspect of information while ignoring other perceivable information
Emotional learning	
Increased emotion recognition	The ability to recognise emotions being experienced or expressed by others
Improved theory of mind	The ability to attribute mental states to oneself and to others, and to understand that others have beliefs, desires, intentions, and perspectives that are different from one's own
Increased empathy	The understanding, awareness of, sensitivity to, and vicarious experiencing of feelings, thoughts, and experiences of another
Increased compassion	Sympathetic pity and concern for the sufferings or misfortunes of others
Enhanced sense of conscience	One's moral sense of right and wrong, which acts as a guide to one's behaviour
Increased decentration / decentering	The ability to consider multiple aspects of a situation, moving from egocentrism to a shared reality with others
Increased mentalising	The ability to see ourselves as others see us, and others as they see themselves (aka mind-mindedness)
Increased mind-mindedness	One's tendency to view another (especially a child) as an individual with a mind, rather than merely an entity with needs that must be satisfied
Overarching cognitive processes	
Enhanced processing fluency	The ease with which information is processed
Enhanced cognitive development	The process by which one acquires knowledge and intelligence through changes in cognitive processes and abilities across childhood and into adulthood

Mechanism	Definition
Enhanced cognitive restructuring	The identification of problematic cognitions and distortions and the rationalisation and rebuttal of these thoughts
Enhanced transformative learning	The expansion of consciousness and change of frames of reference through transforming one's understanding of oneself, a revision of one's belief systems, and changes in lifestyle
Increased diversification of intelligence	Intelligence has been proposed to have at least nine different types: verbal, musical, logical-mathematical, spatial, body movement, intelligence to understand oneself, intelligence to understand others, naturalistic intelligence, and existential intelligence
Increased curiosity	The urge to know or learn
Enhanced creativity	A combination of flexibility in thinking and reorganisation of understanding to produce innovative ideas and new or novel solutions
Enhanced visualisation	The formation of a mental image of an object, situation or set of information
Increased imagination	The faculty or action of forming new ideas, or images or concepts of external objects not present to the senses
Reduced cognitive decline	Problems with memory, language, thinking or judgement that occur with ageing and can develop into cognitive impairment and dementias
1g PSYCHOLOGICAL RESOURCES	
General	
Enhanced maturity	The awareness of how to behave and act according to the circumstances of the environment and the culture or the society one lives in
Increased human capital	Individual resources including knowledge, skills, abilities, talents, intelligence, values
Increased cultural capital	Symbolic and embodied resources related to taste, engagement with art, language etc. that indicate social status or ability to have social mobility
Improved educational attainment	The highest level of education that an individual has completed
Increased personal conversion factors	One's ability to convert resources (such as knowledge) into functionings
Health related	
Expanded lay theories	One's basic assumptions about what health is and what it is influenced by
Changes in illness cognitions	Individuals' beliefs about their own illnesses (especially seen in individuals with a chronic illness)
Increased health consciousness	Whereby one becomes increasingly aware of one's health, diet and lifestyle
Increased health literacy	The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions
Increased understanding of others' health conditions	The degree to which one comprehends the experience of living with mental or physical illness without resorting to stereotypes or essentialism
Increased salience of healthcare engagement	Whereby one perceives engaging with healthcare to be more salient through its highlighting alongside leisure engagement
Experience of symbolic healing	A form of healing that does not involve any physical, psychological or other interventions but involves an individual moving from feeling ill to feeling well
Improved quality of life	The standard of health, comfort, and happiness experienced by an individual or group

3.3.1.2 Social Processes

At an individual level, leisure activities can activate mechanisms concerning social activity (Mechanisms 2a), social relationships (Mechanisms 2b), support specific learning and traits (Mechanisms 2c), and build social resources (Mechanisms 2d). As such, social prescribing leisure activities could additionally affect mental and physical health through a combination of different social processes. The specific mechanisms identified within each of these themes are shown in Table 3.2.

Table 3.2 – Social processes

Mechanism	Definition
2a SOCIAL ACTIVITY	
Contact	
Increased frequency of social contact	Frequency of contact, whether face-to-face, online, or via other means of communication
Increased unmediated interaction	Whereby one has the potential to meet strangers
Increased social integration	The process by which one is incorporated into the social structure of a society
Increased social engagement / Reduced social disengagement	One's degree of participation in a community or society. It can be activated by mechanisms including attitudes, social influence, emotions and habits (theory of interpersonal behaviour)
Increased cultural mixing	Whereby an individual of one culture moves into and interacts with another culture
Actions	
Increased social mimicry / chameleon effect	The copying of postures, mannerisms, facial expressions and other behaviours to facilitate social reactions
Changes in social influence / peer pressure	Whereby one changes one's behaviour (either intentionally or unintentionally) to meet the demands of the social environment
Increased social contagion	Whereby the collective behaviours of a crowd can cause a hypnotic impact on an individual, leading to briefly unreasonable or inconsistent behaviours
Audience effects	A type of social facilitation whereby one's actions are influenced by the presence of others
Increased social performance / decreased social inhibition	Whereby one performs better on tasks when others are around
Increased prosocial behaviour	Behaviour that benefits others or has positive social consequences
Increased altruism	Disinterested and selfless concern for the well-being of others and the exchange of beneficial acts between individuals
2b SOCIAL RELATIONSHIPS	
Social engagement	
Increased positive attitude towards social exchange	Whereby we evaluate the pros and cons of social behaviour and determine it to be beneficial
Increased social networks	The web of relationships that surround an individual that can be described in terms of size, density, boundedness (degree to which they are defined based on traditional group structures such as kin, work, neighbourhood) and homogeneity
Stronger network ties	The characteristics of the relationships within social networks, including duration (the length of time one knows another person), intimacy, multiplexity (the number of types of social transactions or support involved) and reciprocity (the extent to which exchanges are mutual)
Greater satisfaction of social needs	Including the formation of friendships, romantic attachments and other emotional relationships
Reduced iso-strain	Whereby one experiences high demands, low control and low social support/isolation
Bonding	
Increased reciprocity	Whereby one responds to the positive action of another with a positive action of one's own
Increased emotional closeness	A perception of closeness to another that allows sharing of personal feelings
Increased social bonding	A special form of affiliative behaviour in which selective social attachments strengthen social relationships
Improved attachment styles	Changes in the type of affectional bonds we build with others, in particular moving towards more secure attachments and away from avoidant, anxious or disorganised attachments
Increased satisfaction of desire for attachment	The need for close and secure bonds with others, which functions as a primary motivational system
Reduced social isolation	An objective state whereby an individual has low levels of or a complete absence of social contact
Reduced loneliness	A complex and typically negative subjective emotional response to perceived deficiencies in the number of or extent of one's social relationships
Decreased alienation	A condition in social relationships reflected by a low degree of integration or common values and a high degree of distance between individuals

Mechanism	Definition
Increased opportunity for solitude	A positive condition in which a person is alone and unobserved but not necessarily separated by formidable barriers or great distance from others
Increased belonging	An affinity for a place, social location, group or collective, or ethical or political value system that leads to the feeling of being ' at home'
Achievement of biosocial goals	Including to elicit and provide care from and to others, find a suitable mate, form cooperative alliances and reach high social rank
2c LEARNING AND TRAITS	
Social	
Improved social skills	The tools that enable one to communicate, learn, ask for help, make friends and interact with society
Reduced othering	Whereby one views another in a negative way because of a distinguishing characteristic or trait
Reduced individualism	The prioritisation of the individual over the entire group
Enhanced civic individualism	Increasing freedom of action for individuals but in a way that acknowledges global civic culture and diversity
Increased social trust	Reliance on the character, ability, strength, or truth of someone or something within society
Increased social responsibility	Whereby one feels an obligation to act for the benefit of society at large
Changes in framing	Schemas of interpretation that are socially constructed and which individuals rely on to understand and respond to events
Cultural	
Increased cultural attachment	The formation of secure attachment to one's native and/or host culture
Increased cultural learning	A form of social learning that allows for fidelity of transmission of behaviours and information within cultures
Increased cultural consonance	The degree to which individuals are able to approximate in their own behaviours the prototypes for behaviour encoded in shared cultural models
Increased acculturation	The process by which an individual adopts, acquires and adjusts to a new cultural environment
Reduced acculturative stress	The psychological stress of being an immigrant integrating into a new culture
Increased inter-cultural competence	Behaving and communicating suitably, based on one's culture, to achieve desired goals
Increased sociocultural adaptation	The adaptation of an individual within a new society
Increased cultural embodiment	A means of gaining information about the world and the people within it through perception and attention facilitated by the body
2d SOCIAL RESOURCES	
Social identity	
Decreased anonymity	Feeling anonymous or invisible
Development of an interdependent self	The self that is dependent on and fundamentally connected to other people
Development of social identity	An individual's sense of who they are based on their group membership (e.g. leisure club)
Development and reinforcement of social roles	The part an individual plays as a member of a social group and the corresponding changes they make to fit the expectations of that role
Validation of experiences	The acceptance of one's own internal experiences, thoughts or feelings as a result of the recognition and acceptance of these experiences by another
Increased feeling of being valued	One's perceptions of the respect they receive from others, either generalised respect (e.g. towards all individuals within a group or collective), or individualised respect (for particular attributes, behaviours or achievements) (aka worth)
Increased positive social comparisons	The determination of one's social and personal worth based on how one compares oneself to others
Heightened social status	One's perceived relative rank within society
Capital	
Increased social support	Instrumental, financial, informational, appraisal or emotional support provided by others
Increased social capital / access to social resources	Resources embedded in one's social network and social ties, including bonding social capital (links to like-minded people), bridging social capital (links to heterogeneous groups) and linking social capital (links to people in dissimilar situations or outside of one's community)

Mechanism	Definition
Increased employability	The attributes of a person that make that person able to gain and maintain employment
Increased physical capital	Tangible resources such as wealth, property and assets
Increased socio-economic position	An aggregate concept that includes both resource-based and prestige-based measures (e.g. education, income and occupation), as linked to both childhood and adult social class position
Increased social conversion factors	One's ability to convert social resources (such as public policies) into functionings
Increased environmental conversion factors	One's ability to convert resources (such as presence of assets) into functionings

3.3.1.3 Behavioural Processes

At an individual level, leisure engagement could lead to changes in behavioural mechanisms such as those to do with the development of habit (Mechanisms 3a), behavioural decisions (Mechanisms 3b), behavioural drive (Mechanisms 3c), behavioural development (Mechanisms 3d), and personal location (Mechanisms 3e). Engagement with leisure could also lead to individual engagement in other healthy behaviours (Mechanisms 3f), and lead to reduced engagement in unhealthy behaviours (Mechanisms 3g),. These behaviours could, therefore, be an outcome of referrals to leisure activities as part of SP. The specific mechanisms identified within each of these themes are shown in Table 3.3.

Table 3.3 – Behavioural processes

Mechanism	Definition
3a DEVELOPMENT OF HABIT	
Disruption	
Disruption of autopilot	A state or condition in which activity or behaviour is regulated automatically in a predetermined or instinctive manner
Discontinuity of habits	Whereby a change in context (e.g. through taking up a leisure activity) leads to a disruption in habits and greater deliberation over actions
Disruption of script	Whereby a new activity (e.g. taking up a leisure activity) breaks the power of a previous script that was guiding behaviours
Disrupted status quo bias	The disruption of one's tendencies to stick with whatever options are the current default
Reduced psychological reactance to norms	Whereby an individual feels their personal freedoms are being restricted (e.g. through attempts to encourage them to avoid unhealthy behaviours) and therefore engages in an act of anti-conformity
Formation	
Operant learning	Whereby rewards or punishments for behaviours (e.g. leisure engagement) lead to an association between a particular behaviour and its consequence
Classical conditioning	Whereby neutral stimuli take on an emotional tone by being associated with important stimuli, eliciting a specific response
Performing action slips / automatic behaviour	Whereby one engages in a behaviour based on associate cues without intending to do so
Formation of habits	Whereby a behaviour is performed repeatedly under recurring circumstances, so that cognitive associations are formed in memory between context cues and the behaviour and these cues trigger the behaviour.

Mechanism	Definition
Reinforcement of behaviours	Positive responses to behaviours (e.g. engagement in leisure) across other mechanisms of action lead to increases in that behaviour
Increased continuity of positive behaviours	Whereby one retains adaptive behaviours as one ages
Development of harmonious addiction	Whereby an activity becomes a favourite pastime and the subject of autonomous involvement as a 'passion'
3b BEHAVIOURAL DECISIONS	
Choice	
Reduced cognitive dissonance	Whereby there is an inconsistency between our attitudes and behaviours that has to be resolved, often through changes in behaviours
Decreased dynamic inconsistency	Whereby our preferences change over time and our future selves and present self have contradictory desires
Reduced cognitive bias	A systematic pattern of deviation from norm or rationality in judgement
Reduced disconfirmation bias	When individuals refute or ignore arguments that go against their prior beliefs
Increased considerations underlying choice	Whereby decisions are made through comparing the characteristics of the options under consideration (multi-attribute utility theory)
Increased balancing outcome expectancies	Whereby one acknowledges both the positive and negative outcomes of engaging in specific behaviours
Increased reasoned action	Whereby one's decision to engage in a particular behaviour is based on pre-existing attitudes and behavioural intentions (Theory of reasoned action)
Increased controlled risk-taking	The action of engaging in risky behaviours but in a limited risk setting
Changes in perception of boundaries	The perceived dividing lines between different thoughts, feelings or current or prospective experiences
Prediction	
Changes in default effects	Whereby one engages in a behaviour because it is presented as the default option
Increased deadline effects	Whereby the setting of deadlines reduces procrastination and encourages choice behaviour
Changes in norm effects	Whereby social norms and personal norms guide one's actions, but in particular injunctive social norms (the perception of how others approve/disapprove of one's conduct) can guide behavioural change (focus theory of normative conduct)
Changes in self-fulfilling prophecies	Whereby predictions or expectations come true because an individual believes it will and aligns their behaviour to fulfil those beliefs
Increased behavioural prediction	Whereby one's behaviour follows reasonably from their beliefs
Increased response inhibition	Suppression of actions that are inappropriate in a given context and interfere with goal-driven behaviour
Enhanced inhibitory control	Whereby an individual inhibits their impulses and dominant behavioural responses to a stimuli in order to select a more appropriate behaviour
Ecological transition	The shift of roles that occurs over life course, leading to change in person's behaviour but also affecting the wider environment they interact with
3c BEHAVIOURAL DRIVE	
Activation	
Unfreezing of behaviours	Whereby one becomes aware of problems with the current situation and accepts the need to make change (aka change theory)
Increased initiative	One's ability to independently assess and carry out appropriate actions in a given situation
Increased goal setting	As a result of mechanisms relating to motivation, attitudes and subjective norms (aka goal-setting theory)
Increased self-activation	Whereby behaviours are activated when values that are seen as a core part of one's self-concept are cognitively activated (e.g. through leisure engagement)
Increased self-efficacy	An individual's belief in their ability to succeed in specific situations or accomplish tasks
Increased readiness to act	Whereby an individual enters pre-contemplation or contemplation stages that can lead to preparation, action and maintenance of behaviours (aka transtheoretical model)
Increased mental simulation	Our mind's ability to imagine taking a specific action and simulating the probable result before acting
Increased action tendency	The urge to carry out certain behaviours linked to specific emotions
Increased self-determination	One's determination of one's future actions
Decreased ego depletion	Whereby energy for mental activity is limited and if depleted leads to low self-control. Ego depletion can be restored through short-term good mood and long-term building of inner resources and self-regulation

Mechanism	Definition
Decreased goal-sabotaging / self-sabotaging beliefs	Thoughts that create problems in daily life or interfere with goals such as procrastination, self-injury or negative internal dialogue
Motivation	
Decreased apathy	A lack of interest, enthusiasm or concern that may be decreased through social connection or behavioural change
Increased extrinsic motivation	A desire to engage in activities or behaviours that either reduce biological needs or help us to obtain incentives or external rewards (aka drive theory)
Increased intrinsic motivation	A desire to engage in activities or behaviours because they are personally rewarding and fulfil our expectations and beliefs
Increased expectancy motivation	Whereby the expectation of positive responses increases engagement
Increased task-based motivation	Whereby core characteristics of a task are associated with task satisfaction, motivation and engagement: skill variety, task identity, task significance, autonomy and feedback (aka job characteristics model)
Increased identity-based motivation	Whereby one's identity and self-concept motivates one to take action towards one's goals
Reduced fear of failure / self-handicapping	Motivation to avoid failure by not doing tasks that are too challenging and finding ways to ensure they do not succeed
Anticipated regret from non-engagement	Whereby the anticipated regret of not engaging leads one to engage further in a behaviour (aka fear of missing out)
Increased evaluation apprehension	Whereby we fear the evaluation of others, which motivates behaviour
Increased implementation intentions	A self-regulatory strategy whereby an individual plans how and when to engage in a behaviour in order to achieve a specific goal
Perception of being given a second chance	An opportunity to try something again after failing
Achievement	
Increased sense of reward	Satisfaction or a feeling of profit that results from factors such as learning, emotion and motivation
Increased commitment	As a result of an individual making choices that make it more costly for themselves to make the choices they don't want to make in the future (e.g. signing up to a group performance or paying up front for annual gym membership)
Increased perseverance	Persistence in doing something despite difficulty or delay in achieving success
Increased goal attainment	As a result of the achievement of one goal (e.g. relating to leisure engagement) leading to the setting and achievement of further goals (aka goal-setting theory)
Increased experience of making mistakes	Errors or slip-ups, that can in turn lead to processes of improvement and learning
Decreased goal-sabotaging / self-sabotaging behaviours	Actions that create problems in daily life or interfere with goals such as procrastination, self-injury or negative internal dialogue
Improved personal competence	An ever-evolving accumulation of related capabilities that facilitate learning and other forms of goal attainment
Increased self-actualisation	The realisation or fulfilment of one's talents and potentials
Increased generativity	Making one's mark on the world through creating or nurturing things that will outlast an individual
3d BEHAVIOURAL DEVELOPMENT	
Child development	
Improved infant behaviours	Such sleeping, suckling, feeding, cuddling and crying and responses to behavioural cues and interaction
Increased social referencing	Whereby a child regulates their behaviour towards environmental objects, people or situations
Enhanced school readiness	The academic, attention, and socioemotional skills required for a child to enter school ready to engage in and benefit from early learning experiences
Reduced truancy / increased school attendance	Absenteeism from school without good reason
Improved parenting practices	Behavioural approaches of parents towards children, including monitoring behaviours (parents' awareness of their children's actions), nurturance behaviours (the degree to which parents are supportive of their children), and inconsistent behaviours (how parents address their children's inappropriate behaviours)
Increased play	Engagement in activities for enjoyment and recreation rather than a serious or practical purpose (relevant both to children and adults)
Adjustment	
Reduced externalising behaviours	Behavioural problems manifested in outward behaviours such as disruptive, hyperactive, aggressive or anti-social behaviours

Mechanism	Definition
Reduced internalising behaviours	Behavioural problems that more centrally affect an individual's internal psychological environment including anxiety, withdrawal, inhibition, and over-controlled behaviours
Improved development of childhood adaptive behaviours	Childhood adaptive behaviours include developing social skills, personal responsibility, cognitive skills and learning how to carry out essential activities of daily living. They can occur as a result of supportive social and environmental factors during child development such as safety, home stability and parenting styles (ecobiodevelopmental model)
Reduced bullying / victimisation	Repeated oppression, psychological or physical, of a less powerful person by a more powerful one
Increased independence	A personality trait in which a person consistently prefers to act on his/her own thoughts and feelings than take in the views of others
3e PERSONAL LOCATION	
Time	
Increased flow	A state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will continue to do it even at great cost, for the sheer sake of doing it
Increased sense of momentum	Impetus and driving force gained through an action or course of events
Decreased boredom	An emotional and occasionally psychological state experienced when an individual is left without anything in particular to do
Provision of routine	A regular schedule of actions and events (including leisure routine)
Displacement of time to engage in unhealthy behaviours	Whereby one has less time available to engage in unhealthy behaviours due to less spare time
Changes in perception of time	Whereby an individual re-orientates their sense of time for the past, present and/or future
Reduced present bias / reduced hyperbolic discounting	Whereby one places disproportionate weight on present rather than future concerns
Increased anticipation of forthcoming positive events	Pleasure in considering or waiting for expected events (including leisure events)
Increased prospection	The act of anticipating, thinking forwards or simulating future events (aka futures thinking)
Place	
Enhanced sense of place	A social phenomenon whereby people's sense of personal and cultural identity is bound up with place identity
Development of a safe space	A place or environment in which a person or category of people can feel confident that they will not be exposed to discrimination, criticism, harassment, or any other emotional or physical harm.
Increased perceptions of safety	Perceptions of being protected from or unlikely to cause danger, risk or injury
Enhanced field of care	The affective bond between people and place or setting
Changes in place-based behaviour	Whereby a particular place (the behaviour setting e.g. a museum) provides inputs and controls that predict human behaviour (standing patterns of behaviour) in that place
Increased local engagement	Whereby engaging in a leisure activity increases the likelihood one will engage in other activities close by as the cost and effort required for these further activities is lower (aka friction of distance)
Expanded life-world	The culturally defined spatio-temporal setting or horizon of everyday life
3f ENGAGEMENT IN HEALTHY BEHAVIOURS	
Prevention of ill-health	
Increased leisure engagement	Engagement in leisure activities. This can result from mechanisms including learning to engage in leisure activities (leisure socialisation)
Reduced sedentary behaviours	Reducing behaviours that involve sitting or lying down
Increased physical activity	Whereby individuals become more active increasing behaviours that involve moderate or vigorous exercise or activity
Improved sleep	A condition of body and mind in which the nervous system is inactive, postural muscles relaxed and consciousness is suspended
Increased engagement with behavioural immunogens	Behavioural immunogens (aka health promoting behaviours) include healthy eating, exercise and attending health checks. They can be increased as a result of combinations of mechanisms relating to coping and the perception of the threat (protection motivation), combinations of mechanisms relating to perceived risk, benefits, motivation and psychological factors leading to change in health beliefs (health belief model), or combinations of mechanisms relating to self-efficacy, goal setting, risk perception and outcome expectancies (Health Action Process Approach)
Repeated healthy behaviours	Health-promoting behaviours can become regular as a result of mechanisms involving social bonding, others' behaviour and attitudes, cultural knowledge and values, a sense of

Mechanism	Definition
	self and social competence leading to motivational beliefs, attitudes, self-efficacy and trials of behaviour (triadic influence model)
Increased responsiveness to health communication	The degree to which one reacts quickly and positively to health messages. This can be enhanced through combinations of mechanisms relating to motivation, cognitive processing, personal beliefs and comprehension (elaboration-likelihood model)
Management of ill-health	
Increased self-management of health	The ability of an individual to look after their own health. This can be enhanced through combinations of mechanisms relating to knowledge and beliefs, self-regulation skill and ability and social facilitation (aka integrated theory of health behaviour change)
Increased treatment adherence	The degree to which an individual correctly follows medical advice (aka compliance)
Reduced need for medical treatment	Reduced experience of symptoms or health conditions that require medication or other medical intervention, or the better tolerance or management of such symptoms or conditions
Avoidance of relapse	A deterioration in one's mental or physical health after a period of improvement. This can be protected against through combinations of mechanisms relating to coping and self-efficacy (Marlatt's cognitive behavioural model)
Changes in use of health services	Use of healthcare services or spaces can be increased through such engagement becoming the default option e.g. via co-location of leisure activities within healthcare settings (nudge theory), or via individuals taking more responsibility for their own health, or could be decreased as a result of healthcare problems being addressed
Increased self-protection behaviours	Behaviours that an individual engages in to protect their health, such as home health and safety testing. This can be encouraged through combinations of mechanisms relating to planning and implementation intentions (precaution adoption process)
Provision of informal care	Unpaid care provided to older or dependent individuals by individuals with whom the individual has a social relationship (e.g. family or friends)
Delivery of healthcare	
Improved clinical skills	Procedural knowledge, science knowledge and clinical reasoning that enable the development and application of physical examination skills, communication skills, management skills or the execution practical procedures
Improved staff-patient interactions	The quantity (i.e. frequency of contact) and quality (e.g. clarity of communication and compassion) of engagement between healthcare professionals and patients
Reduced clinical errors	The failure of a planned action within healthcare to be completed as intended or the use of a wrong plan to achieve an aim
Reduced staff burnout	A syndrome that results from chronic workplace stress that has not been successfully managed, characterised by feelings of energy depletion or exhaustion, increased mental distance from one's job, or feelings of negativism or cynicism related to one's job, and reduced professional efficacy.
3g DISENGAGEMENT IN UNHEALTHY BEHAVIOURS	
Activities	
Decreased unhealthy behaviours	Engagement in behaviours that are detrimental to health such as poor diet or lack of exercise. These behaviours can be triggered by a perceived dissonance between one's attitudes and one's behaviours (post-decisional conflict) or due to attempts to convince oneself that our behaviours are adequate and to ignore behaviours that do not fit our sense of self (compensatory health beliefs)
Decreased problem behaviours	Problems such as anger and aggression. These can be reduced through combinations of mechanisms relating to values, control, social support and socialisation (problem behaviour theory)
Decreased delinquent or deviant behaviour	Behaviours that violate social norms such as crime or violence. These can be reduced through combinations of mechanisms relating to socialisation, skills and beliefs (social development model), or mechanisms relating to negative self-attitudes (general theory of deviant behaviour)
Decreased unsafe sex practices	This includes engaging in sex without protection, putting an individual at risk of sexually transmitted diseases. Unsafe sex can be increased as a result of the normalisation of aggressive behaviour and the alteration of norms governing behaviour (disinhibition theory)
Decreased screen time	The amount of time spent using a device with a screen such as a smartphone, computer, television, or video game console
Substances	

Mechanism	Definition
Decreased tobacco use	Tobacco use includes the smoking of cigarettes, pipes and cigars. It can be reduced through combinations of mechanisms relating to status, self-image, personality, physiological reactions and social engagement
Decreased drug use	The use of illegal substances. Drug use can be increased as a result of negative self-attitudes (general theory of deviant behaviour)
Improved management of addiction	The need for a particular substance or activity. It can be reduced as a result of increased control over negative aspects of withdrawal via emotional mechanisms (opponent process theory)

3.3.1.4 Biological processes

At an individual level, biologically, leisure activities may activate mechanisms within the central nervous system (Mechanisms 4a), activate mechanisms within the endocrine and immune systems (Mechanisms 4b), affect the cardio-metabolic system (Mechanisms 4c), affect physical performance (Mechanisms 4d), and elicit multi-system biological responses (Mechanisms 4e). The specific mechanisms identified within each of these themes are shown in Table 3.4.

Table 3.4 – Biological processes

Mechanism	Definition
4a NERVOUS SYSTEM	
Perceptual processes	
Changes in activation of the auditory system	The process by which sensations transduced in the ear from our surroundings stimulate nerves leading to the perception of sound
Changes in activation of the visual system	The process by which photo receptors detect and interpret information from visible light to build a representation of the surrounding environment
Changes in activation of the somatosensory system	The process by which sensory receptor cells respond to changes at the surface or inside of the body and stimulate neural pathways leading to the perception of pain, temperature, touch and both position and movement (proprioception)
Changes in activation of the gustatory system	The process by which sensations produced in the mouth stimulate nerves lead to the perception of taste
Changes in activation of the olfactory system	The process by which sensations produced in the nostrils and surrounding areas stimulate nerves leading to the perception of smell
Increased interoception	One's awareness and understanding of what is happening in one's own body (the sense of the internal state of the body)
Increased perceptual sensitivity	The amount of detection of slight, low-intensity stimuli from the external environment independent of one's perceptual ability
Increased sensory equilibrium	The adjustment of the senses to relieve external stress and establish balance
Reduced sensory deprivation	The process by which someone is deprived of normal external stimuli such as sight and sound for an extended period of time

Mechanism	Definition
Increased multisensory integration	The neural integration or combination of information from different sensory modalities (aka multimodal integration or multisensory activation)
Decreased central & peripheral sensitisation	Whereby the central and peripheral nervous systems become regulated in a persistent state of high reactivity leading to the development and maintenance of chronic pain
Reduced pain	Unpleasant sensory and emotional experience associated with actual or potential tissue damage. It is asserted that non-painful sensory input can prevent pain sensations from travelling to the nervous system (gate control theory)
Brain activation	
Increased overall cerebral activation	Whereby the engagement of specific parts of the brain leads to increased oxygen delivery beyond the actual metabolic demand, which can support cognitive processes
Improved overall cerebral blood flow	The blood supply to the brain in a given period of time, dysregulation of which is associated with problems such as hypertension and risk of stroke and dementias
Increased activation of brain regions involved in basic vision and object perception	This includes brain regions such as the occipital cortex, fusiform gyrus, and parahippocampal gyrus
Increased activation of brain regions involved in attention and sensory processing	This includes regions such as the fusiform gyrus, angular gyrus, and superior parietal cortex
Increased activation of brain regions involved in knowledge and meaning	Such as regions involved in evaluative judgement and information retrieval (e.g. the dorsolateral, ventrolateral, anterior medial prefrontal cortex, temporal pole, posterior cingulate and precuneus)
Increased activation of brain regions involved in reward, valuation or response to perceived beauty	Such as the anterior cingulate cortex, orbitol frontal cortex, insula, ventromedial prefrontal cortex, caudate nucleus, substantia nigra, nucleus accumbens, posterior cingulate cortex
Increased activation brain regions involved in affective responses	Such as the subcortical amygdala, insula, posterior cingulate cortex, and medial temporal lobe
Increased activation of the motor cortex	A region of the cerebral cortex involved in the planning, control, and execution of voluntary movements, which includes the premotor areas, the primary motor cortex and the supplementary motor area
Activation of mirror neurons	Neurons that fire both when one acts and when one observes another carrying out an action, supporting in processes such as empathy, mimicry and synchronisation
Brain physiology	
Changes in brain structure	Changes in dynamic spatial and temporal patterns of brain development, which can be associated with changes in cognitive skills especially across the developmental period
Increased grey matter & grey matter integrity	Tissue in the brain composed of neuronal cell bodies and other cells that is found in regions of the brain involved in muscle control, sensory perception, memory, emotions, speech, decision making and self-control
Increased white matter & white matter integrity	Tissue in the brain composed of nerve fibres, integrity of which facilitates connection among distributed neural systems and is associated with good perceptual speed and executive functioning
Increased neurogenesis	The process by which neurons are produced by neural stem cells
Increased neuroplasticity	The ability of the brain to change continuously throughout an individual's life. Neuroplasticity is decreased by factors such as stress and depression, via mediating biological mechanisms such as decreases in brain derived neurotrophic factor (BDNF)
Decreased neurotoxicity	Damage to the brain or peripheral nervous system caused by toxins such as stress hormones
Reduced brain atrophy	Changes including suppressed proliferation of neurons, alterations in the morphology of neurons and reductions in the volume of the different brain regions as a result of factors such as stress.
Increased cognitive reserve	The resilience of the brain against cognitive decline, which helps to explain individual differences in susceptibility to age-related brain changes
Brain biomarkers	
Changes in acetylcholine production	A neurotransmitter involved in memory, muscle contraction, heart rate, arousal and cognition and memory
Increased dopamine production	A neurotransmitter in the brain involved in motivation, reward and pain
Increased serotonin levels	A neurotransmitter in the brain involved in cognition, reward, learning, memory and reducing symptoms of depression and anxiety
Increased oxytocin and vasopressin levels	Biomarkers that play a role in social bonding, trust, generosity and reproduction

Mechanism	Definition
Increased levels of opioids	Neuropeptides and peptide hormones such as endorphins involved in feelings of euphoria, hormonal and metabolic responses. They are increased as part of aesthetic responses and exercise
Increased levels of cannabinoids	Lipids that play a role in memory, pleasure and hunger and are increased as part of aesthetic responses
Increased levels of melatonin	A hormone that regulates circadian rhythms, stress response and has anti-inflammatory properties within the immune system. It is increased by exposure to daylight
Increased levels of glutamate	An excitatory neurotransmitter involved in synaptic plasticity, learning and memory
Changes in GABA levels	Levels of gamma-Aminobutyric acid; an inhibitory neurotransmitter involved in anxiety, alertness, memory, muscle tension and sleep
Decreased neuro-inflammation	Inflammation of the nervous tissue, often triggered by processes such as ageing, exposure to viruses, air pollution, traumatic brain injury, toxic metabolites, and microbes. It can underlie conditions such as depression, anxiety and pain and is modulated by a range of psychosocial factors
Reduced disruption of biological rhythms	Natural internal processes that regulates physical, mental and behavioural changes and are affected by psychological, biological, social and behavioural processes, such as circadian rhythms that regulate each daily cycle
Arousal	
Changes in arousal levels	A measure of physiological activation ranging from feelings of energy and vigour to the opposite feelings of sleepiness and tiredness, and from subjective tension to placidity and quietness. Arousal underlies a variety of emotions and stress reactions
Increased chills	Skin tingling, piloerection and pupil dilation that can occur as a result of an emotional response to a stimulus
Changes in skin conductivity / electrodermal activity	Differences in the electrical potential between different parts of the skin that give a measure of neutrally-mediated effects on sweat gland permeability in response to processes such as stress and arousal
Changes in activation of the sympathetic / parasympathetic nervous systems	The two divisions of the autonomic nervous system (the system responsible for regulating the body's unconscious actions) that respectively respond to threat vs control homeostasis within the body, leading to a cascade of biological responses
Improved autonomic tone	The general activity rate of the autonomic nervous system and the balance between the sympathetic and parasympathetic aspects of the system
Changes in brainwaves	Neural oscillations (repetitive or rhythmic patterns of neural activity) such as alpha waves, beta waves and theta waves that affect physiological states such as arousal as well as processes such as memory and sleep
Brainwave entrainment	Whereby brainwave frequencies fall into step with a periodic stimulus leading to synchronisation of natural body functions and processes
Decreased muscle tension	Muscle tension is when muscles in the body remain semi-contracted for an extended period in response to psychological or physical factors
Increased nerve stimulation	Stimulation of peripheral or cranial nerves via electrical impulses that has been found to reduce pain, depression and seizures
4b ENDOCRINE & IMMUNE SYSTEMS	
Hormones	
Improved regulation of the Hypothalamic-Pituitary-Adrenal (HPA) axis	The central endocrine system for stress response that consists of the hypothalamus, pituitary gland and adrenal glands
Reductions in excessive glucocorticoid activity	The production of hormones such as vasopressin and cortisol which are increased in response to stress and are involved in processes including memory, mood, metabolism and wound healing
Reductions in excess production of catecholamines	Catecholamines such as adrenaline/epinephrine and noradrenaline/norepinephrine are part of the sympathetic nervous system's response to stress. They act as neuromodulators in the brain and hormones in the blood to facilitate physiological responses such as changes in blood pressure and heart rate
Changes in thyroid function	The thyroid gland is a part of the endocrine system that acts via a series of hormonal negative feedback loops to regulate metabolism. Thyroid dysfunction can be caused by stress and is associated with a range of physical and psychological symptoms such as weight gain and anxiety.
Changes in growth hormone (GH) levels	A hormone involved in growth, cell production and cell regeneration which is increased during acute physical stress and dysregulated by prolonged psychosocial stress

Mechanism	Definition
Changes in levels of sex hormones	Sex hormones include testosterone, oestrogen and progesterone, which are involved in functions including fertility, bone health and reduced cardiovascular risk
Immune function	
Changes in levels of innate immunity	Non-specific fast-acting defence mechanisms. Multiple types of cells such as natural killer cells and neutrophils are increased by acute stress, but decreased by chronic stress
Changes in levels of acquired immunity	Adaptive defence mechanisms that are specific to particular pathogens. Multiple types of cells such as T lymphocytes are increased by acute stress, but decreased by chronic stress
Decreased cellular ageing	Progressive decline in the resistance to stress and other cellular damages, causing a gradual loss of cellular functions and resulting eventually in cell death
Decreased bacterial and viral infections	Both common infections (e.g. common colds) and severe infections (e.g. sepsis, meningitis and endocarditis) are increased by factors such as stress
Changes in antibody levels	Antibodies (immunoglobulins) are glycoprotein molecules that enable the acquired immune system to become specific to particular antigens. Specific immunoglobulins such as Epstein-Barr virus are increased by acute stress, whereas others (such as antibodies to influenza vaccinations) are decreased in response to chronic stress
Changes in levels of growth factors	Proteins or steroid hormones capable of stimulating cellular growth, proliferation, healing and cellular differentiation. Examples include insulin-like growth factors (IGF) e.g. IGF-1 involved in processes like neurogenesis and cognition, glycoproteins e.g. granulocyte-colony stimulating factor (G-CSF) involved in stimulating the bone marrow to produce stem cells, and neurotrophins e.g. brain-derived neurotrophic factors (BDNF) involved in encouraging growth and differentiation of new neurons and synapses
Decreases in levels of inflammation	Inflammatory markers include cytokines (chemical messengers that support communication between cells) and other biomarkers such as C-reactive protein (an acute phase protein) that are increased in response to acute stress and can become chronically elevated in response to chronic stress and depression
Shifts in cytokine profiles	Cytokines are small proteins that are important in cell signalling. Th1 cytokines activate cellular immunity to defend against infection, whilst Th2 cytokines activate humoral (non-cellular e.g. antibody) immunity. A shift to Th2 cytokines can exacerbate allergies and autoimmune disease
Decreased oxidative stress	Oxidative stress is a disturbance in the balance between the production of reactive oxygen species (free radicals) and antioxidant defences. It can lead to increased risk of a range of illnesses from cancers to dementias and cardiovascular conditions
Increased vitamin D levels	Vitamin D refers to a group of fat-soluble secosteroids (subclasses of steroids) responsible for increasing intestinal absorption of calcium, magnesium, and phosphate, and multiple other biological effects. Vitamin D can be increased through engagement in outdoor activities that provide exposure to sun
4c CARDIOMETABOLIC SYSTEM	
Cardiovascular factors	
Reduced heart rate	The number of beats or contractions your heart makes per minute
Increased heart rate variability	The physiological phenomenon of the variation in the time interval between consecutive heartbeats, which is involved in biological responses to factors such as stress and emotions
Reduced vasoconstriction	The narrowing or constriction of blood vessels when smooth muscles in blood vessel walls tighten, which can be induced by stress
Decreased blood pressure	The force with which the heart pumps blood around the body, increased by physiological arousal and stress
Reduced hypertension	A medical condition whereby blood pressure in the arteries is persistently elevated, which is associated with a range of cardiovascular conditions
Decreased cardiovascular reactivity	The ability of the cardiovascular system to respond to periods of rest, demand or stress by changing heart rate, blood pressure or other measures of cardiovascular function
Increased angiogenesis	The formation of new blood vessels, which can be disturbed by psychosocial factors
Decreased aortic stiffness	Whereby the elastic fibres within the arterial wall (elastin) begin to fray due to mechanical stress; a process that is exacerbated by psychological stress
Improved cardiac function	The ability of the heart to meet the metabolic demands of the body
Metabolic factors	

Mechanism	Definition
Decreased glucose levels	Our main source of energy, carried through the bloodstream to provide energy to cells. Glucose levels are affected by factors such as stress
Changes in lipid levels	Hydrocarbon based molecules such as cholesterol (lipoproteins) and triglycerides that are essential for the structure and function of living cells, levels of which are affected by psychosocial processes
Changes in haemoglobin levels	Haemoglobin is a protein responsible transporting oxygen around the body. Levels of haemoglobin are affected by psychosocial processes such as stress and depression and both high and low levels (anaemia) can lead to physical illness.
Decreased body mass	The ratio of a person's weight to their height, high levels of which are associated with a range of illnesses
Changes in body composition	Measures such as muscle mass or waist-hip ratio associated with diet and physical exercise
Improved gut microbiota	The gut is populated by biologically active microbes that interact with a range of processes in the host such as immune function, metabolism, organ development and microbiome composition. It has been linked to diet-induced disease predisposition and psychological processes
Changes to the microbiome	The microbiome is the aggregate of all the microbes - bacteria, fungi, protozoa and viruses - that live on and inside the human body. It plays an important role in health by helping to control digestion and immune function and is affected by factors such as stress and mental illness.
4d PERFORMANCE	
Physical function	
Improved balance	The distribution of weight that enables one to remain upright and steady
Improved gait	One's manner of walking, including parameters such as velocity (speed), stride length and cadence (rhythm)
Improved reflexes	One's basic unconscious physical responses to stimuli
Decreased reaction time	The length of time taken for a person or system to respond to a given stimulus or event.
Improved flexibility	The range of motion in a joint or group of joints or the ability to move joints effectively through a complete range of motion
Improved posture	The way in which one usually holds their shoulders, neck, and back
Increased bone health	For example, bone density is a measure of the amount of minerals (mostly calcium and phosphorous) contained within bones
Improved limb function	One's range of motion, strength and ability to use one's arms and hands (upper limbs) or legs and feet (lower limbs)
Improved motor coordination	Combinations of motor movements that result in intended actions, including fine motor skills (smaller movements of wrists, hands, fingers and toes) and gross motor skills (larger movements involving arms, legs, feet or entire body)
Increased ability to perform activities of daily living	Essential and routine aspects of self-care, including independently eating, dressing, walking, bathing and using a toilet, and activities related to independent living such as managing money, taking medication, using a telephone and preparing meals
Increased physical fitness / strength	One's capacity for exertion or endurance, either via turning oxygen into energy for muscle cells (in aerobic exercise) or using energy stored in muscles (in anaerobic exercise)
Reduced falls	An event which results in a person coming to rest inadvertently on the ground or floor
Respiratory function	
Strengthened respiratory muscles	Diaphragm and external intercostal muscle contraction and ribcage elevation that lead to changes in volume and air pressure in the lungs
Increased lung capacity	The ability of the lungs to move air quickly through the airways via inhalation and exhalation (which is impaired in conditions such as asthma, chronic obstructive pulmonary disease and cystic fibrosis)
Improved structured respiratory variability	Respiratory function should respond to the oxygen demands of the body by varying factors such as breathing rate. Regulation of this system may be improved though physical activity.
Improved diffusing capacity	Diffusing capacity (aka transfer factor) is the ability of the lungs to transfer gas from the air to red blood cells
Increased oxygen saturation	The fraction of oxygen-saturated haemoglobin relative to total haemoglobin in the blood
Voice	

Mechanism	Definition
Improved speech	The expression of thoughts and feelings by articulate sounds. It involves factors such as phonation (ability to sustain the voice to achieve appropriate phrasing during speaking), fluency (e.g. not stuttering or stammering) and articulation
Improved language	The method of human communication involving words involving factors comprehension, syntax, semantics and processing (reduced aphasia or language impairment)
Improved voice quality	The characteristic of auditory colouring of an individual's voice involving factors such as roughness, breathiness, strain, deviations in pitch, deviations in normal volume, or unusual perceptual features such as instability and tremor
4e MULTI-SYSTEM	
Load	
Increased homeostasis	A state of relatively stable equilibrium between physical and chemical conditions in the body
Changes in visceral factors	Drive states such as hunger, thirst, sexual desire, drug cravings, physical pain and fervent emotions
Reduced fatigue	Extreme tiredness resulting from mental or physical exertion or illness
Reduced allostatic load	The presence of too much stress or inefficient operation of the stress response system as a result of overload in trying to adapt to adverse psychosocial or physical situations
Rebalanced stress reactivity	One's capacity or tendency to respond to stress, which, at high levels, can increase vulnerability to mental and physical illness
Reduced weathering	Accelerated psychological and physical ageing progresses as a result of cumulative exposure to stressful life circumstances (including socioeconomic disadvantage) and prolonged coping demands
Reduced biological embedding	Whereby an accumulation of biological processes over the life course leads to alterations in biological or developmental processes and poorer health
Decreased frailty	A syndrome of physiological decline in late life, characterized by marked vulnerability to adverse health outcomes
Exposure	
Enhanced exposure to microbial diversity	Exposure to microorganisms, such as bacteria, archaea, and eukaryotes is associated with improved human health
Enhanced exposure to phytoncides	Antimicrobial allelochemic volatile organic compounds derived from plants that have effects including improving immune response
Increased exposure to negative air ions	Electrically charged molecules or atoms in the atmosphere that gain an electron, created from sunlight, plant-based sources of energy, sharing forces of water and other natural and artificial energy sources, and associated with multiple health benefits.
Reduced development of allergies and asthma	As suggested by the hygiene hypothesis, exposure to high microbial diversity facilitates the development of an effective adaptive immune system and reduces risk of atopic sensitisation
Genetic / epigenetic factors	
Reduced damage to telomeres	Non-coding, repetitive nucleotide segments on the ends of chromosomes that serve a protective role during DNA transcription and are shortened in length as a result of stress
Changes in DNA methylation patterns	The biological process whereby methyl groups (molecular structural units consisting of hydrogen and carbon atoms) are added to DNA molecules to repress gene expression. Particular patterns in methylation have been found in response to processes such as stress and adverse life experiences
Changes in gene expression	Gene expression involves the processing of DNA into proteins that have biological functions. A range of molecular processes, such as DNA methylation, respond to stimuli (including psychological, social and behavioural activities) to change gene expression

3.3.3 Literature linking leisure, mechanisms, and health

The strength of the literature on each of these themes of mechanisms varies substantially. This study was a narrative review (271) and so I did not set out to review the strength of evidence supporting each mechanism; rather I sought to identify a comprehensive range of mechanisms and themes. Table 3.5 shows a summary of the literature on each theme (broad thematic grouping of mechanisms) linked first to leisure engagement and then to health outcomes. If certain mechanisms are commonly activated in specific leisure activities, and certain mechanisms commonly lead to improved health outcomes, there is a strong theoretical argument that these mechanisms may be responsible for some of the health benefits of leisure activities. However, future studies should explore the relationship between all three (leisure, mechanisms and outcomes).

Table 3.5 – Literature linking leisure, mechanisms, and health

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
Affective States	Mechanisms relating to affective responses have been the subject of an extensive body of research. For example, interventional and observational studies have found changes and associations with various leisure activities in regards to improved mood, affect, and emotion regulation strategies across different population (273–277). These findings have been shown in a number of randomised controlled trials showing increases in positive emotions and reductions in negative emotions (276), and meta-analyses incorporating different study designs showing a relationship between physical activity and positive affect (279–281). There is also an extensive body of evidence on leisure activities in regards to psychological stress and anxiety across different groups, including meta-analyses showing reduction in psychological stress and anxiety via music exposure (including music therapy) (281,282), and reductions in anxiety following physical activity (284).	Affective states have been linked directly to mental health (e.g. depression) and physical health (e.g. risk of coronary heart disease or type 2 diabetes) as well as indirectly via mechanisms such as developing a group self, modifying group emotions, increasing brain activation, changing hormone levels, building capital, and enhancing behavioural activation (285–288).
Resilience	Numerous studies have investigated leisure activities in regards to resilience mechanisms. For example, intervention studies have shown increases in resilience after leisure engagement (289–291). Observational studies have also shown associations between leisure activities and resilience (292–295). Intervention studies	Resilience has been linked directly to mental health and physical health as well as indirectly via other mechanisms such as eliciting affective responses, modifying brain biomarkers, altering immune function, increasing social contact, increasing motivation, and increasing behaviours relating to the prevention of ill health (304–308).

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
	have shown that leisure activities can improve coping (296), although the strongest evidence utilises therapy models in those facing illness (297,298). Numerous studies have also shown how leisure activities contribute to psychological strength, such as vitality (299), with a particularly large body of intervention studies focusing on how leisure-time physical activity increases vitality (300–303).	
Sense Of Self	A large number of studies have investigated leisure engagement in regards to mechanisms of sense of self. For example, mixed-methods systematic reviews have highlighted associations between leisure activities (including creative therapies) and improved self-expression and self-esteem (309–311). Intervention studies have also shown that different leisure activities can improve sense of identity and self-acceptance, with physical activity improving self-concept and self-esteem (312,313), and therapeutic creative activities enhancing self-esteem (314,315). Meta-analyses have found the strongest evidence for leisure-time physical activity in improving self-worth and self-concept (316–318).	Sense of self is linked both directly and indirectly to health, for example via mechanisms such as increasing brain activation, building social learning and traits, building social identity, increasing social responsibility, and building group learning (319–321).
Personal Transformation	A number of studies have looked at how leisure activities can affect personal transformation. For example, a large number of mixed-method studies have investigated how engagement with leisure activities can be used to understand experiences of one's own narrative and identity, particularly surrounding perceptions of health and illness via creative engagement and literature (322–327). A smaller body of intervention studies have shown that leisure-time physical activity increases personal growth (328) and improves self-regulation (329).	Personal transformation is directly associated with mental and physical health as well as indirectly via other mechanisms such as supporting cognitive and emotional learning, building social learning and traits, influencing individual choice, and increasing behaviours relating to the management of ill health (330–333).
Flourishing	There is a large body of literature on how leisure activities can enable flourishing. Human flourishing encompasses aspects of meaning, purpose and life satisfaction (334), so whilst complex to measure, a number of conceptual studies have explored this relationship (335,336). Observational studies have shown associations between leisure engagement and higher ratings of a worthwhile life (337). Additionally, mixed-design evidence syntheses have highlighted how leisure activities promote meaning-making and purpose (338,339), with these findings echoed by conceptual studies (340)	Flourishing is linked with health directly and via a range of processes including other mechanisms such as aiding personal evolution, altering immune function, modulating cardiovascular factors, building capital, enhancing behavioural activation, supporting achievement and reducing engagement in unhealthy activities (345–349).

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
	and multicultural perspectives (341). Systematic reviews of observational studies have also shown associations between different leisure activities and life-satisfaction (342,343), mirrored by intervention studies also showing improvements (344).	
Psychological Capabilities	A large body of evidence has investigation at how leisure activities are related to mechanisms of psychological capabilities, with substantial research related to improved cognition and cognitive processes. For example, a number of observational studies have looked at how leisure engagement is associated with reduced cognitive decline and maintained cognitive reserve (350–353), which is supported in part by a number of meta-analyses, particularly for physical activity (354–356). Additionally, there is also some research for leisure activities supporting mechanisms such as divergent thinking (357–359).	Enhanced psychological capabilities are associated directly with health as well as indirectly via mechanisms such as developing autonomy, activating perceptual processes, improving physical function, catalysing social actions, supporting social bonding, building group learning, and improving healthcare delivery (360–364).
Psychological Resources	There is a large body of research on how leisure engagement can build psychological resources. For example, a particularly well-evidenced area is health literacy and understanding of health via engagement with leisure-based activities, supported by an array of mixed-methods interventional studies (365–370). As further examples, meta-analyses have explored more specific activities and types of health literature, such as studies showing a relationship between storyline engagement and sexual health literacy (371). There is also an extensive body of literature that has explored how leisure participation is embedded within and contributes to different forms of capital (372–376).	Psychological resources are directly linked to health outcomes as well as being linked indirectly through effects on other mechanisms such as building identity, reducing load, disrupting hierarchies, building capital, increasing health promotion, increasing healthcare assets and developing behaviours to support the delivery of healthcare (377,378).
Group Mind	Overall group-level psychological processes have received less attention than many of the individual-level processes discussed. However, a number of studies have researched leisure engagement in relation to mechanisms of group mind. For example, qualitative analyses have reported that group leisure activities can build collective sense, through themes such as shared responsibility (379), fieldwork reflections have highlighted the interplay between leisure and collective consciousness in respect to ethnic minority groups (380), and an observational study has reported that cultural consonance related to leisure activities is an important aspect of leisure	Group mind is associated with other mechanisms such as supporting changing identity, building general resources, supporting social cohesion, encouraging adaptive group behaviours, and improving healthcare performance (384–387).

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
	satisfaction (381). Research has also explored sense-making via leisure engagement through interactions with one's environment (382,383).	
Group Attitudes	Numerous studies have explored leisure activities in relation to mechanisms of group attitudes. For example, a number of intervention studies have looked at how leisure-based activities can help to reduce stigma and negative stereotypes within different contexts (327,388–391). There is also a number of intervention studies that have looked at how leisure-based activities used within clinical settings can contribute to increased satisfaction with healthcare (392–396).	Group attitudes can affect health, including through mechanisms such as changing hormone levels, modulating brain biomarkers, supporting social bonding, improving equality, increasing social responsibility, and removing barriers to healthcare (397–400).
Language	There is a large body of literature on leisure activities in regards to mechanisms of group communication and group emotions. Much of the work in this space is theoretical and conceptual, based on observations. For example, studies have discussed the role of music and the arts in building collective effervescence (401,402) and community resilience (403). Observational studies have explored how music is associated with the formation of collective memories (404), how attending music festivals is related to the building of collective emotion and collective effervescence (405), and how physical activity can support collective effervescence (406). But there are also some intervention studies, such as showing how leisure activities can help in collective recovery from trauma (407).	Language has been shown to affect health through activating mechanisms including supporting emotional learning, eliciting affective responses, supporting emotion regulation, supporting social bonding, building social identity, and supporting achievement (408–410).
Nervous System	There is a large body of experimental research demonstrating associations between leisure activity interventions, such as exercise (411) mindfulness (412) and music (413) and changes to neurophysiology, and many observational analyses have found associations between creativity and neurophysiology e.g. (411–417). Nervous system mechanisms activated by music (418,419), arts (420), socialising (421), exercise (422,423), dance (416) and spirituality have been summarised in a range of reviews and theory articles e.g. (424,425).	Various brain mechanisms have been linked either directly to health or indirectly to other mechanisms such as eliciting affective responses, improved sensory perception, supporting cognitive learning and cognitive processes, influencing individual choice, increasing motivation, and modulating cardiovascular and metabolic factors (421,426–428).
Endocrine & Immune Systems	There is a substantial literature reporting links between leisure-related interventions, such as singing or concert attendance (429–431), art making (432) and competitive games (433) and changes to cortisol signalling. In addition, exercise interventions improve cytokine signalling (434,435) and	Endocrine and immune responses have been linked to mental and physical health directly as well as via wider mechanisms such as eliciting affective responses, enhancing social engagement, enhancing behavioural activation and increasing behaviours relating to the

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
	socialising is observationally associated with changes to immune gene expression (436). These findings have been summarised in a number of review publications e.g. (420,422,425,437,438).	prevention and management of ill health e.g. (439–445).
Cardiometabolic System	Leisure activity interventions have been shown to affect cardiometabolic factors, such as improved cardiac output (446,447), vagal tone (448,449) and reduced arterial stiffness (450). These findings are supported in a number of longitudinal observational studies e.g. (451–453). In addition, some reviews articles have synthesised evidence between features of leisure such as socialisation (454), music (455) or spirituality (425) and improved cardiometabolic health, and improved cardiometabolic outcomes are presented in a systematic review of arts interventions (437).	Cardiometabolic factors have been shown to affect health directly and via other mechanisms including supporting emotion regulation, building social identity, enhancing behavioural activation, and reducing engagement in unhealthy behaviours and via body composition and associated physical and psychosocial health (426,456–463).
Performance	A small number of random control trials have found links between leisure interventions and physical performance in older people (464,465). These are supported by a number of systematic reviews of mixed observational and interventional evidence for leisure activities such as music (466), singing (467) and physical activity (468) across all age groups. In addition, a number of systematic reviews of leisure interventions have been conducted for outcomes such as frailty (469) and general physical performance (470,471). Volunteering interventions have also been found to improve performance in older adults (472,473).	Physical performance is often considered a measure of physical health outcomes as well as being linked with a range of health conditions (437,466,474,475). Further, physical performance is related to other mechanisms including enhancing meaning in life, building psychological strength, supporting cognitive processes, building social identity, improving equality, supporting the prediction of behaviours, and increasing social contact (476–479).
Multi-System	Whilst interventional studies are limited, several cross-sectional observational studies have identified associations between multisystem biological responses, most notably, epigenetic systems such as histone modification e.g. (480) or telomere length and leisure time physical activity (481–483), meditation (484) and green space exposure (485). Longitudinal studies have identified observational associations between improved allostatic load and leisure time physical activity e.g. (486,487) and socialising e.g. (488).	Multi-system responses have been associated with a range of health outcomes and other mechanisms including through supporting coping, altering immune function, improving physical function, altering generational transmission, encouraging adaptive group behaviours, and reducing engagement in unhealthy activities (489–495).
Environmental Diversity	Whilst much of the research in this area focuses on the health benefits of green spaces instead of links between leisure and environmental biodiversity, a few case studies have observed improved community level biodiversity from both public and private horticulture interventions	A broad literature of review articles e.g. (504–510) and number of interventional studies have linked exposure to green spaces or improved biodiversity to physical and mental health e.g. (511–513), improved health behaviours e.g. (500,514–516) and social capital within neighbourhoods e.g. (498,505).

