

**Development of an online intervention using
positive psychology for depression**

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Statement of originality

I, Sophie Marie Walsh, confirm that the research included within this thesis is my own work or that where it has been carried out in collaboration with, or supported by others, that this is duly acknowledged below and my contribution indicated. Previously published material is also acknowledged below.

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Details of collaboration and publications

The systematic review, reported in Chapter 2, is an amended version of an article published in the Journal of Clinical Psychology (Walsh, Cassidy, & Priebe, 2016). The candidate was responsible for the design, analysis, and write-up. Stefan Priebe, the candidates' first supervisor, provided conceptual input and guidance. Megan Cassidy helped to ensure the consistency of paper screening, data extraction, and evidence synthesis.

The qualitative study, reported in Chapter 3, was conducted with the assistance of Justina Kaselionyte who checked the credibility and consistency of how the candidate applied codes to transcripts. Along with the candidates' supervisors, Stefan Priebe and Steph Taylor, Justina also checked the coherence, distinctness, and credibility of the reported themes.

The candidate was responsible for developing the conceptual model of the intervention, reported in Chapter 4. This was operationalised into an online intervention in collaboration with a software design company, Winona esolutions. Dr Nikolina Jovanovic provided expert advice on appropriate visual design of the online intervention. Eoin Golden conducted the think-aloud usability testing, following a protocol developed by the candidate.

The quantitative aspect of the feasibility study, reported in Chapter 5, was designed, conducted, and analysed by the candidate. Lauren Greenberg provided methodological and statistical advice, as did the candidates supervisors'.

The qualitative aspect of the feasibility study, reported in Chapter 6 was also designed, conducted and analysed by the candidate. However, Paulina Szymczynska checked and refined the framework to ensure it was comprehensive. She also assisted, along with the candidates' supervisors, in the development of the themes to ensure these were distinct, credible, and trustworthy.

Abstract

Background: Increasingly, it is recommended that to improve access to depression treatment, low-intensity psychological interventions should be developed and investigated. To date, resource-oriented approaches, such as positive psychology, that focus on patients' strengths and positive feelings have not been systematically developed and evaluated, despite evidence of potential effectiveness. This thesis aimed to systematically develop a theoretically sound online intervention using positive psychology and investigate its acceptability.

Methods: The intervention's conceptual model was based on evidence synthesised from a systematic review, which identified commonly applied positive psychology components, and a qualitative study with 18 patients and 5 clinicians on the potential acceptability of online positive psychology. The intervention was tested in a feasibility study with 103 participants with depression, to identify the feasibility of study procedures and the acceptability and potential outcomes of the intervention. Intervention acceptability was further explored qualitatively with twenty-three purposively selected participants.

Results: Six positive psychology components were included in the intervention to promote positive affect, strengths, and social connections. Half of the sample used the intervention minimally, a third used it moderately, and one fifth used it regularly. The intervention was rated as helpful by a fifth of the overall sample. Participants reported improved symptoms of depression. The qualitative evidence suggested that intervention acceptability could be explained by the extent to which the positive psychology components were perceived as relevant to participants' depression and how empowering they found a low-intensity website.

Conclusions: A low-intensity online positive psychology intervention is acceptable and potentially beneficial to some patients with depression. Future research is needed to establish whether online positive psychology is attractive to a distinct population. If so, the developed intervention should be refined and evaluated for effectiveness. However, if there are people who generally prefer online treatments for depression, research should focus on developing the best-evidenced approach.