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
	e.g.(496,497) and some articles have reviewed theories and observational evidence on how leisure may be associated with local and global environmental diversity e.g. (498–500). In addition, many leisure activities occur outdoors therefore a range of observational analyses have found associations between leisure activities, such as cycling and walking, and increased exposure to nature and green spaces e.g. (501–503).	
Disease Susceptibility	Observational analyses have found longitudinal associations between leisure time physical activity and mortality (517) and risk of dementias (518) and between residential green spaces and stress and anxiety (519), stroke mortality (520), overall longevity (521) and risk of a broad range of disease clusters (522). In addition, much theoretical work has framed arts and cultural activities as evolutionarily advantageous e.g. (523–525). However, this area of research remains less well developed than for many of the other mechanisms.	There is a direct link between disease patterns and transmission and health, as well as indirect links via mechanisms such as changing hormone levels, altering immune function, modulating cardiovascular and metabolic factors, changing exposure, affecting genetic and epigenetic factors, and changing behaviours relating to the prevention and management of ill health (526–530)
Social Activity	Observational studies have found associations between social activity outcomes in young people, such as reduced antisocial behaviours (531), crime (532) and improved social and academic engagement (533) and leisure activities. Other observational studies have identified associations between volunteering and pro-social attitudes (534) and between art-making and civic engagement (535) and pro-sociality (536). A number of papers have reviewed theory and observational evidence for leisure and social activity e.g. (537–540). Although interventional evidence is limited, exposure to pro-social song lyrics has been shown to promote sociality (541) and leisure interventions have been linked to social activity in children with autism (542–544).	Social activity is related to health directly and via mechanisms such as supporting coping, building general resources, altering immune function, modulating cardiovascular factors, increasing positive exposures, supporting the prediction of behaviours, increasing social control, reducing engagement in unhealthy activities, and improving healthcare performance (545–551).
Social Relationships	A number of intervention studies have shown that leisure engagement can increase social engagement and quality of social relationships e.g. (552–554) and these effects are supported by some systematic reviews of interventions e.g. (496,496) In addition, there are a range of observational e.g. (555–557) and many theoretical publications in this area e.g. (419,420,423,437), which suggest similar findings.	Social relationships are linked to health in a number of ways including through changing hormone levels, modulating cardiovascular factors, supporting emotion regulation and coping, supporting achievement, and increasing behaviours relating to the prevention of ill health (454,558–561).
Learning And Traits	There is a significant body of literature on how leisure activities can build learning and	Social and cultural learning are related to health outcomes via mechanisms such as building

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
	traits (in both children and adults) and traits, including a systematic review, multiple qualitative and case study designs, and experimental studies e.g. (437,562–572)	identity, supporting cognitive and emotional learning, activating perceptual processes, improving voice, enhancing social engagement, encouraging adaptive group behaviours, and removing barriers to healthcare (573–577).
Social Resources	Many observational studies have suggested associations between leisure activities can increased social resources e.g. (578–582) and this work is reported in a number of review articles e.g. (583). This area has been discussed extensively in theoretical publications too e.g. (584–587). However, there are limited intervention studies.	Social resources have been linked directly with health as well as indirectly via affecting mechanisms such as building identity, changing exposure, altering brain physiology, catalysing social actions, supporting behavioural adjustment, increasing health promotion, building group learning, increasing healthcare assets, and influencing healthcare delivery (586,586,588–593).
Group Strength	There is a growing literature on how leisure engagement can build group strength and group cohesion, including ethnographic, qualitative-interview, and intervention studies e.g. (437,594–603)	Group strength can affect health through mechanisms such as building general and health-related resources, decreasing negative exposures, affecting disease patterns, building capital, building group learning, increasing social control, encouraging adaptive group behaviours and reducing engagement in unhealthy activities (592,604–606).
Group Power	There is a small but growing literature on how leisure activities can enhance group power, especially within ethnic studies and feminist literature. This includes mostly in-depth qualitative studies but also some secondary data analyses e.g. (607–616). However, to date there is a paucity of intervention studies on these mechanisms.	Factors relating to power are linked to health in a number of ways, including through reducing stigma, changing attitudes to health, increasing social responsibility, increasing health promotion, influencing healthcare delivery and improving healthcare performance (617–620).
Development Of Habit	A number of studies have shown how leisure engagement can affect the development of leisure-specific habits and thus longer-term leisure engagement. Most of these are observational studies, but early results from intervention studies (especially those addressing specific conditions such as contextual repetitions, cues and scripts) also support this e.g. (621–632)	The development of habits is associated directly and indirectly with health outcomes, including through supporting emotion regulation, developing autonomy, modifying arousal, modulating brain biomarkers, catalysing social actions, enhancing behavioural activation, influencing individual choice, encouraging adaptive group behaviours, and increasing behaviours relating to the prevention and management of ill health (633–638).
Behavioural Decisions	There has been some research on leisure and behavioural decisions, especially focusing on the prediction of behaviours, mediated via e.g. enhanced inhibitory control, offsetting of delayed neural timing, and physiological effects. This is supported through numerous experimental and observational studies e.g. (639–647)	Behavioural decisions have been related to health outcomes via mechanisms such as supporting emotion regulation, building identity, supporting overarching cognitive processes, changing attitudes to health, increasing brain activation, changing exposure, improving equality, enhancing behavioural activation, encouraging adaptive group behaviours, developing behaviours to support the delivery of healthcare, and influencing healthcare delivery (648–653).
Behavioural Drive	Aspects of behavioural engagement have been researched in relation to leisure in some intervention and longitudinal studies,	Behavioural drive has been associated with health both directly and via mechanisms such as developing autonomy, building general

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
	e.g. how leisure activities can enhance goal orientation and motivation (600,654–658,658,659). However, there has been more of a focus on how to motivate leisure engagement rather than how leisure engagement could motivate individuals in other aspects of their lives or support wider achievement.	resources, modifying arousal, modulating brain biomarkers, catalysing social actions, enhancing social engagement, and increasing behaviours relating to the prevention and management of ill health (660–663).
Behavioural Development	There is a large literature on how leisure activities can support behavioural development in children. Evidence comprises a wide range of experimental and observational studies e.g. (423,664–671).	Behavioural development is itself associated with health both directly and via mechanisms such as building identity, building psychological strength, altering brain physiology, building social learning and traits, enhancing behavioural activation and supporting achievement (672–677).
Personal Location	A wide range of leisure activities have been found to affect a sense of time and place, most commonly researched through qualitative studies, longitudinal and secondary data analyses e.g. (678–686). To date there is a paucity of data from intervention studies on these mechanisms.	Personal location has been shown to affect health via mechanisms such as building identity, enhancing meaning in life, modifying arousal, changing exposure, building social identity, assisting in the formation of new habits, and increasing behaviours relating to the prevention of ill health (687–692).
Cooperation	Leisure activities have been shown to be associated with multiple aspects of cooperation. A mix of mainly of longitudinal data collection and qualitative studies has found this is mediated through enhanced social capital, trust and sense of community and reductions in anti-social behaviour and social isolation e.g. (539,693–698). To date there is a paucity of data from intervention studies on these mechanisms.	Cooperation is associated with health via mechanisms such as developing group values and understanding, changing attitudes to health, changing communication, building capital, increasing motivation, increasing health promotion, increasing behaviours relating to the prevention and management of ill health, and removing barriers to healthcare (699–703).
Approaches To Health	There is a growing body of largely qualitative studies and quantitative survey data that the leisure industry and particular leisure programmes can alter behavioural processes relating to health e.g. (704–710). However methodologically rigorous studies are scarce.	Behavioural processes relating to approaches to health are linked directly to health outcomes as well as indirectly via mechanisms such as building psychological strength, building general and health-related resources, reducing load, improving physical function, building power, improving equality, and influencing healthcare delivery .
Availability Of Assets	Whilst evidence - largely from secondary data analyses - has shown a link between leisure engagement and both leisure and healthcare assets (715–718), these mechanisms remain less well researched.	Increased availability of leisure assets has been linked with health via mechanisms such as eliciting affective responses, supporting group cohesion, developing the leisure industry, increasing social responsibility, and increasing behaviours relating to the prevention of ill health (719–721).
Engagement In Healthy Behaviours	There is a substantial literature, including large cohort studies, cross-sectional data, ethnographies and intervention studies, on how leisure activities can increase healthy behaviours e.g. (722–730)	Health behaviours are all strongly related to mental and physical health outcomes (731,732).

Mechanism	Literature linking these mechanisms to leisure	Literature linking these mechanisms to health outcomes
Disengagement In Unhealthy Behaviours	A large number of mostly cross-sectional studies have suggested that certain types of positive leisure engagement are associated with protection against engaging in unhealthy behaviours, such as anti-social behaviour e.g. (722,733–739). But to date there is a paucity of data from intervention studies on these mechanisms.	Maladaptive health behaviours are also strongly related to mental and physical health outcomes (732,740).
Healthcare	A number of studies have shown how leisure can affect healthcare delivery and performance, for example by utilising leisure activities in healthcare spaces, or leisure spaces for healthcare delivery e.g. (741–750)	The delivery and performance of healthcare is strongly linked with health outcomes (751–754).

3.4 Developing a new theoretical framework

As demonstrated through the tables above, there is a substantial body of research identifying specific mechanisms of action by which leisure activities can affect health, thus providing a theoretical underpinning for how social prescribing activities affect mental and physical health. However, whilst the lists above show each mechanism as a discreet entity, the literature highlights that these mechanisms not only affect health directly, but also interact with one another. And so, clearly any framework bringing together these mechanisms must take these interactions into consideration.

Therefore, below I propose a logic model for understanding how leisure activities that people can be referred to as part of social prescribing affect health: The ***Multi-Level Leisure Mechanisms Framework.*** This framework proposes that all mechanisms exist symbiotically, interacting across different levels and domains (see Figure 3.1). This framework continues the broad categorisation of the mechanisms as psychological, biological, social, and behavioural processes, but many of the mechanisms included could fall into multiple headings, transcending categorisation.

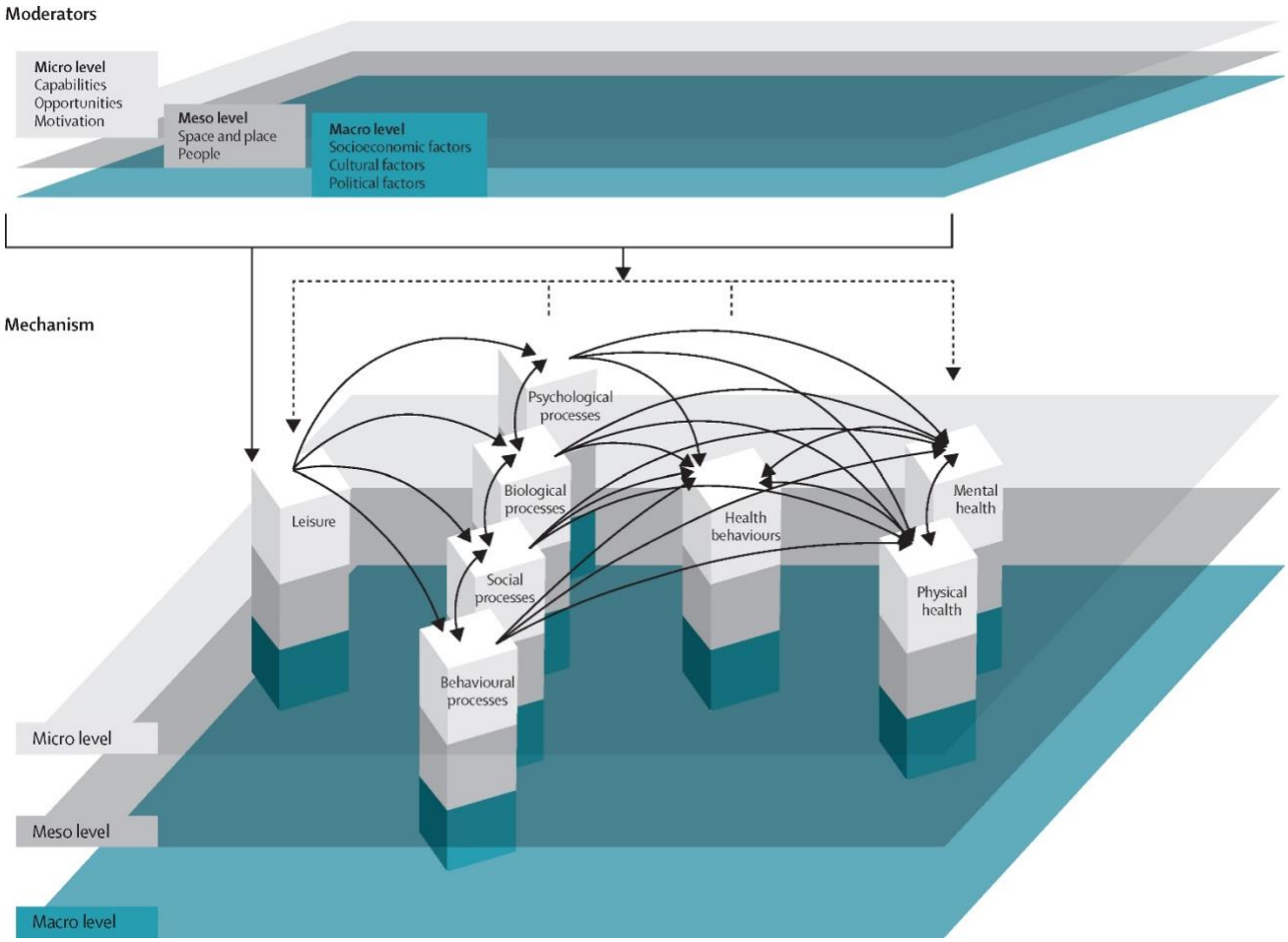

Figure 3.1: The *Multi-level Leisure Mechanisms Framework:* a theoretical framework of mechanisms of action by which leisure activities can affect health

In understanding this framework, I previously highlighted that leisure (and 'social prescribing') activities are 'complex' interventions, and it is necessary to understand this complexity in order to advance our theoretical conceptualisation of how these mechanisms work together. Below, therefore, I outline some of the key theoretical principles underlying complexity science and outline their relation to the *Multi-level Leisure Mechanisms Framework*.

Firstly, all leisure activities involve multiple interacting components and simultaneous causal elements (755). Thus, no social prescribing referral to a leisure activity will activate just one causal mechanism, and so applying simple models of mechanisms to complex social prescribing activities risks overstating the causal

contribution of individual mechanisms (755). In fact, much of the impact of certain mechanisms will result from the interaction of multiple different mechanisms (756,757). This interaction of mechanisms can also lead to new hybrid mechanisms emerging ('adaption') (756), and so the health impact of leisure activities cannot be understood as a sum of the individual parts (757), and attempting to break down a complex system such as social prescribing into individual elements (such as research attempting to test specific mechanisms in isolation from other mechanisms) risks over-simplification and misunderstanding (758).

Moreover, the mechanisms of complex interventions are non-linear, and can involve recursive causality (whereby mechanisms can reinforce one another via feedback loops), self-reinforcement (whereby the successful activation of one mechanism may lead to adaptation of an individual's engagement with a social prescribing activity so that this mechanism is further enhanced), disproportionate relationships (whereby small changes in an individual's leisure patterns can cause big differences in mechanisms and outcomes) and emergent outcomes (whereby mechanisms and outcomes become clear during the implementation of a leisure intervention) (755,757). The model of the *Multi-level Leisure Mechanisms Framework* presented here attempts to highlight this non-linearity and complexity within the pragmatic limits of a comprehensible diagram, but social prescribing leisure activities must not be considered as simple, linear or deterministic systems (759).

Furthermore, it is important not to view any part of social prescribing activities as discrete packages of components occurring in isolation from their contexts (268). Indeed, complex systems are considered 'radically open', i.e. it is arguably impossible to discern where the boundaries of specific intervention components and the wider environment sit (758). Instead, it must be recognised that mechanisms activate due to dynamic interactions between leisure activities and micro-level, meso-level and macro-level contextual factors (or 'moderators') (757). Mechanisms and health outcomes are determined at multiple levels and are affected by political, historical, economic, temporal and spatial factors (760). Social prescribing activities themselves are also often undertaken as part of a larger complex interventional system, since it first often involves GP (or other professional) referral to the activities and so the activity itself forms part of the complex system of a pathway,

e.g. part of healthcare delivery, and so there may be further complexity involving more mechanisms at these other points of the pathway, e.g. GP or link worker consultation (759).

Additionally, the mechanisms presented here occur in conjunction with historical events, not just a single time-point; both those experienced by individuals themselves and those occurring within society (756). So, studies exploring mechanisms of action relating to leisure activities and social prescribing need to focus on dynamic systems rather than on artificially static states (758). Therefore, this framework is intended to be used taking into account these historical and present contextual factors that moderate engagement with leisure and how leisure activities affect health. Further, social prescribing activities that involve the activation of specific mechanisms for a specific group of individuals at a single point in time will not necessarily always involve these mechanisms (759). Changes will certainly occur as elements of the system evolve. Lastly, whilst this framework brings together a large number of potential mechanisms of action, it is not complete, and never could be (757). There may be mechanisms of action that have not yet been identified, and our conceptual understanding of these mechanisms is permanently evolving.

3.5 Discussion

The ***Multi-level Leisure Mechanisms Framework*** is proposed to support the design and conduct of future research into the impact of social prescribing. But it also highlights a number of challenges facing such research. First, the review focused on *potential* mechanisms of action. Some of the mechanisms included have been tested comprehensively across multiple different leisure activities, some have only been tested in relation to specific leisure activities, and others remain theorised but not tested – which is in line with narrative review methodology but still a limitation. However, I provide only example references of studies that have discussed these mechanisms in this review as a comprehensive catalogue of all existing studies on these mechanisms was not the aim of this study. Future research should test whether a specific intervention or mechanism is likely to be disruptive enough to bring about desired change (761). As many of these mechanisms represent complex

structures themselves, the choice of measurement approaches for different mechanisms (e.g. use of biological markers) and study design (in particular the longitudinal tracking of changes time) is key to ensuring that they appropriately capture the mechanism in-question (758).

Further, recalling the complexity lens, studies that focus too narrowly on a single mechanism, attempting to isolate it from its context or other mechanisms, may not produce reliable data (755). We need more research assessing the contributing strength of mechanisms to specific outcomes, and testing whether changes in aspects of an intervention or changes in other mechanisms can improve the workings of other mechanisms. We should also remember the principles such as recursive causality, disproportionate relationships and non-linearity when conducting future research (755,757). Therefore, the framework and mechanisms presented here are intended to support the development of more multi-theory, cross-disciplinary research that incorporates theoretical and methodological pluralism, e.g. studies of social prescribing that research its effects on multiple mechanisms simultaneously (762).

There are various research questions that remain to be explored further. The framework could enable the design and undertaking of statistical modelling, predicting and then testing hypotheses in studies of social prescribing interventions. Additionally, further work is needed to explore whether some leisure activities that patients are referred to as part of social prescribing are more effective than others at activating these mechanisms. This would enable the development of even clearer logic models connecting interventions involving specific components, with particular patterns of mechanisms of actions, with specific health outcomes, and therefore provide further theoretical advance on understanding the health impact of social prescribing. Moreover, future research should compare mechanisms between different social prescribing groups and examine these longitudinally, embracing the dynamic, temporal components of these complex systems (see Study 2 of this thesis).

3.6 Limitations

This review offers the most comprehensive catalogue of mechanisms of action activated by leisure activities to-date and presents a novel theoretical framework. However, there are a number of limitations. First, although a highly cross-disciplinary approach was taken in identifying and cataloguing mechanisms and to list alternative names for mechanisms where similar concepts existed in different fields, differences in language between disciplines may have led to the exclusion of certain mechanisms. Also, each of the mechanisms here involves complex underlying processes. For example, any psychological or biological mechanism identified occurs as a result of many small biological micro-processes such as neurotransmitters activating synapses. I do not focus on these underlying micro-processes but instead focus on the broader processes that occur as a result of leisure engagement and have plausible links with health outcomes. Further, many of the mechanisms listed here have been the subject of previous research, and remain the focus of ongoing studies. Therefore, it is expected that the evidence base on these mechanisms will change over time. So this is presented as the most comprehensive and up-to-date synthesis on mechanisms for understanding social prescribing leisure activities, but also a dynamic and ever-changing one.

Further, I focused specifically on the mechanisms by which leisure engagement can have a *positive* impact on health. However, social prescribing does not always lead to positive health outcomes, with some studies outlined in Chapter 1 showing fewer benefits or even negatives (763,764). Some mechanisms may also be positive in moderate amounts but become maladaptive if taken to extremes, e.g. the concept of 'obsessive passion' in leisure activities (765). Therefore, whilst the ***Multi-Level Leisure Mechanisms Framework*** presents the likely direction of effect, researchers are encouraged to maintain an open mind when researching these mechanisms.

Moreover, this review focuses on the mechanisms of action by which mental and physical health 'outcomes' are achieved. However, the boundary between mechanisms and outcomes is often blurred. As a result, some of the mechanisms identified can also be considered outcomes relating to mental or physical

health themselves. For example, improvements in purpose, quality of life and affect (as well as being mechanisms leading to improved mental health) are often considered primary mental health outcomes for many studies. Therefore, any proposed logic model for an intervention targeting these outcomes would necessitate a rearrangement of the model to move these mechanisms to 'outcomes'. This highlights the need to interpret the terminology used in this review flexibly.

Lastly, this review has identified and catalogued a very large number of theories. This could give the impression that leisure or social prescribing activities can trigger every possible mechanism, leading to the risk that the cataloguing and framework presented here becomes a totalising theory that attempts to explain everything and therefore explains nothing (760). However, there are in fact many further mechanisms that were considered in relation to this framework but were not included as there was neither existing evidence nor a clear theoretical rationale for how leisure could affect them. There are also some mechanisms included, such as those relating to the generational transmission of biological processes, that have been theorised in relation to certain leisure activities, but can take generations to occur, and for which the evidence specifically relating to leisure is much weaker (as explored in *Table 3.5*). I include these mechanisms as they meet the criteria for being potential mechanisms, and their inclusion increases explanatory power in understanding social prescribing. But it is important to note that certain mechanisms are likely not easily activated, nor a realistic goal for leisure activities. It may be the case that this review has provided a framework that is complex to understand (766), but this is only a reflection of the complexity of the processes involved. It is impossible to understand and predict perfectly how all interventions to which patients receive referrals will work, but an enhanced understanding and stronger overarching theoretical framework is crucial to advancing research.

3.7 Conclusions

Overall, this review has identified over 600 mechanisms of action by which leisure activities (which form a significant proportion of the social prescribing pathway, including arts, volunteering, community group membership and sports) can affect health and health behaviours, through networks of psychological, biological, social and behavioural processes at micro, meso- and macro-levels, and has synthesised these findings into a new theoretical framework: the ***Multi-Level Leisure Mechanisms Framework***. No framework will ever be able to include every single mechanism and this framework does not claim to. However, this is the most rigorous review of mechanisms of action for leisure engagement undertaken, and provides the most sophisticated framework to date for understanding how social prescribing affects health. It is hoped that this review and framework will support the design of more theory-driven, cross-disciplinary studies that examine the mechanisms underlying the effects of social prescribing on mental and physical health.

The next study of this thesis further embraces the conceptualisation of social prescribing as a complex system and aims to explore and compare mechanisms of action (and active ingredients) longitudinally across 4 different social prescribing groups, using ethnographic methods. The Multi-Level Leisure Mechanisms Framework developed in this study will be used to help frame these findings.

Chapter 4 - Social prescribing for individuals with mental health problems: How do community groups impact psychosocial well-being? An ethnographic study

4.1 Introduction

As described in my literature review (Chapter 2), social prescribing is one approach to addressing rising mental health problems and loneliness. The GP-link worker social prescribing referral model has received significant attention and funding, and recent evidence suggests it can help support mental health, alleviate GP workload and create more time for a personalised approach with patients (175,767). However, there are many possible referral mechanisms into these types of community groups, including through social care, mental health charities, leaflets/posters, or via word-of-mouth. Thus, to avoid a narrow or overly medicalised focus, my study was primarily centred around the community group or activity itself, capturing participants from numerous and varied referral routes.

Given the nature of social prescribing groups as complex systems, it is likely that multiple mechanisms (as laid out in the previous chapter) are involved, interact and are additive to one another (768). Moreover, there will be different mechanisms involved in different types of groups (e.g. singing vs football), as well as some potentially key overlapping ones. Further, there will be different mechanisms activated across the same types of groups (no two singing groups are the same), and again potentially some important, commonly shared ones. As set out in Chapter 3 (Study 1) of this thesis, these mechanisms can be categorised into biological, psychological, social, and behavioural, as displayed in the multi-level theoretical framework of mechanisms of action presented in the previous chapter (1). It is also important to explore what some of the specific features or components of such groups might be, termed 'active ingredients', which might help to activate the mechanisms that lead to improved mental health. As discussed in Chapter 2, an extensive review of arts activities identified 139 such active ingredients, and found they can be categorised into 'Contexts, People, and Project' (termed the 'INNATE' framework) (these terms are defined in section 4.4 'Findings', page 109) (216). Therefore, I used these two frameworks to help organise my themes (active ingredients and mechanisms that were most grounded in my ethnographic fieldwork, across the four groups) during the Findings section.

I used ethnographic methods to explore the impact of four social prescribing community groups/activities on the psychosocial well-being of individuals with mental health problems. As laid out in Chapter 2 (Literature Review) of this thesis, there is growing evidence that these types of groups can support people's psychosocial well-being and mental health (180–182,186,187,191,769–772). My previous study (Chapter 3) has identified the many possible mechanisms underlying the mental health benefits of such activities, and the INNATE framework has illuminated many of the possible active ingredients. However, it is less clear how mechanisms and active ingredients emerge within specific social prescribing programmes, and whether some are common to all activities or more prominent in some than others. So, the aim of this ethnography was to explore the presence of these active ingredients and mechanisms "in action". Each activity is likely to have many mechanisms and active ingredients, but I focused on those which emerged most commonly, using an inductive approach. It was not possible to test most biological mechanisms sufficiently through qualitative means, so there are far fewer of these in my findings than the other categories. The analysis of psychological, social, behavioural and biological mechanisms, and active ingredients, here, is not exhaustive and never could be. But over the course of 1 year of ethnographic fieldwork, I have strived to capture what some of the 'core' components are across these 4 groups, and these are laid out in the *Findings* section.

Therefore, the aims of this ethnographic study are to:

1) Explore the core active ingredients of four community social prescribing group activities, which may activate mechanisms leading to improved psychosocial well-being
2) Explore the core mechanisms underlying the mental health and social benefits of these activities for participants of these groups.

This is the first known study to use ethnography to examine active ingredients or mechanisms of action across multiple social prescribing groups. The richness of ethnography lies in the extended length of time the researcher spends with a social group. This allows the use of longer and more frequent interviews,

conversations, and observations of participants with whom the researcher has formed relationships and gained a significant degree of trust, setting it apart from most qualitative interview or quantitative studies that have predominated this topic so far. The significant amount of time spent with participants also allows for new questions and investigations to emerge throughout the fieldwork period, that may not have been considered previously.

There are many reasons why it is important to explore, in greater granularity, precisely how these groups impact people's psychosocial well-being. It may be helpful for health and other professionals (who might not have first-hand experience of how such groups work) involved in referring patients or clients into such groups. For example, it can help enhance the understanding of how these groups support people, so this can be better explained to potential beneficiaries (patients, clients). It also might help professionals better identify the types of patients/clients that might be suitable for referral into such groups, e.g. if it was found these groups help reduce addictive behaviours, then someone with a history of substance misuse might be more readily considered. Moreover, the findings can support community groups to identify and explain the potential mechanisms underlying the benefits of their activities (to potential funders and referrers), as well as consider new mechanisms or active ingredients that might be possible within their activities but aren't currently being utilised fully. It could also aid professionals setting up new groups and interventions. There may also be implications for commissioners and funders of such groups and referral processes, in terms of what works well, how and for whom.

4.2 Covid-19 impact

This study was impacted by the Covid-19 pandemic in numerous ways. Originally, the study plan was focused around the GP-link worker social prescribing model, involving fieldwork in the GP consultation and link worker consultation stages, as well as with various community groups. However, this was not possible throughout the pandemic due to very strict rules within healthcare settings, so I could not sit in on consultations. The start of the study was then delayed 9 months until many community groups were able to begin in-person again. During this time, my thinking on social prescribing also evolved and I recognised more

the strength of taking a broader view of social prescribing: the GP-link worker model is only one referral route into these groups (though an important and growing one), and by merely focusing on this route I felt I may be missing some important pathways as well as many individuals who enter these groups by other routes. Therefore, I decided to centre the study around community groups themselves, and so capturing participants from all referral routes. This also enabled a less medicalised conceptualisation of social prescribing, and I reflected on how the reason I had originally chosen to focus on the GP-link worker model was likely because of my own background as a medical student and a PhD student in a healthcare department. Thus, the effect of the Covid-19 pandemic had the unforeseen but perhaps beneficial consequence of enabling me to challenge some of my own biases and positionality and consider a new research focus that I had previously been blind to.

Throughout the ethnographic fieldwork period, fortunately I was able to attend most of the group sessions in-person for the majority of the study period. However, the singing group was especially affected due to particularly stringent Covid-19 restrictions on group singing, due to its high risk of infection spread (773). And so, for much of the ethnographic fieldwork for the singing group, the group met and sang virtually over Facebook video. Thus, I may have missed emergent properties of the group that would occur in-person and not virtually. Fortunately, I was able to explore these in-person during the last few months of my fieldwork. Also, to help mitigate this, the use of in-depth interviews was especially important in this group, as was my regular attendance at the choir's in-person, weekly walking group.

It is of course also possible and likely that the pandemic has influenced the impact these groups have had on people's lives. However, the study was not testing the quantitative impact of these groups on individuals' mental health outcomes throughout the pandemic, where (though still valuable research) drawing conclusions about the impact of these groups in non-pandemic times may be more problematic. The focus of my exploration was very much on the active ingredients of these groups and the key mechanisms by which these groups bring about mental health benefits for participants, in general. Interviews and conversations with participants about the role of these groups on participants' lives were about the entirety of their engagement, which for most participants involved a significant length of time prior to the pandemic. Therefore, it was still possible through

my research aims, and careful interview and conversational framing, to have a more general focus and thus enable relevant implications to emerge from this study for application outside the pandemic context.

4.3 Methods

4.3.1 Study Design

This study uses qualitative, ethnographic methods. Ethnography literally means 'writing about people' (from the Greek words *ethnos* (people) and *grapho* (writing)) and uses participant observation and other methods such as field notes and interviewing to explore, 'on-the-ground', the sociocultural lives of groups of individuals. The unique ability of ethnography to get closer to the lived experience of participants allows for the possibility of richer, more grounded data. This does not deny the inevitability of 'observer effects' and 'researcher bias', and indeed a significant component of ethnography involves the reflexivity of the researcher, a 'turning back on oneself' in order to consider one's positionality (774). I explore this further in Section 4.5 'Researcher reflexivity' section (page 141).

This study situates itself within the pragmatist and critical realism traditions – wherein it is thought possible to assume a social reality separate to our knowledge from it, and that it is the ethnographer's role to attempt to accurately represent that social reality, while still closely examining and reflecting their own assumptions (775,776). The position differs from what some academics call the 'extreme pessimism' of the post-modernist or post-structuralist critique (valuable though their insights have been) (777). Roy Bhaskar, the originator of critical realism philosophy, contended instead that reality has 'depth', and that better knowledge can penetrate this further and further, though without ever reaching the 'bottom' – this statement could apply just as readily to the challenges of observation and measurement across the natural sciences (e.g. astronomy, physics, biology) as it does to the social sciences (778).

I adopted a very open, inductive approach to explore the multiple effects of these groups on participants' lives through detailed observation, interpretation, and interviews. Inductive approaches work

"from the bottom-up, using the participants' views to build broader themes", rather than testing a pre-defined theory (deductive) (779). Moreover, whilst previous studies have tended to focus on 'mental health outcomes', I aimed to explore the wider social, psychological, and behavioural lives of participants, in terms that are meaningful to them, rather than through a strictly medicalised or professional lens. It is useful to do this, otherwise the scientific community risks misunderstanding the complex and varied impact these groups can have on people's lives, when focusing purely on the degree to which they reduce anxiety or depression symptoms (780).

4.3.2 Setting and Participants

All four groups were in a large, ethnically and socially diverse city in England. The groups were: 1) a football group set up for those with substance misuse and/or mental health problems, 2) a mental health choir, 3) a reading group and 4) a gardening group. The latter two groups, whilst less 'mental health-related' in their descriptions, were chosen because they still largely support members with a wide range of mental health and psychosocial difficulties. The groups are deliberately significantly different to one another, and so in my design I have tried to capture the varied nature of social prescribing groups. They were purposively chosen to correspond to four of the main categories within which most social prescribing community groups broadly fall (excluding financial/practical support): sports/exercise, nature, literature/education, and arts. Of course, no wider conclusions can be definitively drawn about the nature of *all* community groups/activities from the analysis of only four groups, but the choice here does allow some useful comparisons and discussions into what some of the shared properties or differences between different types of groups can be.

The football group and the choir were identified and approached over social media (Twitter), the reading group through a mental health research network wherein I am an early career researcher (the MARCH network), and the gardening group through previous voluntary work with the charity. I made a key contact or 'gatekeeper' within each organisation, who were crucial in providing access and ensuring my credibility and acceptance within each group. Details of the research sites will be described in the *Findings* section, but mostly took place at a football centre, a community garden, a rehearsal room within a mental health hospital, a church,

and (for two of the groups for several months due to Covid-19 restrictions) over video call (Zoom and Facebook Messenger Rooms).

Interview participants were sampled to obtain a good spread across gender, ethnicity, age, and mental health condition as it was not possible to interview all members of all groups. All group members included in the study had a diagnosed mental health condition or significant psychosocial challenges and had to be able to give informed consent to participate in the study and communicate in English; there were no other inclusion/exclusion criteria. Three active referrers into the groups were also interviewed, including two social prescribing link workers and a mental health nurse. Four staff members were interviewed, including two group leaders/facilitators and two directors (who both also led sessions and worked directly with group members). The only inclusion/exclusion criteria for staff and referrers was that they worked regularly and directly with group members and could give informed consent and communicate in English.

Informed consent was actively sought from all participants who were interviewed and written about. All participants were given a Participant Information Sheet **(Appendix 2, page 275)** and encouraged to ask questions in-person or over phone/video call, and written informed consent was then obtained. This was not possible with all members of the groups e.g. certain new members joining throughout the study period, or those who did not wish to be actively involved in the study, but these members were made aware of the researcher's role and were not included in any field notes or interviews.

4.3.3 Data collection

I conducted my ethnography between December 2020 and December 2021, attending each group for at least one session each week for a one-year period. This came to an average of 3 hours per group every week, totalling over 600 hours of observational data across the course of the fieldwork period. Immediately after each group session, field notes were thoroughly documented based on my observations, participation and conversations with members and staff. I used a note-taking software called Evernote, which allows efficient categorisation of extensive notes and for me to take notes on my phone or laptop with automatic synchronisation. Sometimes I took notes during breaks within sessions on my phone, in order not to miss

important information. Within each group, I adopted the role of 'active participant' (781) – that is, whilst known by all group members as a researcher, I also actively took part in the activities of each group. I interacted with a wide range of participants, but over time, as is often the case with ethnography, I focused on a sample of 'long-term research companions' with whom I then developed a closer relationship and it was those who were selected for more formal interviews.

For the football group, I joined weekly training sessions with the club, and often played in formal matches and tournaments, too. I also often attended the 'social club' after sessions. For the gardening group, I would split my time each week between a 'Men's shed' group and general volunteering group, fully getting involved in gardening activities such as planting, harvesting, digging, pruning, weeding, and helping construct fences, ponds, and paths. For the reading group, I attended once a week. This involved reading the books and poetry alongside everyone else and partaking fully in 'shared reading'. I took field notes of my observations and informal conversations after every session. For the singing group, I attended once per week during the evening and regularly attended the choir's weekly walking group.

Activity	Average obervation time	Total observaton time	Interview participants
Football	3.5 hours a week	175 hours	7 club members; 1 referrer and member, 1 CEO/founder
Gardening	3 hours a week	150 hours	4 volunteers/members, 2 referrers (SP link workers), 1 CEO/director
Reading	3.5 hours	175 hours	6 group members, 2 facilitators
Singing	2.5 hours	125 hours	7 group members, 1 choir leader

TABLE 4.1 OBSERVATION DETAILS AND INTERVIEW PARTICIPANTS

The approach for observation and field notes broadly followed Spradley's 3 steps of descriptive, focussed then selective observation (782). In practice, this meant in the first few weeks of my ethnography I wrote highly descriptive and broad observation notes, but over time was able to focus more on key emergent themes and on what was more relevant to my research questions. As is typical of ethnography, interpretation

of the data (rather than mere recording or observing) became increasingly important as the study progressed. As Thoreau said "it is not necessary to go around the world to count the cats in Zanzibar", instead ethnography is interested in the 'thick' descriptions, striving to ascertain the meanings of interactions and better understand the lives of strangers (783). I included these interpretations throughout my field notes, which I made during breaks within sessions, immediately after sessions, and during time available between sessions throughout the week. Most of my participation with the groups took place on the same day and time for each group, on a weekly basis. However, there were sometimes extra sessions during the week which I attended, e.g. special events or walks, that took place on other days and times.

Formal interviews were also conducted (n=28) across the four groups, with 21 group members (see Table 4.2 below for participant characteristics), three referrers and four staff members. The average length of interview was 72 minutes. These were semi-structured, open interviews, conducted mostly in-person before or after group sessions, however when more convenient for participants or due to Covid-19 restrictions, telephone or video calls were deployed. The topic guide used for interviews explored the impact of the groups on participants' lives, including their social lives, behaviours, mental health, and wellbeing. The topic guide was developed through collaboration with my supervisory team, who span the fields of Behavioural Science and Health, Biosciences, and Arts and Sciences. The interview format, however, was very open, and participants were encouraged to talk at length about the group's impact on them, in ways that they found most meaningful, rather than solely based around the structure of a pre-defined topic guide (see Appendix 3, page 280).

Age	18-29	2
	30-39	2
	40-49	5
	40-59	6
	60-69	4
	70-79	2
Gender	Male	10
	Female	11
Ethnicity	White	12
	Minority ethnic	9
Employment	Unemployed	17
	Part-time	3

	Full-time	1
Mental health condition, social issue, or disability *	Depression	11
	Loneliness	7
	Anxiety	6
	Substance misuse	5
	PTSD	4
	Schizophrenia	4
	Bipolar disorder	4
	Bereavement	4
	Suicidal ideation/attempts	4
	Criminal behaviour	3
	Chronic pain	2
	Homelessness	2
	Cerebral palsy	1
	Cerebellar ataxia	1
	Schizoaffective disorder	1
	Post-natal depression	1

TABLE 4.2: PARTICIPANT CHARACTERISTICS OF THE 21 GROUP MEMBERS

*many participants fell into multiple categories

4.3.4 Ethical considerations

The study was reviewed and approved by the Camden & Kings Cross Research Ethics Committee (279076; 20/LO/1214). Furthermore, all 4 groups included people with mental health problems and various vulnerabilities, and so it was necessary to be highly sensitive towards this. For example, this involved building rapport with members over a period of several months before asking if individuals wanted to do formal interviews. It also involved being around trained facilitators and group leaders when present with members, and when this wasn't possible (e.g. during one-to-one conversations or interviews) that appropriate safeguarding and reporting procedures were in place (e.g. group leaders being made aware of time and place of interview). Capacity to consent to be involved in the study applied the principles of the 4-step Mental Capacity Act, which as a medical student I have had extensive practice using with patients (784). The consent form is available in Appendix 4 (page 283). Multiple meetings were organised with leaders and facilitators in each of the community groups prior to beginning the ethnography, to decide how I was to introduce myself and the proposed research, as well as conduct the research, in the most sensitive and effective way.

Importantly, this was an ongoing process throughout the entire ethnography, involving regular communication and reflections between myself and staff members.

4.3.5 Data analysis

Interviews were audio-recorded and then transcribed using an encrypted and UCL ethically approved AI software, Scrintal. Following transcription, original recordings of all interviews were deleted, all participants and names of people mentioned in the transcripts were given pseudonyms to preserve their anonymity, and all locations and other identifying features removed from the transcripts. The interview transcripts and field notes were imported into NVIVO 12, a qualitative data analysis software (785). My field notes were also imported into NVIVO, along with text from emails, social media, and websites (from the community groups), as is common with ethnography which often combines multiple data sources. The analytic approach I deployed was reflexive thematic analysis, due to the flexibility it allows in interpreting large data sets, as well as its capacity to incorporate multiple data sources (786). I followed the steps set out by Braun and Clarke of familiarisation with the data, generating and defining codes, theme searching and producing the report (787). I conducted thematic analysis separately for each of the four groups, followed by a combined analysis examining shared and differing properties between the groups. I used an inductive coding approach, where new concepts and themes were generated from the data (788). Context and contradictory data around codes were retained to capture subtle nuances. Themes were developed from the codes, with each theme being either a mechanism or an active ingredient, and resulting from a meaningful pattern in the data. The themes were those active ingredients and mechanisms that were deemed 'most important' throughout my ethnographic fieldwork and interviews: that is, they were observed, or mentioned by participants, most frequently or prominently. All final themes were discussed and agreed upon by my supervisory team. Further potential active ingredients and mechanisms however are reported in Appendices 5-8 (page 285-307).

Participant quotations and extracts from field notes are used throughout the *Findings* section to support the themes. I coded my data inductively, but during the analysis and write-up stage used two frameworks to help organise the themes. For the *Active Ingredients* section, I used the INNATE framework,

which comprises the most extensive review of 'active ingredients' to date (216) to categorise my findings into People, Contexts and Project. To organise my themes within the *Mechanisms* section, I used the 'multi-level theoretical framework of mechanisms of action', which I produced in Study 1, and which is also the most extensive review of mechanisms involved in leisure activities to date (1). This organises mechanisms into the categories of Biological, Psychological, Social, and Behavioural.

4.4 Findings

As described in the *Methods* section, each group section below will have the sub-sections: *Active ingredients* and *Mechanisms*. There will also be a brief *Background* section introducing the group and providing some relevant context. For the *Active Ingredients* sections, my themes will be organised into *Project, People* and *Contexts* (as set out by the INNATE framework). This framework was used after the ethnographic fieldwork and analysis, during the write-up stage, to organise my themes. Active ingredients in the *People* category relate to the social composition of the groups as well as the activity facilitation. Those in the *Project* category relate to the qualities and characteristics intrinsic to the activity itself and the stimuli that prompt further engagement. Those in the *Contexts* category relate to the activity setting (its atmosphere and environment) and the organisational set-up. For the *Mechanisms* sections, they will be organised into *Psychological*, *Social*, *Behavioural* and *Biological* (as set out by my multi-level theoretical framework of mechanisms produced in study 1). Active ingredients and mechanisms will appear in **bold** in each section. Where quotes from individuals were obtained during interviews, I have labelled 'INT', and from informal conversations I have labelled 'INF'.

Given the substantial volume of data collected over the year-long ethnography, across 4 different groups, and the very large number of themes (mechanisms and active ingredients) across multiple different categories: Psychological, Behavioural, Social, Biological (mechanism categories) and People, Contexts, Project (active ingredients categories), across each group – it was not feasible to include participant quotations or field notes to back up every single active ingredient or mechanism mentioned within the main body of this thesis chapter. Instead, normally one or two quotations or field notes are provided in each section of each group

(Social, Psychological, etc.). *** Appendix 9 (page 308-364), however, provides quotation and participant evidence for every single core mechanism and active ingredient listed in the findings. Also in Appendix 9, there can be found case study boxes that give an extra level of depth and background to several participants, which help situate the findings in a wider context; these case study boxes will be labelled 'A closer look'. ***

4.4.1 Community Football Group

4.4.1.1 Background

The community football club was set up by Abdul, who had a history of substance misuse problems and a diagnosis of bipolar disorder, had been sectioned in a mental health hospital, and wanted to create footballing opportunities within his local community for those suffering from substance misuse and mental health difficulties. The club is run entirely by those with past or present lived experience of mental health problems and provides footballing and socialising opportunities every day of the week. Mental health and social problems facing members whom I formally interviewed (7 out of >70 active members) included alcoholism, anxiety, bereavement, bipolar disorder, depression, drug abuse, homelessness, loneliness, side effects of prolonged medication use, paranoid schizophrenia, violent and criminal behaviour, PTSD, schizoaffective disorder, and suicidal ideation/attempts. Among those interviewed was also the founder of the club, and a mental health nurse who was a key referrer. Individuals were referred into the club via many different routes, the most common of which was from the local mental health hospital, but also through local charities, the food bank, rehabilitation services, word-of-mouth and social care. Most members of the club are from minority ethnic groups and of low socioeconomic status. Many are unemployed, often due to mental health reasons. I joined weekly training sessions with the club, and often played in formal matches and tournaments, too. Having played a considerable amount of football throughout my life I had a level of 'sporting capital' (789), which was certainly helpful in gaining the degree of trust and respect from other members that was required for my acceptance into the club as both a member and researcher.

4.4.1.2 Active Ingredients

Project

There were key active ingredients related to intrinsic components of the club and the activity of football. For example, the football group had a **high frequency of sessions**, with football and social activities available for members every day of the week. The high frequency had positive implications for those suffering with addiction problems, and severe social isolation. The club had regular **organised events** for the players to look forward to, outside the normal footballing sessions, including matches and tournaments against other teams. This helps members socially connect with each other and feel a shared identity, as well as provide motivation for continual engagement. An important element to the club's beneficial effects was the role of football as a **physical activity**, producing inherent physical and mental health benefits. The club was considered available for the players **long-term**, with no time-bound nature or end point which the players normally associated with various therapeutic interventions. As Tim (member, mental health nurse and key referrer) told me:

> *A lot of things you might be offered, for example, 8 weeks of CBT or whatever, it's 8 weeks and then you're done…. Whereas with this, they know it's gonna be there, that's the biggest thing, it's not time-bound.* (Tim; INT)

Lastly, a key active ingredient of the club relates to the **competition** involved in football as a game, providing a continual motivation for active engagement, which was something relatively unique to the football group compared to the other groups I observed.

People

There were some core themes related to how people interact and who is involved in the football club. For example, the **leadership qualities** of Abdul were vital in the group's successful elements. He is highly charismatic, driven, has his own experience of mental illness, and is well-known within the community. The

group has **mental health professionals as members**, which has been formative in setting up active referral mechanisms between the local mental health hospital and the club, helping break down the divide between patients and players thereby improving therapeutic relationships, as well as providing extra mental health support for players. The following extract from an interview with Sammy, who suffers with schizophrenia and was experiencing an episode of acute paranoia, demonstrates how this model (having mental health professionals based within the club as players alongside everyone else) can make a difference in practice:

> *Recently, I had a lot of paranoia, for some reason my medication was increased so I started getting paranoid, thinking people on buses could read my mind. But I bumped into Tim, who is part of the football club and a really, really good guy. He ended up paying for an uber for me, taking me to the mental health hospital, and staying with me in the waiting room because of our football connection. It didn't seem like he was a nurse or psychologist, it seemed like he was more of a friend, and that experience made me think if I wasn't part of this football club, it could have been so much more different.* (Sammy; INT)

Most members have a **shared experience of mental health** and often high severity of mental illness, many having been referred from the most severe ward of the local mental health hospital, as Tim explained to me during an interview:

> *In our ward, people are really exceptional. A lot of the patients that you'll see in the club have come from our ward, and we are a male psychiatric intensive care unit, we are looking after patients at the highest risk of suicide, violence, aggression. When other wards can't manage them they send them to us, we are the most extreme. At the end of the road, the most unwell patients.* (Tim; INT)

There is regular **social time outside the activity** of football, and much of this takes place at a 'social club' where members can hang out, socialise, play games, and share free, nutritious, freshly cooked food together.

Contexts

There were key active ingredients related to the organisational set-up of the club and its environment and atmosphere. For example, the club has excellent **inter-organisational partnerships**, and Abdul's charismatic, entrepreneurial, and driven nature is responsible for most of these, as is having mental health and other

professionals as active club members. This partnership between the mental health hospital and the club, whose facilities were just minutes' walk away, has ended up referring more people into the club than any other route:

> *We've connected loads, I would say we've probably taken 40, 50 patients from all walks into the team* (Tim; INT)

This route was set up by Abdul visiting the hospital, where had previously himself been sectioned, and meeting Tim and Ibrahim, two mental health nurses, who both work on the most acute ward of the hospital, the psychiatric intensive care unit. Both listened to Abdul's story and felt some of their patients could benefit from the opportunities the club provided. They obtained novel permission from the hospital to take patients out for supervised exercise, in the form of community football, each week. Both are allocated time within their workload to do this, playing football themselves alongside some of their patients. As Abdul tells me "*there are no hierarchies here*" (INF), referring to the dissolving divide between 'patients' and 'professionals' which the club aims for – it's not as though mental health professionals turn up in work clothes, simply supervising unwell patients; Tim and Ibrahim are very much part of the club, playing football and enjoying themselves in a similar way to everyone else, but also in highly supportive roles.

The club values **inclusivity**, which was influenced by Abdul's experience of previous community mental health football teams not being as inclusive as they could have been. The club provides a **safe space** for individuals to discuss their own mental health free from judgement, and emotionally support one another. The concepts of **discipline and respect** are important for the club, especially in the context of 'heated' situations. Players understand the need to show respect to one another on and off the pitch, and when this is not followed, the use of proportional discipline is considered necessary. The club is **affordable** for members, with all sessions, social activities, food, and often travel available to players for free. Despite being a 'mental health football club', the focus is still largely on the football **activity over mental health**, which helps members form a new positive identity, as well as making initial engagement less intimidating and medicalised. As Tim explained to me:

> *It'll never be framed like that "do you wanna come do this thing for your mental health?", that would never work. It has to be about the football.* (INF)

4.4.1.3 Mechanisms

Psychological

Members experienced a range of psychological mechanisms from their engagement with the club, which may contribute to mental health improvements. For example, members experienced **increased self-confidence** since joining the club. This was related to being accepted into a group and having a safe space to socialise among individuals with shared, lived experience of mental health challenges. Sammy, who had been sectioned in the local mental health hospital for 6 months following a diagnosis of paranoid schizophrenia, and had put on 50kg during his stay at hospital which he felt was caused by medication side effects and not being able to exercise, experienced this significantly:

> *It's really helped my confidence. Because of my weight gain I was very shy, I didn't want to go out and was worried about what other people thought and would think about me. But I found that being around other people (here), it's completely the opposite, that people don't care what way you are, as long as you've got a good heart and you've got a passion for the game, it kind of means they accept you rather than just whipping you or saying that you shouldn't be playing or stuff like that.* (Sammy; INT)

The group was crucially also a space where members could regularly experience **pleasure** and joy. The group also provided **increased personal and social responsibility** for players, in terms of regularly showing up for sessions and including opportunities to be involved in coaching, administration or welfare within the club. This had positive implications for members' self-esteem, motivation, and mental health. Many players experienced **increased purpose/meaning** since joining, crucially giving individuals a reason to get out of bed in the morning and out the house, and live life more fully and meaningfully. Eddy, who has paranoid schizophrenia and a history of substance misuse, and long-term mental health hospitalisation, explained this to me:

> *It gives you so much more than just football, it gives you a purpose, it's a way of life.* (Eddy; INT)

Social

Players experienced a range of social mechanisms from their engagement with club activities, that may enhance mental health. For example, the **formation of friendships** within the club is central to its mental health benefits, especially for those previously experiencing loneliness.

> *I think making good friends that last long is something that's quite difficult to do. But the club kind of facilitates that, by giving us a common ground and makes us all sort of equals with mental health problems. And so it means you can make lasting friendships.* (Sammy; INT)

Players also experienced an **enhanced sense of community** since joining the club, something many of them had not felt previously. The club also provided **increased social support** for players, including practical and emotional support. This comes via peer support between players, and from the mental health and other professionals who are active club members.

> *It's not like coming to a psychologist and saying I'm having these problems. It's more like coming to friends and saying I'm having these problems, what experiences have you had with them, or what kind of experiences have you had?* (Sammy; INT)

Behavioural

Members experienced some key behavioural mechanisms through their club engagement, which may cause improvements in mental health and well-being. For example, many members currently or previously experience addiction problems and involvement with the club seems to lead to a **reduction in addictive behaviours and the building of healthier habits**. For example, Steve, who has been suffering with PTSD and ongoing struggles with drug and alcohol addiction, told me football motivated him to reduce substance use:

> *Going (to) football was so powerful. You're preparing yourself the night before, get your kitbag out, eat some proper food, go to bed right. No drink, I've got football. Before I had to get out this house all the time, but once you do football, you're actually happy and content to recover (here in the house). To sit, not think about drugs, not think about alcohol. You're actually calm.* (Steve; INT)

Players often **increased their work-seeking behaviour**, and received CV support and useful work experience which may increase employability which can have long-term mental and social benefits. This is important since

a high percentage of players were unemployed, but now many are motivated to find work. The club also provided **structure/routine** for members, which was highly valuable considering most members were unemployed so without the structure that work often provides. Structure and routine were particularly important for those with addiction problems and depression. Dave, who struggles with recurrent depression, describes this:

> *If you're suffering with depression, sitting with yourself for long periods without anything in terms of a purpose in mind will generally lead you to (further) depression because your thinking being prone to negativity will take you down that path. Now, if you have sort of things set out in front of you in terms of like a stable routine, it can be a very strong adversary for depression. Structure is very important.* (Dave; INT)

Biological

A common biological mechanism that emerged in the football group was **weight loss**, especially for members who were overweight or obese. Several participants struggled with obesity, often caused by heavy psychiatric medication use and/or the highly sedentary nature of living in a mental health hospital, and so the club has been very important for those individuals to work towards a healthier weight, as Eddy's example demonstrates:

> *I've gone from 150kg in the hospital to 117 now. It's helped being around people with the same sort of issues, same sort of goals to lose weight.* (Eddy; INT)

The core active ingredients and mechanisms of the community football group that were most important in my ethnographic findings are displayed in Table 4.3 below. **Further supporting evidence for each of these (e.g. interview and informal conversation quotations, field notes etc.) can be found in Appendix 9 (page 308). Further potential active ingredients and mechanisms in relation to this group can be found in Appendices 5-8 (page 285-307).**

Active ingredients	Project	High frequency & regularity of activities, Organised events, Physical activity, Available long-term, Competition
	People	Leadership qualities, Mental health professionals as members, Shared experience of mental health & High severity of mental illness, Social time outside activity
	Contexts	Inter-organisational partnerships, Inclusivity, Safe space, Discipline & respect, Affordable, Focus on activity over mental health
Mechanisms	Psychological	Increased self-confidence, Increased personal and social responsibility, Increased purpose/meaning, Experience of pleasure
	Social	Formation of friendships, Enhanced sense of community, Increased social support
	Behavioural	Reduction in addictive behaviours & building healthy habits, Increased work-seeking behaviour, Provision of structure/routine
	Biological	Weight loss

TABLE 4.3: FOOTBALL ACTIVE INGREDIENTS AND MECHANISMS

4.4.2 Community gardening group

4.4.2.1 Background

The community gardening group consists of several sites, all within a mile radius. The first site was originally created several decades ago by a few local citizens who wanted to make use of an old, derelict bomb site. There are several groups of 'volunteers' who come to the gardening sessions, including a 'Men's shed' (a group concept originating from Australia created for men with substance misuse or mental health problems to get together and build/fix things (790)), a Carers' group, a group for those living with cancer, and a general volunteering group. Most of these groups take place on one day a week, but the Men's shed group occurs more frequently. I would split my time each week between the Men's shed group and the general volunteering group, fully getting involved in gardening activities. Volunteers have joined up via their local social prescribing link workers, GPs, local charities, word-of-mouth, or often from enquiring after walking past (the main site is very

visible and sits right across from a large council estate with many residents regularly passing by). Mental health and social problems facing members who I interviewed or conversed with for this study include alcoholism, anxiety, bereavement, chronic pain, depression, job loss, PTSD, schizophrenia, social isolation, and suicidal ideation.

4.4.2.2 Active Ingredients

Project

There were some core active ingredients related to the intrinsic components of the gardening group. For example, gardening seems to offer engagement with various **sensory stimuli** for the volunteers associated with being in nature, especially the visual, auditory, tactile, and olfactory. Regular **organised events** such as walks, trips to famous gardens, and harvest sales are available for volunteers, giving them things to look forward to and connect them further with one another. For example, Terry, who has a history of severe alcoholism and experiences social isolation, told me:

> *I don't really see anyone outside the farm, but they do organise the walks for everyone, and visits to places, so I try to go to as many of them as possible, so that's good 'cause you're with the same people but outside the usual environment.* (Terry; INT)

People

Some key active ingredients were present that related to individuals and how they interact through the gardens. For example, the **inter-personal skills of staff and volunteers** at the gardens were fundamental to volunteers feeling safe and supported. Empathy and compassion were considered especially important. Stephanie, director of the Gardens, told me about the volunteers:

> *The peer support between the different volunteers is quite phenomenal. There's a whole sort of level of support which volunteers give to each other because they've actually got lived experience. (Stephanie; INT)*

Shared activities were another key active ingredient, with shared gardening tasks being common, helping to connect volunteers with one another. Linked to this, is the ample structured and unstructured social time provided, with socialising being common between members during gardening activities, as well as during tea breaks.

Contexts

Certain core active ingredients related to the gardens' organisational set-up and the atmosphere and environment of gardening activities. For example, for most volunteers, the gardens were highly accessible, with most of them living very locally, which was often crucial to their attendance. Relatedly, the gardens seemed familiar to members since they are a visible site within the community, and this made initial engagement less intimidating and more likely for several volunteers I spoke to. Hand-holding referrals into the gardens were common, with social prescribing link workers often coming with individuals to their first session to ensure they felt comfortable and less nervous, as Sandy (one of the social prescribing link workers I interviewed) explained:

> *I think it's about the initial going there, not knowing anyone, just being lost* (the person referred). *So that's where our job is really important, you can go with them so they are going with someone they have previously had conversations with… it's just that first initial being introduced to the group.* (Sandy; INT)

The garden runs regular tours, inviting local professionals to these which helps build inter-organisational partnerships such as with local GPs and link workers. The gardens are a highly no-pressure environment, in that there is no expectation to turn up every week or get involved in activities more than one wants to or socialise more than desired. This was deemed very important for volunteers who might not be able to attend on certain weeks due to mental health reasons or might not be able to do as much gardening in a session or socialise as much as they normally would.

> *I met the leader of the session, who told me I don't have to speak if I don't want to. I can just, you know, take it easy. And that's what I liked, I just love being out in the open, loved being in the gardens, the opportunity to have something to go to that I loved* (Anna; INT)

However, volunteers did consider it to be a **safe space** to be open about mental health and share personal difficulties without the fear of judgment. Lastly, the gardening is highly **affordable**, available free of charge, as well as including various free trips and events which would normally cost money, and often the provision of free food and drink.

4.3.2.3 Mechanisms

Psychological

Various psychological mechanisms were activated in volunteers, through their engagement with the gardens, that may have benefits for their mental health. For example, the gardens led to **increased self-confidence and self-esteem** for many members that I spoke to. Much of this comes from the benefits of socialising in a safe space. For example, Anna, who has ongoing PTSD from a violent assault, experienced 1.5 years of dramatically reduced self-confidence, self-esteem, severe social anxiety, and depression. The gardens were the main factor in slowly building up her self-esteem and confidence, which in turn drastically improved her levels of social anxiety and depression. It acted as a "stepping-stone" (INF) for her in engaging with the wider world, and moving on with her life again:

> *My confidence and self-esteem were the biggest stumbling blocks for me through everything I wanted, like thinking would I even be able to work again… the whole gardens group has meant my self-esteem is much, much better*
>
> *It was a secure, solid stepping-stone. I've stepped on the stone and I've looked around and thought, oh my foot is in the water, Oh it only comes up to my ankles and it's safe. There are no nasty things in there. That's really the analogy.*
>
> *It's interesting how it took getting me out into the gardens, fresh air, a welcome weekly commitment to look forward to, for me to make such headway in getting involved in the world at large again.*
>
> (Extracts from an email sent from Anna to staff at the Gardens)

Volunteers also experienced an **increased sense of achievement**, related to completed tasks during sessions and improvements in their gardening skills. Moreover, the gardens provided **increased purpose and meaning** for volunteers, who felt part of something important. Crucially, gardening was also an activity members found highly **pleasurable**.

Social

Engagement with the gardens activated certain social mechanisms for volunteers that may have benefits for mental health. For example, for many volunteers, the gardens have led to the **formation of friendships**, often lasting friendships and ones that grew to exist outside gardening sessions. Relatedly, members receive **increased social support** through the gardens, from fellow volunteers who often have lived experience of similar difficulties and from staff members. This includes practical and emotional support. Terry described this to me, talking about the leader of the general volunteering sessions:

> *She was someone that you could speak to, sort of like an old friend, a confidant. She could help you as well, especially if you had trouble with benefits and all that…* (Terry; INT)

Volunteers also experience an **enhanced sense of community** through the gardens, which was something several volunteers told me they were lacking in their life previously.

Behavioural

Some key behavioural mechanisms were activated for volunteers through their regular attendance at the gardens. For example, various members told me attending the gardens has led to a **reduction in addictive and unhealthy behaviours**, such as substance misuse. Terry, for example, recently recovering from chronic alcoholism, was reluctant at first but eventually came along to a session, and after just a couple weeks began to love it, describing it as *"the best thing I've ever done for myself"* (INF), and believing *"it helped me stay off the drink more than anything else"* (INF). He finds this is related to the social element, being around kind people

(who are not *"drinking friends"* (INF) and so a more positive, healthy influence on him), being in nature, and the purpose that comes from volunteering there. Further, **increased work-seeking behaviour** was also seen with the gardens, through increased motivation in seeking work and from improved gardening experience which was useful for applying to gardening-related jobs. Lastly, the gardens provide members with **structure and routine** which was deemed important for mental health, in particular depression, loneliness, and addiction problems.

Biological

A few biological mechanisms were talked about by volunteers. For example, several volunteers spoke to me about their **sleep improving** after having started regularly attending the gardening groups, as Anna's experience shows:

> *When I was going through my* [post-traumatic, depressive period] *my sleeping was horrendous, sleeping all the way through the day. Now I'm back to being an early riser again.* (Anna; INT)

Members also spoke to me about the **increased physical strength** they experienced from gardening.

The core active ingredients and mechanisms of the community gardening group that were most important in my ethnographic findings are displayed in Table 4.4 below. **Further supporting evidence for each of these (e.g. interview and informal conversation quotations, field notes etc.) can be found in Appendix 9 (page 308). Further potential active ingredients and mechanisms in relation to this group can be found in Appendices 5-8 (page 285-307).**

Active ingredients	Project	Sensory stimuli, Organised events
	People	Staff inter-personal skills (empathy and compassion), Shared activities, Structured and unstructured social time
	Contexts	Accessible, Familiar, Hand-holding referrals, Inter-organisational partnerships, No-pressure environment, Safe space, Affordable
Mechanisms	Psychological	Increased self-confidence & self-esteem, Increased sense of achievement, Increased purpose/meaning, Experience of pleasure
	Social	Formation of friendships, Increased social support, Enhanced sense of community
	Behavioural	Reduction in addictive & unhealthy behaviours, Increased employability, Provision of structure/routine
	Biological	Improved sleep, Increased physical strength

TABLE 4.4: GARDENING ACTIVE INGREDIENTS AND MECHANISMS

4.4.3 Community reading group

4.4.3.1 Background

The reading group is part of a national reading organisation which has a special focus on mental health and making reading groups available to more vulnerable parts of the population (e.g. in care homes, prisons, and those with mental and physical health difficulties). The reading group utilises a concept known as 'shared reading' (791), whereby during the sessions, members and facilitators take it in turns to read fiction and poetry out-loud to one another, normally 5-10 minutes of reading at a time. After each reading, there is a pause to discuss, analyse and reflect with one another what has just been read.

The last portion of each session is normally dedicated to a poetry reading of one or two poems. Each poem will be read once or twice and then, similarly to the book section, there will be time for discussion and analysis. The poems vary across many topics; however, they often have a mental health or well-being focus, commonly involving themes such as gratitude, living in the present moment, friendship, family, nature, and

personal growth. This group meets once a week, for 3-4 hours, and I have been attending each week. This group has two 'reader leaders' who facilitate the sessions, and members have joined up via a mixture of referral routes e.g., from local mental health charities, library leaflets and word-of-mouth. Whilst not specifically labelled for mental health, this group has evolved such that the focus is on accepting members who have clear psychosocial difficulties. Mental health and social problems facing members who I interviewed for this study include anxiety, brain injury, chronic pain, depression, loneliness, side effects of prolonged medication use, physical disability, PTSD, and severe sight impairment.

4.4.3.2 Active Ingredients

Project

Some active ingredients present related to intrinsic components of the reading group and the activity of reading. For example, the reading group involves ample **cognitive stimuli** for participants, involved in the process of reading, analysing and discussion fictional texts and poetry. It also entails significant **emotional stimuli**, as members often use the text as a vessel to reflect on their own personal circumstances. Phillipa (who does not suffer from a diagnosed mental health condition but is living in severe chronic pain (due to a lung cancer surgical operation that caused significant nerve damage)) finds this is the case in particular with the poetry:

> *I get a lot from the poetry, but I can see other people do as well. It's a bit of an escape. It's the poetry that does things for me.* (Phillipa; INT)

There is a clear **task/goal orientation** element to the reading group, which continues from session to session (with the continuing of the book), and so enhances motivation for regular engagement and focuses participants to be fully in the present moment during sessions. There is an element of **participant choice** throughout the sessions, with members encouraged to choose the books and poetry they would like to read.

People

There were various important active ingredients related to the people involved in the group and the interactions between one another. For example, the group consists of **structured and unstructured social time**, including check-ins at the beginning of sessions, as well as socialising with one another throughout sessions as part of engagement with the text. A key shared feature among members of the group is the high level of **compassion** to one another, part of which is influenced by members' **shared, lived experience of mental health** and the increased understanding and empathy resulting from that. Yasmeen, the lead group facilitator, explained this to me:

> *There's an immense amount of compassion which may be a by-product of I guess the main issue that most our readers have is isolation, loneliness and depression.* (Yasmeen; INT)

The **facilitator inter-personal skills** are central to the workings of the group and involve excellent communication skills, empathy, and ability to express one's own vulnerability. Meera (who experiences chronic depression and a difficult home life) told me about this:

> *Yasmeen has got some fantastic ways. Like if I'm not comfortable in the group for whatever reason, she has got a fantastic way to write an email to me, like when she wrote the email to me about my progress... Her words have meant a lot to me, and sometimes I have saved those words, so that in any time when I am less confident, I will read her.* (Meera; INT)

Contexts

There were several key active ingredients related to the atmosphere and environment of the group and its organisational features. For example, the group consists of a **no-pressure environment**, where members are not forced to contribute more than they feel comfortable doing. It is a highly **welcoming atmosphere** when members first join up, and this is fundamental to individuals deciding to return the following week. Members consider the group a **safe space** to talk openly about their personal life and mental health. Meera has a deep appreciation for this space, in contrast with her life at home:

> *The group has some really great people, who I am grateful I can associate and communicate with, because at home there is no communication where I could share, at home there is no-one.* (Meera; INT)

Finally, the group is highly **affordable**, costing nothing to attend and with refreshments provided, which is important since most members are unemployed or on low-income.

4.4.3.3 Mechanisms

Psychological

The group activated various psychological mechanisms for readers, with potentially positive consequences for their mental health. For example, most members have experienced **increased self-confidence and self-esteem** since joining the group, achieved through improvement in their own abilities and frequent validation and affirmation from other members of the group and facilitators. Engagement with the literature leads to **increased self-reflection and self-knowledge**, as members use the text and the knowledge of other individuals in the group to reflect on their own circumstances. Yasmeen eloquently spoke about this me:

> *What I've experienced is that when people come together, and we've had some very, very troubled people come… there's some alchemy that takes place, because you're not actually addressing the problems themselves, but the problems somehow come out… what needs to be said or shared comes out through the actual text itself. But without the book, it wouldn't happen.*
>
> *There's a lot of wisdom in that situation. A group is given a structure, this makes you feel safe, and then you can step back and let it go. What I absolutely adore watching is when it's not just the reader leader that's leading it. But the other group members start joining in and discussing things with each other. There's a lot of wisdom, compassion and empathy. Um, and yeah, they are great people, but it's back to that principle of you come in, you may be feeling completely isolated, like no one on Earth is like you or understands you. You start reading a book together and discover that you're all having similar responses. Bring that. Then you take a step further and allow for that to enter into a more personal therapeutic process. And it's something transformative. (Yasmeen; INT)*

Some members feel the group has helped them in **building a new identity** for themselves, separate from the one that has mostly shaped them previously, e.g. Meera's identity was very much centred around her role as a wife, mother and grandmother and providing for other people, and the reading group was the first thing she has done "*for myself*" in years. Readers experience **pleasure** from the group, through the joy of reading and

engaging with others. Several members also found the group **increased both their openness to experience and independence** in their wider life, for example in the case of Meera wanting to travel for the first time in her life.

Social

The group activated various key social mechanisms for individuals, that may enhance their mental health and well-being. For example, one of the key features that members experience in the group is the **validation of their experiences**. Members discuss sensitive topics in their personal life, thoughts they have been having, or opinions on the text and these are listened to sensitively by fellow group members and facilitators who verbally validate and affirm what has been said, in a way that helps to create and maintain the safe space. Members experience **increased social support** via the group, again consisting of both the emotional and practical kind, and coming from both fellow members and facilitators. The group has also led to the **formation of friendships** for most members and **reductions in loneliness** for several members I spoke to.

> *I've made friends as a result, and people from the group call me up and ask how I'm doing, or I will call them… so yeah it is undeniable that that is the real plus.* (Tom, current co-facilitator, and former member with previous experience of loneliness and depression, INT)

Behavioural

The group initiated some core behavioural mechanisms in readers, that may enhance their psychosocial well-being. For example, several members have developed **increased assertiveness** since joining the group, influenced by the group's impact on their self-esteem, confidence, and communication skills. Linked to this, some members also experienced **improved self-expression**. Meera often talked about how she is communicating more effectively, in expressing her needs to others and how she feels, more honestly:

> *I believe my language has changed, the way I communicate. I think there is more of a power, a nice power that I can stand up for myself, that kind of communication. So it has given me the confidence to speak for myself and it is happening. Uh, anyway, today, I actually spoke up for myself, spoke with logic, I spoke in a logical way. The book is feeding me some kind of vitamin for the brain through the reading…* (Meera; INT)

The group has also led to the **development of related hobbies and skills** such as increased reading and writing in their own time.

Biological

Members spoke to me of a few biological mechanisms which the group activated. Two participants who had physical health conditions talked to me about some improvements in their condition from attending the group. For example, for a member with chronic pain, reading in the group has helped **reduce pain** slightly, by providing a distraction. For example, Phillipa experiences severe, chronic pain due to a surgery several years ago, and told me reading in the group can help reduce the symptoms of pain slightly, by providing a distraction:

> *You can just lose yourself, which helps (the pain).* (Phillipa; INT)

Other members spoke of the **reduction in symptoms of their chronic physical health conditions**, e.g. reduced tremor due to the calming effects of reading.

The core active ingredients and mechanisms of the community reading group that were most important in my ethnographic findings are displayed in Table 4.5 below. **Further supporting evidence for each of these (e.g. interview and informal conversation quotations, field notes etc.) can be found in Appendix 9 (page 308). Further potential active ingredients and mechanisms in relation to this group can be found in Appendices 5-8 (page 285-307).**

Active ingredients	Project	**Cognitive stimuli, Emotional stimuli, Task/goal orientation, Participant choice**
	People	**Structured and unstructured social time, Compassion, Shared lived experience of mental health, Facilitator inter-personal skills**
	Contexts	**No-pressure environment, Welcoming atmosphere, Safe space, Affordable**

Mechanisms	Psychological	Increased self-confidence/self-esteem, Increased self-reflection & self-knowledge, Building a new identity, Experience of pleasure
	Social	Validation of experiences, Increased social support, Formation of friendships & reduced loneliness
	Behavioural	Increased assertiveness, Improved self-expression, Development of related hobbies & skills, Increased openness to experience & independence
	Biological	Reduced pain, improved physical illness symptoms

TABLE 4.5: READING ACTIVE INGREDIENTS AND MECHANISMS

4.4.4 Community singing group

4.4.4.1 Background

The mental health choir originated within a mental health hospital. The choir is open to all (inpatients and those outside the hospital in the local community), but with a focus on those with mental health conditions. The choir receives a lot of referrals from within the hospital itself, and various mental health staff have also joined as members. The choir meets once a week to sing together, however much of this was over Facebook video throughout the study period due to particularly tight Covid-19 restrictions on group singing (due to evidence that the activity had a particularly high risk of virus spread). Choir members also meet weekly for a group walk (something introduced more regularly during the pandemic), and many events are organised such as group performances. I attended each week for the singing session and regularly attended the group walks. When the choir was able to meet again in-person the group still had to observe social distancing rules. Mental health and social problems facing members who I interviewed for this study include anxiety, bereavement, bipolar disorder, brain injury, depression, hallucinations, loneliness, post-natal depression, PTSD, suicidal ideation and attempted suicide.

The group singing sessions are 1 hour long during the evening. There is also time at the start and end (for those who arrive early or stay afterwards) for socialising. There tends to be some warm-up exercises at the start of sessions, often involving breathing techniques, physical movements, and often amusing singing games.

After this, most of the session consists of practicing various songs, led by Rosa, the choir leader. Some of these will be new songs, some will have been sung in previous sessions. The songs are chosen by Rosa, but members of the choir are encouraged to suggest songs they want to sing, and Rosa will often use these during sessions. Many of these songs will later be used during performances by the choir, so the aim is to improve as time goes on. Rosa is responsible for guiding this process, explaining how things should be sung, the correct notes to hit, the tempo, the pitch, correcting people when necessary, but in a very relaxed and gentle way.

4.4.4.2 Active ingredients

Project

There were some key active ingredients associated with the intrinsic components of the singing group, for example, the regular **group performances** that members take part in. These socially connect members, unite them over a shared identity and mission, and give them something to look forward to and work towards. Wendy, who joined the choir following the death of her husband, and is now the secretary of the choir, describes this to me:

> *Our members actually really like performing. And these are people who would be often very self-conscious in any situation, and you actually get them to a point where they will go out and they will stand on stage… and once you've done an adventurous thing, it becomes easier to do it again, other things become easier…* (Wendy; INT)

There is a clear **task/goal orientation** element, with members working on specific songs together. There is a significant level of **participant choice**, with members encouraged to pick songs they would like to sing, or venues they would like to perform at.

People

There were important active ingredients to the choir related to the individuals involved and their interactions. For example, members have a **shared, lived experience of mental health** difficulties. This helped

Kylie, who experiences depression, loneliness and PTSD related to a violent assault, and was extremely nervous when she first joined up to the choir:

> *Because everyone has a problem with mental health, that really helped me to fit in, because no-one was going to judge you. We all have our problems, but we just come together to sing.* (Kylie; INT)

Rosa has excellent facilitator inter-personal skills linked to previous experience working with vulnerable groups, including her use of humour, ability to bring people 'out their shell', flexibility, sensitivity, and empathy. Wendy described this to me during an interview:

> *Rosa is very good at making people completely relax, not feel like they've got a target to achieve because in most of our lives, you have a target to achieve. (Wendy; INT)*

There are mental health staff as members which helps provide extra support for the singers and helps break down the divide between patient and professionals. There is structured social time at the beginning and end of sessions between members, and during regular activities members do with one another outside the choir e.g. lunches, walks and trips to museums.

Contexts

There were some key active ingredients related to the organisational features of the choir and its overall atmosphere. For example, there is very much a no-pressure environment within the group, wherein members are not pressurised to sing when they don't want to or attend more than they are able to. There is a recurrent emphasis on the fact that "it doesn't matter if you think you can't sing", the choir is centred around having fun and enjoying oneself.

> *I'd been in choirs beforehand, but they were singing off sheet music, if you got it wrong they'd tell you off, whereas the whole point about this choir… it's a lot less stressful, you can just have a good time singing and contributing to the general noise. Nobody tells you off for not singing the right note, it's quite a relaxed atmosphere.* (John, who has cyclothymic bipolar disorder and experiences social isolation; INT)

Importantly, there is a very **welcoming atmosphere** to new members, with often specific long-standing members (e.g. Christina, James, and Harriet) making the extra effort at first to make individuals feel welcomed and comfortable. Despite being a mental health choir, there is a **focus on the (singing) activity over mental health**, which seems to help members feel part of something less medicalised and stigmatised. Crucially, the choir is highly **affordable**, being free of charge to attend.

4.4.4.3 Mechanisms

Psychological

The choir instigated various psychological mechanism in individuals which may have positive implications for their mental health and well-being. For example, many members have experienced **increased self-confidence** due to the choir, many of whom have long-standing difficulties with self-esteem and confidence. For example, for Kylie, the choir's impact on her confidence levels had a profound impact:

> *It has improved my confidence, and my self-esteem. Before I didn't want to go into public. I don't want to go anywhere, when I go into shop I always see people following me. Going to places with people is really, really triggering. The choir changed my life.* (Kylie; INT)

The choir also provides an **increased sense of achievement/satisfaction** for members e.g., from learning new songs and performing in professional venues. Several members describe feelings of singing bringing them fully into the present moment, where they are completely focused on the activity at hand and one's anxious thoughts become less prescient, which is known as **increased flow**. Participants also talk about **reductions in stress and experience of pleasure** associated with singing.

Social

The choir activated some important social mechanisms in individuals with potentially positive implications for their psychosocial well-being. For example, the group provides many members with an

enhanced sense of community and belonging, feeling more connected to their local community and part of something greater than themselves.

> *Whatever your mental health issues are, I think, um, it's vital that you feel part of something. So I think that's where the identity comes in. Yeah, um, is to feel part of a group. You're part of society. If you're not working, then then it's very hard to feel that you're at all linked with anyone else.* (Phoebe, who experiences anxiety and depression; INT)

The group has led to the formation of friendships with many members now meeting up as friends outside the singing sessions, and reductions in loneliness for some members. This is especially important for members who are socially isolated, such as John "*Singing as a group's good because you don't feel like you're on your own".* Peer support is common via both emotional and practical means; however, several members told me it was sometimes necessary to set boundaries when offering support to others to protect their own well-being. Participants often describe a vicarious joy they experience when witnessing the improvement in mental or self-confidence in other members of the group over time.

Behavioural

The choir activated some key behavioural mechanisms in individuals that may enhance their mental health. For example, the singing group provides structure and routine for individuals, which is very important across a range of mental health conditions e.g. John's cyclothymic bipolar disorder. Finally, several members told me the choir has increased their openness to experience and independence:

> *Because of the past problem, I didn't want to get close to anyone, if it wasn't for the choir I wouldn't be able to go out the house. Now, I would like to sit in the bus, and go somewhere… before I wouldn't have talked to anyone, now I talk to people.*
>
> *I always relied on people. Now I have realised I can do things for myself.* (Kylie; INT)

Biological

Several participants talked to me about how the **symptoms of their physical health problems improved** because of their involvement with the group. For example, one member found the group to be extremely helpful in their recovery from a Stroke, in particular helping with their physical movements and speech.

> *It's made a big difference. You are encouraged to express yourself physically, that helps coordination… It probably helped all that coordination, standing up and physically gesturing does help.* (Wendy; INT)

The core active ingredients and mechanisms of the community singing group that were most important in my ethnographic findings are displayed in Table 4.6 below. **Further supporting evidence for each of these (e.g. interview and informal conversation quotations, field notes etc.) can be found in Appendix 9 (page 308). Further potential active ingredients and mechanisms in relation to this group can be found in Appendices 5-8 (page 285-307).**

Active ingredients	Project	Performances, Task/goal orientation, Participant choice
	People	Shared lived experience of mental health, Facilitator inter-personal skills, Mental health staff as members, Structured social time
	Contexts	No-pressure environment, Welcoming atmosphere, Focus on activity over mental health
Mechanisms	Psychological	Increased self-confidence, Increased sense of achievement/satisfaction, Increased flow, Reduced stress & Experience of pleasure
	Social	Enhanced sense of community & belonging, Formation of friendships & reduced loneliness, Peer support, Increased vicarious joy
	Behavioural	Provision of structure & routine, Increased openness to experience & independence
	Biological	Improved physical health symptoms

TABLE 4.6: SINGING ACTIVE INGREDIENTS AND MECHANISMS

4.4.5 Comparing mechanisms and ingredients across groups

This section will summarise the active ingredients and mechanisms across the groups, that were most grounded in my ethnographic fieldwork and interviews. There are some widespread, shared active ingredients and mechanisms between the groups. That is not to draw any definitive conclusions as to the wider universality of such shared active ingredients or mechanisms, but since the 4 groups were purposively chosen to represent a wide breadth of social prescribing categories, there is certainly some utility in illuminating the more prescient themes. There are also some lesser shared themes, but which were particularly important within one or two groups, helping to contrast the differences and highlight potential learning across groups.

There were several important, commonly shared active ingredients across the groups (consistently emerging as a key component in 3 or 4 groups). These were: **Shared experience of mental health, ample socialising time, excellent facilitator inter-personal and leadership skills, no-pressure environment, task/goal orientation, safe space, high regularity of sessions** and **high affordability/accessibility**.

Individuals were supported though the knowledge that often others in the group also experienced mental health difficulties. The focus of sessions still tends to be on the activity itself, but the shared, lived experience within the groups provides comfort for individuals – who feel less judged, stigmatised and alone, more understood, and able to access experientially-based practical and emotional support from other members when required. The social component to all of these groups is also of central importance. Each group has ample structured and unstructured social time. Unstructured social time may occur throughout the activity itself, e.g. banter during football, chit-chat throughout gardening or bonding over something in the text that has just been read. Or, it may be more structured, such as in tea breaks, check-ins, or during social events organised outside sessions.

There were also active ingredients that were less commonly shared across the groups, but were extremely important in one or two groups so warrant further mentioning. For example, despite most groups being focused on the activity itself rather than 'mental health' per se, the reading group involves a significant amount of 'opening up' and emotional conversations incorporated into the activity itself. This still happened in

the other groups (running *alongside* the activities of football, singing and gardening) but with the reading group it was far more intrinsic to the activity itself and the whole concept of 'shared reading'. But it still operates a very much 'no-pressure environment' (no-one is required to share emotionally if they don't want to) like the gardening and singing groups. The football group sets itself apart from the other groups by using the element of competition to increase engagement and enjoyment, as well as providing sessions of a much higher regularity (daily).

As demonstrated most clearly with the football group, these groups can be both suitable and effective for those with severe mental illness. Aspects of the design of the football group make it especially well-adapted for this in terms of inter-organisational partnerships, e.g. its partnership with the local mental health hospital, whereby two mental health staff members are both playing football members of the club and active referrers from the most severe mental health ward. They can act as "hand-holders" to initial engagement as well as keep an active eye on past and previous patients within the community. They have allocated time within their work week to support this. Through this model, extra care within the community is possible for those with severe mental illness, as I laid out in the example of Tim's support during Sammy's psychotic episode (page 111). Similar support is available in the singing group, being based within the community room of a mental health hospital and again having several mental health staff as members.

This was less possible in the gardening group, where there are fewer available working connections with local mental health teams, for example in Andrew's case of severe and untreated schizophrenia **(see page 330 of Appendix 9).** And, even for those groups with greater capability to support people with severe mental illnesses, a key consideration is whether the group has capacity to support individuals through crises or relapses. For example, even with the football group, there are limits to the support that is available within the club, such as with Steve's uncontrolled substance abuse problems disrupting the safe space for other individuals in the group **(see Appendix 9, page 317).** Steve had felt "triggered" at points while playing with the football group, because of his PTSD. In football, a competitive sport, there are more likely to be altercations and perceived threats that might have the potential to trigger someone with PTSD. The tranquil environment of the gardens

is perhaps much less likely to do that, as Anna's case (also suffering from PTSD) highlighted. But, importantly with the football group, the active partnerships with other organisations and mental health professionals are present to support Steve when these limits are reached.

There were several commonly shared mechanisms activated in individuals across these groups (consistently emerging as key mechanisms in 3 or 4 groups). These were: Increased confidence/self-esteem, formation of friendships & reduced loneliness, increased sense of community & belonging, increased social support, experience of pleasure/joy, provision of structure/routine & meaning/purpose.

Crucially, these were all activities that provided pleasure and enjoyment for participants. Often it was helpful if they had previous experiences of having enjoyed the activity, however this was not necessary in all cases. For many new members, having a healthy, enjoyable shared activity in their life was something quite novel. In providing a positive outlet for participants to socialise safely and free of judgement, and to develop various skills related to the specific activity, individuals' self-confidence and self-esteem tended to increase – this was a key mechanism I observed in most participants across every group.

Individuals in these groups also often describe the purpose and meaning these groups have brought to their lives, which had particular importance for those with depression, addiction problems or severe mental illness. Moreover, from a social perspective, many members form lasting friendships, which, especially for those who are chronically lonely, is fundamental to long-term well-being. Members also experience more positive, healthy influences on their lives, e.g. in Terry's case in the gardening group these new healthy, social connections replacing his old, unhealthy, drinking ones. This often led to the development of healthier habits and reductions in unhealthy and addictive behaviours. Members also often experienced an enhanced sense of community, and received social support (emotional and practical) through their fellow members and staff.

Similar with the active ingredients, there were some mechanisms that were not shared in all groups but were particularly important in one or two groups. For example, members in the reading and gardening group experienced an increased openness to new experience after regularly attending the group, Anna describing the gardening group as a "stepping stone" to engagement with the wider world again. Linked to this,

the football and gardening group saw members experience increased job-seeking motivation and behaviour, often supported by staff at the groups. Lastly, the football group had highly specific benefits for those with severe mental illness, especially in terms of helping shape a new identity for individuals that was not simply built around being a mental health patient in a mental health hospital, as many of those in the football group were.

Biological mechanisms emerged less frequently than the other categories (psychological, behavioural and social), which does not reflect that there are fewer beneficial biological mechanisms, but more that with ethnographic methods it is more difficult to measure many key biological mechanisms, e.g. lower stress hormones, impact on cardiac output, change in oxytocin levels, etc. However, for a number of over-weight or obese individuals the football group helped them lose significant weight, and similarly the gardens help several members develop more physical strength. Other mechanisms across the groups included reduced pain (in the context of chronic pain), improved sleep and improved physical health symptoms related to a chronic, physical health condition. All of these have potentially positive implications for participants' mental health.

Most mechanisms found in the ethnography replicated those identified in the master list of potential mechanisms within Study 1, however several new key mechanisms were identified, including 'increased vicarious joy' and 'increased assertiveness'. There were also some other new (i.e. not included in Study 1) potential mechanisms identified but these did not emerge (either through observations, interviews or conversations) substantially enough throughout the ethnography to justify their inclusion within the analysis as their own themes. These were 'anticipatory pleasure', 'increased sense of pride', 'creation of busyness', and 'increased experience of humour, banter' – all of which are included in Appendix 8 (page 305).

Table 6 below shows all the key active ingredients (across the Project, People and Contexts categories) and mechanisms (across the psychological, social, behavioural and biological categories) that were most grounded in my ethnographic fieldwork and interviews, across the 4 groups.

N.b. Simply because a theme box is not crossed below in one of the groups does not mean this was not a feature of the group, just that it was not a key mechanism or active ingredient that *commonly* emerged

throughout my interviews and conversations. For example, all groups were technically 'available long-term' but this was not a feature that participants regularly spoke to me about as being important, besides the football group. Appendices 5-7, however, will include all the potential active ingredients, including those which arose less frequently (page 285-304), some of which may be important and warrant further exploration.

Active ingredients	Project		Football	Gardening	Reading	Singing
		Task/goal orientation			x	x
		Available long-term	x			
		Participant choice			x	x
		Organised events & performances	x	x		x
		Competition	x			
		Sensory stimuli		x		
		Cognitive stimuli			x	
		Emotional stimuli			x	
	People	Structured and unstructured social time	x	x	x	x
		Facilitator inter-personal and leadership skills	x	x	x	x
		Shared lived experience of mental health	x		x	x
		Mental health staff as members	x			x
		Compassion			x	
		Affordable	x	x	x	x
	Contexts	No-pressure environment		x	x	x
		Safe space	x	x	x	
		Inter-organisational partnerships	x			x
		Welcoming atmosphere			x	x
		Focus on activity over mental health	x			x
		Inclusivity	x			
		Discipline & respect	x			

			Football	Gardening	Reading	Singing
Mechanisms	Psychological	Increased purpose/meaning	x	x		
		Increased self-confidence/self-esteem	x	x	x	x
		Increased sense of achievement		x		x
		Increased flow				x
		Experience of pleasure	x	x	x	x
		Reduced stress				x
		Increased self-reflection & self-knowledge			x	
		Building new identity			x	
		Increased personal & social responsibility	x			
		Formation of friendships & reduced loneliness	x	x	x	x
		Increased openness to experience & independence			x	x
	Social	Increased social support	x	x	x	x
		Enhanced sense of community & belonging	x	x		x
		Validation of experiences			x	
		Increased vicarious joy				x
	Behavioural	Development of related hobbies & skills			x	
		Reduction in addictive & unhealthy behaviours & building healthier habits	x	x		
		Increased employability	x	x		
		Provision of structure/routine	x			x
		Increased assertiveness			x	
		Improved self-expression			x	
	Biological	Improved physical health symptoms			x	x
		Improved sleep		x		
		Increased physical strength		x		
		Weight loss	x			
		Reduced pain			x	

TABLE 4.7: ACTIVE INGREDIENTS AND MECHANISMS ACROSS THE FOUR GROUPS

4.5 Researcher reflexivity

Modern research often rightly acknowledges that it is impossible to research something truly 'outside of ourselves' (792). That is to say, the relationship between researcher and the 'observed' is of utmost importance. This is especially the case in ethnography, where the relationship between the researcher and participants can be intimate. As an ethnographer, my interactions with participants directly and indirectly helped to construct the observations that eventually became data for the study (known as 'reactivity' (793)). As discussed in the introduction, this meant a continual 'turning back on oneself' , constantly reflecting on the ways in which the products of my research were being shaped by my own involvement (777). One way I strived to mitigate this, for example, was waiting several months within each group before embarking on interviews and mental health conversations with participants. This allowed trust to build between myself and others in the group, and for participants to behave more naturally and comfortably around me. One member of the reading group, for example, expressed their worry originally that they might feel uncomfortable being 'observed' by a 'researcher' and that that may affect the group dynamic, so I suggested a trial period of a few weeks in which they could make a decision whether they wished me to continue or not, and communicate this separately to the group's facilitators – fortunately during this time they came to feel comfortable with my presence, once an understanding of my participatory role and trust had been formed.

Linked to this reflexivity is the idea of 'positionality', which relates to my own personal situation and professional background, as well as the disciplinary and broader sociocultural circumstances in which I work. It was important to continually reflect on the way my own assumptions and biases shaped how I was conducting my research, e.g. in the questions I was asking during interviews and informal conversations. My professional background as a healthcare academic and medical student, meant I had certain assumptions about how these groups might impact people, and part of the aim of taking as open and inductive approach as possible was to help minimise the effects of these assumptions. For example, I had previously only had professional experience of patients with severe mental illness in an in-patient, hospital setting where individuals were normally extremely unwell; seeing and conversing with many individuals with the same severe diagnoses as I had worked

with before, but now in a community, non-medicalised setting such as playing football together, shifted and matured my understanding of such individuals, and perhaps reduced an element of bias or stigma that had previously been present for me, unknowingly. I wrote down regular reflections in a researcher journal, as part of my field notes, for which I used the software Evernote. As mentioned in the Covid-19 impact section (4.2, page 99) at this beginning of this study, another way I mitigated against my own positionality and professional biases, was to centre the study around the community groups themselves, rather than focusing on the GP-link worker pathway as was originally planned.

Moreover, as an active participant in these groups for a year, I was also personally impacted by them in various ways and experienced the activation of mechanisms within myself that may have had beneficial consequences for my own mental health. The focus of the write-up of this study, however, was on the participants of these groups who had diagnosed mental health conditions. I still made many personal reflections in my field notes throughout the ethnographic fieldwork period, though these did not become a central component of this study write-up. To provide an example of this, I have included an excerpt below of one of these personal reflections, in relation to a group singing session:

> *During this session, we were practicing one of our songs - a song about loneliness - which is, although ultimately an uplifting song, in parts profoundly sad. I couldn't open my mouth to sing it without crying. We'd stop and start with the singing, as we always do when learning a new song, "brick-by-brick". But whenever the music started up again and we sang, the tears would come. I was thinking about my grandma, who died a few months ago. We were very close, and it's not been easy - both because I felt she had so much left to give to, and receive from, the world (being cognitively as sharp as anyone and still leading a very rich, fulfilling life) and losing a loved one is always tough, but also because we are mid-pandemic and grief is complicated further, without the normal processing tools we have e.g. meeting up with family to bond or grieve together. In addition to this, since everyone is grieving, 'experiencing loss' in their own way right now, the meaning of our grief as a family, and my own, feels lessened somewhat, paralysed, even on-pause. Grief is, of course, always strange and unpredictable and there is no one-size-fits-all model - but the context of a global pandemic does have a rather contaminating impact, unsurprisingly.*
>
> *I don't know why this particular song, being fundamentally about loneliness (which although I experience, as we all do, from time to time, fortunately don't suffer from chronically), reminded me so much of Grandma. I have several ideas: it's a sad song, and so may have simply sparked the sense of sadness in me related to her; there is clearly always an element of loneliness or at least loss of social connection that is intrinsically related to grief; there are a lot of older ladies on the zoom group, perhaps reminding me of her; she also loved the arts, being an avid piano player and active member of her local reading group, stimulating further similarity; and the music itself, with the auditory combination of its unique melody and lyrics, triggers something*

> *deep in my limbic system, where memories, emotions and sounds intertwine and influence one another through millions of intricate neurological connections. Most likely it is a combination of these, plus some other factors I have not yet contemplated.*
>
> *I was 'okay', I like crying and the release it brings, and am grateful for the (albeit fleeting) sadness, anger, and sense of indignancy I feel when I am triggered into thinking about her, because it makes me realise how lucky I was to have that connection. It felt cathartic here. I learnt something about the power of the group, and what it can offer people - this time not through others, but directly through my own experience, which is one of the key strengths of ethnographic research. I had clearly needed to cry, releasing some of that stored tension, and this group, likely through different overlapping mechanisms, was able to provide that space for me. It was, in that moment, a tool in processing grief, and in grieving healthily.* (Field notes extract, July 2021)

A final key observation from my study was the many referral routes that brought participants into these social prescribing community groups, e.g. through mental health hospitals, support workers, third sector groups, primary care or word-of-mouth. Given my background as a healthcare academic and medical student, most of my previous experience and knowledge of social prescribing was associated with the GP-link worker model of social prescribing. However, it was clear that among these four groups, this referral pathway formed only a small proportion of total referrals. In part, this demonstrates that social prescribing is far broader than just the GP referral route.

4.6 Discussion

This study has addressed two core research questions, illuminating the key 1) active ingredients and 2) mechanisms, that lead to improved psychosocial well-being across 4 social prescribing community groups. My findings support the conceptualisation of social prescribing activities as complex interventions (768), involving many different active ingredients and mechanisms that produce mental health benefits. Due to the very large number, it was not possible to explore in-depth every single potential mechanism and ingredient that was found throughout this study, and indeed there were many other active ingredients and mechanisms which were not possible to include in my main findings (see Appendices 5-8, page 285-307). And so, I focused on those that were most frequent or important within the groups, grounded in my conversations, interviews and observations

of participants over the course of the ethnography. Throughout this section, I will highlight how my findings align with the broader evidence base, as well as those which represent more novel findings.

As outlined in the previous section, these were all activities that provided enjoyment and pleasure for participants. Often participants reported experiences and enjoyment of the activity before, indicative of previous social prescribing research findings (794), however this was not necessary in all cases. The pleasure component is likely shared across most social prescribing community groups more widely, and arguably sets these groups apart from most professional therapeutic support. The flow state, "a state in which people are so involved in an activity that nothing else seems to matter", which I observed most clearly in the singing group, is enhanced by one's enjoyment of the activity, and may be itself responsible for a degree of the intrinsic motivation and enjoyment of such activities (795). Flow is achieved through a balance of skill and challenge, which all 4 groups utilise, as demonstrated in the 'task/goal orientation' theme. There is also evidence that flow is more enjoyable when an activity is shared, rather than done alone (796).

The focus on the enjoyment of the activity itself as opposed to an emphasis on mental health appealed to many participants across the groups when initially signing up, which is supported by wider social prescribing literature (2). Indeed, Tim (referrer into the football group) would not even mention "mental health" when offering the group to patients; his experience told him it had to be about the football and the enjoyment of that, or people would not engage. Clearly, the idea of a 'mental health group' still carries stigma for individuals, many of whom want to build an identity that is not merely shaped around their mental health or suffering. These findings align with a more salutogenic or 'positive psychology' conceptualisation of mental health (130,131), departing from the narrower biomedical model (explored in Chapter 1 of this thesis) - none of these groups are focusing on an individual's deficits, but instead their assets and skills, e.g. ability to read, play football, or engage with others socially in a safe space. In providing this positive outlet, where one can develop various skills related to the specific activity and more broadly, socialise in a 'safe space' that is relatively free of judgement, individuals' self-confidence and self-esteem increase – this was something common to all the

groups. Improved confidence and self-esteem in themselves are arguably valuable endpoints but are also mechanisms directly correlated with improved mental health outcomes (797,798).

Individuals are further supported though knowledge that others in the group also have experience of mental health difficulties. The shared, lived experience within the groups provides comfort for individuals – who feel less stigmatised and alone, more understood and valued, and able to access practical and emotional support from other members (through their own experience) when required. Many of these principles seem to underlie some of the benefits of 'peer support' groups for mental health, whose number has been rapidly increasing in recent years (799). As Anna from the gardening group describes, these groups seem to act as a 'stepping stone' for individuals for improvements in their life more broadly, and much of this is first centred around improved self-esteem and self-confidence, from which individuals develop better social skills, motivation to seek work, build healthier habits, increase assertiveness, improve self-expression, increase openness to new experiences and achieve greater independence – all of which are mechanisms that can contribute to greater psychosocial well-being (1). These mechanisms suggest individuals seem to become more 'activated' in their own health and well-being, an idea that the recent concept of 'patient activation' and earlier theory of 'self-efficacy' explore, both of which have associations with long-term improvements in mental health outcomes (though the evidence on patient activation's relationship with mental health is still in the preliminary stages, with most data focused on physical health outcomes) (800,801).

Also linked with positive psychology reasoning, individuals in these groups often describe the purpose and meaning these groups have brought to their lives. Martin Seligman, founder of the Positive Psychology movement, defines meaning or purpose as 'belonging to, or serving, something greater than ourselves' (802). Purpose and meaning in one's life are now considered fundamental to flourishing mental well-being, rooted in increasingly Eudaemonic thinking on mental health (reflecting a departure from purely hedonistic conceptualisations of happiness) (803). Some of the most widely used theories of well-being now incorporate purpose or meaning, e.g. Ryff's Psychological Well-Being (PWB) (804) and Seligman's PERMA theories of well-

being (805). Relevant to individuals across the 4 groups, many of whom have had substance misuse problems, there is evidence that 'having a purpose' can be a crucial component in helping tackle addiction (806).

The social component to these groups is fundamental. Members experience lasting friendships, more positive influences, an enhanced sense of community, increased social support, and reductions in loneliness. The importance of forming friendships, especially for those who are chronically lonely, is fundamental, and arguably should be considered a worthy outcome in itself. There is also substantial evidence for the impact of social connection on mental health, physical health and mortality (68,71,807) and my findings corroborate previous research on social prescribing's potential to facilitate friendship formation and reduce loneliness (147,808,809), as I had previously outlined during Chapter 1 of this thesis (pages 37-38, 49).

The types of social connection are important too, as Robert Putnam's work on negative (e.g. smoking or drinking networks) vs positive social capital highlights (810,811). The groups I observed seem to fall more within the positive social capital category, containing individuals who are mostly positive, healthy influences on one's life. This is especially important among those with addiction problems, as I explored with the case of Terry in the gardening group. Besides addiction, for those with mental health difficulties more broadly, being surrounded by positive influences (mostly "kind people" with similar difficulties and shared goals) helps foster more supportive habits and attitudes towards one's mental health, as seen in various themes such as increased openness, improved self-expression, building healthier habits, increased self-reflection and self-knowledge.

An important finding of this research is the evident utility of these groups for individuals with severe mental illnesses. Some members with the most severe problems were still accessing therapy and/or medication alongside the football, but the club itself was still responsible for profound benefits. Previously however most social prescribing studies have focused only on those with mild to moderate mental health conditions (163,167,236,812–814), and some researchers have suggested these groups may be unsuitable for those with more severe problems (608). This is also indicative of national policy, with NHS social prescribing being largely rolled out throughout General Practice, and link workers employed via GP primary care networks (158). The

Royal College of Psychiatrists, however, has recently argued for the utility of social prescribing for mental health service users and in-patient settings, and called for more training for psychiatrists in social prescribing (815).

Keyes' mental health continuum model captures how an individual with a severe mental illness can still have flourishing mental health, when symptoms are properly managed (816). Any assessment as to whether an individual would benefit from social prescribing should be balanced, using a personalised approach, alongside a detailed understanding of the proposed community group and its related supportive capabilities. It is important that those with diagnoses of severe mental illness are not being excluded from the opportunity of accessing such groups, either because of tick-box exclusionary referral criteria within General Practice or because social prescribing referrals from mental health settings are currently under-utilised (815). However, it is not clear to what extent this is the case, and future research should explore this.

Aspects of the design of the football group make it especially well-adapted to supporting those with severe mental illness, through its partnership with the local mental health hospital, whereby two mental health staff members are both playing football members of the club and active referrers from a ward for patients with severe mental health problems and complex needs. There are numerous studies within the social prescribing literature which talk about the importance of inter-organisational partnerships, and crucially the human relationships formed (between organisations) that sustain them (2,150,817,818). There is scope for a healthy blurring of professional-patient boundaries and improving therapeutic relationships (819), as seen with examples from the football and singing groups. It is a similar approach to work that has been done setting up joint arts activities between health professionals and their patients to help break down the professional divide (820), expanding the 'therapeutic relationship' (821), and in addition having potentially positive implications for staff wellbeing and burnout (822). Indeed, a participant in my study, Ibrahim (mental health nurse, *Football*) confirmed this to me "*it's actually for me as well, for my mental health*".

Learning between community groups is possible, regarding effective active ingredients in other groups that could be more readily utilised in one's own. For example, the singing group uses performances in a similar way to how the football group uses matches and tournaments, both helping to socially connect members to

one another through giving people something to look forward to and work towards and helping create a shared identity and sense of community. However, this sort of principle is not utilised in the reading or gardening group, which could potentially adopt similar principles, adapted to their own groups.

There is no one-size-fits-all model to these groups. There may be some key, shared ingredients but there are also key differences which may activate different mechanisms. It might be that different individuals are suited to different approaches (involving different types of active ingredients that activate different mechanisms) and so a deep and detailed understanding of both the individual and the group is necessary for referrers. For example, for Steve (see Appendix 9, page 308) and Anna who both had PTSD, different types of environments may be more or less triggering. No two social prescribing groups are the same, nor are two singing groups, though there may be some commonly shred features - both across all social prescribing groups and between the same type of groups (e.g. the element of competition among football groups). Ultimately however, because of this variety, local knowledge is of paramount importance – especially for the referrer to have a deep understanding of how the group works and what mechanisms it commonly activates, as well as the specific individual's needs and preferences. This fits the philosophy of personalisation currently being rolled out across the NHS, as discussed previously in this thesis (page 32, section 2.1.1), and incorporated into many link worker job descriptions (152).

Finally, the *level* of importance and impact for some individuals of these groups on their lives cannot be understated. These groups might be thought of by some as secondary to more robust therapy, or just a bit of fun, or a hobby, etc. Indeed, there is evidence many GPs have not experienced such groups first-hand themselves, and this might be similar for many other referring professionals, which impacts their understanding of such groups and motivation to refer (2). Certainly, I had my own biases until I had participated in such groups myself, under-estimating the level of impact of such groups as well as the range of psychosocial difficulties among individuals that they serve. It is possible that similar biases and under-estimations exist among referring professionals. In each group, there were examples of individuals for whom their involvement with the group was probably the single most important factor in their life contributing to greater psychosocial well-being. Below are a few interview quotes that highlight this level of importance across each of the 4 groups:

The choir changed my life, yes it changed my life (Kylie, Singing group, who experiences depression, loneliness and PTSD related to a violent assault)

They cared when no-one else did. It's an amazing thing to be a part of this club, their mission, you know, like I said, my first childhood may have been messed up, but it's never too late to have a second childhood (Eddy, Football group, who has paranoid schizophrenia and a history of substance misuse, and long-term mental health hospitalisation)

It was the best thing I'd done, apart from give up drinking, so the second best thing I did, very close to that was to join the farm, you know, and meeting all those lovely people there. (Terry, Gardening group, who has a history of severe alcoholism and experiences social isolation)

It's the only place in my life just for me. It gives me a hope for that person I'm looking to build in myself. (Meera, Reading group, who has chronic depression)

4.7 Strengths and limitations

There were a number of important strengths to this study. Firstly, the use of ethnography is especially unique within social prescribing. It allowed a far greater level of depth of exploring the lives of participants, in a way a single qualitative interview study or survey data is often unable to access. I was able to spend time each week, over the course of 1 year, with the individuals of these social prescribing community groups, experiencing the groups myself first-hand, making detailed observations and conducting interviews – the multiple data collection methods possible with ethnography allows for the possibility of richer data. I developed relationships with these individuals, who were perhaps then able to be more open in interviews and conversations with me than they would have been with a researcher they did not know. The extended time period of ethnography meant I could also better capture the longitudinal, non-static nature of participants' mental health.