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List of abbreviations

BCT	Behaviour Change Taxonomy
CASP	Critical Appraisal Skills Programme
CBT	Cognitive Behavioural Therapy
cCBT	computerised Cognitive Behavioural Therapy
CES-D	Centre for Epidemiological Studies Depression Scale
CMHT	Community Mental Health Team
COREQ	Consolidated Criteria for Reporting Qualitative Studies
CSQ	Client Satisfaction Questionnaire
DSM-IV	Diagnostic and Statistical Manual of mental disorders 4 th Edition
DSM-V	Diagnostic and Statistical Manual of mental disorders 5 th Edition
FAQs	Frequently Asked Questions
GAD-7	General Anxiety Disorder-7
GCSE	General Certificate of Secondary Education
GP	General Practitioner
IAPT	Improving Access to Psychological Therapies
ICD-10	International and statistical Classification of Diseases 10 th Edition
MRC	Medical Research Council
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
PAF-D	Person-Activity Fit Diagnostic
PhD	Doctor of Philosophy
PHQ-9	Patient Health Questionnaire-9
PP	Positive Psychology
PPT	Positive Psychotherapy
PRIME-MD	Primary Care Evaluation of Mental Disorders
PRISMA	Preferred Reporting Items for Systematic reviews and Meta-analyses
RCT	Randomised Control Trial
SD	Standard Deviation
SMS	Short Message Service
SUGAR	Service User and carer Group Advising Research
TAU	Treatment As Usual
TIDieR	Template for Intervention Description and Replication
UK	United Kingdom
USA	United States of America

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My final thanks go to my friends and family for being patient and supportive of this endeavour and for helping to put it into perspective. Special thanks go to my partner Stephen Chase for encouraging me to pursue this opportunity and for his unwavering belief in my ability.

Dedication

This thesis is dedicated to the memory of my adoptive uncle and World War II veteran Antoni Blicharski, (1920 - 1998), for he inspired a lifetime of learning and would have been immensely proud of me writing this 'book'.

About the author

Sophie conducted this thesis at the Unit for Social and Community Psychiatry, led by Professor Stefan Priebe, where she contributes to a range of studies investigating social and creative approaches to mental health.

The idea to develop an online positive psychology intervention was developed by Sophie, based on her research interests in using technology to facilitate the management of health conditions. Previously, she worked on a longitudinal project in which patients with bipolar disorder used simple technology, email and text messages, for weekly mood monitoring (Miklowitz et al., 2012). Although some patients reported that this helped with self-management and mood regulation, others felt the repeated focus on symptoms was off-putting.

Sophie began a systematic review to investigate participation rates and patient experiences of technology-based symptom monitoring. Her findings indicated that although the practice is potentially acceptable in some diagnostic groups, patients with common mental health conditions found mood monitoring less useful and were perhaps less motivated to engage (Walsh, Golden, & Priebe, 2016).

From there, Sophie began to investigate potential resource-oriented approaches to inform technology-based interventions, i.e. those that aim to utilise patients' strengths, positive personal resources, and social resources to promote therapeutic change as opposed to deficit-oriented approaches, i.e. those that addressing presumed deficits.

Concurrently, Sophie contributed to an RCT of a resource-oriented intervention, DIALOG+, which used principles of solution-focused therapy to encourage patients with psychosis to initiate change in their lives. The intervention was delivered by clinicians in routine community meetings and was computer-mediated (via a tablet), to encourage collaborative, patient-centred discussions. This was a successful trial that led to sustained improvements in subjective quality of life, that were comparable to more extensive and costly treatments (Priebe et al., 2015).

Encouraged by these results, and the potential to use resource-oriented approaches within technology-based interventions, Sophie developed the idea for this thesis. It investigates the potential for positive psychology to inform an online intervention for people with depression.

1 Introduction

1.1 Overview

This chapter sets the rationale for this thesis, which was to systematically develop a theoretically sound online intervention using positive psychology and investigate its acceptability. The chapter describes the need for low-intensity online treatments for depression and introduces positive psychology as a promising resource-oriented approach to inform such a treatment. The chapter also outlines some of the limitations of positive psychology that are addressed in this thesis. It describes two scientific frameworks of intervention development that were used to inform this thesis. The chapter concludes with the research questions and summarises how these are addressed by the studies included in this thesis.