Further, the study sample included the individuals accessing these groups, as well as staff and referrers. This enabled me to capture the different perspectives of the social prescribing 'complex system', which is crucial for a holistic understanding into the impact of these groups and this process. Few social prescribing studies have included these multiple perspectives within one study. Moreover, the four groups were purposively chosen to reflect the different categories of social prescribing (leisure) community activities: sports/exercise,

the arts, literature/education, and nature activities. Often research into social prescribing community groups has only focused on a single group, but it is important to compare and contrast between such groups because social prescribing is not 'one thing', and the evidence base needs to reflect that.

There were also several limitations to my study. Firstly, there was potential for selection bias with the groups – all 4 groups were very keen to partake in the research, had a strong online, social media presence, and were long-standing, relatively well-known groups. This might have meant they were more likely to be relatively 'successful' social prescribing community groups compared to others. Considering my focus was on the potential psychosocial *benefits* of these groups, this was not a substantial problem, however it is possible my research has missed some key negatives or challenges that other, less well established or well-connected groups might face.

Further, there was possible self-selection bias in terms of who my 'long-term research companions' and interviewees were, who form a significant proportion of my findings. These individuals do reflect well the wider range of mental health conditions and psychosocial difficulties these groups support, however it is possible that those who agreed to an interview with me and more actively participated in my research were different in some ways to those who didn't, e.g. they may have had more positive experiences of the groups or had more stable mental health than others. However, I have included examples of participants who were experiencing significant challenges within their group, e.g. the case studies of Andrew from the gardens (Appendix 9, page 330) and Steve from the football group (Appendix 9, page 317).

Moreover, due to the Covid-19 pandemic, the singing group in particular was significantly impacted, due to especially tight restrictions on group singing. This meant that a significant proportion of my ethnographic research with the singing group was via virtual format. Therefore, I may have missed emergent properties of the group that would occur in-person and not virtually, e.g. certain types of socialising and social support. Fortunately, I was able to explore these in-person for the final 3 months of my research. The use of in-depth interviews was also especially important in this group for this reason, as was my regular attendance at the choir's in-person, weekly walking group.

Lastly, my *Project* category of active ingredients was relatively weak compared to the richness of data in *People* and *Contexts*, and my *Mechanisms* categories. The INNATE framework and leisure mechanisms framework were not used deductively, since I wanted the ethnography to be as open as possible, and though the findings did fit effectively within the frameworks, aspects of the Project category were not explored as extensively throughout my ethnography, and so future studies could consider using such frameworks from the outset. Similarly, I was unable to explore biological mechanisms in-depth throughout my ethnography, which forms a crucial component of the leisure mechanisms framework, and so this was limited in my findings. Future research should explore these further using biomedical measurements. Finally, while my study explored active ingredients and mechanisms in-depth, future studies could explore the moderators involved that may influence engagement, or the extent to which active ingredients activate certain mechanisms, e.g. individual-level, and wider economic, cultural, and political factors.

4.8 Conclusion

This study has illuminated the core active ingredients and mechanisms, that led to improved psychosocial well-being across 4 social prescribing community groups. There were many different active ingredients and mechanisms identified, supporting the conceptualisation of social prescribing activities as complex systems or interventions. Important shared active ingredients across the 4 groups included: **Shared experience of mental health, ample socialising time, excellent facilitator inter-personal and leadership skills, no-pressure environment, task/goal orientation, safe space, high regularity and high affordability/accessibility**. Commonly shared mechanisms included: **Increased confidence/self-esteem, formation of friendships & reduced loneliness, increased sense of community & belonging, increased social support, experience of pleasure/joy, provision of structure/routine & meaning/purpose.** There were also very important ingredients and mechanisms observed in certain groups that other groups may have benefitted more from, seen in key ingredients such as: **welcoming atmosphere**, **inter-organisational partnerships**, **organised events &**

performances, use of competition, and mental health staff as members; and mechanisms such as: building a new identity and improved self-expression.

I have provided evidence of the potential of these groups to support those with more severe forms of mental illness. Community groups should be supported with improving access for and engagement of people with severe mental illness, for example by inviting mental health staff to join as active members or developing stronger referral links with local mental health teams via relationships with key individuals. Finally, the level of impact these groups can have on people's lives, especially those with severe mental illness or extremely limited social networks, cannot be under-estimated, and it is important such knowledge reaches key referring professionals, including primary care but also crucially outside of it. The deliberate focal point of this study was the community groups themselves, which helped illuminate the true scope of social prescribing, which is far wider than any single referral pathway (e.g. the GP-link worker model), and future research and policy should reflect that. However, given the relatively few referrals coming via the GP referral route among the members of these groups, it may be that there are barriers to GP social prescribing being utilised fully. My next study therefore aims to explore the barriers and facilitators to social prescribing for people with mental health problems from the GP perspective.

Chapter 5 - What are the barriers and enablers experienced by general practitioners to engaging in social prescribing for individuals with mental health problems?

A version of this study has been published at: Aughterson, H., Baxter, L. & Fancourt, D. Social prescribing for individuals with mental health problems: a qualitative study of barriers and enablers experienced by general practitioners. *BMC Fam Pract* **21,** 194 (2020). https://doi.org/10.1186/s12875-020-01264-0. The published version is provided in **Appendix 10 (page 365).**

5.1 Background

First-line approaches in the UK for treating common mental health disorders consist of medication use such as anti-depressants, and psychological therapies. A meta-analysis of anti-depressant use has shown significant effects of the drugs compared with placebo in people with severe depression, but that the effect in people with mild or moderate depression may be "minimal or non-existent" (110). Cognitive behavioural therapy (CBT), the most common form of psychological therapy in the UK, can be an effective treatment, but is normally only available for 8-12 weeks, often with long waiting times – which can have a significantly negative impact on those with mental health conditions (823). Consequently, social prescribing has become increasingly popular for supporting patients with mental health problems.

As outlined in Chapter 1, there is emerging evidence that social prescribing activities can support people's mental health and well-being and growing evidence for the GP-link worker model of SP. Also, as demonstrated in Chapter 2, 3 and 4, there are hundreds of potential mechanisms that can link social prescribing activities with improved mental health. However, social prescribing is still not always routinely offered to patients presenting to the GP with mental health problems. Whilst social prescribing may not be appropriate in every single situation, it is likely that more patients could benefit from social prescribing and with the national roll-out of social prescribing there are now more resources available to support this. It is vital to identify what some of the barriers or enablers to offering social prescribing to people with mental health problems might be.

However, most evidence on social prescribing to date is from the perspective of the patient and their outcomes rather than exploring the challenges in implementing SP. Various studies have shown the benefits of the link worker role to patients, and some are also starting to evaluate social prescribing from the perspective of link workers (249,824). But the role of the GP in social prescribing is less well understood. Uptake of social prescribing appears to rely on GP "buy-in" to validate the service among other professionals and patients, and requires GPs to believe in the link worker's ability and in the benefits of social prescribing (22). A few studies have included interviews with GPs, but these have tended to involve a very small number of GP interviews, or focused solely on one practice or locale (148). Nevertheless, this preliminary research does demonstrate that GPs found it challenging to have good knowledge of community groups or the time to engage fully, but valued face-to-face meetings with representatives from them (148). GPs also reported finding it difficult to address patient's social and mental health needs, due to lack of training and limited time in appointments; GPs acknowledged the limitations of the "traditional medical model" (147). And so, this stresses the importance of pursuing this line of inquiry, to understand the role of GPs in social prescribing more clearly.

Therefore, this study is the first to explore the barriers and enablers to social prescribing for patients with mental health issues, from the perspectives of GPs from across the UK. It uses the lens of behavioural change theory to examine this, applying the Capability Opportunity and Motivation model of Behaviour (COM-B model) (826). The COM-B model is systematically derived from multiple existing behaviour change frameworks and proposes that human behaviour is driven by a combination of Capability (having the physical and psychological skills to enact a certain behaviour), Opportunity (the physical, environmental, and social circumstances in which a behaviour can be enacted) and Motivation (the reflective and autonomic mental processes involved in driving behaviour). This current study uses this COM-B model to elucidate the barriers and enablers to GPs' social prescribing and engagement with community groups, for patients with mental health issues.

5.2 Methods

5.2.1 Design

I used a qualitative, one-to-one interviewing approach to understand what GPs experienced to be the barriers and enablers to engaging with social prescribing for patients with mental health issues. I chose telephone interviews since this was thought to be more convenient for professionals and allowed for a greater geographical spread of GPs. The one-to-one interview approach was chosen in order to allow time for in-depth analysis of individual GPs' perspectives, without any peer influence and restrictions which might arise from focus groups.

5.2.2 Participants & Procedure

I interviewed 17 GPs, with each interview lasting between 30-45 minutes, conducted over the telephone. For the purpose of the interviews, community groups and activities were defined as any group, service or activity within the community, often provided by the voluntary sector; not mainstream community health services e.g. CAMHS. I gave examples such as arts groups, peer-support, walking clubs and community gardening. I explained that these activities include anything that falls under "social prescribing", if that phrase was understood by GPs. The participant information sheet can be found in **Appendix 11 (page 381).** To reflect potential differences in barriers and enablers, I sampled GPs across a range of: GP age and career level, gender, geographical region, known prior engagement with social prescribing, and size of practice (827). Recruitment took place through the mailing list of a national research network (the MARCH network), existing contacts of the lead researcher and university team, and a practitioners' newsletter. No monetary or other incentives were offered for participants to take part. The study received approval from the University College London (UCL) ethics committee (14895/002) and all participants gave written, informed consent. A topic guide for conducting the interviews was developed using the COM-B model as a framework. This guide is presented in **Appendix 12 (page 385).** Informed, written consent was sought and the consent form is available in **Appendix 13 (page 387).** Interviews were audio-recorded and then transcribed in anonymous format (removing any names, locations and other identifying features) by transcription service 'Way With Words'.

5.2.3 Data analysis

The analytical approach I used was reflexive thematic analysis, due its theoretical flexibility and applicability at helping to analyse large volumes of text (828). This consisted of following the steps set out by Braun and Clarke (829): familiarisation with the data (by reading each transcript first and making notes), generation of initial codes and clear definition of codes, searching for themes, reviewing themes (including discussing emerging finding with the other study authors), defining and naming themes, and producing the report. I verified final themes with a second researcher. The software used for coding was NVivo qualitative data analysis; QSR International Pty Ltd. Version 11, 2015. The analysis consisted of mostly inductive techniques. That is, although the COM-B model formed the structure underlying the questions in the interview topic guide, the coding was conducted in an open manner, allowing all the codes and themes to be grounded within the data. The context around codes was retained and contradictory data was also included. Interviewing was stopped once a rich and adequate data sample had been reached, and thematic analysis and coding of this data occurred until no new themes were identified.

Codes were then grouped into themes. Each theme represents a "central organising concept" (828), and was organised into either Capability, Opportunity or Motivation: the three domains of the COM-B model. I analysed the data in relation to the physical and psychological capabilities of individual GPs as reported by them, their reflective and autonomic motivations, and the social, environmental and physical opportunities available to them. Following analysis, I applied the Theoretical Domains Framework (830) to the themes. This enables the mapping of specific barriers and enablers identified by the COM-B model to types of intervention components that can be used to change behaviour. This allowed for the identification of interventions that may support GPs to tackle the barriers and enablers to their engagement with social prescribing.

5.3 Findings

The participants

The sample consisted of mainly female GPs (65%), partners (47%) and most participants worked in London (53%).

Table 5.1: Characteristics of GPs

Region	Wales East of England West Midlands South West England South East England London	1 2 1 3 1 9
GP type	Partner Sessional – salaried, locum Junior, trainee	8 6 (incl. 2 PCN Clinical Directors) 3
Gender	Male Female	6 11

Themes

9 primary themes were identified that spoke to my research aim of identifying barriers and enablers to GPs' social prescribing and engagement with community groups, for patients with mental health issues. These were: Building GP skills, Building trust & relationships between GPs and others, Building the practice, Collaboration between GP practice and other organisations, Community & NHS sustainability, Patient & community factors affecting uptake of social prescribing, GP professional identity, GP desire to 'do things differently', and Understanding benefits of social prescribing. The sub-themes, and how these map onto the COM-B model, are displayed in Figure 5.1 below (this table has been updated from the published version).

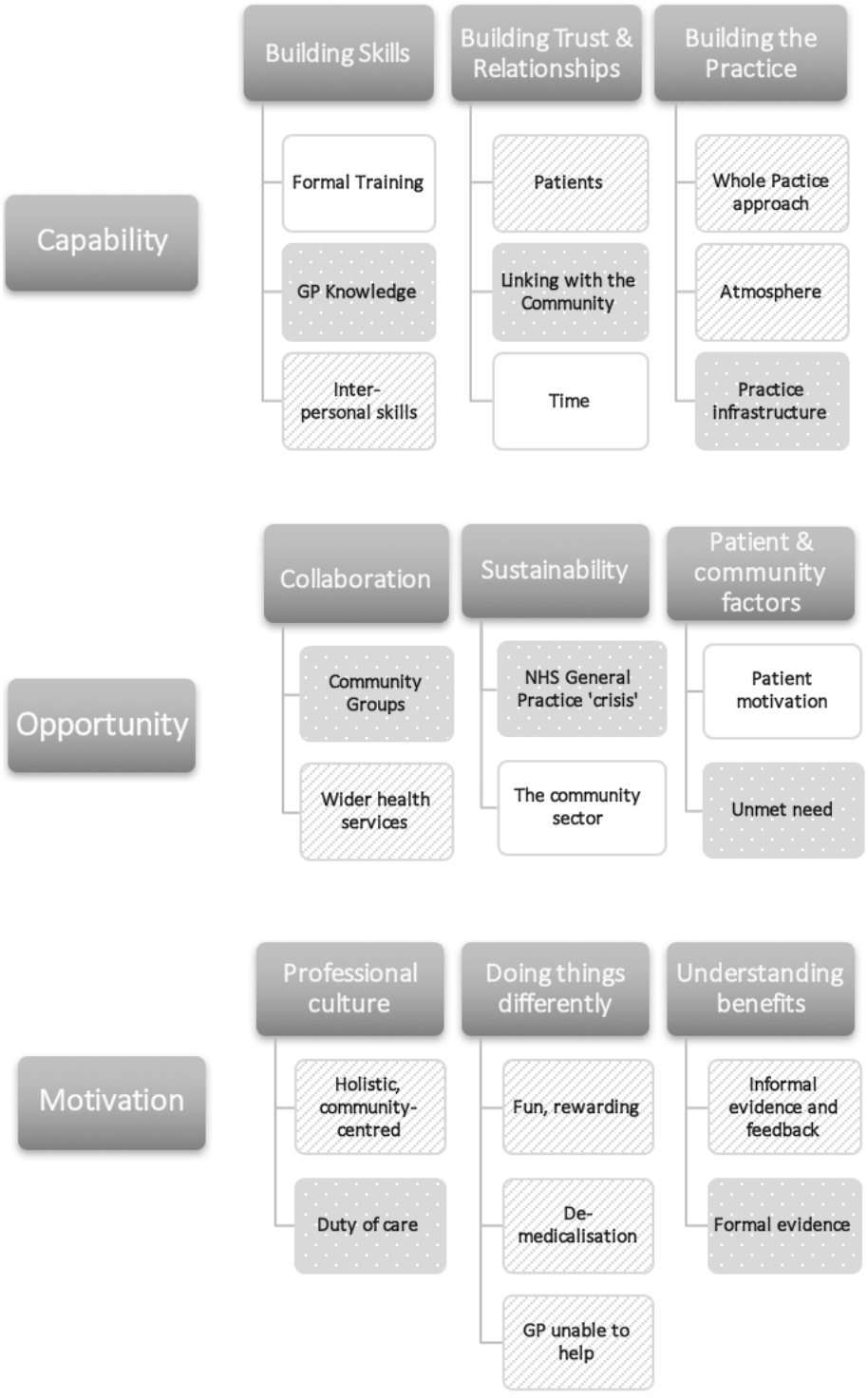

Figure 5.1 Themes, sub-themes mapped to COM-B model domains

*Dark grey rectangle = Capabilities, Opportunities, Motivations; white rectangle = barrier; striped rectangle = enabler; dotted rectangle = both enabler and barrier.

Capability

Three themes were identified within the category of capability – 'Building GP skills', 'Building trust and relationships between GPs and others' and 'Building the practice'.

Building GP skills

'Building GP skills' encompassed three sub-themes, which consisted of barriers, enablers and a mixture of both – including a lack of formal training in social prescribing (barrier), GP knowledge of social prescribing evidence and of their local community (both), and the benefits of GPs having a range of strong inter-personal skills when relating to patients (enabler).

Lack of formal training for GPs in social prescribing

Most GPs said that they received very little training in terms of how to engage with community groups to support social prescribing for patients with mental health issues. Most perceived the lack of formal training to be a barrier, as it meant they lacked the motivation, confidence and know-how to engage in social prescribing effectively:

"As a GP for 30 years I am very conscious that there a lot of people that I cannot help with these skills and training that I've received so far as a doctor" (GP6)

Some GPs felt that when they did have teaching related to this area, it was treated as somewhat of an 'add-on', secondary to the biomedical and clinical teaching:

> *"It's always thought of as a little asterisk…it gets thrown in on the side like oh, don't forget about social prescribing"* (GP13, GP trainee)

GPs felt that there were significant differences in training between GP practices. Part of this was linked to how well-established the level of community engagement was in that particular practice:

> *"Each practice has different services; you've got huge disparity...(between) groups of trainees as to who knows about what and who doesn't… you've got one practice where it's completely commonplace to do loads of social prescribing, and another practice where it might not be something they do at all"* (GP13, GP trainee)

It was felt that formal training at an early stage in a GPs' career, would be beneficial. One GP trainee described how 'sitting in' with link workers and welfare officers to observe what they do, was a highly valuable learning experience:

> *"At the beginning, when I started the job, I had a two-week induction, where every day I would sit in a different clinic, sit in a different community service... so that's how I learnt about it"* (GP14, GP trainee)

GP knowledge: evidence & local community

GPs talked about the importance of having the knowledge of evidence that social prescribing is effective for those with mental health conditions, both regarding the wider evidence base but also that specific to their own social prescribing scheme. GP knowledge of local community assets was deemed important but difficult for most GPs to obtain – part of this was related to the time constraints and demands of the job, which made it difficult for GPs to improve their knowledge of the local community:

> *"It's about not knowing what's out there that can help us above what we've already got in our surgery...we're always busy...We don't always have enough time..."* (GP17)

GPs found it challenging to keep up with all the new services and groups regularly emerging, often replacing old ones that had closed down, within the community:

> *"It's really difficult as a GP because things change so much and services are available and then they're not available"* (GP4)

There was also a knowledge gap, and some degree of confusion, about the new link worker role and what exactly social prescribing will involve in each practice, and when GPs would use the service:

> *"The service is changing, and keeps on changing, and including the different types of link worker it's hard to keep up actually, about exactly what they're doing and providing… I think there's definitely a knowledge gap."* (GP12)

GP knowledge of local community groups and activities was enhanced by personal meetings between GPs and local community representatives, especially if they physically visited the practice:

> *"We hear about these things because we get bombarded...telling professionals by email is hopeless"* (GP10)

> *"What really works well is when a human being physically comes to our site to physically one-to-one reinforce the value of the service that's on offer"* (GP3)

Further barriers to good knowledge of the local community were felt to be the large numbers of part-time and locum GPs, and high staff turnover. This meant that GPs had less time to build knowledge of the local community, and that new GPs who filled the vacancies, had to start afresh, too. It also meant that the sharing of knowledge and support between GPs was more difficult, as they shared fewer overlapping shifts:

"So it's being able to keep people for longer and ensure that they stay in that role…they build their experience, they build their knowledge, and that makes a more effective intervention" (GP7)

"I work part-time and the other GPs in the practice work part-time. There isn't a single time when we're altogether at the same time, in order to be able to say, did you know this is happening?" (GP1)

Many of the GPs had not themselves accessed the types of community groups and services that patients might be referred to. This may underplay these groups' importance in the eyes of doctors, and also the extent to which they are known about:

"Having just led a very sheltered, privileged life…I've got no idea about any of this stuff" (GP15)

GP inter-personal skills

GPs identified a range of important inter-personal skills that were needed for them to engage in social prescribing including: taking a personalised approach, the importance of listening, tenacity of GPs ("sticking with it"), and having a proactive instead of reactive style.

GPs frequently talked about the importance of developing a personalised, patient-centred approach, based on what matters to the patient. This was necessary to find the 'right fit' for patients, thus enabling effective social prescribing:

"For me, the biggest thing is more around what people want. Because it's not my choice at the end of the day, it's the patient and what they want, and what they think will be helpful to them." (GP12)

GPs 'going the extra mile' was commonplace, and often of fundamental importance for facilitating patient engagement with community groups. Part of this involved GPs' actions: visiting community groups, setting up community projects, or learning at conferences; and part of this related to GPs' inter-personal skills: their tenacity with patients and 'sticking with it' approach:

> *"I'm actually interested in what matters to you. I'm not looking to confirm or refute a diagnosis, I'm actually looking to see if between you and me we can find a way, a route map, out of the place you're in, to a place where you would rather be… stick with that person until they have made the necessary connections, applied the necessary advice…whatever it is"* (GP6)

GPs referred to the benefits of taking a proactive, over a reactive, approach to supporting patients with mental health issues to engage with the community:

> *"My knowledge of the community doesn't come from any of the practice jobs that I've had. It comes from actually being interested, and being engaged, going to community meetings"* (GP1)

The importance of truly listening to patients, was stressed by numerous GPs. One GP spoke of how their practice gained a reputation for this within the community, showing the wider knock-on effects that are possible:

> *"Number one, we listen... people were actually shocked and they said, "You just listened to me!" Thereby by reputation which is how news tend to travel in a deprived but close community, fairly rapidly started to attract those people that needed listening to"* (GP6)

Overlapping with both good listening and the 'sticking with it' approach, was the ability of GPs to understand the 'root causes' of patients' problems. It was felt that the root cause for many patients' mental health issues was largely social in origin, for example related to loneliness, financial difficulties, or lack of meaning or purpose

in their lives. Thus, in order for GPs to know when, and how, to use social prescribing, it required an enhanced knowledge of these wider patient circumstances.

> *"When you see other mental health patients…especially on the milder scale, it's evident that a lot of the problems that people are having are hugely tied into their social life and their social circumstances"* (GP13)

> *"I think there's skills about engaging with people and finding out the consultation skills to find out what they need"* (GP7)

Building trust & relationships between GPs and others

The theme of 'Building trust and relationships' emerged between both the GP and patient, which was regarded as an enabler, and between the GP and the wider community (both enabler and barrier), which was also valuable but considered challenging to develop by GPs – although was strongly facilitated when there was a link worker. Time was fundamental in building those trust-bound relationships but was in short supply for GPs and so considered a barrier.

GPs building trust with patients

Trust, from a patient towards a GP, was a recurring theme, crucial in enabling GPs to successfully motivate patients to engage with the community, or link worker. Part of this came from GPs' inter-personal skills. GPs also reported that building trust takes time – some long-standing GPs had this, having spent considerable time with patients getting to know them well:

> *"I know my patients really well. I've been there for 14 years so I've got a group of patients that I know very well, I've got a rapport with, I feel if I suggest something to them, they'll generally think it might be a good idea, and try and follow through."* (GP5)

GPs building trust with link workers and the local community

Trust between GPs and the local community was also important. GPs had to trust in the community services that they were referring patients to. Part of this, again, was facilitated by GPs being in the practice for a long-time:

> *"We're a very long-standing practice... we know the local community... we are, in that sense, quite old-fashioned"* (GP3)

Most GPs had limited capacity to form trusting relationships with many community groups and services directly:

> *"The issues would really, I think would be around relationships. So, I don't think it's possible for every single person to have good working relationships with every community organisation that's out there. We're just too constrained in terms of the people that we know"* (GP1)

The link worker's role was therefore considered of fundamental importance in building the relationships with community groups, and enabling effective social prescribing:

> *"I think that's where the link worker comes in, because it's about creating a bridge. You just have that one relationship with that one person, who has that relationship with multiple areas"* (GP1)

When GPs were able to foster these relationships themselves, it was often due to individual GPs' personal efforts:

"I'm quite keen to find the local churches and go and talk to the vicars and just see what they're doing and if there's anything we can do together. But I don't think everybody thinks the way I do" (GP1)

Again, regular, face-to-face connections worked most effectively to build the necessary relationships. The value of this was deemed difficult to measure, but considered highly important:

"By coming fairly regularly [the link worker]*, just refreshes us and makes us think about it…the value of a physical person is really hard to quantify, but it's really valuable"* (GP3)

The importance of time for developing trust

GPs described the importance of time to develop the level of trust required to motivate patients to take up a community activity, or meet with a link worker, and this was a significant barrier for participants. This 'motivational threshold' relied on both time within an appointment, and time spent over a longer period of weeks, months to years between doctor and patient:

"As GPs we just don't have the time. And I don't have time to have a consultation with someone on loneliness and how they can deal with that" (GP15)

"The kind of relationship that could last for 3,6,9,12 months, occasionally even longer to develop that sort of action plan… Because sometimes you have to get people down the road before they will accept a social prescribing referral and just hold them for a time until they trust that your referral is well intended and expertly suggested" (GP6)

Again, the high levels of locum and part-time GPs, and high staff turnover rates, were barriers to building those highly time- and trust-dependent relationships with patients.

"If you're a new doctor or somebody that moves around without a consistent patient group, it is harder, I think to have that relationship with patients, particularly if you're suggesting something a little bit different for them" (GP5)

Time was also an important factor for developing vital relationships with community groups, that GPs might refer patients to. There was also a time-investment required from GPs to be creative, proactive, or go the extra mile, in engaging with the community:

"If you're trying to do anything that's slightly different or creative...it requires time and resource" (GP11)

Building the Practice

'Building the practice' encompassed three sub-themes: taking a whole practice approach (enabler), building the practice atmosphere (enabler), and practice infrastructure (both enabler and barrier) (encompassed digital and physical elements).

Whole practice approach

GPs frequently articulated the benefits of taking a 'whole practice' approach to enabling effective social prescribing for patients with mental health issues. This could involve joint training, or meetings involving all practice staff members:

"We've had the social prescriber presenting at one of these…telling people what her role is, what she thinks she can help with, how to refer to her, etc. And we communicate quite widely within the practice" (GP5)

One GP talked about the 'glue' of the practice, often kept together by a number of key staff. In addition to the importance of partners, practice managers, link workers and patient groups, several GPs talked about tapping into the potential of receptionists, who had the skills to support patients, and often lived locally which positioned them well within the community:

> *"Most of the reception staff that work in the practice around here, are local. And so, they know local residents, they know, to some extent, what you'd know in the community if you lived in that community. They would know the kind of services…"* (GP1)

GPs expressed the utility of having a link worker 'in-house', enabling personal, face-to-face and ongoing connections between them and practice staff. This facilitated more effective shared learning, regular feedback, and helped GPs understand the social prescribing service and referral criteria. The link worker provided a regular reminder that social prescribing is a tool at the GP's disposal, for patients with mental health issues:

> *"I'm very lucky so I pop in and see her maybe once a week or so…I think it's really helpful for the doctors and nurses who work in our building, with her [the link worker]…keeping everybody enthused about the project, remembering that she's there and we should be using her to refer patients or getting feedback from her about people who have successfully engaged and feel better. It makes it more real"* (GP5)

Relating to the whole-practice approach, but also running through all the capability themes and sub-themes, it emerged that many GPs considered there to be striking differences between individual GPs regarding their skills, motivation and knowledge in this area.

> *"Each individual clinician will have different knowledge of the community, and a different attitude and approach towards linking people in with other resources in the community. That will come down to individual clinical practice, as opposed to a specific practice policy"* (GP1)

Sometimes this was influenced by GPs' position, and stage of career.

> *"The senior GPs weren't quite as tapped into it as the trainees"* (GP15)

Practice atmosphere

A key enabler of building the practice to support social prescribing was when a GP's practice had an atmosphere of community-centredness. The atmosphere of the practice was closely linked to the practice identity, which will be discussed later in the category of motivation, but here refers more to the structural elements of the practice which helps create a 'feel' of it being welcoming and centred around the community. A welcoming practice made it easier for GPs to engage patients with community-centred approaches. Practices that 'invited patients in', who then themselves set up activities based within the practice, reflected this approach.

'Knock-on effects' on the wider community emerged from having a community-centred atmosphere. For example, in one practice, that had a community garden within it:

> *"A couple of policemen came by, and at first I thought, oh dear, maybe there's been some vandalism...but it wasn't that at all. They had heard about the community garden...they had some young offender in mind who they thought was just bored, and might benefit from actually doing something on the land. They were coming to chat...to see what was possible"* (GP17)

Further 'knock-on effects' were seen within a practice that embedded a weekly arts & crafts session in their waiting room. The perception of the practice changed in the eyes of patients, who saw it 'in a different way' - more welcoming and humane.

"Many less complaints. Patients are, generally, nicer at the desk...some of our patients we know come to the crafting group because they're sitting in our waiting room and they see what our receptionist has to deal with...they see them in a different way. So, I think it's broken down some of those barriers and put a more human face on the practice" (GP11)

Practice infrastructure

A further sub-theme was around the infrastructure of the practice, encompassing both digital and physical infrastructure. When good Information Technology (IT) systems were in place, this allowed easy referrals from GPs to community groups or a link worker, which made a GP's job much easier in referring patients with mental health issues for community support.

For example, one practice utilised a single database that was used by the local Clinical Commissioning Group (CCG), used for social prescribing referrals, alongside clinical referrals such as cardiology appointments or hearing tests:

"We're quite helped by the fact that we have one database of referral forms…all our referral forms are uploaded onto that…So that's become easier to integrate new services, because of the IT really…" (GP3)

The issue of lack of physical space also emerged with several GPs:

"I'd like more room physically… If we had more space we could invite the community and the link workers in more closely, which would be an advantage" (GP6)

The practice space could also be used more effectively to advertise social prescribing, for example in the waiting area:

"Probably wasn't advertised well in the waiting area, the areas that the patients stand at the reception desk, so I think that probably could help" (GP14)

Opportunity

Three themes were identified within the category of opportunity – 'Collaboration', 'Sustainability', and 'Patient & community factors'.

Collaboration between GP practice and other organisations

'Collaboration' encompassed two sub-themes, consisting of GP collaboration with community groups (both enabler and barrier), and GP collaboration with wider health services (enabler).

Collaboration between GPs and community groups

Ongoing collaboration between GPs, practices and community groups was vital for successful social prescribing. This was, in part, mediated by the informal relationships previously discussed: see theme 'Building trust and relationships between GPs and others'. More formalised collaborations were also important – a common and highly effective example of this was through the use of a link worker:

"She (the link worker) was a brilliant point of contact just to get plugged into that side of things. Because to be honest, before GP I was completely oblivious to all this stuff" (GP15)

As mentioned previously, GP practices can also collaborate directly with the community, for example citizens being invited in to set up groups, activities and events within the practice. Some GPs felt that the formalisation of collaboration was useful, as it meant it was more likely to be sustained longer term:

"We often have conversations about oh, it would be great to do this, this and this…The problem is, it's too ad hoc, this is more about formalising it and having an actual program…Because I

think unless you get that in, it's difficult to sustain it just by people's good intentions and motivation and things" (GP9)

Collaboration between GPs and wider health services

GPs also articulated the benefits of formally collaborating with wider health and care services, to facilitate more effective social prescribing. They spoke of the importance of the newly formed Primary Care Networks (PCNs) to aid this. Working more closely with neighbouring GP practices enabled more efficient pooling of resources, sharing of knowledge and greater community support for patients. This was especially felt by small practices:

"We've always been motivated in principle, but we really didn't have the wherewithal, especially being a small practice, to set it up ourselves effectively…it's really been the advent of being part of a primary care network that's changed the landscape for us" (GP3)

Asked what factors enable successful social prescribing, GPs also talked about the importance of collaboration at the CCG (Clinical Commissioning Group)-level, and local authority level. CCGs could target resources to support community engagement effectively:

"If it's CCG-wide, if the CCG sources say, right, we are paying for this service for our patients, that's brilliant" (GP2)

"I think it's about making the case for robust community investment for intelligent and authentic social prescribing link worker activity for building primary care networks into their local strategic partnership committees, their local authority conversations" (GP6)

Community and NHS sustainability

'Sustainability' included two sub-themes – the 'crisis' in the NHS and General Practice (both enabler and barrier), and the sustainability of the community sector (barrier).

NHS and General Practice 'crisis'

GPs mentioned resource pressures that affected the degree to which they could effectively engage with community groups, on behalf of patients with mental health issues. However, counter-intuitively, perhaps because of that strain, there was acknowledgement from GPs that they needed to engage with the community and third sector, in order to help those patients:

> *"The NHS is under strain, there's not enough appointments, not enough time, not enough doctors, not enough nurses, it's just very difficult when you're trying to survive to be able to support as you would want to"* (GP4)

> "*I think the social prescribing and the community activities, like Men in Sheds, and other things, have really met some of that need"* (GP7)

Sustainability of the community sector

The sustainability and funding precarity of Voluntary and Community Sector (VCS) organisations, was well understood among GPs. Their concern was related to future sustainability and availability of these organisations, which in part was based on GPs' experience of groups disappearing – this made it challenging to keep up with what was available, and also form lasting relationships with community groups:

> *"There's no point just having somebody signposting if there's nothing there to signpost them to...There used to be quite a number of community groups going…. there's very little activity they do now there…They're all gone. There's nothing really available"* (GP16)

Patients might become reliant on community groups or activities for their health and well-being, and so there was also concern from GPs about the time-bound nature of certain community activities and projects:

> *"They would have some support, but it would finish after the prescribed amount of time. So, I had one patient who was invited to a gardening project, he was given 16 sessions. And actually, ended up in hospital when that provision was taken away because I think that the contrast between having activity and having some social support and then having it removed was almost worse, for him, than having nothing at the beginning"* (GP11)

Patient & community factors affecting uptake of social prescribing

'Patient & community factors' also contained two sub-themes which referred to patient motivation (barrier) and high levels of unmet, psychosocial needs (both enabler and barrier).

Patient motivation to engage

GPs felt that the patient's own motivation or willingness to engage with social prescribing, was often a crucial barrier. GPs found it challenging to persuade some patients to see a link worker, or try a community activity. Beyond the initial engagement, there was also the issue of more longer-term adherence. Patients with common mental health issues such as anxiety and depression found it particularly difficult to try something new, especially when they were unwell:

> *"There are real issues around motivation, effort, concentration, decision-making particularly people who are anxious, to go and try something new"* (GP12)

There seemed to be a 'motivational threshold' that patients had to surpass in order to agree to engage with social prescribing, then actually turn up for a group or activity, and then continue to show up:

"One of my concerns is around how to help patients get over the threshold, so, the threshold in terms of actually signing up and the threshold of actually joining the group" (GP16)

It was a clear barrier to GPs if a patient hadn't heard of the community organisation, as it was more difficult to persuade them to give it a go:

"If patients don't know about something, trying (to) convince them to do something is more difficult." (GP13)

When groups were labelled as being 'for mental health', 'for social isolation', or something similar, this was often seen as a barrier to persuading patients to attend. GPs felt it was more effective to focus on the activity itself, and whether it was something the patient might enjoy:

"I think one of the biggest barriers is anything they perceive as being specific to people with mental health problems. So any kind of activity that's labelled as being for lonely people…Even if it's about improving mental well-being, it has to be much more around…what they're doing, and how interested they are in the activity itself" (GP12)

GPs found that some patients required extra support to engage with community groups. This might require someone meeting them face-to-face, perhaps even accompanying them to the first session:

"I have a contact, which, if the patient will give me consent, I can hand over their phone number and they'll facilitate going to the first meeting, like a buddy system. You can actually make a difference to people by helping them with the access" (GP7)

Again, for those GPs that had access to one, the role of the link worker was a crucial enabler in helping patients engage, bridging that gap between the GP and community, where patients often struggled to navigate alone:

> *"They need help with getting to appointments…it's almost like a hand holding role…And this is really critical, what I find with a lot of our mental health patients is that you can tell them to go to this service, you can do to this or this. But actually the gap between the GP and actually getting there is where we lose them so often, and that is where the navigator is really key"* (GP9)

Unmet psychosocial needs

Most GPs in this study saw high levels of unmet, psychosocial needs within their patient population – and many felt these levels had been rising in recent years. Because of these largely social needs, it was clear to most participants that a social solution, rather than a purely clinical or biomedical one, was more likely to be effective. GPs saw social prescribing, and engagement with community groups, as a key tool especially for patients with mild or moderate mental health issues:

> *"The people coming through who present the biggest bulk of work and so, it's going to be housing, financials, benefit stuff, debt, employment issues. They're the biggest things coming into practices"* (GP1)

> *"The answer probably needs to come from the community because that's where the problem started"* (GP10)

This was most pronounced in deprived areas, demonstrating the social gradient of mental health issues, reinforcing inequalities:

"A lot of people that I see, 70% I'd estimate…are coming in with…mental unhappiness, lack of mental well-being… That kind of stuff is what I think is common in deprived areas…and it places a huge burden on practices" (GP1)

Motivation

The category of motivation contained three sub-themes: 'Professional identity', 'Doing things differently' and 'Understanding benefits'.

GP professional identity

'GP professional identity' encompassed two sub-themes: holistic, community-centred care (enabler) and duty of care (both barrier and enabler).

Holistic, community-centred care

Holistic and community-centred approaches often formed part of professionals' and practices' identity which enabled GPs more extensive social prescribing. Being a long-standing practice with long-serving GPs often enhanced this. Individual professional identity both influenced and was influenced by the overall practice identity:

"It plays to our philosophy of trying to offer holistic care… three of us Partners have been here for the better part of 25 to 30 years… We know multi-generations within the same families, know the local community...we're quite embedded in the community...makes us better able to integrate and persuade people to go and use other community services. Because we're part of the community" (GP3)

However, it was often the case that GPs felt their practice identity was not firmly rooted in community. Part of this was due to individual GPs having no connection to the local area:

"I don't see any of the practices in this geography as being really rooted as community organisations. So, certainly there are practice staff who've been here for decades who have never walked around this area. They drive to work, and they'll drive away from work and don't live locally." (GP1)

Whether or not the GP or practice had a community-centred, holistic identity, very much seemed to influence whether individual GPs were likely to consider active social prescribing 'part of their role'. Most GPs felt to a large extent it was, but some disagreed:

"A lot of the things that people would see as a downside of GP, so you know the social aspect and what people would say is the airy-fairy stuff that takes you away from the medicine, I think is equally important…that's why I became a GP" (GP15)

"That's not part of my job or not part of what I assume my job to be… we're often signposting people to do things for the benefit of their own health but no, we're not a community centre" (GP8)

Duty of care

GPs felt passionately about the principle of 'duty of care', and were driven by this and the principle of providing a high-quality service of care for their patients. When community engagement, or social prescribing, was considered a component of 'high-quality' care, it was a key motivating factor:

"There is a duty of care to these patients...one of the main things I can do for any patient is to signpost them to the available resources" (GP2)

Part of social prescribing being high quality care stemmed from GPs' belief that it was effective, which ties into the later sub-theme of 'Understanding benefits' and the importance of feedback and evidence.

GP desire to do things differently

'Doing things differently' referred to social prescribing being fun and rewarding for GPs, the desire to de-medicalise, and the GP-felt inability to help with psychosocial issues. All of these were considered enablers for motivating GPs to engage.

Fun, rewarding for GPs

Some GPs talked about how it was fun to actively engage more with community groups, and that they found this process rewarding. Linked to the earlier point about whether this is 'part of the role' for a GP, there was a tension around professional boundaries, that required overcoming:

> *"It's actually fun to find novel and creative ways to help your patients much more than prescribing a statin or an anti-depressant. Although it does require a little bit of breaking down boundaries…So, there's a certain inherent tension there"* (GP10)

One GP, whose practice invited citizens from the community in to run groups within the practice, such as a weekly crafting session, expressed that this creative and 'different' process was rewarding for practice staff:

> *"Because it's all been voluntary in a way, and that, actually I think it has engaged the staff group because, again, I think they have quite enjoyed seeing different things happening around the practice"* (GP11)

GPs were fundamentally motivated by a drive to help patients, and make them feel better – which was a key enabler because it was felt that social prescribing could offer that:

"I love medicine, but fundamentally, I like making people feel better, and there is obviously a lot of social stuff that comes into play here" (GP15)

"When a patient comes in and you can actually say to them here's something…you can go to social prescribing or you can go to your exercise prescription…it's like you've given them something. And they feel satisfied and then you feel satisfied as well that you've done something for me, so…that's quite nice" (GP14)

GPs also spoke of the desire to 'empower' patients, so they could take control of their own lives and health:

"I've always been interested in the idea of empowering patients to take charge and control of their own conditions and managing their own conditions" (GP17)

The 'fun' and 'rewarding' components were perhaps especially important given the current high levels of stress and burnout among GPs:

"All around people are burning out, in the last 3 years we've had 6 salary GPs leave and each one has cited this intensity as being the reason why" (GP10)

"Having this kind of opportunity for them and for us to actually do something useful just feels good" (GP17)

GP desire to de-medicalise

GPs talked about the need to de-medicalise certain patient problems that they felt had been over-medicalised. GPs understood many patients' mental health issues were influenced or caused by their social circumstances,

for example related to social isolation, housing or financial difficulties. There was a desire among GPs to look for social solutions for these patients, whose problems were rooted in their social circumstances:

> *"There's a massive role for the community in promoting…mental health and well-being (because) actually most of the mental health and well-being has got social causes"* (GP10)

> *"A large proportion of our people who attend frequently, who are often struggling with chronic pain, struggling with chronic mental health issues and have social isolation…Many of these conditions are not really amenable to medicalisation"* (GP5)

The desire to de-medicalise is closely influenced by the previous sub-theme of inter-personal skills, especially the ability of GPs to understand the 'root causes' of patients' issues – which were often primarily social, not medical.

GP-felt inability to help with all psychosocial issues

GPs often felt unable to help patients with psychosocial issues, with the tools at their disposal – that is, with both their professional skills and the medication they prescribe. GPs felt social prescribing provided such a tool, helping meet those patient needs for which GPs felt they could support no further on their own:

> *"A lot of the problems that people are having hugely ties into their social life and their social circumstances…there's nothing that I can personally do to help that. And you think if only you could get out and do a walking group, do an art class, do something, that would help with a lot of your issues"* (GP12)

There was a common belief in the limitations of certain medications, especially anti-depressants, as the primary solution for patients with mild or moderate mental health issues:

"We medicalise unhappiness as depression…but does that mean they actually are depressed? They get medicalised, get given anti-depressants and get given neuropathic drugs, benzos and opioids. Whereas in fact, when you drill down to it, it's because they've got no hope and no control and no agency. It's because they feel valueless, all the sorts of reasons which those drugs will never treat" (GP1)

Understanding benefits of social prescribing

'Understanding benefits' included both informal (enabler) and formal (barrier) evidence of the effectiveness of social prescribing.

Informal evidence & feedback

It was very rewarding for GPs to feel that patients were benefiting from social prescribing. An effective way of fulfilling this need was having regular feedback to the GP of how the patient was getting on, after their initial referral. GPs, driven by a desire for high quality care for their patients, were far more likely to continually engage in social prescribing, if they knew their patients were benefiting. This process was made easier with a link worker, especially if they were based in the practice building.

"It is important that we get feedback and we understand what's happening. We're lucky, she's based in the same building and we speak with her frequently" (GP5)

"We don't get it (feedback) terribly systematically. I'd be more likely to refer another patient for the same problem if I knew that the previous patient with that problem had got X, Y, or Z and they had been useful" (GP8)

Another way, other than regular feedback, of GPs knowing this could benefit patients, was through GPs' personal experiences. As discussed previously, doctors might not be as likely to have accessed those community resources as some of their patients, but when they were able to relate it was highly motivating:

> *"So, I was ill myself probably about seven or eight years ago. And at that time I was struggling to work so what I did was I went to an art class…And I think certainly for patients of mine with mental health problems or even actually things like chronic pain or breathlessness or any of those things being able to focus on an activity I think is really helpful for them"* (GP16)

Formal evidence

Alongside the importance of feedback and informal evidence, GPs talked about the importance of formal evidence demonstrating that social prescribing was effective. This included both wider research, as well as research conducted on their own practice's social prescribing model and patient population. GPs were far more likely to use social prescribing if they felt it had a strong evidence base that demonstrated improved patient outcomes:

> *"We want to try and have some evidence to prove that patients are benefiting, so that we can go on employing somebody in this role and applying for funding and stuff"* (GP5)

> *"A lot of scientists need that kind of very concrete data to feel comfortable"* (GP16)

Some of the difficulties conducting this sort of research was due to research getting in the way of the activities, and some of it related to the fatigue of third sector organisations and clients having to fill in continuous tick boxes and questionnaires.

"It's like the art therapy, we know it's making a huge difference and we can do surveys or different things, but does it really capture that it's actually reducing, improving well-being? Those kind of things, without stifling the organisations, or the patients with survey after survey, or questionnaire" (GP9)

5.1.4 Discussion

This study explored the barriers and enablers to social prescribing for patients with mental health problems, from the perspectives of GPs. Most GPs were supportive of social prescribing and active engagement with community groups, with nearly all the themes within motivation being enablers. For example, GPs were motivated by a desire to move away from the status quo in primary care, which they felt was failing many patients and leaving them with unmet, psychosocial needs. This was coupled with efforts to de-medicalise social problems amongst patients and find alternatives where medications were found to be ineffective. It was often enjoyable and rewarding for GPs to support this work, which, given the current high levels of GP burnout and stress, has potentially positive implications for staff well-being, morale and GP retention (831). There were a range of inter-personal skills that GPs felt were important to successfully engage, including active listening, 'sticking with it', taking a personalised approach with patients, and the ability to get to the 'root causes' of patients' problems. Trust was also fundamental – GPs felt that patients had to trust them before they could overcome the 'motivational threshold' of agreeing to see a link worker or attend a community activity. This is consistent with research demonstrating that patients who have high levels of trust in their doctor are significantly more likely to adhere to the healthy behaviours the doctor recommends (37,38).

Further, although GPs felt very limited by the 10-minute appointments they had with patients in building this trust, they believed that link workers (who often have ~1hr consultations) had the time to support patients with a more personalised approach. Link workers were also seen as the key 'bridge' between the GP and community, where previously GPs were limited by the number of relationships they could build with the different community groups. Time, trust and building relationships must all be seen within the

conceptualisation of social prescribing as a complex system (768), with trust between different stakeholders (e.g. patients, GPs, link workers, and community groups) important at each different stage of the social prescribing pathway (834). The importance of taking a whole-practice approach also embraces complexity, harnessing the potential of receptionists, practice managers, link workers, GP trainees and partners to help build a practice ethos and atmosphere that is centred around the community.

There were also a number of key barriers. In the wider environment, GPs were concerned about the availability of community groups in their surrounding area, their often transient nature, and understood that the precarity of funding for third sector groups was a significant challenge. GPs also spoke of the 'crisis' across the NHS and General Practice, citing lack of resources, time and staff shortages. This contributed to GP stress and burnout but also, inadvertently, helped GPs understand that the community sector could offer support that they themselves could not alone. Another key concern was around a lack of formal evidence on the benefits of social prescribing, both in terms of the wider evidence base but also local evidence collated within a specific practice's social prescribing model. There is growing evidence that social prescribing has the potential to improve mental health and well-being outcomes for patients (35–37), but this evidence appears not to be reaching some GPs.

This is consistent with the fact that most GPs felt there was very little formal training on community engagement and social prescribing – training on this could be enhanced, e.g. through E-learning courses (836), Continuing Professional Development (CPD) training (837) and crucially in order to fully meet targets with the current GP curriculum (which requires GP trainees to 'develop a holistic mindset' and 'build relationships with the communities in which they serve') (838). When *informal* evidence was present, via regular feedback from the community or link worker to the GP, this provided a significant incentive for GPs to continually engage with social prescribing for their patients. Corroborating wider research, this seemed to be especially effective when there was positive feedback and reinforcement either from patients or link workers (839–841). The use of specialised (social prescribing–specific) digital software such as Elemental (842) can support with this, as could

the more widespread incorporation of link workers at Multi-disciplinary team (MDT) meetings in General Practice (825), which current guidance for Primary Care Networks recommends (843).

It is evident, therefore, that in order to tackle the barriers and amplify the enablers found in this study, interventions are needed. These have the potential to support GPs to engage more effectively with community groups, for patients with mental health issues. Mapping the barriers and enablers onto the COM-B wheel, elucidates several types of intervention that could help GPs engage more effectively, and optimise social prescribing especially for patients with mental health problems (844). The Theoretical Domains Framework (TDF) was applied to the COM-B model, which allows specific interventions to be matched with key domains - specific Behaviour Change techniques were selected, based on the degree of available evidence supporting their efficacy for that type of barrier or enabler (845). A range of practically-feasible interventions derived from the data in this study are proposed in Table 5.2, below:

Table 5.2: Proposed interventions to enhance GP social prescribing and community engagement for patients with mental health issues, linked to Behaviour Change Techniques

Barriers/enablers	Intervention type	Behaviour Change techniques	Outline of strategy
Building GP skills, Building trust and relationships between GPs and others, Building the practice, Patient and community factors affecting SP uptake, GP desire to do things differently, GP professional identity	Training; Education; persuasion	Behavioural rehearsal; demonstration of behaviour; instruction on how to perform a behaviour; goal setting (behaviour and outcome); discrepancy between current behaviour and goal; verbal persuasion about capability; monitoring of (outcomes of) behaviour; information about social and environmental consequences; information about health consequences; credible source; pros and cons; salience of consequences; framing/reframing; identity associated with changed behaviour	Training package for GPs to improve upon the specific social prescribing referring and inter-personal skills for their patients (narrative-based healthcare education methods may be one relevant approach (846,847)); enhance education for GPs on the wider evidence base of social prescribing; enhance GPs' and other practice staff's knowledge of the local community assets and services on offer – this could be run by community group representatives or link workers. Explore the use of patient stories and community group experiences to educate GPs and other healthcare professionals on social prescribing/community engagement as an effective option to support patients; e.g. through use of videos and in-person accounts – teaching incorporating the 'patient voice' and lived experience has expanded in UK medical schools in recent years and could be enhanced further in GP training (848). The current GP curriculum requires GP trainees to 'build relationships with the communities they serve' and 'develop a holistic mindset' (838) and increased training on social prescribing could help GP trainees meet these targets. GPs could be encouraged to take online learning modules in Social Prescribing, as part of their CPD (Continuing Professional Development), such as this E-learning course for link workers which is also available to GPs and other healthcare professionals (836)
GP desire to do things differently, Understanding benefits of SP	Incentive; Enablement	Feedback on behaviour; feedback on outcomes of behaviour; positive reinforcement; social comparison; reward; identity associated with changed behaviour	Improve IT and in-person systems to provide regular, systematic feedback to GPs on their social prescribing-referred patients. The use of specialised digital software such as Elemental (842) could be harnessed for this, as could the more widespread involvement of link workers in Multi-disciplinary team (MDT) meetings (many practices already do this (825)), and indeed current NHS England guidance for Primary Care Networks calls for better integration of the new NHS roles (including link workers) into MDTs (843).
Building trust and relationships between GPs and others,	Enablement	Social support (emotional and practical)	Explore buddy systems for patients, accompanying/"hand-holding" them - those that may benefit from additional support - to initial community group and activity sessions; allocate adequate link worker time for this and/or harness volunteers for this – some GP practices already do this. 'Altogether Better' is an example of the use of volunteer 'Health Champions'

Barriers/enablers	Intervention type	Behaviour Change techniques	Outline of strategy
Understanding benefits of SP			that work within GP practices and support with things such as accompanying patients to their first social prescribing activity session (849).
Building the practice	Enablement; Environmental restructuring	Prompt/queues; behavioural substitution; behavioural cueing; habit formation; habit reversal; social comparison; conserving mental resources; restructuring the physical environment	Improve digital element of social prescribing referrals; use on-screen prompts for GPs (e.g. better use of on-screen 'Nudge' strategies (850)), and quicker, simpler forms that GPs can send to link workers. Elemental software provides one example for better use of digital referral technology in relation to social prescribing (842).
Building the practice, Collaboration between GPs and others	Environmental restructuring	Restructuring the physical environment; restructuring the social environment; adding objects to the environment	Explore re-purposing excess/unused GP practice physical space, or creating space where feasible in order to have a link worker working within the practice, and/or to invite the community in to utilise e.g. Kentish Town Caversham group GP practice, where a patch of unused derelict land next to their practice has been used to create a community garden used for mental health conversations with patients (851). Other similar examples (in London) include the Bromley by Bow Centre (156), or Sydenham gardens (852). This may not be feasible in many practices that do not have additional space.

5.1.5 Strengths and limitations

This study had a number of strengths, including its good spread of rural and urban perspectives and the involvement of GPs from across the full spectrum of career level. Further, the research was guided by an established theoretical framework and my use of multiple one-to-one interviews enabled me to confirm and explore themes in depth. However, there were some limitations. GPs were interviewed from across the UK, but the majority were still from England. Given slight differences in the roll-out of schemes within Scotland, Wales and Northern Ireland, research into the potential effects of interventions will need to be adapted to local settings. The self-selection of participants also means that some GPs facing more extreme barriers to engagement (e.g. due to lack of time or awareness) may not have been able to take part. However, our study did include a number of participants with no current engagement in social prescribing, so it was not just limited to those who were already significantly involved.

5.1.6 Conclusion

This study is the first to explore the barriers and enablers to social prescribing for patients with mental health issues, from the perspectives of GPs from across the UK. It highlights the need to address barriers such as lack of formal training for GPs on how to engage effectively, the importance of a range of strong inter-personal skills, and the benefits of the link worker role. Further studies are encouraged in order to develop and test the effectiveness of the behaviour change interventions proposed, e.g. whether they increase GP social prescribing referral rates or patient uptake.

Chapter 6 – Discussion

Each chapter of this PhD has already included a discussion of each of the individual study findings, strengths and limitations and implications. This section will provide a summary of the overall findings, situate the findings within the wider literature, outline the strengths and limitations of the whole thesis, and discuss implications for future research and practice.

6.1 Summary of findings

The aim of this thesis was to use qualitative methods to explore the role of social prescribing in supporting individuals' mental health, focusing on *how* these groups have an impact, as well as the barriers and enablers to GP engagement. The PhD contained three main objectives:

1) To explore and understand the 'mechanisms of action' underlying the mental health impacts of social prescribing activities on individuals and build a new 'theory of change' framework for these mechanisms
2) To identify key 'active ingredients' in social prescribing community groups, that lead to improved mental health and well-being
3) To identify the 'barriers and enablers' for General Practitioners (GPs) to effective social prescribing for individuals with mental health problems

Regarding the first objective, Study 1 involved an extensive review of over 600 mechanisms of action by which leisure activities impact health. The review focused on 'leisure activities' which constitute a large proportion of social prescribing activities, including arts, volunteering, and sports groups. The review found the mechanisms can be split into *psychological*, *biological*, *social*, and *behavioural* processes, that function at the *micro-*, *meso-* and *macro*-levels, and synthesised these findings into a new theoretical framework: The *Multi-Level Leisure Mechanisms Framework*. No framework could include every single mechanism and this review did

not claim to, however it does represent the most extensive review and framework to date for understanding how social prescribing activities may be impacting mental and physical health.

Also concerning the first objective, Study 2 used ethnographic methods to capture some of the core mechanisms by which four social prescribing community groups support individuals' mental health, among those with mental health problems. It used the multi-level leisure mechanisms framework to group these mechanisms in the analysis stage. Important mechanisms that were common across the four groups included increased self-confidence and self-esteem, experience of pleasure and improved mood, increased social support, formation of friendships and reduced loneliness, increased meaning/purpose, and enhanced sense of community and belonging. However, the study identified many more mechanisms that were important for different individuals across different groups and an extensive list of these is available in Appendix 8 (page 305).

Addressing the second objective, Study 2 also explored the key active ingredients across the four groups, using the INNATE framework to split these up into *Project*, *Contexts*, and *People*. Important highly shared active ingredients across the 4 groups included: high regularity and frequency of sessions, availability long-term, affordable, shared lived experience of mental health, a no-pressure environment, ample structured and unstructured social time, facilitator inter-personal skills, and the provision of a safe space. Differences between the groups were also highlighted in the study, with many active ingredients used effectively in some groups but not others (e.g. mental health professionals as members in the football and singing groups, but not the gardening or reading groups). The study also identified many more active ingredients across the different groups and an extensive list of these is available in Appendices 5-7 (page 284-304).

Study 2 also demonstrates the wide range of individuals social prescribing can support: across different ages, genders, ethnicities, socioeconomic status; those with loneliness, anxiety, depression, addiction problems, schizophrenia, PTSD, bipolar disorder, bereavement, chronic pain, etc. Social prescribing is not merely an option for those with mild mental health problems – for example, in the football group many individuals with severe mental health problems who were inpatients of the local mental health hospital (in the most severe ward category) had their mental health and overall lives substantially improve from regular

engagement with the group. Providing adequate support processes are in place, e.g. good inter-organisational links with local mental health teams, these groups can be profoundly helpful those with more severe mental illness.

Finally, regarding the third objective, Study 3 used qualitative methods to explore the barriers and enablers for GPs in engaging with social prescribing for individuals with mental health problems. This referral pathway represents just one route into such groups but is an important (and growing) one. This study was the first to explore this and highlighted the need to address barriers such as lack of formal training for GPs on the evidence base of social prescribing and how to engage effectively, as well as the importance of a range of strong GP inter-personal skills (e.g. active listening and motivational skills), and the benefits of the link worker role. This study also recommended a range of interventions targeting GP behaviour, linked to the barriers and enablers identified in the study, such as setting up a buddy system for accompanying patients to community groups using volunteers.

To summarise, my studies and this thesis have produced 6 core findings:

1. **Social prescribing is a complex intervention, that impacts individuals' mental and physical health through biological, psychological, social and behavioural mechanisms**. Social prescribing (in the broad sense) reflects a more salutogenic, personalised, positive psychological, asset-based, biopsychosocial, less individualised, approach towards mental health.

2. As well as supporting those with mild to moderate mental health problems and those experiencing social problems such as loneliness, poverty and unemployment, my findings also suggest that as long as appropriate support processes are in place, **SP can be helpful to those with severe mental illness and complex needs** (e.g. people with PTSD, schizophrenia and substance misuse problems).

3. There are some highly shared, core active ingredients of social prescribing (found across the 4 groups of Study 2): Shared experience of mental health, ample socialising time, excellent facilitator inter-personal and leadership skills, no-pressure environment, task/goal orientation, safe space, high regularity and high affordability/accessibility. Less commonly shared but highly important active ingredients within one or two groups included: mental health as staff members, inter-organisational partnerships, and welcoming atmosphere.

4. There are some highly shared, core mechanisms in social prescribing (found across the 4 groups of Study 2): Increased confidence/self-esteem, formation of friendships & reduced loneliness, increased sense of community & belonging, increased social support, experience of pleasure/joy, provision of structure/routine & meaning/purpose. Less commonly shared but highly important mechanisms within one or two groups included: increased openness to experience, increased job-seeking motivation and behaviour, and building a new identity.

5. Social prescribing is far broader than just the GP-link worker referral model, and there exist lots of referral routes into these groups – many of these warrant further attention. Hand-holding opportunities and active inter-organisational partnerships are valuable in creating more effective referral mechanisms.

6. GPs and other referring professionals may benefit from further training in social prescribing, covering knowledge of its wider evidence base, awareness of local provision, and effective referring skills to address barriers to engagement.

6.2 Situating findings within the wider theoretical context and literature

Recalling Chapter 1 (Historical and theoretical overview), my studies provide supporting evidence that social prescribing represents a novel intervention that challenges some of the traditional approaches towards mental health treatment and pathology. For example, Studies 1 and 2 demonstrate the many mechanisms through which social prescribing exerts its impact on mental health – not just through 'the biomedical', or medical symptom reduction. This supports both a biopsychosocial view of social prescribing and mental health, thus challenging the biomedical model, and also an understanding of social prescribing as a 'complex system', which influences mental health through a combination of interacting mechanisms, active ingredients and moderators as represented in Figure 6.1 below (121,853). Though moderators were not studied explicitly throughout this PhD (lending themselves to more quantitative methodologies e.g. regression analyses, sub-group analyses by age, gender, geography, etc.), they constitute an important component of this complex system and warrant further research in regards to social prescribing.

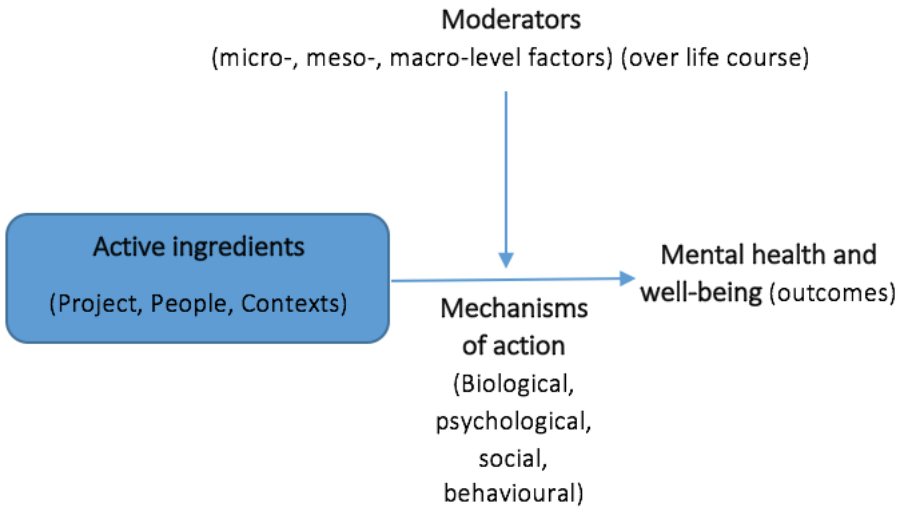

FIGURE 6.1 RELATIONSHIP BETWEEN ACTIVE INGREDIENTS, MODERATORS AND MECHANISM OF ACTION

My studies also support a move away from the medicalisation of individuals' mental health problems. GPs in Study 3 mostly supported the need to de-medicalise certain patient issues and provide more options for support within the local community. Instead of focusing on 'symptom reduction', the social prescribing groups

in Study 2 focused on an individual's and the community's 'assets' (854): the ability to play football, garden, sing and read together in a group. This is in keeping with a more salutogenic, 'positive psychological', less individualised form of support: a shift away from traditional and mainstream forms of mental health care (131,134). The fact that individuals accessed these groups through many different routes (as seen in Study 2) demonstrates the holistic, communitarian nature of health (855); thus further challenging the biomedical or medical dominance model that implies doctors and health professionals should be the ones most in control of mental health.

These principles seem to underlie some of the benefits of 'peer support' groups for mental health, whose number has been rapidly increasing in recent years, and have a growing evidence base for their role in supporting people with mental health problems (799,856). Similar to peer support, the shared, lived experience of individuals accessing the social prescribing groups in Study 2 allowed them to feel less stigmatised and alone, better understood and valued, and more readily able to access support. The types of social connection in these groups tend to embody Robert Putnam's positive social capital, rather than more negative forms (e.g. smoking or drinking networks) (810,811). My ethnographic work found that most individuals accessing these groups were on a similar journey trying to live healthier, happier lives and so tended to be positive influences on one another.

There have been previous studies that have attempted to 'explain' social prescribing through a key overarching theory, such as 'social cure theory' and 'self-determination theory' (227,857). These studies have been helpful in advancing our understanding of some of the key features of social prescribing. Indeed, my studies support the fundamental importance of social relationship formation in social prescribing ('social cure'), as well as aspects of self-determination theory (relatedness, autonomy and competence). However, a fundamental conclusion from my studies and this thesis is that social prescribing cannot be simplified down into a single, neat theory. Social prescribing groups are complex adaptive systems, activating many different mechanisms in individuals. These mechanisms will also vary between different types of social prescribing groups, and among different individuals.

Another way in which my research (particularly Study 2) provides an advance on existing social prescribing literature (608), is the evident utility of these groups for those with severe mental illness, e.g. severe addiction problems, schizophrenia or bipolar disorder. Social prescribing has the potential to be extremely valuable for these groups, providing appropriate support mechanisms are in place such as close links to local mental health teams. So far there has been very little research into social prescribing for those with severe mental illness, and my ethnography study represents one of the first known studies on this topic. The Football group within this study provided one highly effective and unique example of this, where mental health staff at the local mental health hospital (within most the severe ward), who were also full, playing members of the football club, and had a central role in the referring, hand-holding, and ongoing support of players – and had allocated time within their work week to accommodate this. Further, previous research has suggested social prescribing may exacerbate exiting health inequalities (linked to 'habitus', see page 51) (858). Whilst my research did not explicitly test this, my ethnography study did demonstrate these four social prescribing community groups largely supported individuals who were low socioeconomic status, often unemployed and/or from minority ethnic groups, providing some evidence at least that these groups do have the potential to support those individuals most in-need.

In order to effectively embrace a personalised model of care (152), which I outlined in Chapter 2 (2.1.1 'Policy context of social prescribing'), we must understand that in research that means embracing the complexity lens and resisting the urge to apply a single unifying theory to a concept as complex as 'social prescribing'. Hence, the use of broader, theoretical *frameworks* (859) (that better acknowledge this complexity by allowing for all the many different theories, mechanisms and active ingredients of social prescribing to sit within them) such as that of study 1, or the INNATE framework of active ingredients (216), are helpful. However, it is important to note that many of these mechanisms (and active ingredients and moderators) are also being continually researched in their own right both in relation to social prescribing activities and to broader activities, so our conceptual understanding of these components is constantly evolving.

6.3 Implications

This PhD has potential implications for several groups: 1) mental health researchers, 2) commissioners/funders (e.g. CCGs, PCNs, local government, private organisations), 3) community groups and 4) referrers (into social prescribing groups, e.g. GPs, psychiatrists, social workers, link workers, etc.).

For **mental health researchers**, the *Multi-Level Leisure Mechanisms Framework* is intended to support the design and conduct of future research into social prescribing's impact. It divides mechanisms of action into biological, psychological, social, and behavioural processes. It is hoped this can support the development of more multi-theory, cross-disciplinary studies that embody theoretical and methodological pluralism, e.g. social prescribing studies that research effects on multiple mechanisms simultaneously. My ethnography study was an example of how this framework could be applied to understand the mechanisms of action within different community groups, in this case inductively. Future studies should explore specific mechanisms in more detail, identifying systematically what research has been carried out, and conducting new studies where mechanisms have not been examined empirically. It is also important that future research investigates the mechanisms those that are less well understood, not just those that are frequently incorporated. It is also important to remember the conceptualisation of social prescribing groups/activities as complex adaptive systems (207). Studies that focus too narrowly on a single mechanism, attempting to isolate it from its context or other mechanisms, may not be reliable. We also need more research assessing the strength of the link between specific mechanisms to specific outcomes, and testing whether changes in certain active ingredients or mechanisms can improve the workings of other mechanisms, e.g. using a repeated measures design and logistical regression analysis as was done in a previous social prescribing study testing the 'social cure' theory (857).

It is also important to re-iterate that complex interventions do not follow as consistent pattern of effect as more simple pharmaceutical interventions and differences in findings when replicating studies does not necessarily mean the findings are unreliable (860). A wide range of factors ('moderators' e.g. age, gender, geography) can influence which mechanisms are activated for different individuals and moderate relationships

between multiple mechanisms and health outcomes, as well as affecting individuals' initial engagement. Indeed, it is increasingly acknowledged that complex interventions, such as social prescribing, often perform best when personalised to local circumstances, and do not always work in the same way for different individuals. Future research should explore the effect of moderators (micro-, meso-, and macro-level ones) in more detail.

Future studies examining mental health 'outcomes' of social prescribing could also consider broadening the focus of such outcomes, moving beyond merely anxiety or depression scores. Useful as measuring anxiety or depression symptoms can be, it still reflects highly medicalised, narrow conceptions of mental health (861). There is scope for greater use of more holistic, eudaimonic measurements, that capture more effectively the wide range of mechanisms involved in such activities, incorporating mechanisms or outcomes such as friendship, self-confidence, or meaning/purpose (e.g. Ryff's psychological well-being scale and Seligman's PERMA theory of wellbeing (804,805)). Given the differing impact these groups can have on individuals (who also have highly varying problems), more personalised measurement tools and outcome measures could also be utilised more, e.g. the MYCaW (Measure Yourself Concerns and Wellbeing) tool (862). Moreover, the orthodoxy of traditional RCT methodology (as seen in drug vs placebo trials) should be questioned when applied to the complex landscape of community, often involving significant flaws in this setting e.g. poor external validity and impossibility of blinding (863). There are many other methodologies well suited to evaluating social prescribing, e.g. ethnographies, qualitative interview studies, realist evaluations, cohort studies or pragmatic trials, that can provide rich data.

Future research should also explore the impact of social prescribing on those with severe mental illness, with most studies previously focusing on those with mild to moderate mental health conditions (163,167,236,812–814). My ethnography study clearly demonstrates the profound benefits these groups can have for those with severe mental illness. Research should examine whether social prescribing is being under-utilised for this population. Further, most research in the academic literature on social prescribing focuses on the GP-link worker model, which is highly important, but social prescribing is far broader than this one pathway, and future research should explore the range of referral pathways and models, moving beyond solely primary

care. Acknowledging complexity further, mechanisms, active ingredients and moderators occur in GP and link worker (and other referring professionals') consultations and can also be studied at these stages of social prescribing 'pathways', just as my ethnography (Study 2) examined them at the community group stage, and Study 3 at the GP-level.

For referrers, as I found within my ethnography study, there are many different professionals who refer individuals into social prescribing community groups, e.g. GPs, social workers, psychiatrists and other mental health professionals, third sector workers, and often friends/word-of-mouth. There were lessons from both this study, and Study 3 that may be useful for these groups of professionals. For example, building active partnerships with the community groups that referrers send people to is fundamentally important, supporting previous social prescribing research (150). Lasting relationships between individuals across organisations and gatekeepers are central to this. Relatedly, 'hand-holding' individuals to their first session with a group can make the experience less intimidating for them and increase their motivation for continued engagement, again backed up by previous social prescribing studies (157). It can also be beneficial for referrers to experience community groups and activities first-hand, aiding their understanding of how such groups work, as well as helping to build inter-organisational relationships and partnerships, and helping to blur professional-patient boundaries which can enhance therapeutic relationships (821). There were specific GP interventions proposed in Study 3, including incorporating social prescribing training into CPD courses, E-learning, greater use of the 'patient voice', better use of digital software to support with SP, and increased representation of link workers within MDT meetings. With appropriate training, behaviour change frameworks such as COM-B (844) could be utilised by individual GP practices or other referring groups, e.g. social workers or mental health professionals, to identify key barriers and enablers specific to their local circumstances.

Moreover, referrers could consider using the proposed frameworks (e.g. the leisure activities mechanisms framework (1)) to match a specific individual's needs (e.g. low self-esteem, social isolation, addiction problems) with community groups that have experience and success supporting with such issues. A deeper understanding of both the individual being referred, and the active ingredients and mechanisms

associated with the community group, is necessary for this. Finally, it is important to take a nuanced approach for those with severe mental illness, and not rule out a referral simply because of a more severe diagnosis. An individuals' current level of stability should be considered, balanced with an in-depth knowledge of the community group and their capacity at supporting those with more severe mental health problems – a highly personalised approach is key.

For social prescribing **community groups**, there are several potential implications from this thesis. For example, if supporting those with mental health problems, groups should consider inviting local mental health professionals (who themselves may enjoy the activity) to join as members or create more formal, mutually beneficial partnerships such as that seen in the football group of my ethnography study. This can enable continued care within the community and more trusting relationships to form between individuals and mental health professionals. Groups could consider using the proposed frameworks in the ethnography study, both the leisure mechanisms framework (1) and the INNATE active ingredients framework (216), to help frame what their group does to support people's mental health. This could have utility for noticing potential gaps for better practice, and act as a framework to demonstrate to funders and referrers the group's potential mental health and social benefits.

For **commissioners/funders**, including bodies such as CCGs, PCNs, local government and private organisations, there are some important implications from this thesis. Funding should be focused on partnership building, allocating time and resources for building active partnerships between community groups and local mental health teams and other organisations. This could include building hand-holding opportunities (e.g. for link workers, and other referring professionals – such as the mental health staff in the Football group in Study 2 who had allocated working time for this) and opportunities for professionals to gain first-hand experience of community groups. The hierarchy of medical evidence, e.g. placing at the top quantitative, controlled trials, that 'prove' efficacy of a group, should be questioned regarding its applicability to social prescribing community activities (864). The same standards for drug trials cannot readily (or, necessarily, validly) be transplanted into the complex landscape of community groups and activities (863,865). Other forms of

quantitative and high-quality qualitative research, case studies and participant stories can provide a deep exploration into the benefits of such groups for individuals and constitute valid evidence for commissioners, something which encouragingly is being acknowledged increasingly across the NHS (866).

6.4 Strengths & Limitations

The strengths and limitations of each study are outlined at the end of each study chapter. This section will outline the strengths and limitations of this thesis as a whole.

A key strength across the entire thesis was the consistent embracing of a 'complexity' conceptualisation of social prescribing. Each study adopted this lens: Study 1 involved a review of 600 mechanisms of actions demonstrating the complexity of social prescribing activities; Study 2 used ethnographic methods to explore the many mechanisms and active ingredients across four community groups; Study 3 centred around the COM-B model which is a behavioural change framework rooted in complexity theory and derived from a systematic analysis of behavioural change frameworks. Moreover, when considering social prescribing as a pathway, with many different components and 'players', the studies within this thesis covered many different perspectives, collecting evidence from GPs, link workers and other referring professionals, community group staff and crucially the individuals attending such groups. This incorporation of multiple perspectives and stages is fundamental to improving our understanding of social prescribing. It is possible that with the many mechanisms and active ingredients identified across Studies 1 and 2, it becomes more difficult to draw simple conclusions about social prescribing, however that is only a reflection of the complexity of the underlying processes.

There may have been a bias with participant recruitment in Studies 2 and 3, with participants self-selecting to take part. In Study 3, this may have meant those GPs were less representative of the broader GP profession e.g. they may have been more likely to have a prior interest in social prescribing. There was still a good spread of GPs in Study 3 across different levels of deprivation, rural-urban geography, and career-level. In Study 2 (the ethnography), it may have meant those participants more willing to actively engage in my

ethnographic research, e.g. to be interviewed, were somehow different to those who did not. However, my research participants did cover a wide range of mental health and psychosocial difficulties and did include individuals experiencing significant challenges within the groups as well as benefits. The self-selection concern could also apply to the community groups that agreed to take part in the ethnography. However, a good spread across social prescribing groups was deliberately chosen, embracing the breadth of social prescribing categories that exist, including sports/exercise, nature, education, and the arts – allowing more comparisons between groups and potentially wider conclusions to be drawn than studies with a narrower focus. Most studies previously have tended to focus on a single social prescribing community group/activity, or a single social prescribing model or pathway.

The PhD deployed exclusively qualitative methodology, and so given the small sample sizes of Studies 2 and 3 (although large for qualitative research), there are always limits on broader conclusions that can be drawn. However, the richness of ethnography in particular lies in the extended period of time I was able to spend with participants, enabling a temporal understanding of social prescribing and a deep exploration into their lives on-the-ground, on a level that few other methods can harness. This meant I was able to identify findings that may have not emerged using other methodologies that extract data from one or just a few time-points. Further, it allowed me to experience social prescribing myself, grounding both my previous research and my research into participants within my own lived experience, helping to further my understanding of social prescribing and enabling more effective data gathering skills from participants as the fieldwork period progressed.

6.5 Closing remarks

This PhD has provided evidence that social prescribing can support mental health through many different mechanisms, which interact with one another, and it has identified a range of active ingredients present in community activities. Social prescribing is not a single intervention, and there are many different types of social prescribing community groups/activities, which have overlapping but also different active ingredients, and thus mechanisms. My research found these groups are often able to reduce loneliness and facilitate friendship formation, support with addiction problems, create a more positive identity in individuals, and foster a sense of community and belonging. They also have the potential to support those of lower socioeconomic status and a wide range of psychosocial problems including those with severe mental illness. It is hoped that the leisure mechanisms framework developed in Study 1 can support the design of more theory-driven studies that readily embrace complexity and study the mechanisms underlying the mental health effects of social prescribing, as demonstrated within my ethnographic study. There are many different referral routes into these groups, and my studies highlight some unique examples (e.g. mental health hospital referral route into the football club in Study 2) and propose some potential interventions for GPs, with relevance for other referring professionals, too. Finally, social prescribing represents a novel approach to supporting mental health, one that has the potential to challenge biomedical, individualised solutions and embrace a more salutogenic, biopsychosocial, community-based model.

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Appendix 2. Participant information sheet for Study 2

SOCIAL PRESCRIBING

Research Project Information leaflet: community group participants, patients, link workers and GPs

You are invited to take part in a research project focused on Social Prescribing. This leaflet explains why we are conducting this research and what will be involved if you take part. Please feel free to ask if there is anything that is not clear, or if you would like further information.

What is social prescribing?

Social prescribing is the use of local community groups, services, and activities to support individual's health and well-being. This may arise via a referral of a person from their GP to a link worker, who aims to connect that person to such groups.

What is the purpose of this research?

We are exploring how social prescribing is working for community groups on-the-ground, as well as GPs, link workers and patients. We are exploring the potential benefits of this type of social prescribing to patients and community group users.

What will happen in this research?

The researcher will take part in the activities of the community group, observing and experiencing first-hand the effects of such activities. The researcher may ask questions about individuals' experience. For some participants, with their permission, the

researcher may sit in on GP and link worker consultations that are related to social prescribing.

Do I have to take part?

No. It is completely up to you whether you would like to take part. If you do choose to take part, you will be given this information leaflet to keep and asked to sign a consent form. Even if you have given consent, you are free to withdraw at any point and do not need to give a reason for this. This will not affect the standard of care you receive in any way.

What will happen if I agree to take part?

If you agree to take part, we will explain the process in more detail and answer any more questions you may have. You will be asked to sign a consent form. There is a possibility at a later point the researcher may want to do a short interview with you about your experience, and if you agree the sound of that interview will be recorded – you will be asked to specifically consent for this aspect.

Will my details be kept confidential?

Yes, only members of the direct research team will have access to your personal details. The exception to this is if any clear safeguarding issues arise, in which case your GP or link worker may be informed. All information collected during the research will be treated with the strictest confidence, in accordance with the Data Protection Act 2018. Data will be stored by University College London on a secure database. Data will contain no personal identifying information, and unique code names will be used. All original written notes or audio recordings will be deleted. The results of this study may be published but your name nor any other personal identifier will be used in a publication. The results will be available to participants, if requested.

What are the potential risks or benefits of taking part?

There are no major foreseeable risks of taking part in this research. If any issues arise, such as psychological discomfort of being involved, then please do let us know, and

remember you are free to withdraw from the research at any time. There may be some benefits, for example for patients having a friendly face to accompany them to appointments with link worker or community settings. The research will also help inform the social prescribing service so that care can be improved for other patients experiencing the pathway.

Local Data Protection Privacy Notice

The controller for this project will be University College London (UCL). The UCL Data Protection Officer provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk

This 'local' privacy notice sets out the information that applies to this particular study. Further information on how UCL uses participant information can be found in our 'general' privacy notice. For participants in health and care research studies, visit https://tinyurl.com/yacga9me

The information that is required to be provided to participants under data protection legislation (GDPR and DPA 2018) is provided across both the 'local' and 'general' privacy notices.

The lawful basis that will be used to process your personal data are: 'Public task' for personal data and' Research purposes' for special category data.

Your personal data will be processed so long as it is required for the research project. We will endeavour to minimise the processing of personal data wherever possible. If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk.

What if things go wrong? /complaints

If anything goes wrong, or to make any complaints, please contact UCL data protection details Patient Advice and Liaison Service (PALS) at 02034473042 and uclh.pals@nhs.net or UCL data protection office at data-protection@ucl.ac.uk

What will happen to the study results?

The results of the study may be published in an academic journal, which may be read by other academics and health professionals, but your name nor any other personal identifier will be used to identify you in a publication. The results will be available to participants, if requested.

Who is organising, sponsoring and funding this study?

The study is being organised by Chief Investigator Dr Daisy Fancourt (UCL) and student researcher Henry Aughterson (UCL), sponsored by the UCL Joint Research Office (JRO) and funded by UCLH Charity.

Who has reviewed this study?

All research in the NHS is looked at by an independent group of people called a Research Ethics Committee. A favourable ethical opinion has been obtained from <Camden and Kings Cross Research Ethics Committee>. NHS Management Approval has also been given.

For more information, please contact:

Student researcher:

Henry Aughterson

PhD and medical student, UCL

Behavioural Sciences and Health

Institute of Epidemiology

University College London

07534241106

henry.aughterson.14@ucl.ac.uk

Chief Investigator:

Dr Daisy Fancourt MA(Oxon) MM PhD FHEA FRSPH
Associate Professor / Wellcome Research Fellow
Research Department of Behavioural Science and Health
Institute of Epidemiology & Health Care
University College London
1-19 Torrington Place, London, WC1E 7HB
d.fancourt@ucl.ac.uk
07958065563

UCL Joint Research Office

(Project ID number): 279076

Thank you so much for reading this information leaflet and for considering to be part of this research.

Appendix 3. Topic guide for Study 2

Interview guide:

Introduction, service use and health history:

Demographics: age, ethnicity, MH condition, PH condition, level of education, level of employment

Could you talk a bit about your own journey with mental health? Physical health? Substance use?

Talk to me about your experience of using health services/mental health services? What things were positive, and is there anything the service could have done better?

Any experiences of therapy?

How do you currently feel about your diagnosis/past diagnoses? Treatment you are on/have received?

In your experience with health professionals, to what extent have community groups and activities been discussed in the past?

Joining the group:

How did you hear about the group, and what was the process by which you joined up?

What influenced your decision to join? If through a person, how were they able to persuade you? What else influenced your decision? What did you hope to get out of the group?

Have you done any other community groups or activities before this/alongside this?

Were there any barriers to joining up for you? Could you describe these? What do you think some of the barriers might be for others?

How come you hadn't joined up before? Or to something like this?

Engagement with the group:

How long have you been coming to the group?

How involved are you/what do you do each week with the group?

Why do you keep coming back? What helps you/motivates you to engage with the group? (prompts: any particular individuals, mental health, physical health, keeping busy, social connection)

Has your view of the group evolved over time? If so how?

Have you always liked this activity? Was/is that important?

Are there any aspects of the group that you feel could be improved? If so, what would you change? To ensure people get the most benefits from it? To ensure it is inclusive? To support you better?

Mental health:

Have you noticed any (mental health) benefits for yourself since joining the group? If so, could you describe them? Any impact on symptoms? " " physical health?

How do staff/facilitators promote the mental health and well-being of yourself and other members?

What are the key features of the group, if any, that make it supportive for mental health, or enjoyable?

Could you compare/contrast your experiences of more formal mental health services with your experiences with the group?

Social/psychological:

Have there been any knock-on effects of joining the group, in terms of impact on your wider life? Any impact on your relationships? Health behaviours (substances, diet, exercise, sleep, other forms of looking after yourself)? Productivity/work? Attitude/ways of approaching things?

Has the group impacted your sense of community? If so, how?

Has the group impacted how socially connected you feel? If so, how? How have your relationships with other group members evolved?

Has the group had any impact on your sense of identity? /Your sense of shaping who you are? If so, how?

How has the group, if at all, influenced your:

Confidence levels, or self-esteem? Empowerment?

Focus, concentration?

(Gardening – impacted your relationship to nature?)

(Gardening/football – impact of being outside?)

Experience of personal growth?

Sense of…

Purpose, or meaning? Achievement?

Control, or personal responsibility? independence?

Competence/ability to do activity (in said activity, and wider)? usefulness (to others)?

Structure? Keeping busy?

Feeling safe?

Co-operation, working together, teamwork?

Hope or optimism (for the future)?

Belonging? Stigma/non-stigmatising?

Being in the present moment?

What social or practical support, if any, have you received through the group? And have you given any social support?

Has the group influenced your ability to cope with difficult circumstances or emotions? If so, how?

Have you learnt anything/any skills from the group? Social skills? Communication skills? Anything else?

Can you describe any particularly memorable moments in the group/activity? (Especially any that had a positive impact on your mental health/well-being, or made you appreciate the group)

What would you say to health (or social care) professionals about these types of groups?

Appendix 4. Consent form for Study 2

IRAS ID: 279076

Centre Number:

Study Number:

Participant Identification Number:

CONSENT FORM FOR RESEARCH PARTICIPANT

Title of the project: Social Prescribing study

Name of Student Researcher: Henry Aughterson

Thank you very much for your interest in taking part in this research. Before you agree to take part, the person organising the research must explain the project and information sheet to you, and answer any questions you have. You will be given a copy of this Consent Form to keep and refer to at any time.

Please Initial Box

1. I confirm that I have read the information leaflet dated 01/02/21 (version 1.1) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical or legal rights being affected. ☐

3. I consent to the processing of my personal information for the purposes of this study, but that such information will be treated as strictly confidential and handled in accordance with GDPR and the Data Protection Act 2018. ☐

Yes / No

4. I understand that the information collected about me will be used to support other research in the future, and may be shared anonymously with other researchers. ☐ ☐

Yes / No

5. (Optional) I agree to my GP being informed of my participation in the study, including any necessary exchange of information about me between my GP and the research team. ☐ ☐

Yes / No

6. (Optional) I understand that a part of the study may be audio recorded and I consent to the use of this material, in written form and anonymously, being used as part of the project. ☐ ☐

Yes / No

7. (Optional) I agree to be contacted by this UCL researcher to participate in a follow-up interview as part of the project. ☐ ☐

8. I agree to take part in the above study. ☐

Participant:

Your Name (PLEASE PRINT)	Date	Signature

Researcher:

HENRY AUGHTERSON	22.2.21	HWA
Your Name (PLEASE PRINT)	Date	Signature

Appendix 5. Active ingredients in the project category of Study 2

PROJECT						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
Attributes	Qualities and characteristics of the activity	**Format**	Relating to the arrangement, style and type of activity	Mode	The form in which the activity occurs	In-person	In-person	In-person (some virtual during COVID-19 pandemic)	In-person (some virtual during COVID-19 pandemic)
				Synchroneity	Degree to which the activity occurs in real-time for participants	Live	Live	Live	Live (with recording elements/activities between sessions)
				Activity level	Degree to which the activity requires active participation	Active	Active	Active (but possibility for more passive, e.g., just listening to the reading)	Active
		Dose	The amount of activity(ies) received by participants	Frequency	Rate of occurrence or engagement with an activity	Regular (6 days/week)	Regular (1-4 days/week, depending on sub-group)	Regular (1/week)	Regular (1/week)
				Duration	Length of dose/exposure of activity measured in time	2-4 hours	3-6 hours	3 hours	1 hour
				Maintenance	Over what time periods the activity continues	Long-term	Long-term	Long-term	Long-term
		Design	Relating to a structural plan for the activity which may or	Structure	How the activity is formally	Structured	Semi-structured	Structured	Structured

PROJECT						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
			may not be adaptable		organised in its delivery				
				Guiding	Degree to which the activity is taken in a particular direction to reach a goal or outcome	Not especially guided	Partly guided	Highly guided	Highly guided
				Project approaches	Approaches or techniques employed within the activity that characterise it	Not recorded	Not recorded	Not recorded	Not recorded
				Personalisation	Degree to which the activity is designed to meet participants' needs or preferences	Not highly personalised	Not highly personalised but freedom to choose what jobs you do	Personalised	Personalised
				Challenge	Level of difficulty of the activity and whether the difficulty can be adapted across participants	Moderate	Easy-moderate	Moderate-stretching	Easy-moderate
				Goal orientation	Degree to which the activity is directed towards a particular aim or ends and who sets goals	Goal-focused, e.g. upcoming matches or tournaments	Goal-focused, e.g. completing certain jobs in the gardens	Goal-focused, e.g. completing a book	Goal-focused, e.g. learning a song, or working towards a performance

PROJECT						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
				Feedback	Whether and how evaluative information or reflections are included in the design of the activity	Peer-led, e.g. feedback forms	Peer-led, e.g. feedback forms	No	No
		Artistic content	Relating to the artistic dimensions of the activity	Genre	The primary branch of creative activity in which the activity(ies) is(are) categorised and sub-categories	Sports	Nature	Bibliotherapy	Arts
				Multi-modality	Degree to which the activity draws upon a range of different art forms or disciplines in its delivery	No	No	Poetry and fiction/literature	Music
				Activity type	The kind(s) of activity(ies) included that define(s) the creative engagement	Football	Gardening	Group poetry and reading fiction	Group singing
				Themes	Engagement with specific themes or subjects as part of the artistic content	No	No	Mental health, nature, acceptance, compassion, creativity, meaning, reflection	Joy, sadness, celebration, togetherness, mental health

PROJECT						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
		Activity resources	Physical, conceptual or informational materials used/employed in the delivery of the activity	Activity consumables	Activity resources that can be used up or depleted	Food and drinks	Food and drinks	Food and drinks, poetry sheets	Food and drinks, music sheets
				Props	Items such as objects or furnishings employed within the activity	Footballs, goals, pitches, cones, bibs, whistles, keeper gloves	Spades, shovels, watering cans, wheelbarrows, gardening gloves, tool seats, etc.	Books, poetry	Music sheets
				Products	Tangible outputs of an activity	E.g. paintings, drawings, videos	Fresh produce from harvest, constructed things e.g. fences, trellises, greenhouses, sheds, pathways	Poetry and other bits of writing	Video or song recordings
				Performances	Intangible outputs of an activity (incapable of being perceived by the sense of touch)	Matches, tournaments	Harvest sales	No	Performances
		Integrated activities	Activities that are integrated within the arts/cultural activity(ies)	Psychosocial support	Professional techniques and/or resources designed to support mental health, wellbeing, experiences of psychological disorders	Welfare officers (peer support)	No formal	No formal	No formal

PROJECT						Football	Gardening	Reading	Singing
Category	Definition	Sub-category 1	Definition	Sub-category 2	Definition				
					and/or quality of life				
				Allied therapies	Therapeutic techniques that treat or manage physical disability, malfunction, pain or stress and tension via physical methods	No allied therapy	No allied therapy	No allied therapy	No allied therapy
				Health education	Learning experiences designed to help individuals and communities improve their health by increasing their knowledge or influencing their attitudes	Mental health first aid training available	None	None	None
				Spiritual or holistic practice	Experiences relating to religious, spiritual or mind-body practices	No	No	No	Breathing exercises
				Socially-engaged practice	Programmes designed to engage with social issues or that seek social or political change	No	No	No	Aims to reduce mental health stigma

PROJECT						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
Engagement	Stimuli prompting active involvement in the activity	**Sensory stimuli**	Objects, actions, materials or experiences that activate the senses as part of the activity	Sight (Vision)	Perception of objects or imagery by use of the eyes as part of the activity	No	Engagement with nature, e.g., the soil	No	No
				Hearing (Auditory)	The perception of stimuli by the ear as part of the activity	No	Engagement with nature, e.g. bird song	Listening to reading	Music
				Smell (Olfactory)	To perceive odour or scent through the nose as part of the activity	No	Engagement with nature, e.g. smell of flowers	No	No
				Taste (Gustatory)	The act of tasting food or drink as part of the activity	Delicious home-made food in the social club	Trying the fresh garden produce	No	No
				Touch (Tactile)	To use the body (i.e. hand, finger) to be in contact with something (i.e. an object or person) as part of the activity	The football	Engagement with nature, e.g. the soil	The physical book	No
		Cognitive and/or creative stimuli	Objects, actions, materials or experiences that activate cognitive processes as part of the activity	Involvement of the imagination	Stimulating mental images, concepts, or other creativity-relevant processes (those that are conducive to independence, risk-taking, and	No	Use of creativity to fix or build things	Use of imagination to interpret the text, or write own poetry	No

PROJECT						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
					taking new perspectives)				
				Emotional stimuli	Something about the activity or aspects of it that brings about affective states of consciousness (feelings)	No	No	High level of emotional stimuli in the books and poetry	Processing of singing, along with the melody and lyrics, can involve a high level of emotional stimuli
				Cognitive stimuli	Something about the activity or aspects of it that prompts mental processes of perception, memory, judgment, and reasoning (contrasted with emotional processes)	Cognitive stimulation involved for participants who support with coaching or admin for the club	Problem-solving involved in building and fixing things	High level of cognitive stimuli in the books and poetry	Cognitive stimuli involved in learning song lyrics and melody
				Aesthetic engagement	Participants having a subjective sense of something as beautiful through engagement with the activity	No	Yes, through engagement with nature	Yes, through engagement with the literature	Yes, through group singing
				Pleasure	Something about the activity or aspects of it that brings	Moments of fun, enjoyment, laughter	Moments of fun, enjoyment, laughter	Moments of fun, enjoyment, laughter	Moments of fun, enjoyment, laughter

PROJECT						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
					about feelings of pleasure				
				Participant choice	Making a selection from a number of possibilities based on preference or under guidance as part of the activity	Low level of participant choice	Participants can choose what jobs they help with, but is often a guided choice based on what needs doing in the gardens	A degree of participant choice in picking the books the group read, although this is often a guided choice	A degree of participant choice in picking the songs the group sings, although this is often a guided choice
		Physical motions and actions	Physical, bodily motions or actions employed as part of the activity	Proprioception (or kinaesthesia)	Heightened awareness of the body's position and movements, and whether this is free or guided	Yes, through the activity of football	Yes, through physical activity of gardening	No	Yes, through breathing exercises and use of voice
				Movement	Any bodily movement prompted by the activity as produced by skeletal muscles that require energy expenditure	High level of physical movement	Significant degree of physical movement	No	Light physical movement
				Physical exercises	The systematic use of exercises as part of the activity to promote bodily fitness and strength	High level of physical exercise	Mild-moderate level of physical exercise	No	Very mild physical exercise

Appendix 6. Active ingredients in the people category of Study 2

PEOPLE						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
Social composition	Relating to how people interact through engagement with the activity and who is involved in this interacting	**Social diversity**	The people involved in the activity	Presence of others	The number of people and/or the size of the group that the activity entails	Large group (often 15-20 in sessions)	Small groups of 5-10	Small group of 6-7	Large group of 15-20
				Shared attributes	Whether individuals engaging together in the activity have characteristics in common	All with mental health conditions or substance misuse problems, mostly local, male and female teams split up, mostly low socioeconomic status	Mostly local, mostly low socioeconomic status	Mostly local, mostly low socioeconomic status	Mostly women, mostly low socioeconomic status
				Distinct attributes	The diversity of individuals engaging together in the activity	Mix of ages (~16-50), ethnically diverse, mixed footballing ability	Mix of ages (~24-80), even split of gender, ethnically diverse, mixed gardening ability	Mix of mental health conditions Mix of ages (~30-70), even gender split, ethnically diverse, mixed reading ability	Mix of ages (~30-70), mix of mental health conditions, ethnically diverse, mixed singing ability
		Participant experience	Previous experiences that participants may bring to an activity	Activity experience	Whether individuals engaging have previous experience of the activity	Most/all had played football before	Many but not all had gardened before	Many were new to reading to his degree	Mixture of prior experience
				Health experience	Whether individuals engaging have previous experience or knowledge of specific health conditions,	Not recorded	Not recorded	Not recorded	Not recorded

PEOPLE						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
					healthcare in general, or health outcomes				
				Lived experience	Whether individuals engaging have personal experiences relevant to who the activity is tailored for	Lived experience of mental health and/or substance misuse problems	Lived experience of mental health or social problems	Lived experience of mental health problems	Lived experience of mental health problems
				Relationship to others	The kind of relationships the individuals engaging together in the activity have to one another	Some pre-existing friendships, or patient-professional relationships	Some pre-existing friendships, but mostly new	Mostly new friendships	Some pre-existing friendships, but mostly new
				Personal attributes	Personal qualities that participants have which inform how they engage with the activity	Confidence, sporting ability	Not recorded	Self-confidence, reading ability	Not recorded
		Integrated social exchanges	Social exchanges (face to face or digital) between participants that are part of or integrated into the activity	Shared focus	Whether and how attention is given collectively to an object, activity, thought or person/people as part of the activity	Highly shared focus on playing football	Sometimes joint focus with one or two others, but often different tasks – although shared focus around the activity of gardening	Highly shared focus on what is being read and discussed	Highly shared focus on singing as a group
				Shared activity	Whether and how participants cooperate or collaborate as part of the activity	Highly shared activity	Shared activity although often jobs are split up	Highly shared activity	Highly shared activity
				Social exchanges	The social elements of the activity itself that involve interaction with others	Banter, communication on the pitch, emotional support, chit-chat	Banter, chit-chat, communication about tasks	Banter, opening up, emotional support, chit-chat	Banter, chit-chat, singing in harmony, communication about lyrics or melody

PEOPLE						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
				Structured social time during activity	Aspects of the activity that encourage the formation of social relationships or socialising	Not structured	Social tea-breaks	Check-ins at the beginning of sessions and social breaks	Check-ins at the beginning of sessions
				Structured social time outside of activity	Planned time outside of the core activity delivery used to encourage the formation of social relationships or socialising	Group trips e.g. to see a professional football match in a stadium	Group trips e.g., to famous gardens	Not often	Group trips e.g., to exhibitions, or walks
				Communications	Whether and how those in leadership/management communicate with participants in the lead up to and after the activity	Whatsapp messages, and phone calls	Whatsapp messages and newsletters	Emails to participants, And phone calls	Emails and Facebook
		Informal social exchanges	Social exchanges (face to face or digital) between participants that are not planned as part of the activity	Unstructured social time during activity	Space provided during an activity for participants to informally socialise	Food and games at the social club after sessions	Social tea-breaks	Time for this throughout sessions	Socialising time before and after sessions
				Unstructured social time outside of activity	Social time or social activities shared between participants outside of the activity, without formal guidance	Peer meet-ups and phone calls	Peer meet-ups and phone calls	Peer meet-ups and phone calls	Peer meet-ups and phone calls
Activity facilitation	Relating to the people who lead or guide the outward facing	**Type**	Relating to the kind of leadership employed to	Facilitator(s)	Who facilitates the activity during its delivery and what form this facilitation takes	Coaches run sessions, but these are still exclusively members with lived experience of mental health	Paid gardening staff run sessions	Volunteer group facilitators coordinate the sessions	Paid group choir leader runs the sessions

PEOPLE						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
	aspects of the activity (i.e. not the administrative aspects but the activity facilitation)		deliver the activity						
				Co-production	Whether the activity involves actively including participants in the process of delivering and facilitating it	Yes, coaches and supporting helpers are all participants	Long-standing members often adopt more supportive, leadership roles	No	Long-standing members often become more involved, e.g. the choir committee
				Number	The number of people who facilitate or lead the activity	Group of coaches/helpers	Several staff facilitating sessions	2-3 co-leaders	1 leader
				Professionalisation	Whether the person/people who facilitate the activity identify as professional(s) within their specific field/domain	Peer-led	Professional gardeners	Non-professional but often related backgrounds, e.g. experience in writing	Professional choir leader
				Training	Whether the person/people who facilitate the activity have professional training (i.e., domain-specific skills)	Peer-training and qualifications possible through the club	Professionally trained previously	Internal training to be a group leader	Professionally trained previously
				Consistency	Whether facilitation changes or stays the same	Can change fairly regularly	Consistent	Consistent	Consistent
		Facilitator experience	Approaches and/or experiences that a facilitator may	Activity experience	The amount of previous domain-specific experience, knowledge or skills members of activity facilitation have	Lack of prior experience	Significant prior knowledge and skills	Mixed	High level of prior knowledge and skills

PEOPLE						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
			bring to an activity						
				Health experience	The amount of previous experience or knowledge members of activity facilitation have in relation to specific health conditions, healthcare in general, or health outcomes	Limited for most	Often quite limited prior to working with the gardens	Mixed	Good level of prior experience
				Lived experience	Whether members of activity facilitation have personal experiences relevant to who the activity is tailored for	Lived experience of mental health and/or substance misuse problems	Less so	Mixed, but helpful	Less so
				Relationship to others	The kind of relationship the facilitator has to those engaging in the activity	Peers	Professional/paid vs volunteers	Volunteer, so in between peer and professional in relation to the members	Professional/paid vs members
				Personal attributes	Additional qualities that the facilitator(s) bring to the activity that informs how it is delivered	Charisma, confident, competent, patience, compassion, good inter-personal skills, welcoming	Confident, competent, empathy, compassion, good inter-personal skills, welcoming	Charisma, confident, competent, patience, kindness, welcoming compassion, empathy good inter-personal skills	Charisma, confident, funny, competent, patience, empathy, compassion, good inter-personal skills, welcoming
		Practice and style	The manner in which the activity is delivered	Technique	Whether the activity facilitator(s) draw on approaches or technical skills that are characteristic of one's domain-specific field	Not recorded	Not recorded	Not recorded	Not recorded
				Values-directed focus	Whether and how the facilitator(s) deliver the activity based on specific ethical values	Respect, positivity, no hierarchy, importance of trust. Focus on football over mental health	Willing to help others. Focus on gardening over mental health	Compassion, kindness, empathy, validating, no right answer/interpretation, positivity	Validating, kindness, no need for perfection, risks are important, no hierarchy. Focus

PEOPLE						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
									on singing over mental health
				Outcomes-directed focus	Whether and how the facilitator(s) focus on health, educational, or aesthetic goals as part of the activity	Focus on upcoming matches and tournaments but goal is to have fun not just to win	Focus on completion of gardening tasks but this is not rushed	Focus on completing books but this is not rushed	Focus on songs/performance but goal is to have fun not sound perfect
				Person-centred focus	Whether and how the facilitator(s) consider participant preferences, safety, needs, and values to deliver the activity	Limited due to big group size	Not a focus, but environment is very no-pressure	Big focus of facilitator is to make individuals comfortable and at-east, especially if new to the group	Facilitator makes individuals at-ease through use of humour and validation
				Autonomy-directed focus	Whether and how the facilitator(s) provide participants with autonomy as part of the activity	Not especially	Volunteers have choice in what tasks they get involved with	Members have a say in what book or poetry the group does, and also are encouraged to bring in their own writing or poetry	Members have a say in what song are sung, and venue they perform at, or group trips they do
				Equality, diversity and inclusion	Whether and how the facilitator(s) consider fair treatment and equal opportunities to deliver the activity	Inclusivity and equality are important principles to the club. Targeted towards those with mental health and substance misuse problems	Open to all, especially those with mental health or social problems	Targeted towards those with mental health problems	Targeted towards those with mental health problems
				Safety	Whether and how the facilitator(s) consider the safety of participants in how the activity is delivered	Discipline necessary when the principle of respect is not followed, in order to maintain safe space for others	Physical safety of volunteers is an important consideration	Emotional safety a strong consideration from facilitators	Emotional safety a strong consideration from facilitators
				Tailoring	Whether and how the facilitator(s) personalise or adapt the activity to meet the needs of participants	Non-tailored	Non-tailored	Degree of personalisation	Degree of personalisation

PEOPLE						Football	Gardening	Reading	Singing
Category	**Definition**	**Sub-category 1**	**Definition**	**Sub-category 2**	**Definition**				
		Additional people	Staff or other people that support or co-lead the activity	Presence of volunteers	Unpaid staff who support or co-lead the delivery of the activity and what they do to support	Many volunteer staff	All professional staff	Volunteer staff	Volunteer supporters
				Presence of healthcare professionals	Healthcare professionals who support or co-lead the delivery of the activity and how they support	Presence of mental health professionals	No	No	Presence of mental health professionals
				Presence of others	Other staff or people and how they support, co-lead or are present for the delivery of the activity	Other professionals present, e.g. local charity workers and police officers	No	No	No

Appendix 7. Active ingredients in the contexts category of Study 2

CONTEXTS						Football	Gardening	Reading	Singing
Theme	**Definition**	**Sub-theme 1**	**Definition**	**Sub-theme 2**	**Definition**				
Setting	The aggregate of place(s), things, surroundings and feelings that make up the situation of the activity	**Environment**	The circumstances, objects, and conditions which make up the surroundings of the activity	Location	The place where the activity is delivered	Outdoors, football pitches	Outdoors, gardens	Indoors, church	Indoors, community room in mental health hospital
				Basic features	Functional aspects of where the activity takes place and how room(s)/space(s) are arranged	Artificial football pitches	Several urban community gardens sites	Church with seating area	Room with lots of seats and tables
				Attractiveness	Whether the environment of the activity is perceived as beautiful, attractive or pleasing to the eye, as well as and modifications made	Functional	Very beautiful	Beautiful setting	Functional
				Situation	The geographic and/or socioeconomic features of where the activity takes place	In a highly urban area, high level of area deprivation	Gardens within a highly urban, socioeconomically deprived area	Affluent area, highly urban	Highly urban area, mixed socioeconomic surroundings
				Time and day	When the activity takes place and whether this changes	6 days a week, middle of the day	Tuesdays and Fridays sessions 10-2pm, and for one sub-group most days of the week 10-4pm	Wednesdays 1-4pm	Wednesdays 6-7pm
				Access	The methods used and the means or opportunities available	Most participants live within the local area, however some get	Most participants live within the local area, however some get public	Most participants live within the local area, however some get public	Most participants live within the local area, however some get

CONTEXTS						Football	Gardening	Reading	Singing
Theme	**Definition**	**Sub-theme 1**	**Definition**	**Sub-theme 2**	**Definition**				
					to find and participate in an activity	public transport across the city	transport across the city	transport across the city	public transport across the city
				Privacy	Whether the location of the activity is accessible by anyone (including those not engaging) or if it is only open to those who are part of the activity	Public setting, members of the public can walk past the pitches. But the pitches are private and hired by the club	Public, community gardens, members of the public can walk past, but only volunteers can enter so privacy is maintained	Private room	Private room
		Atmosphere	The character, feeling, or mood of a place or situation where the activity takes place	Comfort	Degree to which the setting of the activity elicits a sense of ease, safety and relaxation	Safe space	Safe space, serene environment	Safe space, highly relaxed environment	Safe space
				Belonging	Degree to which the setting and environment elicits a feeling of being included	Highly welcoming atmosphere	Highly welcoming atmosphere	Highly welcoming atmosphere	Highly welcoming atmosphere
				Familiarity	Degree to which the setting of the activity is known or unknown by participants	Familiar setting to most participants	Familiar setting to most participants	Familiar setting to most participants	Familiar setting to most participants
				Ambiance	The mood or tone of the surroundings where the activity takes place	Noisy, crowded	Peaceful, nurturing	Calm, quiet	Separated off from society/outside
				Organisation	How the delivery and management of the activity is perceived by participants	Sometimes quite inefficient, but organic	Organic feel	Organic feel, efficient	Organic feel, efficient
Project set-up	The structure, processes and/or systems	**Economic resources**	Relating to economic resources connected to the	Participant charges	Monetary transactions connected to or part of the activity and any support structures in	Highly affordable. Free activity. Free food and drink available and	Highly affordable. Free activity. Free food and drink and events	Highly affordable. Free activity. Free food and drink and books	Highly affordable. Free activity. Free food and drink and events/trips

CONTEXTS						Football	Gardening	Reading	Singing
Theme	**Definition**	**Sub-theme 1**	**Definition**	**Sub-theme 2**	**Definition**				
	which surround the outward facing delivery of the activity		activity and its delivery		place to ensure equal distribution of monetary resources	travel costs to matches and tournaments			
				Project funding	Whether and how the activity is delivered using monetary resources obtained through external organisations, individuals, trusts, charities or the government to be used for the purpose of delivering the activity	Local council funding and trust funding	Trust funding, corporate funding and local council funding	Trust and charity funding	Trust and charity funding
				Fees	Whether the people involved in the delivery of the activity are paid for their time	Several paid staff	Several paid staff	Volunteer leaders, not paid	One paid staff
				Longevity	The duration of the activity across time and whether the activity can be upheld and supported with the economic resources available	Available long-term	Available long-term	Available long-term	Available long-term
				Environmental sustainability	Whether the best use of resources are made in view of what may be harmful to the environment	Not recorded	High level of environmental sustainability, with the local recycling of fresh produce, use of electric vehicles, etc.	Not recorded	Not recorded
		Management	Relating to the person, people, group(s) or company(ies) in	People	Whether there are any people 'behind the scenes' of the	Administrative support staff	Board of trustees	National organisational staff	Volunteer committee

CONTEXTS						Football	Gardening	Reading	Singing
Theme	**Definition**	**Sub-theme 1**	**Definition**	**Sub-theme 2**	**Definition**				
			charge of organising the activity		participant-facing aspects of the activity				
				Affiliation	Whether and how the activity is connected to an organisation or institution	Association with the FA (Football Association)	No	National reading organisation	No, although placed/connected within a mental health hospital
				Branding	The language, visual imagery, and ethos and/or symbols that represent a connected organisation, institution and/or the activity	'Reduce mental health stigma and provide footballing opportunities for those with mental health problems and/or substance misuse problems' & Respect	Environmental sustainability; 'growing plants, growing people, growing communities'	'Improve lives through reading'	'Reduce mental health stigma'
				Collaboration	Working in partnership with other organisations or institutions in the delivery of the activity	No	No	No	No
				Patient and public involvement	Actively including participants or the public in the process of designing and organising the activity	Club run by those with lived experience of mental health	No	No	Volunteer committee involves those with lived experience of mental health
Pathway	Relating to the partcipant(s') route into or out of the activity	**Recruitment**	How participants find out about or are enrolled into the activity	Formal referral	Referral into the activity from professional services such as via established organisations or schemes	Local mental health hospital, probation officers, police, food banks, social care, addiction and mental health charities. Important hand-holding role	GP-link worker social prescribing, local mental health and social care teams, charities. Important hand-holding role	Mental health charities, direct GP referral	Mental health services, direct GP referral, other community groups. Important hand-holding role
				Informal referral	Referral into the activity from personal, social group, or community connections or networks	Through friend(s)	Through friend(s)	Through friend(s)	Through friend(s)

CONTEXTS						Football	Gardening	Reading	Singing
Theme	**Definition**	**Sub-theme 1**	**Definition**	**Sub-theme 2**	**Definition**				
				Choice	Who decides if the participant will enrol in the activity	Participant chooses	Participant chooses	Participant chooses	Participant chooses
				Advertising	Finding out about the activity via publicity materials and whether these materials are targeted for particular groups	Online, social media	Visible site within the community	Library leaflets/posters	Library leaflets/posters
		Signposting and referral	Signposting to services, resources, support, or advice beyond the activity itself	Inter-sector signposting	Resources, information and/or direct recruitment into another arts or cultural activity that may be suitable for the participant(s)	Not recorded	Not recorded	Not recorded	Not recorded
				Health-sector signposting	Resources, information and/or direct recruitment into healthcare or support for mental or physical health	Signposting to mental health and addiction services and charities	Signposting to mental health services	Signposting to mental health support	Signposting to mental health services and charities
				Social signposting	Resources, information and/or direct recruitment into about social support services or activities	Signposting to social support	Signposting to social support	Signposting to social support	Signposting to social support
				Other-sector signposting	Resources, information and/or direct recruitment into services or activities of other sectors	Support with employment opportunities	Support with employment opportunities	Not recorded	Not recorded
				Safeguarding referral	Whether and how action will be taken to protect participants from emotional or physical harm if it is needed	Not recorded	Not recorded	Not recorded	Not recorded

Appendix 8. Extended list of mechanisms across the 4 groups in Study 2

This table below also includes mechanisms which were less frequently mentioned throughout my ethnographic fieldwork and interviews so did not warrant full themes in the main text, however might still be important mechanisms that warrant further exploration. These are shown with italics and asterisks.