1.2 The need for low-intensity online treatments for depression

1.2.1 The public health burden of depression

Depression is a word that has come to be used to describe the despair that can accompany daily life. In contrast, depressive episodes are specific experiences characterised by a range of symptoms including low mood, decreased capacity for enjoyment, reduced concentration and energy, and disturbed sleep and appetite. According to the DSM-V, for a diagnosis of major depressive disorder to be made at least five symptoms, including depressed mood or loss of interest of pleasure, must persist for two weeks or more and affect a person's ability to function (American Psychiatric Association, 2013). The ICD-10 diagnoses depression according to the severity of the episode; either mild, moderate, or severe depending on the number of symptoms present and the extent to which these affect daily functioning (World Health Organization, 2004).

Depression can take numerous forms. Essentially, it is viewed as an episodic, recurring disorder with periods of depression varying in length (World Health Organization, 2001). It can also take chronic forms, where symptoms persist for two years or more (Scott, 1988). Furthermore, depression often occurs alongside other health conditions as a so-called co-morbidity. For example, many patients also meet the criteria for another psychiatric condition, often anxiety (Kessler et al., 2003). In physical health, depression is often co-morbid with chronic conditions including arthritis and diabetes, and can worsen patient health outcomes (Moussavi & Chatterji, 2007).

Depression affects large numbers of people and the estimates of prevalence vary depending on the methodology used. However, one recent study suggested that there were almost 300 million cases of major depressive disorder globally during 2010, a point prevalence of 4.4% (Ferrari, Charlson, Norman, Flaxman, et al., 2013). In the United Kingdom (UK), according to figures from the Psychiatric Morbidity Survey the prevalence was 2.3% (McManus, Meltzer, Brugha, Bebbington, & Jenkins, 2009). Rates of depression are reportedly higher amongst women, who are twice as likely to experience depression as men (Kessler, 2003).

Consequently, the burden of depression is considerable and it is recognised as a leading cause of disability worldwide (Ferrari, Charlson, Norman, Patten, et al., 2013; World Health Organization, 2009). Not only is depression associated with great personal burden, there are vast economic consequences in terms of treatment and lost employment costs. In England in 2007 it was estimated that £1.7 billion was spent on services and £7.5 billion was lost in employment costs, with figures projected to increase dramatically by 2026 to £3 billion and £12.2 billion respectively (McCrone, Dhanasiri, Patel, & Knapp, 2008). As a result, effective and cost-effective treatment of depressive disorders is a public health priority.

Although effective treatments have been developed, there is a 'treatment gap' whereby people in need of treatment do not have it. According to Kohn et al., (2004) who calculated the treatment gap for countries worldwide, based on prevalence rates, service use, and population size, it is estimated that over half of patients (56%) with depression remain untreated. In the UK, figures from the 2007 Psychiatric Morbidity Survey indicated that only 24% of people with depression and anxiety were receiving treatment (McManus et al., 2009). There have been various strategies suggested to improve access to treatment including addressing stigma and increasing access to psychosocial interventions (Patel et al., 2010). In particular, it is recognised that an important contributor to the treatment gap is the scarcity of resources for treatment that includes policy and infrastructure, mental health services, and human and financial resources (Saxena, Thornicroft, Knapp, & Whiteford, 2007). Consequently, there are calls to increase the availability of low-intensity psychological interventions.

Low-intensity psychological interventions are defined as those that require little to no therapist time to facilitate, such as guided self-help and computerised cognitive behavioural therapy (cCBT). An obvious benefit is that such interventions can make

better use of scarce healthcare resources, whilst addressing patient needs. Such treatments are recommended for depression in the UK, by the National Institute for Health and Clinical Excellence (NICE), as part of a stepped care model whereby patients are offered the least amount of therapeutic contact that is appropriate in the first instance and then 'stepped up' if needed (National Institute for Health and Clinical Excellence, 2009).

A prime objective of the Increasing Access to Psychological Therapies (IAPT) initiative in England has been to increase availability of the aforementioned low-intensity psychological interventions in a bid to address the treatment gap (Clark et al., 2009). Clark et al., (2009) describe that in a typical intervention, a patient with depression would receive a book outlining a recovery programme to independently work through, supplemented by phone calls from therapists to check progress. However, despite investment the treatment gap remains, with a recent report suggesting IAPT has met the need of just 15% of adults with common mental health conditions (Mental Health Taskforce, 2016). Concurrently, the demand for mental healthcare is increasing and there have been calls to increase innovation and use online technologies, such as websites and smartphone apps, to make low-intensity psychological interventions more available to help bridge the treatment gap (Department of Health, 2014; Mental Health Taskforce, 2016).

1.2.2 The use of the Internet to improve access to mental health treatment

There are several reasons for the trend towards disseminating low-intensity treatments online. The first relates to the digital revolution that has occurred in society in recent years. Greater numbers than ever before now use the Internet in their daily lives. The Office for National Statistics recently reported that 73% of adults in the UK now access the internet 'on the go' using a mobile phone or smartphone, a rate which has doubled since 2011 (Prescott, 2017). Not only is the Internet used to purchase goods and services, a fifth of people surveyed report using it in the last week to search health related information (Ofcom, 2017). As the population becomes more familiar and comfortable with the internet it is perhaps unsurprising that it is viewed as part of the solution to improve the accessibility of mental health interventions (Hollis et al., 2015; Mental Health Network NHS Confederation, 2014).

A key driver in the use of online services is that the demand for mental healthcare is predicted to exceed NHS resources (Hollis et al., 2015). The Mental Health

Foundation estimates that by 2030 there will be 2 million more adults with mental health problems in the UK (Mental Health Foundation, 2013). However, cost pressures require services to find innovative ways to deliver interventions (Bennion, Hardy, Moore, & Millings, 2017; Hollis et al., 2015). It is hoped that offering information and interventions online could help to deliver services more efficiently (Mental Health Network NHS Confederation, 2014). This is because patients could more readily access appropriate information and services which could reduce the need for face-to-face appointments and the associated time and expense of travel, potentially resulting in reduced staff workloads and waiting lists. Essentially, online interventions can be widely disseminated without being ‘consumed’ or diminished, unlike interventions delivered by healthcare practitioners in which financial resources are consumed (e.g. staff salaries, infrastructure) (Muñoz, 2010). Accordingly, the UK Government and Chief Medical Officer have called for mental health services to use technology to improve care and access to services (Department of Health, 2014; HM Government & Department of Health, 2011).

The benefits of online services and treatments go beyond efficiency. It is proposed that they offer greater flexibility and patient-centeredness, as patients have greater choice and control over their mental healthcare (Hollis et al., 2015). Patients can use websites and smartphone apps to access psychological interventions (Hill et al., 2017), track their progress or symptoms (Walsh, Golden, et al., 2016), detect changes in their mood and activities (Marzano et al., 2015), and to share their experiences with their peers (Naslund, Aschbrenner, Marsch, & Bartels, 2016), or health professionals (Hollis et al., 2015). Evidently, using the Internet has great potential to improve access to psychological interventions for the large numbers of patients with depression. However, it is acknowledged that this potential has yet to be realised within UK services (Hill et al., 2017; Hollis et al., 2015). The reasons for this will be discussed later in this chapter, in section 1.6.

1.3 A resource-oriented approach: positive psychology

1.3.1 Deficit-oriented and resource-oriented approaches

To date the majority of interventions using online or computerised means have been informed by deficit-oriented treatments, which authors have conceptualised as those designed to target and ameliorate a presumed deficit or problem (Priebe, Omer, Giacco, & Slade, 2014). This was evidenced in a recent systematic review of over forty

open trials and RCTs of computerised psychological treatments for depression, which found that whilst 18 different interventions were tested, the majority of these were informed by CBT (Richards & Richardson, 2012). Researchers have suggested that this reflects a common, and relatively unchallenged, assumption within psychiatry that directly addressing problems can achieve therapeutic change (Priebe et al., 2014; Seligman, Rashid, & Parks, 2006). However, it is argued that deficit-approaches may strengthen patients' negative self-image and reduce their perceived sense of control by focusing primarily on what is wrong (Rashid & Ostermann, 2009).