Mechanisms	Psychological		Football	Gardening	Reading	Singing
		Increased purpose/meaning	x	x		*
		Increased sense of achievement		x		x
		Increased flow	*	*	*	x
		Experience of pleasure	x	x	x	x
		Reduced stress				x
		Increased self-reflection & self-knowledge			x	
		Building new identity	*	*	x	
		Increased personal & social responsibility	x			
		Development of good values	*			
		Distraction from life difficulties	*			*
		Reduces racing thoughts	*			*
		Increased identity-based motivation	*			
		Improved mood	*	*	*	*
		Improved illness cognition		*		
		Increased empathy		*	*	*
		Increased optimism		*	*	
		Improved self-knowledge		*		`
		Anticipatory pleasure		*		

			Football	Gardening	Reading	Singing
Mechanisms	Psychological	*Challenged ways of thinking*		*		*
		Increased knowledge		*		
		Improved management of grief		*		
		Increased commitment	*	*		
		Increased social trust			*	
		Increased self-expression			*	*
		Increased relaxation			*	
		Increased gratitude			*	
		Increased acceptance of personal fallibility	*		*	
		Increased self-compassion	*		*	
		Improved reasoning			*	
		Greater acceptance of uncertainty			*	
		Increased sense of achievement			*	*
		Increased social trust	*			*
		Increased independence				*
		Reduced anxiety			*	*
	Social	Increased social support	x	x	x	x
		Formation of friendships & reduced loneliness	x	x	x	x
		Enhanced sense of community & belonging	x	x		x
		Validation of experiences			x	
		Increased vicarious joy				x
		Development of related hobbies & skills			x	*
		Improved social skills	*			
		Inspired by others			*	
		Increased feeling of being valued			*	
		Increased tolerance			*	

	Social		Football	Gardening	Reading	Singing
		Increased experience of humour, banter			*	
		Increased sense of pride	*			*
	Behavioural	Increased openness to experience & independence			x	x
		Reduction in addictive & unhealthy behaviours & building healthier habits	x	x		
		Increased employability	x	x		
		Provision of structure/routine	x			x
		Increased assertiveness			x	
		Improved self-expression			x	
		Improved self-care	*			
		Keeps you busy	*			
		Reduced violence	*			
		Greater ability to support family		*		
		Reduced reliance on medication	*	*	*	
		Push myself more			*	
		Improved self-care				*
	Biological	Reduced pain			x	
		Improved physical health symptoms			x	x
		Improved sleep		x		
		Increased physical strength		x		
		Weight loss	x			

Appendix 9. Extended participant dataset from Study 2

FOOTBALL

Active ingredients

Project

High frequency & regularity of activities

Footballing sessions are available to members every single day of the week, which is highly frequent compared to most social prescribing community groups, which normally offer one or two sessions per week (indicative of my other 3 groups). For many members with substance misuse problems, this high level of frequency allows them to stay busy, which can serve as a crucial distraction from substances and a substitution to harmful, addictive behaviours. The high frequency of sessions also has specific benefits for those experiencing social isolation since it provides a regular social outlet. For those experiencing mental health conditions such as depression, having a regular activity that gets them out of the house each day can be profoundly important. Many members are also unemployed, and the high frequency of sessions provides members something to regularly look forward to:

> *It's changed their outlook, created a brighter outlook, that's the benefit of having sessions so regularly, you know there's something there day after day, week after week, they look forward to it, they know it's gonna be there. Yeah, pretty protective…* (Tim, a mental health nurse, active club player and key referrer; INT)

Organised events

Alongside footballing sessions everyday within the club, a key feature is the numerous events (e.g., matches, tournaments, trips) that are arranged 'over and above' these normal sessions. Players felt this was a very important part of the club's activities. It gives members something to look forward to, and work towards together (e.g. competing as a team against other clubs). In the context of a group of individuals of whom many are unemployed and have limited social networks, this can be particularly significant. It might involve playing in special locations due to the links the organisation has built up, which players appreciate:

> *We go out for trips, like playing at [professional football club] stadium, you know, these things are really nice things to be able to do, there's opportunities there. So you may as well make the most of it.* (Dave, a recovering alcoholic, suffering with recurrent depression and previous suicide attempts; INT)

Physical activity

Football is centred around physical exercise, and this was identified as a key active ingredient by members of the club. Many participants described specific motivations around losing weight (see 'Weight loss' biological mechanism, page 115) and getting fitter, and others were very aware of the mental health benefits of physical exercise for themselves.

I've learnt exercise is good for your physical health, but also your mental health (Sammy; INF)

Because football is perceived and experienced as a 'game', participants didn't identify it in the same laborious way as other forms of physical activity which they had previously disengaged with.

Available long-term

There is no limit on how many sessions they can attend or duration of time they can be an active member. This sits in contrast with the nature of time-bound, formal therapy or other groups that members have experienced in the past. Because of this, members feel the club will always be there for them, within the community. As Tim (member, mental health nurse and fitness instructor) tells me:

> *A lot of things you might be offered, for example, 8 weeks of CBT or whatever, it's 8 weeks and then you're done…. Whereas with this, they know it's gonna be there, that's the biggest thing, it's not time-bound.* (Tim; INT)

Competition

Healthy competition is incorporated into the footballing sessions. Football itself is a competitive sport and the nature of football as a 'game' is a key active ingredient to the club. It causes the players to be completely engrossed in the activity (enabling a 'flow state' - discussed in later sections) and motivates them to come back regularly. There is light competition every day during the standard footballing sessions and slightly greater levels of competition during the matches and tournaments arranged with other clubs. Competition seems to help

players feel more connected to one another and to the identity of the club, especially when playing against other teams. There are times when sessions can get "overly competitive" (Sammy; INF), and a degree of discipline might be required (see later theme "discipline and respect").

People

Leadership qualities

Abdul's leadership, particularly his charisma, entrepreneurial spirit, and determination, is reflected in the way he has set up links with other local community groups and organisations. When originally setting up the club, Abdul was doing so "completely on my own" (INF) and would go and visit local organisations that he thought might have members who could benefit from community football. In this organic approach, he would attempt to set up informal referral pathways through relationships he made there. Tim spoke of Abdul's entrepreneurial nature and drive, alongside the fact he was known within the local community, as being fundamental in the success of this partnership, and more broadly the success of setting up and running the club:

> *One of the reasons it has worked so well is because of Abdul's personality, he's very entrepreneurial, very deep roots in the community, people know who he is. He's someone who's been able to channel what he has been dealt basically into something very, very positive.*

> *It's a very simple message. You get someone with deep roots in the community who, ideally, has been on that journey themselves. You support them with a couple of staff and then yes, sky's the limit.* (Tim; INT)

Abdul's experience playing and coaching with the team he himself was referred to (before its funding was cut) was key in motivating Abdul to set up a new club. This, and Abdul's lived experience of mental health difficulties were fundamental in his drive to provide opportunities for others who had experienced similar difficulties to him.

> *I knew myself how much it had helped me, and I know the amount of people it has helped. Like all the leagues and tournaments I've played in and stuff… I had dreams innit, I had big dreams. So the motivation was… how can I put it? The underdog, you know, it's like the odds are against me innit, and I believed in myself.* (Abdul; INT)

Mental health professionals as members

As mentioned previously, there are numerous mental health (e.g. Tim and Ibrahim (mental health nurse, colleague of Tim's)) and other professionals who are playing members of the club. This model seems to be supported by those in the club, for example Eddy who was referred via the local mental health hospital route, values having mental health and other professionals (as well as welfare officers – players who are trained up in mental health first aid and provide extra peer support), playing alongside each other:

> *There's Ibrahim from Mental Health. There's someone from the police that's a welfare officer. There's Tim from Mental Health. So there's so many people that are definitely trying to help people and promote the right way of living and saying "we are there for you".* (Eddy; INT)

The following extract from an interview with Sammy, who suffers with schizophrenia and was experiencing an episode of acute paranoia, demonstrates how this model (having mental health professionals based within the club as players alongside everyone else) can make a difference in practice:

> *Recently, I had a lot of paranoia, for some reason my medication was increased so I started getting paranoid, thinking people on buses could read my mind. But I bumped into Tim, who is part of the football club and a really, really good guy. He ended up paying for an uber for me, taking me to the mental health hospital, and staying with me in the waiting room because of our football connection. It didn't seem like he was a nurse or psychologist, it seemed like he was more of a friend, and that experience made me think if I wasn't part of this football club, it could have been so much more different.* (Sammy; INT)

For Sammy here, while he was experiencing an acute psychotic episode, being with someone he knew within the club who was also a mental health professional, was fundamental in dissipating the situation and directing him to further mental health support. It's an example of the dissolving of a professional-patient divide enabling a more effective therapeutic relationship. Because of the greater level of trust and comfort Sammy had in Tim from playing together in the club, seeing him "like he was more of a friend" (INF) than a mental health professional, Sammy's psychotic episode was potentially a lot less severe than it could have been.

Shared experience of mental health

Nearly all members of the club have a shared, lived experience of mental health problems, which helps provide a safe space for individuals to be open and support one another (see later theme 'Safe space'), and, as Sammy tells me:

> *It gives us a common ground and makes us all sort of equals with mental health problems.* (Sammy; INF)

Within this group, especially those referred via the mental health hospital route, the members are considered to have some of the most severe mental health problems in society, as Tim explains to me during an interview:

> *In our ward, people are really exceptional. A lot of the patients that you'll see in the club have come from our ward, and we are a male psychiatric intensive care unit, we are looking after patients at the highest risk of suicide, violence, aggression. When other wards can't manage them they send them to us, we are the most extreme. At the end of the road, the most unwell patients.* (Tim; INT)

Social time outside activity

Another feature considered important to the players for their well-being is the 'social club' component. This is a small community centre just a few minutes' walk from the footballing sessions, where players can meet, socialise, play games, and enjoy free, nutritious, freshly cooked food together. The importance of the 'social' will be explored in greater depth in the *Mechanisms* section.

> "*They've got a hub now where people can go, play pool, make music, eat if they're hungry. It's a big plus*" (Eddy; INT)

Contexts

Inter-organisational partnerships

The football club has highly active partnerships with local mental health charities, substance misuse charities, community centres, food banks, police and probation services, GP practices and the local mental health hospital – all of whom referred individuals into the club who they thought might benefit. Below is an excerpt from my field notes, when I observed an example of one of these partnerships during a footballing session:

> *We were kicking a ball about on the pitch (a small, 5-aside, AstroTurf cage) and I saw 3 police officers walking past, in full uniform, in upright postures and looking quite serious. Suddenly Abdul runs over shouting something to them, in a friendly and joking manner, and Steve soon joins them. As soon as Abdul starts talking to them, I noticed the officers' dispositions totally transform, their shoulders drop, jaws loosen, and facial expressions soften. They became a lot more relaxed - physically and expressively - it was clear Abdul knew them well, especially the female police officer who Abdul had persuaded to get involved with the club as a player. "She's gonna play for us, she's gonna play for us!", Abdul shouted towards those of us on the pitch. I could see how Abdul's disarming nature and charisma was fundamental in forming and maintaining these sorts of partnerships.* (Field notes, 27th April)

I later discovered how this connection with the local police turned out to be hugely valuable for the club and its members. It has meant members have more trust in the local police, which may have benefits for player safety and from a local crime prevention standpoint. The club also receives referrals from local police and probation officers who know about the club and how it might help certain individuals they have regular contact with. It is an example of breaking down professional barriers, for example seen in the female police officer joining the club as a player; this idea will be explored further in the following paragraph, with a different example.

One of the most important links formed was with the mental health hospital where Abdul had previously been sectioned. When Abdul re-visited the hospital, he met Tim (a mental health nurse and fitness instructor) and Ibrahim (a mental health nurse). Tim and Ibrahim both work on the most acute ward of the hospital, the psychiatric intensive care unit. Both listened to Abdul's story and felt some of their patients could benefit from the opportunities the club provided. They obtained novel permission from the hospital to take patients out for supervised exercise, in the form of community football, each week. Both were allocated time within their workload to do this, playing football themselves alongside some of their patients. As Abdul tells me "*there are no hierarchies here*" (INF), referring to the dissolving divide between 'patients' and 'professionals' which the club aims for – it's not as though mental health professionals turn up in work clothes, simply supervising unwell patients; Tim and Ibrahim are very much part of the club, playing football and enjoying themselves in a similar way to everyone else.

This partnership between the mental health hospital and the club, whose facilities were just minutes' walk away, has ended up referring more people into the club than any other route:

> *We've connected loads, I would say we've probably taken 40, 50 patients from all walks into the team* (Tim; INT)

The close relationship that Tim and Ibrahim maintain with some of their patients through the football, both with those on supported leave and those who had been referred previously and continued to be part of the club, has potentially profound benefits from a community mental health prevention standpoint.

> *We see them through the football team so we're still connecting with people, so if we see that someone is dipping, we can intervene. Whereas previously, we'd discharge them and see them again in a few months.* (Tim; INT)

Tim admits this would not have been possible had he not had a very supportive team, that was open to 'change ideas':

> *Over the past few years since (Ibrahim) and I have always been working as a team with a great consultant and a great wider team' we've introduced a whole host of change ideas. Um' we've been running quality improvement projects. And since we've introduced new ideas like my role, which has effectively been allowing them access to exercise five days a week and bring them to stuff like the club* (Tim; INT)

Inclusivity

Abdul had himself previously been referred to a mental health charity football team, via a support worker at the mental health hospital where he had been sectioned. He played for the team and was also able to gain coaching and refereeing qualifications. Abdul was inspired by his own experience playing and coaching community football, however, there were elements that he wanted to be different. For example, previously he had experienced prejudice on account of his ethnicity and religion.

> *If I was English, I would have got treated differently by the staff, by the players, by everybody. It wasn't very inclusive. I wanted to make a change. I just wanted to provide opportunities and pathways to people similar to what I've been through.* (Abdul; INT)

Inclusivity was one of the crucial values that Abdul has strived to bring to the club, and its membership is predominantly low socioeconomic status, minority ethnic and many suffering from severe mental illness. This inclusivity seems to be felt by the members, for example Dave telling me:

> *They put principles before personalities, no favourites and everyone's treated the same. It doesn't matter whether you think you're Maradonna or whatever…* (Dave; INT)

Dave did however go on to say, that there may be extra allowances and empathy from members for people with more pressing mental health conditions:

> *We've got some people coming that have more pressing mental health than others, and you can sort of tell within the group who they are, and everyone backs off, gives them a little bit more time on the ball. It's a bit more understanding of what's going on for someone. And I think that's something that's sort of filtered down from the top.* (Dave; INT)

Safe space

Linked to inclusivity, is the idea of a 'safe space' that players felt the club provided for them. Eddy told me that if he didn't feel safe in this space he wouldn't come, and he certainly wouldn't be open about his mental health. For him this is associated with being around people he can trust, after a series of toxic relationships in his life in which trust was a major issue. It is also linked to being around people with a similar shared experience of mental health (see *People* section) and other difficulties, where one can feel less judged and stigmatised, and more understood.

> *Just not being judged, being yourself… being around a group of people that all have insecurities, but they show their insecurities. They show their flaws basically, it allows good things to happen to you, like healing* (Eddy; INT)

> *It's a safe space where they won't be judged, it's about creating a positive environment where they feel comfortable* (Tim; INF)

Discipline and respect

Another important principle that the club follows is the idea of respect. This is something that Abdul requires everyone to sign up to (in an informal agreement) when they join the club, and he often talks to me about its importance. Football can get quite 'heated' between players sometimes, especially with people struggling with various mental and social problems, but most people seem to understand the concept of respect and the importance of respecting one another on and off the football pitch. When someone has been especially

disrespectful, Abdul believes that a degree of discipline is sometimes necessary. This might involve a conversation, a time-out, or a suspension, depending on the context. He tells me this is because other players who don't like the negativity or aggression no longer feel comfortable coming anymore, and so are disadvantaged, the 'safe space' lost for them.

> *It's because we need a safe and relaxed environment, and like if you're not adhering to that you've got to play football somewhere else, because otherwise what happens is the other people leave* (Abdul; INT)

The idea of respect and, when necessary, a degree of discipline seems to be accepted and understood by most players too, as Dave told me:

> *Everyone gets a chance to make a mistake. You know, no one is perfect and we all have our moments. But it's about putting down that principle of okay, you can have a moment but just not here, not now. And if you do, you might have to sit out a few weeks, you know? You're going to have to feel it a little bit, so that when you do come back you know that that's the way you've got to act. And it's a good way of doing it, I've seen it work with the team. (Dav; INT)*

The following is an excerpt from my field notes accompanied by a reflective note of an example of a situation that got 'heated' during a footballing session. It demonstrates the challenges of working with individuals with severe mental health and/or addiction problems, the limits of what the club can support with, and the need for a degree of discipline sometimes:

I had been interviewing Steve in his flat earlier in the day, where I had noticed there were some empty whiskey bottles and beer cans on the floor, in a very messy flat in general. I wasn't sure if he'd been drinking that day, but he was slurring his words slightly so I thought that might be the case. We walked over to the football session together. I'd mentioned privately to Abdul that I was aware Steve was still drinking (and perhaps had been drinking this morning). Abdul wasn't surprised and told me the many times they have tried to support Steve with local addiction charities, but that sadly there is a limit to what they, as a small community football group, could do for him after a certain point. Abdul was aware Steve was still struggling with drinking, and his one rule was that Steve could not turn up drunk to sessions. Later in the football session Steve did have an altercation with another player, who he felt had kicked a ball aggressively at him before starting the match. Steve reacted extremely aggressively, threatening "I'll bite your throat off". A few of us were able to calm the situation down. Abdul had a gentle word with Steve, persuading him to take a breather and sit out the rest of the session. (Fieldnotes, 26th June)

A closer look: Steve

Steve, who is suffering from PTSD which led to his substance misuse problems, had previously told me about how small provocations can "trigger" him, ever since the trauma he experienced. This is what I witnessed first-hand here, possibly combined with the fact that Steve may have been drinking earlier that day which may increase his likelihood of aggressive behaviour. This sort of behaviour has the potential to intimidate other players, threatening that 'safe place' for them. This must be considered by Abdul and other staff, who also needs to contemplate the vital outlet that the club provides for Steve, in a difficult balancing act of discipline and inclusion. Abdul has clearly tried on multiple occasions to support Steve further by linking him up to local addiction charities but feels that, beyond that, at least for some individuals, there is a limit of what the club can support with. It is important to state though, that during my year spent with the club, there were very few instances I witnessed of overly aggressive or threatening behaviour from players.

Affordable

The availability of free food in the social club, alongside free footballing equipment and football in general, was of fundamental importance to members who would otherwise be unable to afford these things – most members are unemployed, on state benefits or very low-income.

We've got a hub now, where people can go play pool, make music, eat if they're hungry, which is a great thing. So I don't think there are any flaws to being part of this club, even the kits are free, which is a bonus. (Eddy; INT)

Focus on activity over mental health

The club is a mental health football club supporting people with a wide range of mental health problems, but I found for the most part the focus is largely on football rather than mental health. Tim thinks this is important, and when he is asking individuals from the ward if they would like to try some footballing

sessions, he doesn't even mention the fact it is a 'mental health football club' as he believes this would be off-putting. He believes the framing should be around the activity itself and the enjoyment of it.

> *It'll never be framed like that "do you wanna come do this thing for your mental health?", that would never work. It has to be about the football.* (Tim; INF)

Mechanisms

Psychological

Increased self-confidence

Mechanisms related to psychological growth were frequently talked about by players as reasons for why the club improved their well-being and lives more broadly. For example, many players talked about how the club helped improve their self-confidence and levels of self-esteem. Sammy, who had been sectioned in the local mental health hospital for 6 months following a diagnosis of paranoid schizophrenia, and had put on 50kg during his stay at hospital which he felt was caused by medication side effects and not being able to exercise, experienced this significantly:

> *It's really helped my confidence. Because of my weight gain I was very shy, I didn't want to go out and was worried about what other people thought and would think about me. But I found that being around other people (here), it's completely the opposite, that people don't care what way you are, as long as you've got a good heart and you've got a passion for the game, it kind of means they accept you rather than just whipping you or saying that you shouldn't be playing or stuff like that.* (Sammy; INT)

Increased personal and social responsibility

Another key mechanism that many players talked about was the value of increased personal responsibility, especially relevant to those who had spent years in mental health hospitals where opportunities to be responsible for oneself or others may be diminished. Within the club this may have involved the responsibility of just turning up to sessions, or even helping run sessions or training to be a coach or welfare officer:

> *There's opportunities, like Abdul gave me the opportunity to do coaching. I definitely want to be part of shaping our community to make it a better place.* (Dave, who grew up a member of a

Romani travelling community, and has ahistory of depression, alcoholism, and suicide attempts; INF)

Being given more responsibility has really had a good impact on my mental health in general, it's made me more confident… (Sammy; INT)

Increased purpose/meaning

Another mechanism linked to psychological growth, was how the club can provide purpose and meaning for members, many of whom were lacking this previously such as in the cases of Sammy and Eddy who had each spent a significant amount of time admitted in the local mental health hospital (1 and 5 years respectively) prior to being referred into the group. The club became a way in which they could re-build purpose into their lives after re-entering society:

The football itself has definitely helped in so many ways because it's given me a sense of purpose, you know, being around people with the same sort of issues, the same sort of goals (Sammy; INT)

It gives you so much more than just football, it gives you a purpose, it's a way of life. (Eddy; INT)

Experience of pleasure

Football is an activity that members of the club get great joy from. Most have played before and knew this was an activity they enjoyed, which influenced their decision to sign up – however this was not always necessary. Experiences of pleasure and joy come throughout all the games that are played. I would observe this regularly in players through their laughter and smiling when they were celebrating scoring a goal or a great piece of footballing skill, winning a game, or bantering with one another on and off the field. These moments of fun and enjoyment constitute a key feature I would observe in every group session.

Social

Formation of friendships

The social side of being part of the club was of central importance to the mental health benefits of players, and in motivating players to continue attending. For many people, this was about making friends and forming lasting friendships.

> *I think making good friends that last long is something that's quite difficult to do. But the club kind of facilitates that, by giving us a common ground and makes us all sort of equals with mental health problems. And so it means you can make lasting friendships.* (Sammy; INT)

The formation of lasting friendships should be considered a valuable outcome itself (as well as a mechanism), especially for those who have limited social networks or have been experiencing chronic loneliness, as many players were. Tim gives his professional perspective on how the club is helping to reduce loneliness:

> *It brings together an incredibly lonely, marginalised group. A lot of these guys, they've got very little support networks. If you look at outcomes for schizophrenia, you're basically dying 20, 25 years earlier and something like 50% diagnosed will attempt suicide at some point. And we've connected a lot of people with schizophrenia into the club, which has immediately made them less lonely, given them a community, group of people to hang around with, sessions run pretty much every day of the week.* (INT)

Increased sense of community

Relatedly, the club has also helped people feel more connected with their local community:

> *I feel like more a part of the community, like this is the only thing that I do that really connects me with my community.* (Dave; INF)

This seems to be especially important for those struggling with loneliness, as Sammy describes to me:

> *I would think being part of a community in which you've got like-minded individuals is very beneficial for someone who's maybe alone.* (Sammy; INT)

Increased social support

Peer support between members was also common, and I witnessed this in nearly every session I joined, for example players 'checking in' with one another, or comparing experiences of their conditions or mental health treatment:

> *It's not like coming to a psychologist and saying I'm having these problems. It's more like coming to friends and saying I'm having these problems, what experiences have you had with them, or what kind of experiences have you had?* (Sammy; INT)

> *It's important because we're social beings, as much as people like to think of themselves as reclusive and as an island, your nature is social, and if you don't have any social outlet, you're putting yourself in a very bad way* (Dave; INT)

Behavioural

Reduction in addictive behaviours, building healthier habits

Because of their involvement with the football club, players experienced changes in their behaviour around their physical health and health-related habits. For example, Steve, who has been suffering with PTSD and ongoing struggles with drug and alcohol addiction, told me football motivated him to reduce substance use:

> *Going (to) football was so powerful. You're preparing yourself the night before, get your kitbag out, eat some proper food, go to bed right. No drink, I've got football. Before I had to get out this house all the time, but once you do football, you're actually happy and content to recover (here in the house). To sit, not think about drugs, not think about alcohol. You're actually calm.* (Steve; INT)

Increased work-seeking behaviour

Others, including Sammy, spoke to me about the benefits of being involved in some administrative work within the club, in terms of how that might help him re-join the wider world of work:

> *It's very beneficial for me, I'm re-using skills that I've already learned, as well as being something I'm able to put on my CV.* (Sammy; INT)

Mahmoud (aged 27) has a diagnosis of paranoid schizophrenia related to excessive drug use, spent 7 years in the local mental health hospital and time in prison related to drug offences, and told me the club was "magical" (INF) and has helped him realise he would like to work, preferably in an area that "gives back" (INF) to society in some way.

> *Right now they're helping me with a DBS reference, 'cause in the future I want to work.* (Mahmoud; INT)

Provision of structure, routine

Another important theme in supporting the well-being of players at the club was the structure or routine that regular football provided. Most members who attended regularly were not in work, often due to mental health reasons, thus the importance of finding positive activities to form a routine was tantamount to their well-being. Dave, who struggles with recurrent depression, describes this:

> *If you're suffering with depression, sitting with yourself for long periods without anything in terms of a purpose in mind will generally lead you to (further) depression because your thinking being prone to negativity will take you down that path. Now, if you have sort of things set out in front of you in terms of like a stable routine, it can be a very strong adversary for depression. Structure is very important.* (Dave; INT)

Further, he talks about how just getting out the house, which can seem near-on impossible when in certain mental health states, can be made slightly easier when having a structured, familiar activity to look forward to:

> *Going out the front door can be a nightmare, you know? But overcoming that obstacle with something that's familiar makes it easier, you know? It's like, okay, I'm going there, I know people that are there, I know what's going on there, it's going to be fine, just get out the door.* (Dave; INT)

Biological

Weight loss

A common biological mechanism that emerged in the football group was weight loss, especially for members who were overweight or obese, e.g. Sammy, Eddy and Steve. Several participants struggled with obesity, often caused by heavy psychiatric medication use and/or the highly sedentary nature of living in a mental health hospital, and so the club has been very important for those individuals to work towards a healthier weight, as Eddy (28, who has paranoid schizophrenia and a history of substance misuse, and long-term mental health hospitalisation) told me:

> *I've gone from 150kg in the hospital to 117 now. It's helped being around people with the same sort of issues, same sort of goals to lose weight.* (Eddy; INT)

GARDENING

Active ingredients

Project

Sensory stimuli

The sensory stimuli of being in the gardens, in nature, seems to be significant for volunteers, encompassing many different senses, especially the visual, auditory, tactile, and olfactory. During a session,

Jane talked to me about the importance of "*engaging with the outside world, the soil, and the smell of the earth*" (INF). The gardens provide a very sensory experience for her and others. Terry often describes the gardens to me as an "*oasis*" (INF) in the middle of a crowded urban environment, which provides a huge release for him especially in contrast to his home, which is situated on a very noisy, busy main road nearby.

Organised events

One of the key features to the gardens is the regular events that are organised for volunteers, e.g., trips to famous gardens, celebrations, walks, garden fairs. These can be extremely valuable for members, who might be socially isolated. It helps volunteers connect with one another further, in a way that's different but additive to the usual volunteering sessions. For example, Terry, who has a history of severe alcoholism and experiences social isolation, tells me:

> *I don't really see anyone outside the farm, but they do organise the walks for everyone, and visits to places, so I try to go to as many of them as possible, so that's good 'cause you're with the same people but outside the usual environment.* (Terry; INT)

> *Because you see people in a different light I mean, most obvious thing is you see people in their own clothes.* (Terry; INT)

For those with limited social networks, the gardens can form a crucial social support, and this will be explored further in *Mechanisms.* Anna, who is suffering from PTSD and depression, finds the organised events an exciting thing to look forward to, and a sign of the personal progress she has made (with the help of the gardens), compared to previously not feeling able to leave the house or see other people:

> *I made something at home on my own and it got entered, I didn't win, but I went along to the [location] harvest festival, and that was wonderful.* (Anna; INT)

People

Staff and volunteer inter-personal skills

The role of the staff at the gardens is fundamental in creating the sort of atmosphere that provides mental health and social benefits for the volunteers, and in keeping them coming back each week. Compassion is a very important trait among staff at the gardens. Anna described the staff as "*understanding and gentle*" (INF), which was especially important for her and her ongoing recovery from PTSD. Terry also talks about the importance of their inter-personal skills:

> *They've all got one thing in common, which is that they're good with people, and they like people, and they like working with people, as opposed to the rest of us!* (Terry; INT)

Stephanie, the director of the gardens, seems to agree with these attributes, and tells me it is mostly learned "on the job" (INF) by staff, who do not have any formal mental health training:

> *I think it's through being friendly… none of our staff have got a therapeutic piece of paper, but I think we are all quite skilled in it now… I think you learn a lot of people skills, being empathetic, learning by doing.* (Stephanie; INT)

Many volunteers also have excellent inter-personal skills, some of which is related to the lived experience of mental health volunteers have, or experience applying for certain state benefits, as Stephanie tells me:

> *The peer support between the different volunteers is quite phenomenal. There's a whole sort of level of support which volunteers give to each other because they've actually got lived experience.* (Stephanie; INT)

Shared activities

The gardening itself is a collective endeavour - even if people might be working on different jobs, there is always the sense that the time, space, and activity is shared. Often there is an element of teamwork involved (e.g. several people working together to fix a fence), which is something that Terry finds rewarding. Although, linked to the 'no pressure environment' of the gardens (see below theme), he acknowledges that others may not be the same as him, and will often want to do more 'lone' jobs, and there is a space for that too.

> *Some people can have a job, and it's really a job where you can do on your own. And maybe that's why they like it, but I've never been like that, I've always liked working with other people.* (Terry; INT)

Structured and unstructured social time

Unstructured socialising occurs throughout the gardening sessions, between fellow volunteers working next to each other, or passing each other by in the gardens. Also in a more structured sense, at every session, a bell rings about half-way through to signal it is time for tea, biscuits, and sandwiches. Sometimes there might be a home-made soup cooked with fresh produce from the gardens. This is a break-time when everyone stops what they are working on and gathers at some benches in the centre of the gardens. There will normally be light chit-chat and banter, but sometimes more personal conversations between volunteers related to physical or mental health, e.g., one volunteer often talking about his stroke recovery and how volunteering with the gardens was helping with that. It is a time where members socialise and connect with one another.

Contexts

Familiar

The accessibility of the gardens seems to be important for many volunteers. The main site sits right across a large council estate, and so there are regular passers-by. This visible presence within the community is a motivating factor for local people signing up because it feels familiar to them. For example, Anna tells me, when she finally felt confident enough to attend a gardening session:

> *I was nervous at first, but I was excited because I really wanted to see the glasshouses and I'd walked through the park a million times but I've never got to see the glasshouses. I was intrigued by them so excited by that.* (Anna; INT)

It was also the reason Loraine, who is a full-time carer for her parent and grandparent, first joined up:

> *I was just walking past, and one day I happened to notice the gardens on the opposite side, and I just met the lady who runs it… she tells me it's a community garden…* (Loraine; INT)

Accessible

It is also important for many of the volunteers that the gardens were local, often walking distance. Sandy, one of the social prescribing link workers who refers into the gardens, says location is

often a major barrier for people. This might be due to cost or transport difficulties, or fears of being in an unfamiliar area.

> *When I'm looking for activities for people I often put into Google Maps how far from their house is the activity, and if it's a very complicated journey that could be a barrier.* (Loraine; INT)

Hand-holding referrals

Sandy often attends the first sessions with people she refers, known sometimes as a hand-holding role. This helps with accessibility but also because attending a group for the first time can be a scary and anxiety-inducing experience for anyone, but especially those who might be experiencing mental health difficulties or social isolation.

> *We can go together, so for next time they know where they're going, like the bus route, and how I physically find the place.* (Sandy; INT)
>
> *I think it's about the initial going there, not knowing anyone, just being lost* (the person referred). *So that's where our job is really important, you can go with them so they are going with someone they have previously had conversations with… it's just that first initial being introduced to the group.* (Sandy; INT)

Inter-organisational partnerships

Both link workers I interviewed for this study felt it was very important to build up relationships between them and the gardens, which was facilitated by accompanying individuals to sessions, as Harriet tells me:

> *It's building those relationships that build the backbone.* (Harriet; INF)

I also often observed the gardens running regular tours, which are open to the public, and where they often invite local professionals such as link workers, GPs and social workers which provides effective opportunities to build those working relationships. For a small charity, with staff often struggling to find time to arrange formal introductory meetings with different organisations, this has proven a highly effective avenue to make local

connections and is also an excellent way to give (potentially referring) professionals some first-hand experience of the gardens.

No-pressure environment

One of the most frequent attributes that volunteers talked to me about was the 'no pressure environment' of the gardens. There is very little pressure in terms of how much you need to get involved, how much gardening you need to complete, and how often you attend sessions. This applies both to new volunteers starting up, as well as long-term volunteers. This was deemed very important for volunteers who might not be able to attend on certain weeks due to mental health reasons or might not be able to do as much gardening in a session or socialise as much as they normally would.

> *I met the leader of the session, who told me I don't have to speak if I don't want to. I can just, you know, take it easy. And that's what I liked, I just love being out in the open, loved being in the gardens, the opportunity to have something to go to that I loved* (Anna; INT)

Safe space

Loraine talks about how volunteers, upon getting to know one another, learn to give individuals space when needed:

> *We're close enough to each other that we know to let people have their space, even if someone is a very chatty person, we kind of know when it seems they want their own time today as well… I think we kind of feed off on each other's mental health states.* (Loraine; NT)

The gardens do, however, provide a 'safe space' for individuals to talk about their mental health or struggles in life, and receive emotional support when needed. For example, Jane, who has ongoing anxiety and depression, tells me:

> *You feel safe, you know, that you can say if you talk about something, it will just stay in the group, remain with a couple of people there… it's nice to be able to share…* (Jane; INF)

Anna talks about the importance of the safe space in a slightly different way. For her, physical safety is particularly important in relation to her experience of PTSD:

> *I'm never going to be the same again, and being somewhere where I feel safe and secure, it's very important. It's set away from people, people don't come through the gate… there are people around, I'm not on my own… it's just feels like a lovely area.* (Jane; INT)

Affordable

All volunteers are also entitled to take home fresh produce from the gardens when it is ready for harvest. This helps encourage healthy eating and enables some savings to food costs, which is important for many members who are unemployed or low-income. On top of this, lunch and refreshments are provided for members free of charge, along with many events and trips that would normally cost a significant amount of money to buy tickets and travel. Sandy tells me how cost is often a significant barrier for people she refers into other groups:

> *When there is a cost, that is definitely a barrier for people. There's some things where the session might be £3 or something, and I think for people that's manageable, but beyond that, that does exclude people definitely.* (Sandy; INT)

Mechanisms

Psychological

Increased self-confidence & self-esteem

Many members told me how the gardens had a positive impact on their levels of self-confidence and self-esteem. For example, Anna, who has ongoing PTSD from a violent assault, experienced 1.5 years of dramatically reduced self-confidence, self-esteem, severe social anxiety, and depression. She spent this time at home by herself, not talking to or seeing anyone, fearful of socialising and leaving the house. The gardens were the main factor in slowly building up her self-esteem and confidence, which in turn drastically improved her levels of social anxiety and depression. It acted as a "stepping-stone" (INF) for her in engaging with the wider world, and moving on with her life again:

> *My confidence and self-esteem were the biggest stumbling blocks for me through everything I wanted, like thinking would I even be able to work again… the whole gardens group has meant my self-esteem is much, much better*
>
> *It was a secure, solid stepping-stone. I've stepped on the stone and I've looked around and thought, oh my foot is in the water, Oh it only comes up to my ankles and it's safe. There are no nasty things in there. That's really the analogy.*
>
> *It's interesting how it took getting me out into the gardens, fresh air, a welcome weekly commitment to look forward to, for me to make such headway in getting involved in the world at large again.*

(Extracts from an email sent from Anna to staff at the Gardens)

Increased sense of achievement

Sessions at the gardens often provide a sense of achievement and satisfaction, due to the visible impact of the work that's been achieved, for example harvesting vegetable patches or building a trellis. Terry describes this to me, especially in the context of his physical disability which means he lives in chronic pain. He had originally felt this disability would severely limit his activities, but found he could do more in the gardens than he thought he would be able to, and this provides him immense satisfaction:

> *Terry: If they give me something to do and there's a possibility it can be finished in that session, then I'll do my damnest to finish it. I feel disappointed with myself if I leave and it's not finished yet!*
>
> *Me: Is that linked to a sense of achievement?*
>
> *Terry: Yeah, it is. Especially when you've got a disability, you know?* (Terry; INT)

Increased purpose/meaning

Individuals felt a sense of purpose and meaning from regularly attending gardening sessions. This was particularly important for many members who were not working, and so the gardens provide a purpose that often work can offer people. Moreover, having a purpose can provide a reason to get out of bed and out the house, crucial for individuals experiencing mental health difficulties:

> *It gives me a sense of purpose. Before, I had no reason to get up.* (Anna; INF)

Experience of Pleasure

Crucially, gardening is an activity the volunteers find pleasurable, and this is a key motivating factor underlying continual engagement – it brings joy to their lives. For some members, e.g. Dave, the central reason he signed up was because he had gardened before and knew it provided him with joy. Anna felt similarly:

> *It re-ignited my pleasure in gardening.* (Dave; INF)

Social

Formation of friendships

Many of the mental health benefits of the group are not necessarily to do with the gardening itself, but the social aspect. The gardens are an opportunity to make friends, which is profoundly important for many of the volunteers who have experienced often extreme social isolation. For Terry, it is often the single social interaction he has each week (he goes to 2 sessions per week) "*I don't really see anyone outside the farm*" (INF), "*the only thing I do all week is come to the farm*" (INF):

> *It started off as just volunteering. And then it became, you know, you get to know people, you get on with people, and you make friends from it… I consider everyone that goes there my friend* (Terry; INT)

Often these evolve into friendships outside the gardens too (perhaps a good indicator of genuine friendship), as Loraine tells me:

> *I do enjoy the friendships that go down there. And I have met up with people outside the farm as well… and outside, it feels the same.* (Loraine; INT)

Increased social support

There are numerous ways in which volunteers receive social support at the gardens, from both staff (which I discussed in the *People* section, theme: *staff inter-personal skills*) and other volunteers. Volunteers often spoke to me about how they themselves enjoyed helping and supporting others. For example, Loraine, one of the more long-standing volunteers, often helps new volunteers with advice on how to sow fruit and vegetable seeds, harvest produce, distinguish between different types of weeds, etc.

> *It's motivating because I know it helps others as well, me being there helps others.* (Loraine; INF)

The staff often provided emotional and practical support for volunteers. Terry describes this to me, talking about the leader of the general volunteering sessions:

> *She was someone that you could speak to, sort of like an old friend, a confidant. She could help you as well, especially if you had trouble with benefits and all that…* (Terry; INT)

There were limits to the degree of social support the gardening group could provide, however. For example, Andrew who has paranoid schizophrenia for which he does not receive much formal support (mostly due to his

unwillingness, or fear, to engage with services), was asked by staff to take a break of a few weeks from the gardens due to some complaints from other vulnerable volunteers who had been feeling unsafe, due to various incidences. Staff at the gardens have tried to help Andrew engage with various local mental health services over several years however have found this extremely difficult due to the severity of Andrew's condition, his lack of clinical support for it, and also the garden's limited formal and informal connections with local mental health teams.

Enhanced sense of community

Volunteers often talked about the sense of community they felt from regularly attending the gardens. This is something that some volunteers had never felt much before, despite living locally, as Anna explains to me during my interview with her:

> *It did instil in me a bigger sense of community. I love that people get together and do things. I didn't know there was a farm here, and it's just down the road to me! I've lived here for many, many years and I didn't know.* (Anna; INT)

Jason, who joined the gardens after his brother died (his brother, who he lived with, had been a very well-known and loved volunteer before him for many years), talked to me at length during a gardening session about how difficult he had found it to make local connections, in such a busy city. For him, the gardens became a vessel in which to do that, allowing him to be *"much more connected to the local community"* (INF), making connections he *"wouldn't have had before"* (INF). Jason's brother had been his primary social connection in the area and when he died Jason became extremely socially isolated, so this new community was very important for him. He also felt this was a way of continuing his brother's legacy and helped his grieving process.

Behavioural

Reduction in addictive & unhealthy behaviours

Several volunteers experienced ongoing or previous issues related to addiction. Terry, recently recovering from chronic alcoholism, was reluctant at first but eventually came along to a session, and after just a couple weeks he began to love it, describing it as *"the best thing I've ever done for myself"* (INF), and believing *"it helped me stay off the drink more than anything else"* (INF). He finds this is related to the social element, being around kind people (who are not *"drinking friends"* (INF) and so a more positive, healthy influence on him), being in nature, and the purpose that comes from volunteering there.

A closer look: Terry

I have talked to Terry on many occasions about his alcoholism and the role the gardens played in helping him stay sober now. About 9 years ago, Terry's drinking had got the point where he had a major collapse, was hospitalised, and nearly died. He had been drinking copious amounts daily for several years prior to this, linked to bereavement and job loss, but admits he has had a problem most his life. He started going "cold turkey" after the hospitalisation and became quite socially withdrawn (most his social connections were related to drinking, and so by stopping drinking he was also becoming more socially isolated). An old friend of his recommended he go along to some of the gardening sessions, since they thought this might benefit Terry as he used to work as a gardener many years ago and had always enjoyed it. Gardening soon became the most important thing in his life for staying sober.

Stephanie, director of the gardens, feels strongly she is keeping people out of GPs' and A&E waiting rooms (from e.g., the reduction in harmful, addictive behaviours, and physical health benefits of gardening) from her years of experience with the volunteers, but tells me this is *"difficult to prove"* (INF) (in a quantitative manner), especially as a small charity with limited capacity:

> *We can't put a value on it, it's not possible. That's one of the frustrating things as a small charity. I mean, I've been doing presentations to a group of GPs, and I've said, hand on heart, I know that our work with volunteers is keeping people outside your waiting room and one of the GPs put their hand up and said, well how can you prove that? And I know it from talking with the volunteers but I can never actually, you know, demonstrate by facts and figures because we don't have the capacity to do that kind of research. And I don't think it's appropriate, I think it would put people off.* (Stephanie; INT)

Increased work-seeking behaviour

Several volunteers also found the garden has motivated them to seek employment. Many of the volunteers are unemployed, often due to mental health or social reasons. For example, Anna has been unemployed for several years, and previously unable or fearful of re-entering the job market due to her PTSD, but found she was more motivated due to her time with the gardens, acting as that *"stepping-stone"* (INF) that built her self-confidence up enough:

> *I applied for this job I've been interested in for 3 years. I didn't get an interview, but it was still huge, a big deal. I just took the bull by the horns. I spent 5 days researching and getting ready for it.* (Anna; INT)

Terry has also been able to get some paid work through the gardens, working on various projects, due to his previous experience working as a professional gardener. This was the first paid work he's been commissioned for in several years. Sam, a member of the Men's shed group, who also struggles with alcoholism and was made redundant 3 years ago, is now planning a career change (from textiles) into horticulture because of how much he enjoys the work at the gardens, and is working on gaining the appropriate qualifications, which the gardens is supporting with. At least 3 other members of the gardens I spoke to, all currently unemployed, are working on developing similar qualifications to apply for part-time or full-time jobs in the gardening world, all motivated by their time with the gardens.

Provision of structure/routine

Volunteers often spoke about the structure or routine that was provided from regular volunteering with the gardens. For Jason, this was particularly helpful when his brother died. The gardens provided a sense of structure to Jason's week that he felt was crucial to him grieving more healthily. Upon joining the gardens (where his brother had volunteered for many years) he found this helped him *"stay busy"* (INF) and *"stay out the house"* (INF) – where everything was a reminder of his brother, whom he had lived with. The gardens, though also a reminder of his brother, seemed a healthier one, and was also a place for socialising with others and doing meaningful work. Jason was also a member of the Men's shed group which meant he could come in most days of the week.

Sandy, one of the social prescribing link workers that refers into the gardens group, agrees that structure seems to be one of the most important beneficial elements to these types of groups in general:

> *I think one of the key things when referring people is the kind of structure, I think that's what people are looking for. Some people want to fill their week with like a timetable of activities. If you've got to wake up because you're doing that activity on this day, I think, yeah it definitely provides that routine and structure.* (INT)

Biological

Improved sleep

Several volunteers spoke to me about their sleep improving after having started regularly attending the gardening groups, as Anna told me:

> *When I was going through my* [post-traumatic, depressive period] *my sleeping was horrendous, sleeping all the way through the day. Now I'm back to being an early riser again.* (INT)

Sarah, a social prescribing link worker that refers people into the gardening group, explained to me about how having a *"timetable of activities"* (INF) and *"structure"* (INF) helps people with their sleeping pattern because *"you know you've got to wake up because you're doing that activity on this day"* (INF).

Increased physical strength

Volunteers also experienced improvements in their physical strength and capabilities, from the (often physically demanding) tasks of gardening. As Terry told me *"I think I've got stronger!"* (INF) Loraine felt similarly:

> *I find it works muscles that I can't even work when I'm going to the gym. Especially with digging.*
>
> (INT)

Harriet, another social prescribing link worker that refers individuals to the gardening group, explained this to me:

> *A lot of people who have been stuck in doors aren't doing any exercise, aren't moving a lot, you know? So this helps build up their physical ability, improves their physical health as well.* (INT)

READING

Active ingredients

Project

Cognitive stimuli

Most time during each session is spent on the book which the group is reading at the time. The book is always fiction and will normally be considered a 'classic' as the overall organisation believes this ensures a good

standard of literature across all their groups. During my time with the group, we read Northanger Abbey by Jane Austen, Remains of the Day by Kazuo Ishiguro and some short stories. Reading such books is an intellectual challenge, especially for individuals who do not have much prior reading experience, such as several members of this group – as Tom tells me *"it's something you have to work on a bit, it can be a challenge"* (INT). But the pace of reading is encouraged to be slow, to ensure all reading speeds are catered for and the book is easy to follow for everyone. The facilitators regularly summarise what has just been read to ensure everyone has followed, and members are always encouraged to ask questions on anything they are unsure about. Members find the reading of these books and poetry highly intellectually stimulating and feel pride in the improvements in their language and literary skills that such engagement brings over time.

Emotional stimuli

A key part of the reading group is not just the reading aloud together, but the discussion that follows this. This might involve e.g. people's thoughts on what was just read, how it made them feel and why, what they did or didn't like about the text, why the author wrote something in a particular way, what this says about certain characters and their motivations, or what the meaning behind a line in a poem was or the poem overall. This discussion is about the literature, but wider reflections are also encouraged, where participants draw comparisons between what has just been read and their own life experiences, or they talk about why the text was particularly meaningful for them. Of course, one's analysis about the text in the book or poem cannot be separated from an individual's own personal experience, which unavoidably influence how we think about what we've just read. Often, the poetry section was when most of these deeper, personal reflections occurred. It happened frequently during the book reading too, but it was more prescient (and often greater in terms of emotional sharing) during the poetry sections, as Phillipa describes:

> *I get a lot from the poetry, but I can see other people do as well. It's a bit of an escape. It's the poetry that does things for me.* (Phillipa; INT)

Task/goal orientation

There is very much a 'task-at-hand' or focus for the group during sessions, either on the book or the poetry. With the book, this continues from session to session, and so creates something to look forward to the following week, with readers excited to know what is going to happen next (since all reading is done during sessions, together), thus providing a key motivating factor for continual engagement. The obvious focus during sessions again enables participants to enter a 'flow state' in which they are absorbed in the task at hand.

Participant choice

There is an important element of participant choice within the group sessions. The book is often chosen by the facilitators, but always with consent of the group who are often presented with a few options to choose between. Again, with the poetry, often one of the facilitators will choose a poem, but group members are often encouraged to bring poems they have come across (or sometimes written), and this happened regularly. Moreover, no-one is forced to read aloud but everyone will have the opportunity to do so if they desire. The structure of the sessions varies according to the readers' choices too, and if individuals want to spend more time on particular topics of conversation that is normally actively encouraged by the facilitators.

People

Structured and unstructured social time

There is time allocated during sessions to conversation unrelated to the literature, for example at the beginning of every session there is a 'check-in', where everyone gets a chance to tell the group how their week has been and how they have been feeling recently. It might involve mental or physical health chats but is often just light chit-chat, banter and catching up. It seems to be an effective way of bonding group members, and gently bringing everyone into the present moment rather than rushing straight into the text. This time is important to members, who feel cared for, rather than it all being about the book they are reading, as Simon tells me:

> *At the beginning of the meeting, Yasmeen (group lead facilitator) goes round everybody and asks how everyone is, she's not doing it to waste time, she's doing it because she cares.* (INT)

However, socialising outside the context of the book is still allowed and encouraged at any other point during the sessions, often happening at the end but also throughout – in breaks, or just as part of general distractions that occur or tangents leading from discussion periods. The facilitators do aim to ensure good progress on the text throughout sessions, but not to the extent to which they would shut down social bonding between members.