An alternate approach is one that is resource-oriented, i.e. takes a position that a person has internal resources, e.g. strengths and abilities, and external resources, e.g. friends and family, that can be utilised to promote therapeutic change (Priebe et al., 2014). Such an approach might be more appealing to some, particularly in a context where patients are independently attempting to engage with an intervention. Put another way, it might be more appealing to complete an inventory of strengths rather than an inventory of symptoms. Additionally, resource-oriented interventions are promising as they could indirectly affect symptoms, through improving patients' self-esteem and expertise (Priebe et al., 2014). Consequently, this thesis is focused on using a resource-oriented approach.

1.3.2 The field of positive psychology

The field of positive psychology can be considered resource-oriented as its research focuses on what makes life worth living, in order to promote wellbeing and flourishing in individuals, institutions, and society (Seligman & Csikszentmihalyi, 2000). The field was mobilised by Martin Seligman (1999) in his presidential address to the American Psychological Association. He argued that for too long psychology has focused on pathology and addressing deficits and problems, with the result that we know little about how individuals are fulfilled and how communities thrive (Seligman & Csikszentmihalyi, 2000). Seligman predicted that the positive psychology movement would generate evidence based, effective interventions to promote thriving individuals, families, and communities (Seligman & Csikszentmihalyi, 2000).

Since its inception positive psychology has become an umbrella term, under which a range of topics, in varied disciplines including public health, psychiatry, education, management, and sports, are investigated (Rusk & Waters, 2013) and promoted in the popular press (Linley et al., 2006). However, the focus of this thesis is related to

positive psychology's aim to provide evidence-based interventions to promote individual flourishing. It is this aspect of positive psychology that is being referred to from this point forward in the thesis. The subsequent sections describe research into positive psychology components developed for the general population and for people with depression. The critique of this research is described in a later section.

1.3.3 Developing effective positive psychology components

The process of generating evidence-based interventions to promote flourishing is described by Seligman, Steen, Park, & Peterson (2005). Their aim was to use behavioural or cognitive exercises to increase positive feelings, behaviours, and thoughts. Initially, these interventions were aimed at a general audience and intended to improve the health and happiness of all citizens, rather than for a specific population (Seligman et al., 2005). The process began with a decision that the theoretical target was happiness. This was conceptualised as having three aspects; pleasure (characterised by positive emotion), engagement (involvement and absorption in work and personal relationships), and meaning (a sense of purpose and connection to something other than oneself) (Seligman, 2002). Seligman and colleagues (2005) then identified a large number of exercises (at least one hundred) from a range of sources, including Buddhism and the human potential movement in the 60s, to Michael Fordyce's happiness interventions (Fordyce, 1977, 1983), that appeared to promote pleasure, engagement, and meaning. These were distilled into a smaller number of reproducible exercises, such as 'three good things in life', where participants documented daily positive events and their causes (Seligman et al. 2005).