Compassion

One of the key shared qualities between members of the group seems to be the level of compassion from all the readers to one another – demonstrated through displays of kindness, empathy, and affirmation. Simon, who has suffered from cerebral palsy his whole life, believes this is the central feature behind the group:

> *I can put it down to two words, it's that: we care. If we didn't care, if everybody wasn't so nice, I wouldn't be going to the group. It's the people who keep me coming back.* (Simon; INT)

For Simon, this is more important than the literature itself:

> *It is the people. Yes the books matter, the discussions, the poems. Yes the biscuits matter. But truth is, realistically the only people who matter are the people on the table.* (Simon; INT)

Shared, lived experience of mental health

Yasmeen believes a significant part of this high level of compassion and empathy lies in the fact that all members have a lived experience of mental health or psychosocial difficulties. This leads to greater levels of empathy towards other people's suffering and struggles, in part because they understand better:

> *There's an immense amount of compassion which may be a by-product of I guess the main issue that most our readers have is isolation, loneliness and depression.* (Yasmeen; INT)

Tom, who signed up to the group originally due to social isolation and depression, and is now involved in another reader's group (within the same organisation) as one of the group leaders, agrees with Yasmeen that this shared, lived experience between members is significant:

Everyone had their own various sort of personal struggles and whatever and it felt that there was a kind of empathy for that side of thing. (Yasmeen; INF)

Facilitator inter-personal skills

The facilitators play an extremely crucial role within the group in maintaining the well-being and satisfaction of members. There are two facilitators in this group, Yasmeen and Jane. Jane is an ex-professor of English, and leads on the book component of the group, and is more in-charge of book analysis and keeping things ticking over with the text. Readers valued this, e.g. Meera (who has recurrent depression and a difficult home life) telling me *"I absolutely love Jane's professionalism"* (INF). Yasmeen's role is slightly different, and far more intertwined with emotionally connecting and supporting readers, as well as often leading on the poetry section at the end. Yasmeen strives to make every single person in the feel valued and special and much of this is through her verbal communication, as she explains to me:

So in your feedback, you always promoting the positive in someone, Um, like as a response (to something they've said) saying: that's so sensitive of you. (Yasmeen; INT)

The knowledge of how and when to verbalise certain things is only possible due to the high level of empathy and sensitivity Yasmeen has towards other group members, picking up on various visual and verbal cues. Yasmeen puts some of this empathy/sensitivity down to her own previous experience of chronic depression. She also shares her own experience of mental health difficulties, or insecurities, during sessions where appropriate, to help others feel comfortable enough to share. This helps normalise others' experiences where often individuals might still have a degree of shame, thereby contributing to a safer space:

I might say an awful lot of my own history in the hope that this might make people more comfortable, I may scare the bejesus out of someone, but, um, I think allowing for more confessional. We're just like, Hey, it's fine to talk about all this stuff. It's nothing special. You know, we can be together in this, and surrender. (Yasmeen; INT)

There is very much a 'no pressure' atmosphere to the group in terms of how much people are required to verbally contribute during sessions, however one of Yasmeen's skills is knowing the right moments to 'push' ever so slightly with someone, encouraging them to contribute something when they might not have

volunteered otherwise. When this happens and the person's contribution is normally praised verbally or engaged with by Yasmeen, Jane, and other group members, it helps grow the confidence and self-belief of that member, bringing them 'out their shell' more. This would likely not happen without a facilitator, and one with a high level of inter-personal skills. India, a naturally very quiet and shy person, and severely lacking in self-confidence when first starting with the group, highlights this to me:

> *Yasmeen understood at the beginning, that I was a very quiet person, and I would say at the time I didn't feel very confident reading aloud. But yeah I think Yasmeen really encouraged me. Sometimes I would shut away from saying things in the discussion, or shy away from reading, simple because I always thought people didn't want to hear what I had to say or what I had to read.* (Yasmeen; INT)

Linked to her empathy, is the high level of emotional support Yasmeen will give to members, often going the 'extra mile', as Meera explains:

> *Yasmeen has got some fantastic ways. Like if I'm not comfortable in the group for whatever reason, she has got a fantastic way to write an email to me, like when she wrote the email to me about my progress.. Her words have meant a lot to me, and sometimes I have saved those words, so that in any time when I am less confident, I will read her.* (Meera; INT)

However, beyond empathy and linked to the *Compassion* theme, none of this would occur if Yasmeen did not also deeply *care* about the well-being of the members the group, as Simon words beautifully:

> *Yasmeen particularly cares, she cares about everybody. You know, she oozes kindness, it's almost like she's got a sign on the way to our front door that says everybody who is not kind won't be allowed in. Anybody who doesn't care won't be allowed beyond this point.* (Simon; INT)

Contexts

No-pressure environment

One of the key features of the group, which Yasmeen and Jane go out of their way to make clear to new members, is that there is no pressure on them to participate any more than they wish to during group sessions. New members are often quite nervous (and may already have issues around self-confidence) when they first start with the group, and so it is important they are able to go at their own pace. They don't have to

read if they don't want to nor give their opinion during discussion periods, and they are welcome to show up late, leave early or not attend for whatever reason. There is no judgement or expectation from the facilitators or other group members. India, who suffers from recurrent anxiety and depression and has a chronic neurological condition that affects her speech - which in turn has had a long-term impact on her self-confidence - tells me during our interview:

> *Yasmeen's never made a point of saying, you know, you have to read. She's always just said, if I call on you to read, it's basically up to you whether you want to or not. I think Yasmeen understood at the beginning, that I was a very quiet person, and at the time I didn't feel very confident in reading aloud.* (India; INT)

Phillipa, who does not suffer from a diagnosed mental health condition but is living in severe chronic pain (due to a lung cancer surgical operation that caused significant nerve damage), understands that *"some people are just happy to sit there being quiet, listening"* (INF). Before first signing up to the group, Phillipa had been experiencing social isolation, and picked up a leaflet that someone was handing out in the library, about the reading group and the concept of 'shared reading' – where individuals read aloud together and pause at intervals to discuss the text. Phillipa thought this was incredible, because she had poor eyesight and was insecure about her reading pace, and the design of the group meant that she could still be fully involved without the pressure of having to read in front of everyone:

> *The problem was then I couldn't even read a newspaper. And because I wasn't working I was beginning to feel quite isolated. The library was handing out these leaflets about a reading group and this concept of 'shared reading'. I can still remember the feeling, to this day. I was just smiling all day long, I can go and listen to something even if I can't read!* (Phillipa; INT)

It is important to note that, over time, both India and Phillipa became frequent 'out-loud' readers within the group sessions, having a go at reading aloud during most sessions I attended. But this was something that happened gradually over time, as their confidence and level of comfort with the group grew.

Part of the 'no pressure' environment, is the philosophy within the group that there is no invalid opinion or 'correct answer' to anyone's interpretation of the text. Further, that it is okay not to understand everything in the text, and often impossible to. Both these things seem to be very common points of insecurity

for individuals first entering the group, often due to negative previous experiences, e.g., from school, or work/general life when their opinion has not been appreciated or validated. This attitude is something Yasmeen and Jane regularly remind the group of, and it helps members who might have previously lacked belief in themselves, have the confidence to say what they think. Phillipa, one of the most long-standing readers in the group, describes the almost 'eureka' moment when members realise their interpretations of the text are perfectly valid:

> *'Cause poetry is for everyone, 'cause they suddenly realise that there's not always an exact reason to that poem. Yeah, their interpretation of that poem is as valid as the next person. Because there's different levels of education, and some people won't understand certain words. And that worries them, but suddenly you realise they are relaxing, as they realise that however you interpret the text is valid.* (Phillipa; INT)

Welcoming atmosphere

The importance of the initial session for an individual joining the group, seems be of utmost importance. It seems feeling welcomed by a mixture of other people in the group and crucially the facilitator(s), is fundamental. Yasmeen makes a highly intentional effort each time a new member tries out the group, to ensure they feel welcomed:

> *What I realised is that everybody needs, I believe – and I am quite effusive – is they need a very, very warm welcome and I do my best to demonstrate my support and admiration and empathy, and so it's sort of trying to make a connection with every (new) member to ensure they feel heard, and they feel part of it.* (Yasmeen; INT)

If the first session does not go well for them, it is quite likely some individuals would not return. This is especially the case with individuals experiencing significant psychosocial difficulties and often high levels of social anxiety and lack of self-confidence. India was telling me how on her first session with the group, she was extremely nervous (which was very common among members), and was strongly considering not showing up originally:

> *I remember thinking, do I go in now? Do I knock? Well, I knocked on the door. I said is this the book group? They said yes and, you know, there were quite welcoming. They were all quite nice and they filled me in on the book that they were reading, and Yasmeen kindly said to me, you can borrow my book to catch up on the story so far if I wanted to, and I thought that was a good idea and then I decided to go back next week.* (India; INT)

It was quite clear, for her, had this group gone slightly differently, e.g. the other members had not been so welcoming, or Yasmeen not offered her the book to borrow, India may not have come back the following week.

She would not have become the active member that she is now or been part of a group that was fundamental in improving her self-esteem, confidence, and level of social connection.

Safe space

In concrete terms, the reading group sessions consist of reading a book together, discussing and analysing, and often doing so similarly with poetry at the end. But the sessions are also so much more than that, often involving periods of deep emotional sharing between participants, and discussions on mental health or difficulties in life. This openness about personal lives and mental health would not be possible if the participants did not feel this was a safe space to be open about their feelings and their struggles. Meera was nervous when she first joined, but the group became a very safe space for her, in which she felt comfortable sharing some of her difficulties at home and other insecurities, and often received very comforting validation and emotional support from the group. This would occur at the beginning of sessions during a 'check-in' period with everyone, as well as throughout the reading and poetry periods, where often something in the text triggers a point of reflection and introspection for readers on their own circumstances. People are not rushed when disclosing something personal – ample space is provided for that in the discussion periods, and conversations are not restricted to

the text alone, indeed personal reflection is actively encouraged by the facilitators. Meera has a deep appreciation for this space, in contrast with her life at home:

> *The group has some really great people, who I am grateful I can associate and communicate with, because at home there is no communication where I could share, at home there is no-one.* (Meera; INT)

Affordable

Sessions are completely free, which is very important to members since most of them are low-income or unemployed. Free snacks and drinks are also provided during sessions, and support is available for travel costs.

A closer look: Meera

Meera joined the group at a similar time to me. She is from a country in South Asia originally but grew up in East Africa. She moved to England at 21, as part of an arranged marriage. However, quickly it became clear that this man was unlikely to be a loving, caring husband. Meera quickly became depressed because of this, which triggered a life-long pattern of treatment with various strong mental health medications including Valium, lithium, benzodiazepines and SSRIs (type of anti-depressants) for her low mood - "Two weeks after I got married, I was on benzodiazepines". Prior to this unhappy marriage Meera had not had any significant mental health difficulties. It felt to me as though there was very little 'medically' wrong with her, but that her difficult social situation had been chronically and severely medicalised. She has been heavily medicated for over 40 years now, and although has had a solid work life in England and has two successful, grown-up children, ultimately, she has not been happy at home throughout this time, and her husband is still not supportive and loving (Meera feels it would be impossible to separate for cultural and familial reasons). She told me "I've probably buried about 40 years".

> *Every time I became unwell, it was because of home, right? And what would happen is whenever I would become unwell, I would just take this tranquilizer medicine to cope with my life at home.*

Just over a year ago Meera was visiting a new GP, who was trying to reduce her lithium dose, which they felt was extremely high. She built a good relationship with this GP, who was also trained as a psychotherapist, and told her that they think she is being emotionally controlled at home and offered some psychological support. This was the first time anyone had said this to Meera and the first time any psychological support had been offered, and she was referred to her local mental health trust where she was able to access various talking groups and courses, which she found extremely helpful. Here, a professional in the mental health trust suggested Meera go along to one of the reading group sessions:

> *I was feeling insecure because I didn't know the set-up. I knew the local mental health trust well, but I didn't know the readers' group. Is it safe? But I trusted everybody, and got on with it…*

Mechanisms

Psychological

Increased self-confidence & self-esteem

A common mechanism that the reading group supports individuals with is increased self-confidence, which is closely linked to heightened self-esteem. India and Meera are two very good examples of this, having had their levels of self-esteem and confidence transformed by the group. This applies to their confidence and belief in themselves within the context of the reading group but also in their wider life (which some of the later behavioural mechanisms demonstrate).

> *Before I might have thought to myself, nobody wants to hear that or you won't be of interest to anybody. Whereas now, because of the group, I think to myself, well, if you don't put yourself forward you will never know.* (India; INT)

I was able to track this from the very beginning with Meera, since she started the group at the same time as me. In the first few sessions she was extremely cordial, but quiet and rarely spoke unless called upon. For a while she would not express her opinion on the book or poem without prefacing it with something like *"I don't think this is right but…"* (INF). She rarely volunteered herself to read out-loud. However, over time, through regular validation and encouragement from other groups members and the facilitators, she became increasingly confident and after several months she became one of the most loquacious members of the group. Her confidence manifested itself in terms of putting her literary opinion across more readily and expansively, regularly volunteering to read, having a go at writing poetry for her first time, and in her wider life expressing herself and her needs more at home (see later theme 'Increased assertiveness').

Increased self-reflection and self-knowledge

A big part of the sessions involves discussion and analysis of the fictional text being read and the poems. This often sparks wider reflections for participants on their own circumstances, and how that relates to what has been read. This increased self-reflection that occurs because of the literature and is enhanced by the words of other group members, seems to me to be vital in various members' journey of personal growth. Yasmeen believes the use of literature is central for this, enabling a therapeutic process that is almost in disguise as something else, and thus perceived as less shameful or intimidating, and so members feel more comfortable reflecting on their own circumstances and sharing openly:

> *What I've experienced is that when people come together, and we've had some very, very troubled people come… there's some alchemy that takes place, because you're not actually addressing the problems themselves, but the problems somehow come out… what needs to be said or shared comes out through the actual text itself. But without the book, it wouldn't happen.*
>
> *There's a lot of wisdom in that situation. A group is given a structure, this makes you feel safe, and then you can step back and let it go. What I absolutely adore watching is when it's not just the reader leader that's leading it. But the other group members start joining in and discussing things with each other. There's a lot of wisdom, compassion and empathy. Um, and yeah, they are great people, but it's back to that principle of you come in, you may be feeling completely*

> *isolated, like no one on Earth is like you or understands you. You start reading a book together and discover that you're all having similar responses. Bring that. Then you take a step further and allow for that to enter into a more personal therapeutic process. And it's something transformative.* (Yasmeen; INT)

Poems specifically seem to have the ability to enable deep self-reflection by members, often about things in life that make them happy or that are important to them. This would include things such as the importance of relationships, nature, expressing emotions, hope, pushing oneself, being in the present moment, creativity, positivity, acceptance, self-compassion and appreciating the small things. As Yasmeen told me: "*It raises so many aspects of the problem of being human, of living, of, you know, absolutely anything. The poetry can stab you in the heart, it can make you feel uplifted…"* (INT). For example, take the poem Wild Geese by Mary Oliver, which we did during one session, and the following group reflections:

You do not have to be good.
You do not have to walk on your knees
for a hundred miles through the desert repenting.
You only have to let the soft animal of your body
love what it loves.
Tell me about despair, yours, and I will tell you mine.
Meanwhile the world goes on.
Meanwhile the sun and the clear pebbles of the rain
are moving across the landscapes,
over the prairies and the deep trees,
the mountains and the rivers.
Meanwhile the wild geese, high in the clean blue air,
are heading home again.
Whoever you are, no matter how lonely,
the world offers itself to your imagination,
calls to you like the wild geese, harsh and exciting -
over and over announcing your place
in the family of things.

Yasmeen asked the group whether anyone feels the pressure in life *"to be good"* (INF), like in the poem. Members in the group said they do feel that pressure often and that it can be quite draining. Meera, for example, said she feels *"squashed"* (INF) by this pressure sometimes, which can make her feel unable to thrive or be herself fully. She believed the poem is about self-compassion and how it is important to give yourself a break and be kind to yourself. Simon agrees and says it is only important to *"treat others as you would wish to be treated"* (INF). The group also discussed how the poem is about the healing power of nature. Meera reflected

on a time she spent in nature recently and felt gratitude: *"I could not thank the universe enough"* (INF). She finds nature makes her feel more connected and can help with loneliness and made an intention to get out into nature more. India - who is a very shy, quiet person with chronic difficulties surrounding self-confidence - was inspired by the poem to live life to the full and take more chances: *"it makes me feel that whatever you would like to do or explore, you should just have a go and see where that takes you"* (INF).

Building a new identity

Some members talked to me about how the reading group helped them build a new, different identity for themselves. For example, before joining up with the group, Meera's identity was very much centred around her role as a wife, a mother and grandmother, and providing for other people. Over the past several years, she has rarely done things *"for herself"* (INT). This group became one of those things. She feels she is now building an identity of a reader, who can engage in intellectual discussions with interesting people.

> *I would like to be sophisticated, and having joined with Y's group I'm looking at building my personality, which would have happened but didn't cause of what happened age 21, and I'm now 60 plus, but I'm still willing to be the Meera that I want to create, I would like to create, and I would say, this team of people, this group has got some great people, and I'm really very grateful that I can associate and communicate because at home there's no communication where I could share care.* (Meera; INT)

Throughout my time with the group, Meera often talked to us about the new person she was trying to be, and how the group was helping her build certain aspects of her personality that she has not been able to build over many years of putting other people's needs over her own. Yasmeen also describes Phillipa's journey (having got to know her very well over many years within the group together) and how she feels the book club has helped shape a new identity for her.

> *It's that sense of identity. Take someone like Phillipa, who's had to be a professional patient and had to battle through being ignored and ferocious pain. But when she comes in, she's like a diva, and she's got a great gift with poetry, and I'm really hopeful that it allows her a separate identity, separate to that one, and also the one taking care of family members and all those other things.* (Phillipa; INT)

Pleasure

Reading is a highly enjoyable activity which brings members great joy to their week. The act of reading, being read to, and discussing, analysing, and socialising are all pleasurable experiences. This is a key motivating factor underlying continual engagement and the mental health benefits of the group. Meera likens this to *"feeding me some kind of vitamin to the brain through the reading"* (Meera; INT).

Increased openness to experience & independence

The reading group also seems to inspire members to live life more fully. Again, this seems to be a combination of inspiration from the literature (especially the poetry) as well as from other group members and facilitators. India, for example, has started to volunteer:

> *I was applying to do, um, voluntary work at a community centre. Yeah, which I never would have thought of doing before. Um, so I think the group's give me a bit confidence to, you know, go forward and do that.* (India; INT)

As mentioned previously, Meera decided to plan a holiday for herself somewhere in the UK, because of the encouragement of the group, something she'd never felt able to do before. India has also found the group has given her *"the encouragement to explore different things"* (INT).

Social

Validation of experiences

Very much linked to the compassion group members show for one another, is the use of validation, encouragement, and praise – by group members and the facilitators. I witnessed the use of this 'validation of another's experience' nearly every session I attended, and, indeed, received it myself on occasions as well as using these techniques often towards others. It helps members with their self-confidence, self-esteem, and belief in themselves, and makes them feel valued. Meera, who receives much validation from the group and frequent praise on her personal growth and literary progress, tells me in a conversation that the group *"knows who I am"* (INF), and *"values and understands me"* (INF), and that she wishes her family/husband were more like the group. The philosophy of regular validation, affirmations and praise for others is something that

Yasmeen leads on, but seems to become very natural within the group, with members adopting very similar techniques to Yasmeen in terms of comforting others with their words. This might include picking up on points others have made and telling them you found that very interesting; or, congratulating someone on their improved language and communication abilities; or, on their growing confidence or self-awareness.

Increased social support

Overlapping with, but slightly different from validation/praise, is the peer support members provide for one another, both emotional and practical. Tom and Simon, for example, have grown very close through the group, and Tom will always walk with Simon to the bus stop after group sessions, to support with his physical disability which severely impairs his walking. Moreover, Simon had to spend several months in hospital during my time with the group, due to respiratory issues related to his disability, and Tom would call Simon each week for check-in calls (physically visiting was not possible due to the Covid-19 pandemic). Providing support for others in the group is something that members find very rewarding. India for example talking about how poetry she had written and showed the group *"may click with other people, and they may be comforted"* (INF). Tom would often talk to people after sessions, or phone them up or drop them an email, if he could see they were a bit down or anxious:

> *"I can tell just by listening to someone's tone of voice, whether they are happy or not, and if I feel it's the right thing to do then I'll quite possibly contact them after the group".* (Tom; INT)

During sessions, members also often share psychosocial difficulties they've been having, e.g., at home, with friendships, with anxiety or depression levels, and other group members and the facilitators often provide comforting emotional support for that person, often helped by their own lived experience. There is ample space during sessions allowed for this, at the start during 'check-ins', at the end, but also throughout and it rarely

feels like members are rushed because of a need to get on with the book or poetry. Members support other members in striving to reach their goals in life, for example, during one session Meera talked about how she rarely does things for herself and had never been a holiday before for pure enjoyment. The group encouraged her idea to take a small trip by herself and spent time recommending places in the UK that she might enjoy, whilst exploring various concerns and worries she had related to this.

A closer look: Reflecting on a moment

Sometimes this 'peer support' can occur less purposively, through general interactions between members or during moments of banter. During one session, for example, we were also talking about the power of nature, and how it can bring us into the present moment, become less anxious and appreciate our surroundings. Paul, who has recurrent anxiety and depression and was recently referred via the local mental health hospital, said he liked to hug trees, which the group found amusing. Yasmeen talked about the fields near her house, and how she can lose herself in nature for hours. Jane said she doesn't hug trees but does touch them a lot – I made a silly joke about not rushing into anything too quickly with trees, which the group had a laugh about.

The session had overrun, but as people were starting to say goodbye, Meera said to me: *"Wait, Henry can I tell you something?"* Meera then told us this beautiful story about a time recently she connected with nature, through meeting a flute player in her local park who was playing the flute underneath Meera's favourite oak tree. Not only was this Meera's favourite tree, but she also loves the flute, and so struck up a conversation with the man, who turned out to go to her local gym. Meera felt more connected with nature, but also her local community. Meera had seemed very withdrawn that whole session and quite low in mood, (unusually for her) not contributing anything to the group's reflections on nature. But she said my joke had reminded her of her recent encounter and she was able to find something to be grateful for, leaving the session in a more positive mood.

She later told me, very kindly and beautifully worded, by email*: "Henry, compliments to you during the reading group, you mentioned the tree, which opened me up and saw me through to the Light which my recovery needed".* This made me reflect on how the slightest moment in the group, a small question, comment, or joke can spark something in someone, e.g., a memory, that leads to greater self-reflection and sometimes joy and personal growth. This happens often and through unplanned, natural social interactions between members.

Formation of friendships & reduced loneliness

Members become close to one another through the group, and over time often real friendships form. This is a worthy outcome itself, but profoundly important for some members who had previously been experiencing loneliness, such as Phillipa, Tom, Meera and India.

> *I've made friends as a result, and people from the group call me up and ask how I'm doing, or I will call them… so yeah it is undeniable that that is the real plus.* (Tom; INT)

For Simon, it is the people in the group and those friendships that form that are the most important aspect of the group for him'

> *It's the people that want me to come back. If hypothetically Yasmeen were to stop doing the group, if Jane stopped doing the group and if everybody were to leave then to me next week, it would be a totally different group, it wouldn't be the same. You know it is the fact that we have got so close as we have, that we do get on so well, what makes it so successful. And quite*

honestly, we could be reading this book or we could be reading Noddy. And quite honestly, it wouldn't matter. (Simon; INT)

Behavioural

Increased assertiveness

Some readers have noticed an improvement in how they express themselves and their needs, due to the influence of the group. This seems to be a combination of learning from and analysing literature and learning from other group members and facilitators. Meera often talks about how she is communicating more effectively at home, in expressing her needs and how she feels, more honestly. This is something she hasn't felt able to do at home during 40 years of marriage.

I believe my language has changed, the way I communicate. I think there is more of a power, a nice power that I can stand up for myself, that kind of communication. So it has given me the confidence to speak for myself and it is happening. Uh, anyway, today, I actually spoke up for myself, spoke with logic, I spoke in a logical way. (INT)

The book is feeding me some kind of vitamin for the brain through the reading… and the group people who are giving their time, their time was very valuable to me…. And I would say today how I was communicating at home about being standing firm my ground, yet said in a logical way, and then by communicating with somebody who is not treating you right, in a logical way. All you have to do is just keep trying. We can't change them, but they will change by themselves. (Meera; INT)

Similarly, India, who also had difficulties expressing herself fully, mostly due to chronic low self-esteem and confidence, finds the group has helped her convey her opinions more readily:

It has made an impact on shaping the sort of person I am… I'm more willing to actually give my opinion now, whereas before I wouldn't. (India; INT)

Improved self-expression

India also finds writing poetry, which is something the group inspired her to do, and which she often shares with the group, helps her express herself more clearly:

Since I've been doing poetry, it has helped me express my feelings on paper… it's a way to express myself. (India; INF)

Meera feels similarly:

I feel I am growing in my language, because of the group. I need that amount of language to support my mental, physical and emotional health. (Meera; INT)

Development of related hobbies and skills

For many members, the reading group has transformed their relationship with literature. Meera, for example, had *"never read a book in my life"* (INF), mostly because she has never felt she had the time, and rarely did things for herself and her own enjoyment. Now, she is reading classical books of literature and complicated poems, and even wrote her first poem after being encouraged by Yasmeen and other members (including myself), which she read out to the group. Her poem was about a TV programme she loves (Strictly Come Dancing), and all the life lessons one can extrapolate from it. The group all complimented the poem, telling Meera what they liked about it, and encouraged her to write more. Meera seemed extremely proud of herself, and keen to practice more writing.

Tom, who eventually became a lead facilitator within another group, never used to read fiction at all, and now considers it a very important part of his life:

I have to say it got me into reading literature… you suddenly realise what a huge difference it makes in your life. (Tom; INT)

Simon has also experienced the development of reading as a hobby, in a way he never had before:

I'm now reading my own books as well as the ones we're reading in the group. (INF)

Biological

Reduced pain, improved physical health symptoms

A couple of participants who had physical health conditions talked to me about some improvements in their condition from attending the group. For example, Phillipa experiences severe, chronic pain due to a surgery several years ago, and told me reading in the group can help reduce the symptoms of pain slightly, by providing a distraction:

You can just lose yourself, which helps (the pain). (Phillipa; INT)

India, who has a brain disorder that causes a tremor and speech difficulties, also spoke to me about how these symptoms seem to lessen during the group setting, in part because she is comfortable in the group and can relax in the presence of the other group members, which she told me seem to have a calming effect on her symptoms.

Singing

Active ingredients

Project

Group performances

Group performances are a key ingredient to the choir's enjoyment for people. They happen every few months, and often involve singing at various interesting or well-known venues. Members are often very proud of these performances and feel a sense of achievement. As James, a long-standing member of the choir with a history of suicide attempts and recurrent depression, tells me:

> *I am (proud) and I should be I think. I'm proud, of not just me, but everyone who's there, because it takes a lot to get up on a stage and sing.* (James; INT)

James used to have extremely low confidence singing in front of other people, but over time he has grown to love performing. I discovered that many choir members follow similar arcs to this. Wendy, who joined the choir following the death of her husband, and is now the secretary of the choir, describes this to me:

> *Our members actually really like performing. And these are people who would be often very self-conscious in any situation, and you actually get them to a point where they will go out and they will stand on stage… and once you've done an adventurous thing, it becomes easier to do it again, other things become easier…* (Wendy; INT)

Rosa describes how performances give people something to look forward to, work towards, and connect with one another:

> *It's always really good to have a performance to work towards. There is something about knowing that you have to get something ready, I think that galvanises people.* (Rosa; INT)

Task/goal orientation

There is very much a series of tasks which members are focused on during sessions. Learning new songs and singing accurately requires a significant degree of concentration and attention and so participants become absorbed in the activity:

> *Everyone's at the same stage and you're all having to learn the same notes, that's what the music does.* (Rosa; INF)

Certain songs will be carried on from week to week, enabling a continuation between sessions and something to work towards which is a motivating factor for sustained engagement.

Participant choice

Rosa often chooses the songs to be learnt and sung, however members are encouraged to suggest songs that they would like to learn, and these are nearly always accepted. This is something I noticed early on when Edwina (a group member with experience of chronic anxiety) asked if we could sing her favourite song 'Walking on the Moon' by the Police and by the next week the whole choir was learning and singing it. Members are also encouraged to say if they don't like a song, in which case Rosa is happy to try out something else, since her priority is members' enjoyment.

People

Shared, lived experience of mental health

The choir is based in a community room within a mental health hospital and is predominantly for those with mental health conditions. This shared experience of mental health seems to make new members feel more comfortable, connected, and less judged. When Kylie, who experiences depression, loneliness and PTSD related to a violent assault, first joined up to the choir she was extremely nervous. She also had serious difficulties trusting people, following her assault, and so this was a big step. She did not have any friends locally and this was the first group she had joined. She is a member of a local church but unfortunately does not find this to be a very supportive or non-judgemental environment for her.

> *Because everyone has a problem with mental health, that really helped me to fit in, because no-one was going to judge you. We all have our problems, but we just come together to sing.* (Kylie; INT)

Facilitator inter-personal skills

Rosa, the choir leader, has many strong inter-personal skills and attributes that contribute to members' enjoyment and satisfaction with the choir. Rosa has worked with vulnerable groups for many years, including working with a homeless choir, and has developed a high level of sensitivity and empathy which she brings to her role. One of Rosa's key aims is to make singers in the choir feel relaxed and comfortable in their ability to sing in a group and not feel judged. She instils an attitude that it's okay to make mistakes, it doesn't matter if you think you can't sing, and that we are just here to have fun. She verbalises this to the group a lot, so they absorb this philosophy. As Wendy describes to me during our interview:

> *Rosa is very good at making people completely relax, not feel like they've got a target to achieve because in most of our lives, you have a target to achieve. And therefore, if you think you can't hit the right notes or you can't read music, that just switches off… so I think it's making people feel comfortable about doing something which is for fun.* (Wendy; INT)

She also uses humour and banter frequently, as she tells me:

> *Everyone has their own style as facilitator, I think mine is very much like a big sister, using humour I think that's my style. Most people I know who did this work use humour.* (Rosa; INT)

I noticed this a lot during sessions, Rosa often making fun of herself to make others laugh, lighten the mood of the group and make others feel better about themselves. She would also pick individuals out by name and have a little joke with them, which seems to help that person feel valued and connected to the group. Linked to this, Rosa is very good at 'bringing people out their shell'. This might involve encouraging an individual to do a small solo during one of the sessions.

> *There are occasions when I've overstepped the mark, but it is about going that far and then just letting them try it… It's about giving permission, but it's also not giving permission to have to achieve, it's just giving permission to try, and not being worried about what the result is. But even with the result, you can tweak it a bit and that's also quite important, too.* (Rosa; INT)

She is very gentle, not forceful, but seems to have the sensitivity to know when to 'push', as James tells me:

> *Rosa, she knows when to push and when not to push. She's very good at that.* (James; INF)

Members seem to appreciate it when they do get pushed a little (when the moment is right), as James described to me after a session where he had been encouraged to do a small solo:

I'm glad Rosa called me up. It dragged me out. I wanted to do it but I wouldn't volunteer.

(Jamees; INF)

It is also important that Rosa has a high level of flexibility in her role as leader of a choir for people with mental health conditions, and not a more formal, strict choir. People might not show up on time, they have varying capacity from week to week, and performance might not always go to plan. But none of this bothers Rosa, who sees her goal as making sure members enjoy themselves and have a good time:

> *It's about being extraordinarily flexible. So if we do a performance, I can't rely on anything that we've done rehearsals before that will happen. So there's a flexibility needed.* (Rosa; INT)

> *Sometimes guys from the ward come down for their six o'clock entertainment, and sometimes they sing really loudly and off key. But that doesn't faze Rosa. She just takes (it) all in her stride.* (Wendy; INT)

Mental health staff as members

The choir consists mostly of members with lived experience of mental health conditions, however there are also a few mental health professionals who regularly attend, or occasionally visit. These tend to be from within the mental health hospital the choir is based at. It is not something that is drawn attention to, and new members normally wouldn't know who was a mental health professional and who wasn't. The exception to this is when occasionally a mental health professional takes a patient down directly from the ward to the choir. This creates a dissolving of the divide between professional and patient, which seems to have benefits for that relationship:

> *Whenever you learn a new piece of music, everybody in the room is at the same point. Here some of the members of the staff, for example, if you came down to the wards with your OT* (Occupational therapist) *and they might be bossing you around all day or getting you to do something. Then you learn to sing something together and suddenly there is this levelling out because everyone's at the same stage.* (Rosa; INT)

This is something the staff end up really enjoying for themselves, as well as helping to serve a purpose for their patients:

> *They used to come down with users and patients and then they started coming on their own too. But they used to… like the nurse would sit with their arms folded. We'd say to them perhaps, you know, join in on that. And then eventually some of the nurses did join in and they enjoyed coming down with them.* (Christina; INT)

During our interview, Christina told me about a time where a nurse and a few mental health patients came down to the group together, from the ward, and the singing game that the group was playing seemed to dissolve some of the tension between the two:

> *Rosa said, "Anybody wanted to sing the solo?" Well, normally everybody just sits there. This time 3 or 4 hands went up, so we said we'll all sing the same song and it was "pick up a chair and sit next to me". We made this song up… So one of them says to his nurse "pick up the chair and sit next to me", and then the other one shouts "pick up the chair and sit next to me!". And you thought, well, he's not getting on with his nurse, but you could see they both laughed and it broke the tension. And when they went back to the wards, when you check later on, they were completely different people*. (Christina; INT)

Structured social time

Outside the singing sessions, there are other regular activities members of the group do together, e.g., trips to museums, lunches, and walks. These seem to be very important for group bonding and the forming and maintaining of friendships within the choir. I regularly attended a weekly walk that some members went to. Only 3 members of the choir attended these walks every week: John, Harriet and Christina. These walks were especially valuable for John, who has cyclothymic bipolar disorder and experiences social isolation. During the Covid-19 pandemic, John was not attending many of the choir singing sessions because they were online and he did not enjoy the virtual format, so the walking group kept him connected with the choir and other people. He told me his well-being has gone from a *"2 out of 10 to a 9 out of 10"* (INF) since doing these weekly walks with Harriet, Christina and sometimes myself and others.

Contexts

No-pressure environment

An important philosophy to the choir seems to be the low pressure/expectation atmosphere. Many members upon joining up with the group have perhaps stereotypical views in their head about what a choir– is - that it may be strict and formal, and this often means they are very nervous at first. But this choir is very much antithetical to that traditional view of a choir. Anyone is welcome, it doesn't matter if you "can't sing", it is not about being perfect but having a good time.

> *I'd been in choirs beforehand, but they were singing off sheet music, if you got it wrong they'd tell you off, whereas the whole point about this choir… it's a lot less stressful, you can just have*

> *a good time singing and contributing to the general noise. Nobody tells you off for not singing the right note, it's quite a relaxed atmosphere.* (John; INT)

> *I joined the choir after my husband died, as I felt it was important for me to do something I'd never done with him, and here was a choir that didn't mind if I sung out of tune!* (Wendy; INT)

Rosa is crucial in dictating this philosophy, making everyone feel comfortable in themselves, and not worried about singing the right note all the time. She frequently reminds people verbally of this and tells me it is about *"really moderating the language around failing"* (INF). Christina describes the choir's philosophy to me as "*wrong and strong"* (INF). This philosophy is absorbed by members, who pass it on to others, as James does when new members join up and are often worried about the fact they can't sing. For James, who also didn't think he could sing but is now a very confident singer, it is about re-framing the purpose of the group to be about *"finding one's voice"* (INF), which he believes everybody has:

> *Even when people say "I can't sing", I say "Well, I can't, but you know, everybody's got a voice". And that was what changed in me.* (James; INT)

Another part of this relaxed atmosphere is that there are no expectations on frequency of attendance. Rosa is highly sympathetic to the fact members with mental health conditions may not always have the capacity to attend every session, or turn up on time:

> *There's no obligations. If you can't come or you don't feel like coming or you want to go on holiday, no-one's going to care. If you want to walk in at 10 to seven* (10 minutes before the end)*, I don't care. So there's this real sense of 'f it's not for you that day, it doesn't matter.* (Rosa; INT)

Welcoming atmosphere

The group is extremely welcoming to new members, and Rosa and a few long-standing members (Christina, Harriet and James) make a keen effort to warmly welcome every new individual. Wendy describes the importance of Christina's role:

> *And of course, the person who always greets everyone is Christina, always shows friendship, even if she's never seen you before.* (Wendy; INT)

The importance of a warm welcome cannot be underestimated, with certain individuals being highly unlikely to show up the following week otherwise. For Kylie, who had severe trust issues with any new people, related to PTSD from her violent assault and trust issues within previous relationships, this was fundamentally important:

> *At first I was scared people would not like me, because in my past I have had problems with relationships, issues trusting people… where I was left alone, without friends. I thought people would judge me, because I had been rejected in the past, but people were very welcoming and I felt accepted.* (INT)

Focus on activity over mental health

The choir serves mainly individuals with mental health problems, however the focus is very much on the singing rather than specifically mental health or any form of therapy. This seems important to members, as it helps the choir feels less clinical, less service-based.

> *Our way of offering support is an hour's worth of singing every week. There's nothing official, no therapy, nothing like that. But it is through the singing, that's how we support.* (Rosa; INT)

John contrasts this to another group he goes to, an arts therapy group, where the focus is far more on mental health in terms of conversations and language. He likes this less because he does not like to feel that his mental health condition defines him:

> *There's no sort-of, tell each other how we're feeling today, we're simply here to sing. That's why I like it. Whereas in my other group* [an arts therapeutic group] *it's more like, you've got all these people who have got various mental health definitions clanging around their necks.* (John; INT)

Linked to this, there were often discussions between members of whether the choir was a 'service' or not. In part this is because some long-standing members/committee members worry that the choir comes across as offering more mental health support than it really does, and therefore may be misleading to new, incoming members. Christina makes the very interesting point to me, however, that the boundaries of what is or isn't a therapy, or is or isn't a service, are not clear-cut:

> *Everybody says we're not a service. I agree with that. But to a point a choir is a service to the community. But 'here's an in-depth discussion about we must let people know we're not a service, and ' don't think that would happen if we weren't in a mental health setting. But here's the thing. Actually we are a service, a service to the community, just like any other choir.*
>
> *If you were in the choir and you weren't very well, people in the choir would either take you to the place where you'd be safe or advise you to go to the place* [formal mental health support]. *But they wouldn't leave you dangling. I' you're in a community, you look after your community regardless.* (Christina; INT)

Mechanisms

Psychological

Increased self-confidence & self-esteem

The choir has had a substantial impact on members self-confidence levels and relatedly their levels of self-esteem and self-belief, which many members have previous issues around. Their confidence and self-belief in their singing improves:

> *I'll get up on the stage and just you go for it, you know, whereas before you were scared confidence wise.* (Harriet; INT)

Additionally, there seems to be a positive impact on member's confidence in wider life. For Kylie, the choir's impact on her confidence levels had a profound impact:

> *It has improved my confidence, and my self-esteem. Before I didn't want to go into public. I don't want to go anywhere, when I go into shop I always see people following me. Going to places with people is really, really triggering. The choir changed my life, yes it changed my life.* (Kylie; INT)

Increased sense of achievement

The choir provides many members with a regular sense of achievement, often related to songs they have learnt, or performances completed. Part of this is related to the hard work and training that goes into learning songs and being able to perform them in front of a crowd, often in a nice venue.

> *I suppose it's like training isn't it' You've trained for something, and there's a goal in mind, and it's been good the training, it's been hard work, but at the end of the day, if you've achieved what you set out to do, it's that little bit about 'well done'. I think that's why they like performing, because it's like we've got something to aim for. And then we've achieved it and there's a feeling of satisfaction. Like you've won a gold medal, you know, it feels like that.* (Wendy; INT)

John speaks to me of the time he did a solo in a well-known musical venue with great pride:

> *And George* [previous choir leader] *said to me, You can do the solo and I was great. I do wear that on my sleeve as an achievement.* (John; INT)

Wendy also makes the important point, that for many members who have more severe mental health conditions, there are many other small achievements associated with attending a group such as the choir, even just getting out of bed and leaving the house:

> *For a number of people you have to get dressed, an achievement. You have to be clean, an achievement. You have to get there, an achievement, and then you meet people. So you're achieving with a structure that you set out. It would have been so easy for me just to lie in bed. I know when I'm struggling, I just lie in bed and I know that if I've stayed in bed for more than a*

day, I've got a big problem. So it's that bit about that structure of having do something, to get somewhere. (Wendy; INT)

Increased flow

Mihaly Csikszentmihalyi describes flow as "a state in which people are so involved in an activity that nothing else seems to matter" (867). This seems to be the experience of choir members, who often describe their worries and anxieties dissolving during the singing sessions, where they can focus intently on the task at hand and be fully in the present moment.

It brings you away from your mental health. And when you sing you're concentrating on something else. And you're concentrating that you want to get it right, and you are not concentrating on your own self. (James; INT)

The flow state here seems to be linked to the focus required to learn a new song, and then singing it as a group:

If you're learning your song, actually, you do really have to focus. So you have to focus on that rather than anything else. So, yeah, that is an additional benefit. So, like I finish work, and sometimes I'll continue to think about work, but with focusing on the choir, I can't. You know, it helps me to step outside everything else that's going on. (Phoebe; INT)

It takes away that judging feeling in my brain, the doubts... (Christina; INF)

Reduced stress & Experience of pleasure

One of the key active ingredients to the choir is simply the pleasure and joy members experience during sessions. As Harriet told me during our interview *"It's just a joyous time, really".* The singing itself feels good, as James says, *"something lifts"* (INF), as does the socialising and the laughter (of which there is plenty).

Almost two sides of the same coin, the group sessions seem to help reduce individuals' stress levels. Again, this is something felt during the singing sessions but seems to have an after-effect too. James still feels this effect after sessions and has been coming for 13 years:

It's 'cause I feel good about what we do in the choir and sing, and I go away with this, I can't describe the feeling, but it's like everything lifts inside you, even now. You can go into singing and be stressed out from work or whatever, and by the end of it you're uplifted. (James; INT)

When we go to the choir, you can go there feeling really down. But as soon as that hour's over, your different, you're different somehow. You're much, much happier. (Harriet; INT)

Feelings of joy come largely through a combination of the singing itself, the socialising and often lots of banter and laughter:

You have a laugh. You just get to know other people. It's a joyous time, Really. (Harriet; INT)

I'm just happy, for a few days afterwards. And it makes me ask myself Why can't I be happy? So it just keeps me going, inspires me. (Kylie; INT)

Social

Enhanced sense of community & belonging

The choir provides a sense of community for members, many of whom may not have friends or family living locally. It allows individuals to feel part of something greater than themselves and a sense of belonging. Often this is possible through work, but many members are unemployed, either due to psychosocial reasons or because they are retired.

Whatever your mental health issues are, I think, um, it's vital that you feel part of something. So I think that's where the identity comes in. Yeah, um, is to feel part of a group. You're part of society. If you're not working, then then it's very hard to feel that you're at all linked with anyone else. (Phoebe; INT)

I didn't do any activities where there was a sense of community until the choir fulfilled that sense of community. (Christina; INT)

Formation of friendships and reduced loneliness

Related to the increased sense of community or belonging members feel, is the mechanism by which the choir helps to form genuine friendships and reduce loneliness. This is especially important for members who are socially isolated, such as John:

Singing as a group's good because you don't feel like you're on your own. I have quite a solitary life, unfortunately, it just worked out that way. I have good contacts with my family, and I've got friends who I've known a long time, but they're all busy with their lives. And so the choir is a good thing because it's a bit of interaction, human interaction. (John; INT)

Sometimes group members will arrange things to do with one another outside the choir, such as trips together, as James tells me:

The most important thing about the choir is there is a social interaction with people as well' because I've got some really good friends from it, you know, like we're going to [location] this weekend. With Christina, Harriet and her daughter. So you know, you've got that bond, which is very important because, you know, especially if you've got no family or friends, because at the time I didn't have any family or friends around me. (James; INT)

Increased social support

Members in the choir receive and give support to one another. This may be of a practical nature, for example, the walking group was set up by Christina largely to support fellow member John, who was unable to attend the singing group when it was online due to Covid-19, due to challenges for him involved in engaging virtually. Christina knew that John would be very socially isolated without the choir each week. As Christina tells me *"If you're in a community, you look after your community"* (INF). It might also involve emotional support:

> *Being able to talk to people and maybe if they're a bit miserable, trying to help them…* (Harriet; INT)

However, there are limits to such support from choir members (who are not professionally trained in mental health), especially when supporting members who are more severely unwell. Several members told me about the need to set up boundaries sometimes, learning from previous occasions where their ability to provide support has gone past their capacity.

> *I've had to set up boundaries sometimes as well with people in the choir, because yeah, because otherwise you're hurting yourself as well. Um, don't get me wrong, I haven't had any issues apart from once, but we won't go into that...* (James; INT)

> *We became friends and we've been away for a weekend together, and I thought they were well. And then suddenly they became ill and their aggression towards me, It was not very nice. If I'm honest. But afterwards, when they're well, you forget that. So I've started to put a few boundaries in place, stopped inviting everyone to my house, because I wanted to remain friends.* (Christina; INT)

Increased vicarious joy

Linked to members' willingness to provide support for one another, is the enjoyment members get when they see another member's confidence levels and mental health improve over their time spent with the choir.

> *I enjoy when someone comes to an event. And, you know, six months ago, they wouldn't have gone.* (James; INT)

> *When I'm feeling really down, a smile comes on my face, thinking about people that got on the [location] stage and sang when they weren't very well. It has helped.* (Christina; INT)

Behavioural

Provision of structure, routine

The choir provides a structure and routine for individuals in their week, which seems to have benefits

for people's mental health. For Tom, who has bipolar disorder which causes swings and fluctuations in his mood and symptoms, told me the *"consistency and regularity"* (INF) of the choir helps mitigate the fluctuating nature of his condition. The group is something regular to look forward to each week, which Christina believes could be obtained from any community group, not just a choir:

> *What's important, is for a person, once a week, to go to that community group is a big thing, especially on their own, they're isolated and they probably look forward to it as well. And it doesn't have to be singing. It could be anything that they're interested in and there is a community group there for, and that structure. Yeah, it's very important.* (Christina; INT)

Just as with sense of community, structure and routine is something that can often be provided by work, and the choir can fill part of that gap for those members who are unemployed.

> *When you went to work, you were in a community and you got up and there was structure. Yeah, and when you retire. I still did volunteering. But the structure had gone and it was scary, I suppose going to the choir once a week… it helped breach the gap.* (Christina; INT)
>
> *It's that bit about that structure of having do something, to get somewhere… you know that you're going to feel better when you get there.* (Christina; INT)

Increased openness to new experiences & independence

For some members, such as Kylie, the choir has had a significant impact on their wider life, their motivation and ability to engage more in society in general, and live life more fully.

> *(My life) has changed a lot. Yeah, because of the past problem, I didn't want to get close to anyone, if it wasn't for the choir I wouldn't be able to go out the house. Now, I would like to sit in the bus, and go somewhere… before I wouldn't have talked to anyone, now I talk to people.*
>
> *I always relied on people. Now I have realised I can do things for myself.* (Kyle; INT)

A closer look: Kylie

Kylie's story is an especially potent example of the potential impact of the choir. Kylie is originally from West Africa and has found it difficult making friendships since moving to the UK several years ago. Part of this is due to extremely low self-confidence and difficulties trusting new people, related to a violent assault she experienced from a man she knew. She is a member of a local church but does not find this to be a very supportive community e.g., only phoning her up to *"ask for donations"* rather than to check in with her.

She was extremely socially isolated and would not leave the house apart from to buy groceries, never travelling far from her home or taking public transport. A few years ago, Kylie's GP picked up on the fact she was very lonely and referred her to a therapy group. A support worker called Jason came to talk to this group encouraging people to get involved in local community activities. He talked to Kylie, who told him she was extremely lonely. Upon Jason asking if there were any activities she liked doing, she said she liked to sing. Jason knew the choir very well, especially Christina (long-standing committee member at the choir) through previous collaborations in the community. Jason phoned Christina up and asked if she would look after Kylie if she were to join up with the choir. Jason then brought Kylie to her first session and introduced her to Christina, who was able to warmly greet Kylie and make the first few sessions as unintimidating and welcoming as possible for her. Kylie was *"at first scared people would not like me"* but soon *"felt accepted"* by the group.

The impact on her life has been profound. It was the single most significant factor buffering her loneliness and keeping her socially connected. Not only this, but it also significantly improved her self-confidence, trust issues and ability to participate in life more fully – for example, travelling further distances from her home or socialising with other people. Even agreeing to do an interview with me, involving travelling, sharing a coffee and some food, and entrusting personal information with someone she didn't know very well, not least a male with whom her trust difficulties were most significant, were all things she told me without the singing group she never would have felt comfortable doing.

Biological

Improved physical health symptoms

Several participants talked to me about how the symptoms of their physical health problems improved because of their involvement with the group. For example, Wendy found the group to be extremely helpful in her recovery from a Stroke, in particular helping with her physical movements and speech:

> *It's made a big difference. You are encouraged to express yourself physically, that helps coordination… It probably helped all that coordination, standing up and physically gesturing does help.* (Wendy; INT)

Appendix 10. Published manuscript version of Study 3

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RESEARCH ARTICLE Open Access

Social prescribing for individuals with mental health problems: a qualitative study of barriers and enablers experienced by general practitioners

Henry Aughterson*, Louise Baxter and Daisy Fancourt*

Abstract

Background: There is growing evidence for the use of social prescribing as a means to improve the mental health of patients. However, there are gaps in understanding the barriers and enablers faced by General Practitioners (GPs) when engaging in social prescribing for patients with mental health problems.

Methods: This study uses a qualitative approach involving one-to-one interviews with GPs from across the UK. The COM-B model was used to elucidate barriers and enablers, and the Theoretical Domains Framework (TDF) and a Behaviour Change Theory and Techniques tool was used to identify interventions that could address these.

Results: GPs recognised the utility of social prescribing in addressing the high levels of psychosocial need they saw in their patient population, and expressed the need to de-medicalise certain patient problems. GPs were driven by a desire to help patients, and so they benefited from regular positive feedback to reinforce the value of their social prescribing referrals. They also discussed the importance of developing more robust evidence on social prescribing, but acknowledged the challenges of conducting rigorous research in community settings. GPs lacked the capacity, and formal training, to effectively engage with community groups for patients with mental health problems. Link workers, when available to GPs, were of fundamental importance in bridging the gap between the GP and community. The formation of trusting relationships was crucial at different points of the social prescribing pathway, with patients needing to trust GPs in order for them to agree to see a link worker or attend a community activity, and GPs requiring a range of strong inter-personal skills in order to gain patients' trust and motivate them.

Conclusion: This study elucidates the barriers and enablers to social prescribing for patients with mental health problems, from the perspectives of GPs. Recommended interventions include a more systematic feedback structure for GPs and more formal training around social prescribing and developing the relevant inter-personal skills. This study provides insight for GPs and other practice staff, commissioners, managers, providers and community groups, to help design and deliver future social prescribing services.

Keywords: Social prescribing, General practice (GP), Community engagement, Community, Mental health, COM-B, Theoretical domains framework (TDF), GP behaviour, Behaviour(al) change theory, United Kingdom (UK)

* Correspondence: henry.aughterson.14@ucl.ac.uk; d.fancourt@ucl.ac.uk
Department of Behavioural Science and Health, Institute of Epidemiology, University College London (UCL), 1-19 Torrington Place, London W1CE 7HB, UK

Background

There is growing recognition internationally of the limits of biomedically-centred approaches to tackling many of the leading health problems. It is estimated that 1 in 6 adults experience a common mental health disorder such as anxiety, depression or obsessive-compulsive disorder [1, 2]. Multiple factors underlying these high rates have been suggested, including increasing inequality and economic uncertainty, the rise of chronic physical illness and obesity, cultural individualism, increasing levels of loneliness and an ageing population [3–6]. Moreover, obesity and chronic physical health conditions are also significantly influenced by one's mental health and social circumstances [7].

First-line approaches in the UK for treating the common mental health disorders consist of medication use such as anti-depressants, and psychological therapies. A meta-analysis of anti-depressant use has shown significant effects of the drugs compared with placebo in severe depression, but that the effect in mild or moderate depression may be "minimal or non-existent" [8]. Cognitive behavioural therapy (CBT), the most common form of psychological therapy in the UK, can be an effective treatment, however is normally only available to the person for 8–12 weeks, often with long waiting times. Further, a meta-analysis found its efficacy as a treatment for depression has been diminishing over time [9].

There has been rising support in recent years for approaches that support people's mental health in ways other than medication and time-bound psychological therapy (e.g. IAPT-accessed CBT). Academics and practitioners have called for more community-based approaches that are personalised to an individual's circumstances, available longer term, and address the social determinants of mental health [10, 11]. Social prescribing is potentially one such approach, defined as the referral of patients, often from a GP (General Practitioner), to sources of support within their community such as walking groups, Men's sheds, singing groups, lunch clubs, arts activities and community gardening. This can occur via a link worker, who sits between the GP and community groups, and works with patients to discuss and agree their "social prescription". Social prescribing has existed in different forms, in a number of GP practices around the country for several decades [12, 13], but the recent national roll-out marks a significant expansion - NHS England has committed to hiring 1000 link workers across the UK over 2019/2020, with the aim for social prescribing to reach 900,000 people by 2023 [14].

There is emerging evidence that social prescribing activities can support people's mental health, with activities such as arts classes, gardening, and exercise schemes leading to increased empowerment, self-esteem, confidence, improved mental health outcomes and cognitive functioning, and lowered feelings of social exclusion and isolation [15–17]. Another social prescribing study found reductions in isolation and improvements in health-related behaviours and management of long-term conditions [18]. There is also growing evidence for the benefits of the common social prescribing 'model', that is, the referral from a GP, through a link worker, to community groups and activities. For example, a randomised controlled trial of such a social prescribing model in Bristol demonstrated statistically significant improvements in anxiety, quality of life and ability to carry out daily activities [13]. A realist review of social prescribing in the UK has found that link workers form a crucial component of the model, facilitating the bridge between GPs and community groups, enabling greater access to support for patients [19].

Social prescribing is a complex system, with multiple interacting components, each activating different mechanisms, producing multiple and combined effects [20]. Therefore, it is vital to study the perspectives and outcomes of GPs, link workers, patients and community groups together. However, most evidence on social prescribing to date is from the perspective of the patient and their outcomes. Various studies have shown the benefits of the link worker role to patients, and some are also starting to evaluate social prescribing from the perspective of link workers [21, 22]. But the role of the GP in social prescribing is less well understood. Studies have identified that the success of social prescribing seems to rest on the GP's ability to identify social issues and root cause [23]. It also appears to rely on GP "buy-in" to validate the service among other professionals and patients, and requires GPs to believe in the link worker's ability and in the benefits of social prescribing [22]. Further, a few studies have included interviews with GPs, but these have tended to involve a very small number of GP interviews, or focused solely on 1 practice or locale [24, 25]. Nevertheless, this preliminary research does demonstrate that GPs found it challenging to have good knowledge of community groups or the time to engage fully, but valued face-to-face meetings with them [24]. GPs were also reported to find it difficult to address patient's social and mental health needs, due to lack of training and limited time in appointments; GPs acknowledged the limitations of the "traditional medical model" [25]. And so, this stresses the importance of pursuing this line of inquiry, to understand the role of GPs in social prescribing more clearly.

Therefore, this study is the first to explore the barriers and enablers to social prescribing for patients with mental health problems, from the perspectives of GPs from across the UK. It uses the lens of behavioural change theory to examine this, applying the COM-B model [26]. The COM-B model is systematically derived from

multiple existing behaviour change frameworks and finds that human behaviour is driven by a combination of Capability (having the physical and psychological skills to enact a certain behaviour), Opportunity (the physical, environmental and social circumstances in which a behaviour can be enacted) and Motivation (the reflective and autonomic mental processes involved in driving behaviour). This study uses this COM-B model to elucidate the barriers and enablers to GPs' social prescribing and engagement with community groups, for patients with mental health problems.

Methods

1Design

Interpretative-descriptive qualitative methods [27] using a one-to-one interviewing approach were used to understand what GPs experienced to be the barriers and enablers to engaging with social prescribing for patients with mental health problems. Telephone interviews were chosen since this was thought to be more convenient for professionals and allowed for a greater geographical spread of GPs. The one-to-one interview approach was chosen in order to allow time for in-depth analysis of individual GPs' perspectives, without any peer influence and restrictions which might arise from focus groups.

Participants and procedure

Seventeen GPs were interviewed, once each, with each interview lasting from 30 to 45 min, conducted over the phone.