These positive interventions were taught to students and mental health professionals. From this, anecdotal testimonies emerged suggesting these interventions were powerful and in many instances "life-changing" (Seligman et al., 2006, p.775, 2005, p.414). On this basis Seligman and colleagues opted to empirically test the effectiveness of five interventions, in an RCT, against a placebo control of 'early memories', which participants wrote about each night for a week. Over 500 healthy participants were recruited from the Authentic Happiness website (created for Seligman's book of the same name, published in 2002) and were randomly assigned to practice one of the exercises listed in Table 1.1, or the placebo, for one week. Participants completed baseline and follow-up questionnaires via the website. Outcome measures included the Steen Happiness Index, developed by Seligman and

colleagues, and the Centre for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977), measured at post-test and after one week and one, three, and six months. Table 1.1 outlines the findings of participants who completed all measures (n=411, 71% of original sample) which indicate that three interventions: ‘gratitude letter’, ‘three good things in life’, and ‘using signature strengths in a new way’, significantly improved happiness and reduced depression over time, whilst the others had transient effects comparable to the placebo (Seligman et al., 2005).

Table 1.1 Description and results of first RCT of positive psychology interventions

Intervention name	Description	Results
Gratitude letter	Write and personally deliver a letter to someone who has never been properly thanked for their kindness	Increased happiness and decreased depressive symptoms for one month
Three good things in life	For one week write three things that went well each day with a causal explanation	Increased happiness and decreased depressive symptoms for six months
You at your best	Write about a time when they were at their best. Review the story each day for a week and reflect on personal strengths	Transient effects on happiness and depression
Identifying signature strengths	Take online inventory of Character Strengths to identify top five strengths to use more often in the next week	Transient effects on happiness and depression
Using signature strengths in a new way	Take online inventory of Character strengths. Receive individual feedback on strengths and use top strengths in a new and different way each day for one week	Increased happiness and decreased depressive symptoms for six months

In the discussion of their 2005 paper, Seligman and colleagues reported being encouraged by their findings of effectiveness in a general population of happiness seekers with mild levels of depression. They stated “we cannot resist the speculation that happiness exercises might prove therapeutic in depressive disorders” (Seligman et al., 2005, p.420). Indeed, in another publication they argued for the potential synergy in packaging interventions together for people with depression, as a multicomponent intervention, arguing that other therapies rarely administer one intervention in isolation (Duckworth, Steen, & Seligman, 2005). Consequently, Seligman and colleagues developed positive psychotherapy (Seligman et al., 2006).

1.4 Positive psychotherapy

1.4.1 The conceptual model of positive psychotherapy

Positive psychotherapy is a treatment for depression that can be considered resource-oriented as it uses a number of components to promote positive emotions and thoughts, awareness and use of personal strengths, and improve interpersonal relationships (Seligman et al., 2006).

The difference between the previous section on positive psychology components and the current one on positive psychotherapy is that the target audience for the former was a more general population of happiness seekers, whilst the latter is focused explicitly in people with depression. However, there are many similarities because the components for positive psychotherapy originate from positive psychology. In fact, Seligman explains that positive psychotherapy is based on “a core of the 12 best-documented [positive psychology] exercises” (Seligman et al., 2006, p.776,) to be delivered in six week group therapy, or a fourteen week individual therapy. The group model was reportedly targeted towards people with mild-to-moderate depression with sessions focused more on the positive than on symptoms of depression. The individual model was described as aimed at those with a diagnosis of depression and Seligman introduced a balance between focusing on patients’ positives as well as on their depressive symptoms. Table 1.2 outlines the components of each version.

Table 1.2 Positive psychology components in group and individual positive psychotherapy

Component name	Brief description	Group	Individual	Principle being targeted
Positive introduction	Write about a time when they were at their best		✓	Engagement
Obituary/ Biography	Write a 1-2 page essay summarising what you would like to be remembered as having lived a satisfying life	✓		Engagement
Using your strengths	Take online inventory of Character Strengths (VIA-IS) to identify top five strengths and plan to develop these	✓	✓	Engagement
Blessings journal	For one week write three things that went well each day with a causal explanation	✓	✓	Engagement
Writing memories	Write three bad memories and distress		✓	Pleasure
Forgiveness letter	Write forgiveness letter to transform anger and bitterness to neutral or positive emotion		✓	Pleasure
Gratitude letter	Write and personally deliver a letter to someone who has never been properly thanked for their kindness	✓	✓	Engagement
Personal satisficing plan	Settling for 'good enough' compared to trying to find the 'best' option		✓	Meaning
One door closes/ one door opens	Write occasions where something important did not happen but other opportunities arose		✓	Pleasure
Active Constructive Responding (ACR)	React in a visibly positive and enthusiastic way to others' good news at least once per day	✓	✓	Meaning
Family strengths tree	Family members complete VIA-IS and discuss their common strengths		✓	Meaning
Savouring	Each day take time to enjoy something that is usually hurried. Afterwards write what you did, how and what was different	✓	✓	Pleasure
Gift of time	Use strengths in service of others		✓	Meaning