Community groups and activities were defined as any group, service or activity within the community, often provided by the voluntary sector; not NHS services e.g. CAMHS. Examples were given such as arts groups, peer-support, walking clubs and community gardening, or anything understood by GPs as "social prescribing". A purposive sampling approach was taken, to reflect potential differences in barriers and enablers due to GP age, gender, geographical region, known prior engagement with social prescribing, size of practice, and GP career level [28] (see Table 1 for characteristics of GPs). Recruitment took place through the mailing list of a national research network (the MARCH network), existing contacts of the lead researcher and university team, and a practitioners' newsletter (the Social Prescribing Network). No monetary or other incentives were offered for participants to take part. The study received approval from the University College London (UCL) ethics committee (14,895/002) and all participants gave informed consent. A topic guide for conducting the interviews was developed using the COM-B model as a framework. This guide is presented in Supplementary Material. Interviews were recorded and then transcribed by transcription service 'Way With Words' in anonymous format.

Table 1 Characteristics of GPs

Region	Wales	1
	East of England	2
	West Midlands	1
	South West England	3
	South East England	1
	London	9
GP type	Partner	8
	Sessional – salaried, locum	6 (incl. 2 PCN Clinical Directors)
	Junior, trainee	3
Gender	Male	6
	Female	11

Data analysis

The analytical approach used was reflexive thematic analysis [29]. This consisted of following the steps set out by Braun and Clarke [30]: familiarisation with the data, generation of initial codes and clear definition of codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Themes were verified with a second researcher (LB). The software used for coding was NVivo qualitative data analysis; QSR International Pty Ltd. Version 11, 2015. The analysis consisted of both inductive and deductive techniques: initial coding was conducted in an open manner, allowing codes and themes to be grounded within the data. The context around codes was retained and contradictory data was also included. Coding was undertaken at the semantic level, covering what has been explicitly articulated by participants, using theory to progress the level of analysis from description to interpretation, elucidating the barriers and enablers of behaviour within the COM-B model.

Codes were then grouped into themes. Each theme represents a "central organising concept" describing a meaningful pattern in the data [29], and falls within Capability, Opportunity or Motivation: the three domains of the COM-B model. We analysed our data in relation to the physical and psychological capabilities of individual GPs as reported by them, their reflective and autonomic motivations, and the social, environmental and physical opportunities available to them. Following analysis, we applied the Theoretical Domains Framework (TDF) [31]. The TDF was originally developed using an expert consensus method that synthesised, from a plethora of behaviour change theories, 14 key domains. These domains map onto, and add a greater level of depth to, the COM-B model. We then used a matrix that matches the theoretical domains to specific behaviour change techniques, based on expert consensus for effectiveness at behaviour change [32, 33]. This enables the mapping of specific barriers and enablers identified by the COM-

B model to types of interventions that change behaviour. This allows us to identify and suggest interventions that may support GPs tackle the barriers and enablers to their engagement with social prescribing.

Findings

The participants

Themes

Nine primary themes were identified. These were: building skills, building trust and relationships, building the practice, collaboration, sustainability, patient and community factors, professional culture, 'doing things differently' and understanding benefits. The sub-themes, and how these map onto the COM-B model, are displayed in Fig. 1.

Capability

Three themes were identified within the category of capability – 'Building skills', 'Building trust and relationships' and 'Building the practice'.

Building skills 'Building skills' encompassed 3 sub-themes, which consisted of barriers, enablers and mixes of both – including a lack of formal training, GP knowledge of social prescribing evidence and of local community, and the benefits of GPs having a range of strong inter-personal skills when relating to patients.

Formal training

Most GPs said that they received very little training in terms of how to engage with community groups to support social prescribing for patients with mental health problems. Most perceived the lack of formal training to be a barrier, as it meant they lacked the motivation, confidence and know-how to engage in social prescribing effectively:

> *"As a GP for 30 years I am very conscious that there a lot of people that I cannot help with these skills and training that I've received so far as a doctor"* (GP6)

Some GPs felt that when they did have teaching related to this area, it was treated as somewhat of an 'add-on', secondary to the biomedical and clinical teaching:

> *"it's always thought of as a little asterisk...it gets thrown in on the side like oh, don't forget about social prescribing"* (GP13, GP trainee)

GPs felt that there were significant differences in training on this between different GP practices. Part of this was linked to how well-established the level of community engagement was in that particular practice:

> *"you've got one practice where it's completely commonplace to do loads of social prescribing, and another practice where it might not be something they do at all"* (GP13, GP trainee)

It was felt that formal training at an early stage in a GPs' career, would be beneficial. One GP trainee described how 'sitting in' with link workers and welfare officers to observe what they do, was a highly valuable learning experience:

> *"At the beginning, when I started the job, I had a two-week induction, where every day I would sit in a different clinic, sit in a different community service... so that's how I learnt about it"* (GP14, GP trainee)

GP knowledge: evidence and local community

GPs talked about the importance of having the knowledge of evidence related to this area, both regarding the wider evidence base but also that specific to their own social prescribing scheme. GP knowledge of local community assets was deemed important but difficult for most GPs to obtain – part of this was related to the time constraints and demands of the job, which made it difficult for GPs to improve their knowledge of the local community:

> *"it's about not knowing what's out there that can help us above what we've already got in our surgery...we're always busy...We don't always have enough time..."* (GP17)

GPs found it challenging to keep up with all the new services and groups regularly cropping up, often replacing old ones that had closed down, within the community:

> *"it's really difficult as a GP because things change so much and services are available and then they're not available"* (GP4)

GP knowledge of local community groups and activities was enhanced by personal meetings between GPs and local community representatives, especially if they physically visited the practice:

> *"what really works well is when a human being physically comes to our site to physically one-to-one reinforce the value of the service that's on offer"* (GP3)

Further barriers to good knowledge of the local community were the large numbers of part-time and locum GPs, and high staff turnover. This meant

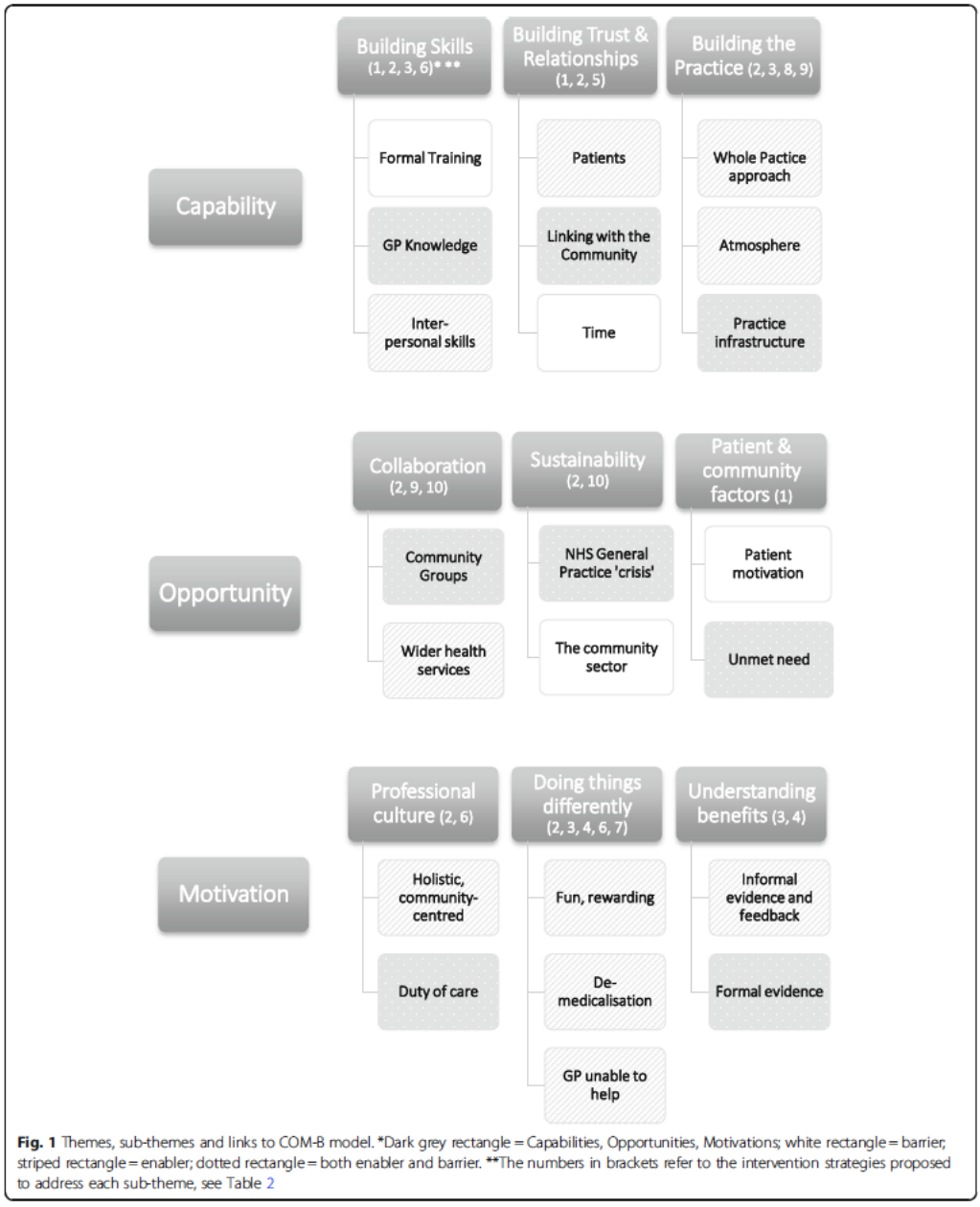

Fig. 1 Themes, sub-themes and links to COM-B model. *Dark grey rectangle = Capabilities, Opportunities, Motivations; white rectangle = barrier, striped rectangle = enabler; dotted rectangle = both enabler and barrier. **The numbers in brackets refer to the intervention strategies proposed to address each sub-theme, see Table 2

that GPs have less time to build knowledge of the local community, and that new GPs who fill the vacancies, have to start afresh, too. It also meant that the sharing of knowledge and support between GPs is more difficult, as they share fewer overlapping shifts:

"I work part-time and the other GPs in the practice work part-time. There isn't a single time when we're altogether at the same time, in order to be able to say, did you know this is happening?" (GP1)

Many of the GPs had not themselves accessed the types of community groups and services that patients might be referred to. This may underplay these groups' importance in the eyes of doctors, and also the extent to which they are known about:

"Having just led a very sheltered, privileged life…I've got no idea about any of this stuff" (GP15)

Inter-personal skills

There were a range of important inter-personal skills of GPs that emerged from the interviews, including: taking a personalised approach, the importance of listening, perseverance of GPs, and having a proactive instead of reactive style.

GPs frequently talked about the importance of developing a personalised, patient-centred approach, based on what matters to the patient. This was necessary to find the 'right fit' for patients, thus enabling effective social prescribing:

"For me, the biggest thing is more around what people want. Because it's not my choice at the end of the day, it's the patient and what they want, and what they think will be helpful to them." (GP12)

GPs 'going the extra mile' was commonplace, and often of fundamental importance for facilitating patient engagement with community groups. Part of this might involve GPs' actions: visiting community groups, setting up community projects, or learning at conferences; and part of this relates to GPs' inter-personal skills: their perseverance with patients and 'sticking with it' approach:

"I'm actually interested in what matters to you. I'm not looking to confirm or refute a diagnosis, I'm actually looking to see if between you and me we can find a way, a route map, out of the place you're in, to a place where you would rather be… stick with that person until they have made the necessary connections, applied the necessary advice…whatever it is" (GP6)

GPs referred to the benefits of taking a proactive, over a reactive, approach to supporting patients with mental health problems engage with the community:

"My knowledge of the community doesn't come from any of the practice jobs that I've had. It comes from actually being interested, and being engaged, going to community meetings" (GP1)

The importance of truly listening to patients, was stressed by numerous GPs. One GP spoke of how their practice gained a reputation for this within the community, showing the wider knock-on effects that are possible:

"Number one, we listen… people were actually shocked and they said, "you just listened to me!"… thereby by reputation which is how news tend to travel in a deprived but close community, fairly rapidly started to attract those people that needed listening to" (GP6)

Overlapping with both good listening and the 'sticking with it' approach, is the ability of GPs to understand the 'root causes' of patients' problems. It was felt that the root cause for many patients' mental health problems was largely social in origin, for example related to loneliness, financial difficulties, or lack of meaning or purpose in their lives. Thus, in order for GPs to know when, and how, to use social prescribing, it requires an enhanced knowledge and understanding of these wider patient circumstances.

"when you see other mental health patients…especially on the milder scale, it's evident that a lot of the problems that people are having are hugely tied into their social life and their social circumstances" (GP13)

Building trust and relationships

The theme of 'Building trust and relationships' emerged between both the GP and patient, which was regarded as an enabler, and between the GP and the wider community, which was also valuable but considered challenging to develop by GPs – although was strongly facilitated when there was a link worker. Time was fundamental in building those trust-bound relationships, but was in short supply for GPs.

Patients

Trust, from a patient towards a GP, was a recurring theme, crucial in enabling GPs to successfully motivate patients to engage with the community, or link worker. Part of this comes from GPs' inter-personal skills. Building trust also takes time – some long-standing GPs had this, having spent considerable time with patients getting to know them well:

"I know my patients really well. I've been there for 14 years so I've got a group of patients that I know

very well, I've got a rapport with, I feel if I suggest something to them, they'll generally think it might be a good idea, and try and follow through." (GP5)

Linking with the community

Trust between GPs and the local community was also important. GPs had to trust in the community services that they were referring patients to. Part of this, again, was facilitated by GPs being in the practice for a long-time:

"we're a very long-standing practice... we know the local community... we are, in that sense, quite old-fashioned" (GP3)

Most GPs had limited capacity to form trusting and working relationships with many community groups and services directly:

"The issues would really, I think would be around relationships. So, I don't think it's possible for every single person to have good working relationships with every community organisation that's out there. We're just too constrained in terms of the people that we know" (GP1)

The link worker's role was therefore considered of fundamental importance in building the relationships with community groups, and enabling effective social prescribing:

"I think that's where the link worker comes in, because it's about creating a bridge. You just have that one relationship with that one person, who has that relationship with multiple areas" (GP1)

Again, regular, face-to-face connections worked most effectively to build the necessary relationships. The value of this was deemed difficult to measure, but considered highly important:

"by coming fairly regularly, just refreshes us and makes us think about it...the value of a physical person is really hard to quantify, but it's really valuable" (GP3)

Time

It takes time to develop the level of trust and working relationship required to motivate patients to take up a community activity, or meet with a link worker, and this was a significant barrier for participants. This 'motivational threshold' relies on both time within an appointment, and time spent over a longer period of weeks, months to years between doctor and patient:

"as GPs we just don't have the time. And I don't have time to have a consultation with someone on loneliness and how they can deal with that" (GP15)

"that could last for 3,6,9,12 months, occasionally even longer to develop that sort of action plan... sometimes you have to get people down the road before they will accept a social prescribing referral and just hold them for a time until they trust that your referral is well intended and expertly suggested" (GP6)

Again, the high levels of locum and part-time GPs, and high staff turnover rates, were barriers to building those highly time- and trust-dependent relationships with patients.

"If you're a new doctor or somebody that moves around without a consistent patient group, it is harder, I think to have that relationship with patients, particularly if you're suggesting something a little bit different for them" (GP5)

It also takes time for GPs to develop vital relationships with community groups, that they might refer patients to.

There is also a time-investment required from GPs to be creative, proactive, or go the extra mile, in engaging with the community:

"if you're trying to do anything that's slightly different or creative...it requires time and resource" (GP11)

Building the practice

'Building the practice' encompassed 3 sub-themes: taking a whole practice approach, building the practice atmosphere, and practice infrastructure (which encompassed digital and physical elements).

Whole practice approach

GPs frequently articulated the benefits of taking a 'whole practice' approach to enabling effective social prescribing for patients with mental health problems. This could involve joint training, or meetings involving all practice staff members:

"we've had the social prescriber presenting at one of these...telling people what her role is, what she thinks she can help with, how to refer to her, etc. And we communicate quite widely within the practice" (GP5)

One GP talked about the 'glue' of the practice, often kept together by a number of key staff. In addition to

the importance of partners, practice managers, link workers and patient groups, several GPs talked about tapping into the potential of receptionists, who had the skills to support patients, and often lived locally which positioned them well within the community:

> *"Most of the reception staff that work in the practice around here, are local. And so, they know local residents, they know, to some extent, what you'd know in the community if you lived in that community. They would know the kind of services…"* (GP1)

GPs expressed the utility of having a link worker 'in-house', enabling personal, face-to-face and ongoing connections between them and practice staff. This facilitated more effective shared learning, regular feedback, and helped GPs understand the social prescribing service and referral criteria. The link worker provides a regular reminder that social prescribing is a tool at the GP's disposal, for patients with mental health problems:

> *"I'm very lucky so I pop in and see her maybe once a week or so…I think it's really helpful for the doctors and nurses who work in our building, with her [the link worker]…keeping everybody enthused about the project, remembering that she's there and we should be using her to refer patients or getting feedback from her about people who have successfully engaged and feel better. It makes it more real"* (GP5)

Relating to the whole-practice approach, but also running through all the capability themes and sub-themes, it emerged that many GPs considered there to be striking difference between individual GPs regarding their skills, motivation and knowledge in this area.

> *"each individual clinician will have different knowledge of the community, and a different attitude and approach towards linking people in with other resources in the community. That will come down to individual clinical practice, as opposed to a specific practice policy"* (GP1)

Atmosphere

It was a key enabler when a GP's practice had an atmosphere of community-centredness. The atmosphere of the practice is closely linked to the practice culture, which will be discussed later in the category of motivation, but here refers more to the structural elements of the practice which helps create a 'feel' of it being welcoming, and centred around the community. A welcoming practice made it easier for GPs to engage patients with community-centred approaches. Practices that 'invited patients in', who then themselves set up activities based within the practice, reflected this approach.

'Knock-on effects' on the wider community emerged from having a community-centred atmosphere. For example, in one practice, that had a community garden within it:

> *"a couple of policemen came by, and at first I thought, oh dear, maybe there's been some vandalism…but it wasn't that at all. They had heard about the community garden…they had some young offender in mind who they thought was just bored, and might benefit from actually doing something on the land. They were coming to chat…to see what was possible"* (GP17)

Further 'knock-on effects' were seen within a practice that embedded a weekly arts & crafts session in their waiting room. The perception of the practice changed in the eyes of patients, who saw it 'in a different way' and more welcoming.

> *"Many less complaints. Patients are, generally, nicer at the desk…some of our patients we know come to the crafting group because they're sitting in our waiting room and they see what our receptionist has to deal with…they see them in a different way. So, I think it's broken down some of those barriers and put a more human face on the practice"* (GP11)

Practice infrastructure

A further sub-theme was around the infrastructure of the practice, encompassing both digital and physical infrastructure. When good Information Technology (IT) systems were in place, this allowed easy referrals from GPs to community groups or a link worker, which made a GP's job much easier in referring patients with mental health problems for community support.

For example, one practice utilised a single database that was used by the local Clinical Commissioning Group (CCG), used for social prescribing referrals, alongside clinical referrals such as cardiology appointments or hearing tests:

> *"We're quite helped by the fact that we have one database of referral forms…all our referral forms are uploaded onto that…So that's become easier to integrate new services, because of the IT really…"* (GP3)

The issue of lack of physical space also emerged with several GPs:

> *"I'd like more room physically… If we had more space we could invite the community and the link*

workers in more closely, which would be an advantage" (GP6)

The practice space could also be used more effectively to advertise social prescribing, for example in the waiting area:

"probably wasn't advertised well in the waiting area, the areas that the patients stand at the reception desk, so I think that probably could help" (GP14)

Opportunity

Three themes were identified within the category of opportunity – 'Collaboration', 'Sustainability', and 'Patient and community factors'.

Collaboration

'Collaboration' encompassed 2 sub-themes, consisting of GP collaboration with community groups, and GP collaboration with wider health services.

Community groups

Ongoing collaboration between GPs, practices and community groups was vital for successful social prescribing. This was, in part, mediated by the informal relationships previously discussed. More formalised collaborations were also important – a common and highly effective example of this was through the use of a link worker:

"she (the link worker) was a brilliant point of contact just to get plugged into that side of things. Because to be honest, before GP I was completely oblivious to all this stuff" (GP15)

As mentioned previously, GP practices can also collaborate directly with the community, for example citizens being invited in to set up groups, activities and events within the practice. Some GPs felt that the formalisation of collaboration was useful, as it meant it was more likely to be sustained longer term:

"we often have conversations about oh, it would be great to do this, this and this…The problem is, it's too ad hoc, this is more about formalising it and having an actual program…Because I think unless you get that in, it's difficult to sustain it just by people's good intentions and motivation and things" (GP9)

Wider health services

GPs also articulated the benefits of formally collaborating with wider health and care services, to facilitate more effective social prescribing. They spoke of the importance of the newly formed Primary Care Networks (PCNs) to aid this. Working more closely with neighbouring GP practices enabled more efficient pooling of resources, sharing of knowledge and greater community support for patients. This was especially felt by small practices:

"We've always been motivated in principle, but we really didn't have the wherewithal, especially being a small practice, to set it up ourselves effectively…it's really been the advent of being part of a primary care network that's changed the landscape for us" (GP3)

Asked what factors enable successful social prescribing, GPs also talked about the importance of collaboration at the CCG (Clinical Commissioning Group)-level, and local authority level. CCGs could target resources to support community engagement effectively:

"if it's CCG-wide. If the CCG sources say, right, we are paying for this service for our patients, that's brilliant" (GP2)

"I think it's about making the case for robust community investment for intelligent and authentic social prescribing link worker activity for building primary care networks into their local strategic partnership committees, their local authority conversations" (GP6)

Sustainability

'Sustainability' included 2 sub-themes – the 'crisis' in the NHS and General Practice, and the sustainability of the community sector.

NHS and general practice 'crisis'

GPs mentioned resource pressures that affected the degree to which they could effectively engage with community groups, on behalf of patients with mental health problems. However, counter-intuitively, perhaps because of that strain, there was acknowledgement from GPs that they needed to engage with the community and third sector, in order to help those patients:

"the NHS is under strain, there's not enough appointments, not enough time, not enough doctors, not enough nurses, it's just very difficult when you're trying to survive to be able to support as you would want to" (GP4)

"I think the social prescribing and the community activities, like Men in Sheds, and other things, have really met some of that need" (GP7)

The community sector

The sustainability and funding precarity of VCS (Voluntary and Community Sector) organisations, was well understood among GPs. Their concern was related to future sustainability and availability of these organisations, which in part was based on GPs' experience of groups disappearing – this made it challenging to keep up with what is available, and also form lasting relationships with community groups:

> *"There's no point just having somebody signposting if there's nothing there to signpost them to…There used to be quite a number of community groups going…. there's very little activity they do now there…They're all gone. There's nothing really available"* (GP16)

Patients might become reliant on community groups or activities for their health and well-being, and so there was also concern from GPs about the time-bound nature of certain community activities and projects:

> *"they would have some support, but it would finish after the prescribed amount of time. So, I had one patient who was invited to a gardening project, he was given 16 sessions. And actually, ended up in hospital when that provision was taken away because I think that the contrast between having activity and having some social support and then having it removed was almost worse, for him, than having nothing at the beginning"* (GP11)

Linking to the earlier theme of formal collaboration, one GP suggested an opportunity for greater community support through the shift from Sustainability Transformation Partnerships (STPs) to Integrated Care systems (ICSs):

> *"We've gone to the STP and have said to them if you become an ICS, you really need to think about how you are going to attract funding into the third sector of the communities"* (GP6)

Patient and community factors

'Patient and community factors' also contained 2 subthemes which referred to patient motivation and high levels of unmet, psychosocial needs.

Patient motivation

GPs felt that the patient's own motivation or willingness to engage with social prescribing, was often a crucial barrier. GPs found it challenging to persuade some patients to see a link worker, or try a community activity. Beyond the initial engagement, there is also the issue of more longer-term adherence. Patients with common mental health problems such as anxiety and depression find it particularly difficult to try something new, especially when they are unwell:

> *"There are real issues around motivation, effort, concentration, decision-making particularly people who are anxious, to go and try something new"* (GP12)

There seems to be a 'motivational threshold' that patients have to surpass in order to agree to engage with social prescribing, then actually turning up for a group or activity, and then continuing to show up:

> *"one of my concerns is around how to help patients get over the threshold, so, the threshold in terms of actually signing up and the threshold of actually joining the group"* (GP16)

When groups were labelled as being 'for mental health', 'for social isolation', or something similar, this was often seen as a barrier to persuading patients to attend. GPs felt it was more effective to focus on the activity itself, and whether it was something the patient might enjoy:

> *"I think one of the biggest barriers is anything they perceive as being specific to people with mental health problems. So any kind of activity that's labelled as being for lonely people… it has to be much more around…what they're doing, and how interested they are in the activity itself"* (GP12)

Accessibility of, and transport to, community groups for patients was often a key barrier. This could be due to poor transport links in the area, the cost of transport, or patient aversion to travelling far from home:

> *"We have a barrier of accessibility. So many of these people don't have any means of transport, aren't confident enough or able to use public transport"* (GP5)

GPs found that some patients required extra support to engage with community groups. This might require someone meeting them face-to-face, perhaps even accompanying them to the first session. Again, for those GPs that had access to one, the role of the link worker was a crucial enabler in helping patients engage, bridging that gap between the GP and community, where patients often struggle to navigate alone:

> *"They need help with getting to appointments…it's almost like a hand holding role…And this is really critical, what I find with a lot of our mental health*

patients is that you can tell them to go to this service…But actually the gap between the GP and actually getting there is where we lose them so often, and that is where the navigator is really key" (GP9)

Unmet need

Most GPs in this study saw high levels of unmet, social needs within their patient population – and many felt these levels had been rising in recent years. Because of these largely social needs, it was clear to most participants that a social solution, rather than a purely clinical or biomedical one, was more likely to be effective. GPs saw social prescribing, and engagement with community groups, as a key tool especially for patients with mild or moderate mental health problems:

"the answer probably needs to come from the community because that's where the problem started" (GP10)

This is most pronounced in deprived areas, demonstrating the social gradient of mental health problems, reinforcing inequalities:

"housing, financials, benefit stuff, debt, employment issues. They're the biggest things coming into practices… a lot of people that I see, 70% I'd estimate… are coming in with…mental unhappiness, lack of mental well-being… That kind of stuff is what I think is common in deprived areas…and it places a huge burden on practices" (GP1)

Motivation

The category of motivation contained 3 sub-themes: 'Professional culture, 'Doing things differently' and 'Understanding benefits'.

Professional culture

'Professional culture' encompassed two sub-themes: holistic, community-centred care and duty of care.

Holistic, community-centred: care

Holistic and community-centred approaches often formed part of professionals' and practices' culture and ethos, which enabled GPs more extensive social prescribing. Being a long-standing practice with long-serving GPs often enhanced this. Individual professional ethos or culture both influenced and was influenced by the overall practice culture:

"it plays to our philosophy of trying to offer holistic care… three of us Partners have been here for the better part of 25 to 30 years… We know multi-generations within the same families, know the local community…we're quite embedded in the community…makes us better able to integrate and persuade people to go and use other community services." (GP3)

However, it was often the case that GPs felt their practice culture was not firmly rooted in community. Part of this was due to individual GPs having no connection to the local area:

"I don't see any of the practices in this geography as being really rooted as community organisations. So, certainly there are practice staff who've been here for decades who have never walked around this area. They drive to work, and they'll drive away from work and don't live locally." (GP1)

Duty of care

GPs felt passionately about the principle of 'duty of care', and were driven by this and the principle of providing a high-quality service of care for their patients. When community engagement, or social prescribing, was considering a component of 'high-quality' care, it was a key motivating factor:

"I think it's a wish for a high quality service for patients" (GP7)

"There is a duty of care to these patients…one of the main things I can do for any patient is to signpost them to the available resources" (GP2)

Part of it being high quality care stems from GPs' belief that social prescribing is effective, which ties into the later sub-theme of 'Understanding benefits' and the importance of feedback and evidence.

Doing things differently

'Doing things differently' referred to social prescribing being fun and rewarding for GPs, the desire to de-medicalise, and the GP-felt inability to help with social issues.

Fun, rewarding

Some GPs talked about how it was fun to actively engage more with community groups, and that they found this process rewarding. Linked to the earlier point about whether this is 'part of the role' for a GP, there is a tension around professional boundaries, that requires overcoming:

"It's actually fun to find novel and creative ways to help your patients much more than prescribing a

statin or an anti-depressant. Although it does require a little bit of breaking down boundaries…So, there's a certain inherent tension there" (GP10)

One GP, whose practice invited citizens from the community in to run groups within the practice, such as a weekly crafting session, expressed that this creative and 'different' process was rewarding for practice staff:

"because it's all been voluntary in a way, and that, actually I think it has engaged the staff group because, again, I think they have quite enjoyed seeing different things happening around the practice" (GP11)

GPs were fundamentally driven by a drive to help patients, and make them feel better – which was a key enabler because it was felt that social prescribing could offer that:

"I love medicine, but fundamentally, I like making people feel better, and there is obviously a lot of social stuff that comes into play here" (GP15)

GPs also spoke of the desire to 'empower' patients, so they can take control of their own lives and health:

"I've always been interested in the idea of empowering patients to take charge and control of their own conditions and managing their own conditions" (GP17)

The 'fun' and 'rewarding' components are perhaps especially important given the current high levels of stress and burnout among GPs:

"all around people are burning out, in the last 3 years we've had 6 salary GPs leave and each one has cited this intensity as being the reason why" (GP10)

Desire to de-medicalise

GPs talked about the need to de-medicalise certain patient problems that they felt had been over-medicalised. GPs understood many patients' mental health problems were influenced or caused by their social circumstances, for example related to social isolation, housing or financial difficulties. There was a desire among GPs to look for social solutions for these patients, whose problems were rooted in their social circumstances:

"there's a massive role for the community in promoting…mental health and well-being (because) actually most of the mental health and well-being has got social causes" (GP10)

"a large proportion of our people who attend frequently, who are often struggling with chronic pain, struggling with chronic mental health issues and have social isolation…Many of these conditions are not really amenable to medicalisation" (GP5)

The desire to de-medicalise is closely influenced by the previous sub-theme of inter-personal skills, especially the ability of GPs to understand the 'root causes' of patients' issues – which were often primarily social, not medical.

GP unable to help

GPs often felt unable to help patients with psychosocial issues, with the tools at their disposal – that is, with both their professional skills and the medication they prescribe. GPs felt social prescribing provided such a tool, helping meet those patient needs for which GPs felt they could support no further on their own:

"a lot of the problems that people are having hugely ties into their social life and their social circumstances…there's nothing that I can personally do to help that. And you think if only you could get out and do a walking group, do an art class, do something, that would help with a lot of your issues" (GP12)

There was a common belief in the limitations of certain medications, especially anti-depressants, as the primary solution for patients with mild or moderate mental health problems:

"we medicalise unhappiness as depression…but does that mean they actually are depressed? They get medicalised, get given anti-depressants and get given neuropathic drugs, benzos and opioids. Whereas in fact, when you drill down to it, it's because they've got no hope and no control and no agency. It's because they feel valueless, all the sorts of reasons which those drugs will never treat" (GP1)

Understanding benefits

'Understanding benefits' included both informal and formal evidence of social prescribing.

Informal evidence and feedback

It was very rewarding for GPs to feel that patients were benefiting from social prescribing. An effective way of fulfilling this need was having regular feedback to the GP of how the patient was getting on, after their initial referral. GPs, driven by a desire for high quality care for their patients, were far more likely to continually engage

in social prescribing, if they knew their patients were benefiting. This process was made easier with a link worker, especially if they were based in the practice building.

> *"it is important that we get feedback and we understand what's happening. We're lucky, she's based in the same building and we speak with her frequently"* (GP5)

Another way, other than regular feedback, of GPs knowing this can benefit patients, was through GPs' personal experiences. As discussed previously, doctors might not be as likely to have accessed those community resources as some of their patients, but when they were able to relate it was highly motivating:

> *"So, I was ill myself probably about seven or eight years ago. And at that time I was struggling to work so what I did was I went to an art class…And I think certainly for patients of mine with mental health problems or even actually things like chronic pain or breathlessness or any of those things being able to focus on an activity I think is really helpful for them"* (GP16)

Formal evidence

Alongside the importance of feedback and informal evidence, GPs talked about the importance of formal evidence demonstrating that social prescribing was effective. This includes both wider research, as well as research conducted on their own practice's social prescribing model and patient population. GPs were far more likely to use social prescribing if they had a strong evidence base that it improved patient outcomes:

> *"We want to try and have some evidence to prove that patients are benefiting, so that we can go on employing somebody in this role and applying for funding and stuff"* (GP5)

Some of the difficulties conducting this sort of research is due to research getting in the way of the activities, and some of it relates to the fatigue of third sector organisations and clients having to fill in continuous tick boxes and questionnaires.

> *"it's like the art therapy, we know it's making a huge difference and we can do surveys or different things, but does it really capture that it's actually reducing, improving well-being? Those kind of things, without stifling the organisations, or the patients with survey after survey, or questionnaire"* (GP9)

Discussion

This study explored the barriers and enablers to social prescribing for patients with mental health problems, from the perspectives of GPs. Most GPs were supportive of social prescribing and active engagement with community groups, with nearly all the themes within motivation being enablers. For example, GPs were motivated by a desire to move away from the status quo in primary care, which they felt was failing many patients and leaving them with unmet, psychosocial needs. This was coupled with efforts to de-medicalise social problems amongst patients and find alternatives where medications were found to be ineffective, corroborating wider research [8]. It was often enjoyable and rewarding for GPs to support this work, which, given the current high levels of GP burnout and stress [34], has positive implications for staff well-being, morale and GP retention. There were a range of inter-personal skills that GPs felt were important to successfully engage, including active listening, 'sticking with it', taking a personalised approach with patients, and the ability to get to the 'root causes' of patients' problems. Trust was also fundamental - patients had to trust GPs before they could overcome the 'motivational threshold' of agreeing to see a link worker, or attend a community activity. This is consistent with research demonstrating that patients who have high levels of trust in their doctor are significantly more likely to adhere to the healthy behaviours the doctor recommends [35, 36].

Further, although GPs felt very limited by the 10 min appointments they had with patients in building this trust, they believed that link workers (who often have ~ 1 h consultations) had the time to support patients with a more personalised approach. Link workers were also seen as the key 'bridge' between the GP and community, where previously GPs were limited by the number of relationships they could build with the different community groups. Time, trust and building relationships must all be seen within the conceptualisation of social prescribing as a complex system [37], with trust between different stakeholders (e.g. patients, GPs, link workers, and community groups) important at each different stage of the social prescribing pathway [20]. The importance of taking a whole-practice approach also embraces complexity, harnessing the potential of receptionists, practice managers, link workers, GP trainees and partners to help build a practice ethos and atmosphere that is centred around the community.

There were also a number of key barriers. In the wider environment, GPs were concerned about the availability of community groups in their surrounding area and their often transient nature, and understood that the precarity of funding for third sector groups was a significant challenge. GPs also spoke of the 'crisis' across the NHS and

Table 2 Proposed interventions to promote increased GP social prescribing and community engagement for patients with mental health problems, linked to Behaviour Change Techniques

Intervention number	Number of barriers/enablers that could be addressed	Intervention type	Behaviour Change techniques	Outline of strategy
1	5	Training	Behavioural rehearsal; demonstration of behaviour; instruction on how to perform a behaviour; problem solving; goal setting (behaviour and outcome); discrepancy between current behaviour and goal; social support; verbal persuasion about capability; monitoring of (outcomes of) behaviour	Training package for GPs to develop the appropriate inter-personal skills important for effective social prescribing for their patients, including motivational skills, active listening, perseverance and resilience training, ascertaining 'root causes'; include regular training updates and "check-ins" for GPs; include clear training for GPs on referral criteria for social prescribing
2	4	Training; enablement	Self-monitoring of (outcomes of) behaviour; Goal setting (behaviour); goal setting (outcome); action planning; identity associated with changed behaviour; restructuring the social environment	Training programme/plan for whole practice and all practice staff – on how to create a more community-centred atmosphere and engage more with the community, as a practice. This should include more time allocated to supporting active engagement with the community; regular whole-practice meetings, activities and team-building exercises that are centred around community approaches/social prescribing. This should also include tailored support for part-time and locum GPs, and a plan for GP retention
3	3	Education	Information about social and environmental consequences; information about health consequences; information about antecedents; credible source; pros and cons	Educate all GPs on the wider evidence base of social prescribing, the harms of over-prescribing and over-medicalisation; enhance GPs' and other practice staff's knowledge of the local community assets and services on offer – this could be run by community group representatives or link workers; also include education about the social prescribing service and the new link worker role
4	3	Incentive; Enablement	Feedback on behaviour; feedback on outcomes of behaviour; positive reinforcement; social comparison; reward; identity associated with changed behaviour	Develop a system to provide regular, systematic (positive) feedback to GPs on their social prescribing-referred patients; reward GPs who use social prescribing effectively and appropriately
5	2	Enablement	Social support (emotional and practical)	Set up a buddy system for patients accompanying them to community groups and activities; use link workers and harness volunteers for this
6	2	Persuasion; modelling; training	Salience of consequences; information about emotional consequences; pros and cons; material incentives; comparative imagining of future outcomes; framing/reframing; credible source; identity associated with changed behaviour	Use patient stories, community group and GP experiences to persuade GPs that social prescribing/community engagement is an effective way to support patients; through use of videos and in-person accounts
7	1	Restriction; Coercion	Behaviour substitution; habit formation; habit reversal; punishment; social comparison	Dis-incentivise GPs for inappropriate anti-depressant/medical prescribing and not offering social prescribing when referral criteria are met
8	2	Enablement; Environmental restructuring	Prompt/queues; behavioural substitution; behavioural cueing; habit formation; habit reversal; social comparison; conserving mental resources; restructuring the physical environment	Develop a strong IT system for social prescribing referrals; use on-screen prompts for GPs to see the social prescribing option for every consultation (or every relevant consultation as determined by referral criteria); design quick, simple forms that GPs can send to the link worker
9	2	Environmental restructuring	Restructuring the physical environment; restructuring the social environment; adding objects to the environment	Physical space in practice re-purposed or created in order to house a link worker and/or for receptionists to have chat with patients, and/or to invite the community in to utilise, e.g. crafting session or community garden

Table 2 Proposed interventions to promote increased GP social prescribing and community engagement for patients with mental health problems, linked to Behaviour Change Techniques *(Continued)*

Intervention number	Number of barriers/enablers that could be addressed	Intervention type	Behaviour Change techniques	Outline of strategy
10	1	Environmental structuring	Restructuring the physical and social environment	Provision of long-term funding to VCS groups that are receiving social prescribing referrals; explore pooled budgets, e.g. combined health, local government and third sector funding

General Practice, citing lack of resources, time and staff shortages. This contributed to GP stress and burnout but also, inadvertently, helped GPs understand that the community sector could offer support that they themselves could not alone. Another key concern was around a lack of formal evidence on the benefits of social prescribing, both in terms of the wider evidence base and also that collated within a specific practice's social prescribing model. There is growing evidence that social prescribing has the potential to improve mental health and well-being outcomes for patients [38–40], but this evidence appears not to be reaching GPs. This is consistent with the fact that most GPs felt there was very little formal training on community engagement and social prescribing. When 'informal evidence' was present, via regular feedback from the community or link worker to the GP, this provided a significant incentive for GPs to continually engage with social prescribing for their patients. Corroborating wider research, this seemed to be especially effective when there was positive feedback and reinforcement either from patients or link workers [41–43].

It is evident, therefore, that in order to tackle the barriers and amplify the enablers found in this study, interventions are needed. These have the potential to support GPs engage more effectively with community groups, for patients with mental health problems. Mapping the barriers and enablers onto the COM-B wheel, elucidates several types of intervention that could help GPs engage more effectively, and optimise social prescribing especially for patients with mental health problems [26]. Specific Behaviour Change techniques have been selected, based on the degree of available evidence supporting their efficacy for that type of barrier or enabler [33]. The proposed interventions derived from the data in this study are listed in Table 2, below:

Limitations

This study had a number of strengths, including its good spread of rural and urban perspectives and participants from practices in diverse areas of differing levels of deprivation, and the involvement of GPs from across the full spectrum of career level. Further, the research was guided by an established theoretical framework and our use of multiple one-to-one interviews enabled us to confirm and explore themes in depth. However, there were some limitations. The study involved interviews with 17 GPs, which limits the generalisability of its findings. Moreover, it was surprising that some issues seemingly highly related to those with mental health problems, e.g. risk and safety considerations in referring patients to community groups and availability of trained staff in those settings, was not talked about frequently by the GPs, and further research should explore this. However, it is nonetheless the first study from the perspectives of GPs across the UK, in the social prescribing literature. GPs were interviewed from across the UK, but the majority were still from England. Given slight differences in the roll-out of schemes within Scotland, Wales and Northern Ireland, research into the potential effects of interventions will need to be adapted to local settings. The self-selection of participants also means that some GPs facing more extreme barriers to engagement (e.g. due to lack of time or awareness) may not have been able to take part. However, our study did include a number of participants with no current engagement in social prescribing, so it was not just limited to those who already were significantly involved.

Conclusion

This study is the first to explore the barriers and enablers to social prescribing for patients with mental health problems, from the perspectives of GPs from across the UK. It highlights the need to address barriers such as lack of formal training for GPs on how to engage effectively, the importance of a range of strong inter-personal skills, and the benefits of the link worker role. Further studies are encouraged in order to test the effectiveness of the behaviour change interventions proposed. They should also examine the factors which affect uptake and long-term adherence of social prescribing by patients. Other qualitative methods, such as ethnography, could be deployed to examine social prescribing in greater depth.

Supplementary information

Supplementary information accompanies this paper at https://doi.org/10.1186/s12875-020-01264-0.

Additional file 1. Interview guide attached.

Abbreviations
BCT: Behaviour Change Theory; CCG: Clinical Commissioning Group; COM-B: Capability, Opportunity, Motivation and Behaviour; GP: General Practitioner; IAPT: Improving Access to Psychological Therapies; ICS: Integrated Care System; IT: Information Technology; NHS: National Health Service; PCN: Primary Care Network; STP: Sustainability Transformation Partnership; TDF: Theoretical Domains Framework; UK: United Kingdom; UCL: University College London; UCLH: University College London Hospital; VCS: Voluntary and Community Sector

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Authors' contributions
DF, LB and HA designed the study and recruited participants. HA and LB carried out data collection, and HA conducted the analysis and wrote the final manuscript. All three authors read and approved the final manuscript.

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Availability of data and materials
The datasets used and analysed during the current study are available from the corresponding authors on reasonable request.

Ethics approval and consent to participate
The study received ethics approval from the University College London (UCL) ethics committee **(14895/002)** all participants provided written informed consent to participate.

Consent for publication
Not applicable.

Competing interests
The authors declare they have no competing interests.

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Publisher's Note

Appendix 11. Participant information sheet for Study 3

Participant Information Sheet For General Practitioners

UCL Research Ethics Committee Approval ID Number: 14895/001

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title of Study: What are the barriers to, and enablers of, engagement with social, cultural and community assets at an individual, organisational, and policy level?

Department: Research Department of Behavioural Science and Health, UCL

Name and Contact Details of the Researcher(s): Louise Baxter (l.baxter@ucl.ac.uk)

Name and Contact Details of the Principal Researcher: Dr Daisy Fancourt (d.fancourt@ucl.ac.uk)

You are being invited to take part in a research project exploring how social, cultural and community groups engage with people with mental health conditions. This project is part of a wider study, and we are also separately asking mental health service users, policymakers, and representatives from cultural, community and social assets, for their views.

Before you decide whether to take part it is important for you to understand why the research is being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

1. What is the project's purpose?

We know that taking part in community and cultural activities can be good for mental health. This study is exploring what factors might help people with mental health conditions to participate more, and what aspects might be preventing this. This aspect of the study aims to understand both the challenges that organisations involved in policymaking, such as commissioning or funding services, might face in encouraging participation by people who have mild to moderate mental illnesses, and what might already be happening at this level to encourage this.

2. Why have I been chosen?

You have been asked to take part because of your role as a GP who may be involved with social prescribing, now or in the future. The network is focusing on the resources within communities and how these can support people with mental health conditions, and you have been asked to take part as your role may involve an aspect of health, funding or strategic decision-making.

3. Do I have to take part?

It is completely up to you to decide whether or not to take part, and if you do not wish to take part you do not have to give any reason. If you do decide to take part you will be given this information sheet to keep, and be asked to sign a consent form. You can also withdraw at any time without giving a reason. If you decide to withdraw any anonymous data you have already provided will be retained, but no further data will be gathered.

4. What will happen to me if I take part?

If you decide to take part you will be invited to take part in either a one-off face-to- face or telephone interview with a researcher, whichever is most convenient for you. It is anticipated that the interview will last up to an hour, and cover such topics as the place of community asset engagement in delivering care for people with lived experience of mental illness, and how your organisation works with the community and voluntary sector. The interview will be audio recorded, and transcribed (typed out) by a professional transcription company. The researcher may also take some additional notes during the interview.

5. Will I be recorded and how will the recorded media be used?

The audio recordings of the interview made during this research will be used only for analysis. No other use will be made of them without your written permission, and no one outside the project, or the transcribing company, will be allowed access to the original recordings. The recordings will be destroyed after analysis is completed.

6. What are the possible disadvantages and risks of taking part?

There are no anticipated risks to taking part in this research project. You will have to give some time to taking part in the interviews. Interviews will be anonymised, and pseudonyms will be used with any quotes.

7. What are the possible benefits of taking part?

Whilst there are no immediate benefits for those people participating in the project, it is hoped that this work will help to increase our understanding about how individuals with mental health conditions can be encouraged to engage more with their communities.

8. What if something goes wrong?

If you have any concern over any aspect of the study, please contact the Principal Investigator of the MARCH Network in the first instance: Dr Daisy Fancourt, (d.fancourt@ucl.ac.uk).If you remain unhappy and wish to make a complaint then you can contact the Chair of the UCL ethics committee: ethics@ucl.ac.uk

9. **Will my taking part in this project be kept confidential?**

All the information, such as your contact details, that we collect during the research will be kept strictly confidential. Your contact details will be kept separately from your interview recording and transcription and destroyed once the analysis is completed.

An external company will be used to transcribe (type up) the interview. The files will be securely stored and transmitted using encryption and transcribed maintaining strict confidentiality. They will also keep these confidential. Only researchers on the project, and the transcribing company, will have access to the recordings of the interviews or transcripts of these.

Quotes from your interview may be used in research reports or publications, but this will have a pseudonym (a 'made up' name) beside them, never your real name.

10. Limits to confidentiality

Please note that assurances on confidentiality will be strictly adhered to unless evidence of wrongdoing or potential harm is uncovered. In such cases the University may be obliged to contact relevant statutory bodies/agencies.

11. What will happen to the results of the research project?

We will write the results of the wider project up and this will be reported through publication in articles, conferences and presentations, and through the MARCH Network which includes service users, community organisations and policy makers and scope conference and other presentation opportunities. The transcribed interviews will be stored securely (password protected) for ten years after the completion of the study.

12. **Local Data Protection Privacy Notice**

Notice:
The controller for this project will be University College London (UCL). The UCL Data Protection Officer provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk

This 'local' privacy notice sets out the information that applies to this particular study. Further information on how UCL uses participant information can be found in our 'general' privacy notice:

For participants in research studies, click here

The information that is required to be provided to participants under data protection legislation (GDPR and DPA 2018) is provided across both the 'local' and 'general' privacy notices.

The categories of personal data used will be as follows:

Name
Address
Email address/ telephone contact number

The lawful basis that would be used to process your *personal data* will be performance of a task in the public interest.

The lawful basis used to process *special category personal data* will be for scientific and historical research or statistical purposes.

Your personal data will be processed so long as it is required for the research project. If we are able to anonymise or pseudonymise the personal data you provide we will undertake this, and will endeavour to minimise the processing of personal data wherever possible.

If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk.

13. Who is organising and funding the research?
The research is being organised by the MARCH network, based at University College London (UCL). The network is funded by UKRI.

Contact for further information
Please contact Louise Baxter for further information:

Email: l.baxter@ucl.ac.uk

Telephone: 020 7679 8347

You will be given a copy of the information sheet and a signed consent form to keep.

Thank you for reading this information sheet and for considering taking part in this research study.

Appendix 12. Topic guide for Study 3

Opening information for participants

- We've invited you to be part of the study as the MARCH Network **(a research network focusing on social, cultural and community assets and mental health)** is conducting a research project trying to understand what factors might help people with mild or moderate mental health conditions to participate more in community activities, and/or what aspects might be preventing this. As part of this we are asking how policymakers, funders and commissioners engage with people with lived experience of mental illness and community activities.

- **Community activities and organisations include (but are by no means limited by): singing groups, walking groups, art classes, community gardening, anything considered "Social Prescribing", or that relates to social and cultural assets within the community. This research is not about community health services e.g. CAMHS, district nurses or community physiotherapy - but do still mention anything you feel is relevant.**

- We are also separately asking mental health service users, and cultural and community organisations for their views.
- Some people that we talk to may be very involved, whereas others are may not have done so much, but we're interested in all views.

- You've all had an information sheet about the research. The key things are that we are audio recording today's interview, but your views today will be confidential and anonymised. So anything you say where you reference a person or your organisation we'll be anonymising that. So you can speak freely.
- We're holding several other interviews over the next few months to hear from more organisations and will be bringing together everything we learn from all of the groups in a final report that we can circulate to you.

- I have a list of core questions I'd like to ask and some prompts but do feel free to add any other thoughts too
- A final thing to say is that we're only managing to speak to a select group of policymakers, commissioners and funders for this research, but if, when you're answering questions, you are aware of different experiences from other organisations you're connected to, please do share them too – anonymously is fine - as we want to try and get a rich picture of the experiences of lots of different organisations.

Opening question

1. Understanding the role in at the moment – what role are you in now? How does this (potentially) relate to cultural/ community engagement and people with lived experience of mental illness?
2. **How is your organisation currently supporting social prescribing, and/or the engagement of people with lived experience of mental illness in community activities? [make clear that the following questions relate to the work/ role, rather than personally]**

Three main questions

3. **What was it that first MOTIVATED you (i.e. your organisation) to support this area of work? What is it that still motivates you to support it?**

   a. *Was this included in your organisational strategies or government policies?*
   b. *Was there any kind of economic motivation like cost savings?*
   c. *Have you been influenced by the increasing discussions on mental health?*
   d. *Did affiliated organisations request it?*
   e. *Is it important for your organisation to do this/ part of the organisation identity?*
   f. *Did you see other organisations delivering similar work either in the UK or in other countries?*

4. What factors, skills or characteristics that you think your organisation has in order to be able work in this area? What makes it able to engage/ successful in engaging?
   If not working in this area, what do you think it is about your organisation that would need to change?
   a. *Do you feel your staff have the training needed to be able to support this kind of work?*
   b. *Are there any factors within your organisation that make it hard for you to engage with this kind of work at the moment?*
   c. *Do you have sufficient resources?*
   d. *Do you have good links with healthcare/mental healthcare OR community organisations [DELETE AS APPROPRIATE]?*
   e. *Are there any issues around strategy/funding/GDPR etc?*
   f. *How confident are you about working in this area? What would change/ improve this?*
   g. *What kind of support would help your organisation?*

5. Are there factors in the wider environment (outside the immediate organisation) that help with, or hinder, this work? For example:
   a. *Have you received specific funding that has allowed you to develop this work?*
   b. *Have you received support from other organisations/ funders/partners?*

Closing questions

1. [Speaking about your department/ organisation] Now you've started working in this space, do you think you will ever stop? Why/why not? OR If you're not already engaged, what do you think might change that and make you want to engage?

Appendix 13. Consent form for Study 3

CONSENT FORM: Policy, Funding and Commissioning Group

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: What are the barriers to, and enablers of, engagement with social, cultural and community assets at an individual, organisational, and policy level?

Department: Behavioural Science and Health

Name and Contact Details of the Researcher(s): Louise Baxter l.baxter@ucl.ac.uk

		Tick Box
1.	I confirm that I have read and understood the Information Sheet for the above study. I have had an opportunity to consider the information and what will be expected of me. I have also had the opportunity to ask questions which have been answered to my satisfaction.	
2.	I understand that I will be able to withdraw my data up until this is has been anonymised and included in the analysis.	
3.	I consent to the processing of my personal information, such as contact telephone number or email address, for the purposes explained to me. I understand that according to data protection legislation, 'public task' will be the lawful basis for processing.	
4.	I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified. I understand that my data gathered in this study will be stored anonymously and securely. A pseudonym will be used where quotes may be included in reports or publications.	
5.	I understand that my information may be subject to review by responsible individuals from the University (to include sponsors and funders) for monitoring and audit purposes.	
6.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason. I understand that if I decide to withdraw, any personal data I have provided up to that point will be retained.	
7.	I understand the potential risks and the direct/indirect benefits of participating.	
8.	I understand that the data will not be made available to any commercial organisations but is solely the responsibility of the researcher(s) undertaking this study.	
9.	I understand that I will not benefit financially from this study or from any possible outcome it may result in in the future.	
10.	I agree that my pseudonymised research data may be used by others for future research (No one will be able to identify you when this data is shared).	
11.	I understand that the information I have submitted will be published as a report and I wish to receive a copy of it. Yes/No	

12.	I consent to my interview being audio recorded, and understand that the recordings will be destroyed after analysis is completed.	
13.	I am aware of who I should contact if I wish to lodge a complaint.	
14.	I understand that other authenticated researchers will have access to my pseudonymised data.	
15.	I voluntarily agree to take part in this study.	

Name and Contact Details of the Principal Researcher: Daisy Fancourt d.fancourt@ucl.ac.uk

Name and Contact Details of the UCL Data Protection Officer: Lee Shailer, l.shailer@ucl.ac.uk

This study has been approved by the UCL Research Ethics Committee: Project ID number: 14895/001

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

I confirm that I understand that by ticking each box below I am consenting to this element of the study. I understand that it will be assumed that unticked boxes mean that I DO NOT consent to that part of the study. I understand that by not giving consent for any one element that I may be deemed ineligible for the study.

_____	_____	_____
Name of participant	Date	Signature
_____	_____	_____
Name of researcher	Date	Signature