In the 2006 paper Seligman et al., sought to explain the theoretical rationale for the model and its possible mechanisms. Interventions were selected as they were assumed to target pleasure, engagement, or meaning, as summarised in Table 1.2. The following paragraphs describe how the components of the individual version of positive psychotherapy were designed to target particular principles, according to Seligman et al., (2006).

1.4.2 Promoting pleasure

Seligman et al., (2006) described that some positive psychology components aimed to promote pleasure, i.e. the experience of positive emotions in the present, past, and future and were designed to amplify the intensity and duration of these emotions. The 'savouring' activity was used to amplify satisfaction from immediate pleasures so that participants learn to savour experiences they usually rush through. The 'writing memories' and 'forgiveness letter' aimed to enhance the positivity associated with memories and to promote positive emotions about the past including satisfaction, fulfilment, and serenity. Finally, the 'one door closes, one door opens' component was intended to promote positive future emotions including hope, optimism, and confidence.

1.4.3 Promoting engagement

Other positive psychology components were designed to promote engagement, i.e. absorption and involvement in work, leisure, or relationships. Seligman et al., (2006) suggested it was important to encourage people to identify talents and strengths and use these, hence the inclusion of the component 'using your strengths'. The component 'positive introduction' was also included as a way to promote awareness of personality competencies and achievements. The 'blessings journal' component was included to help participants recognise everyday positives in their day-to-day life. Similarly, the 'gratitude letter' was designed to help shift participants focus towards positive interpersonal relationships.

1.4.4 Promoting meaning

Finally, several positive psychology components aimed to promote meaning, i.e. a sense of purpose and connection to something beyond oneself. The 'gift of time' component was therefore designed to encourage participants to use their strengths in the service of a 'positive institution' such as religion, politics, family, or community. The 'active constructive responding' and 'family strengths tree' components were

aimed to help participants derive more meaning from interpersonal relationships, by encouraging active listening and the sharing and comparison of strengths. The 'satisficing plan' component was designed to encourage participants to be more comfortable with their choices, rather than continually seeking perfection.

1.4.5 Principles and mechanisms

Although the above paragraphs and Table 1.2 state which components target particular principles, it must be acknowledged that Seligman et al., (2006) suggest that in reality positive psychology components might target more than one principle. This is evidenced in gratitude components such as 'blessings journal' and 'gratitude letter', which could be said to promote pleasure as well as engagement. This is because the 'blessings journal' could also improve awareness of current pleasant events. Similarly, the 'gratitude letter' might shift memories towards the good things that friends or family have done for them in the past. However, for the sake of clarity in this thesis it will be reported that the components target the particular principle described in the previous sections and in Table 1.2.

The authors propose three mechanisms of change of positive psychotherapy intervention depicted in Figure 1.1. Firstly, it is suggested that the therapy works by re-educating a participant's attention and memory away from the negative towards the positive. This general mechanism can be seen in components such as the 'blessings journal', whereby each evening participants are instructed to write three things that went well and why, which can counteract the focus on anything that has gone wrong during the day. This may make the person more likely to remember these events than they otherwise would have. The second proposed mechanism involves explicit behavioural changes as a result of the components. It is argued that by changing the way a patient behaves during daily activities, there will be positive consequences. Thirdly, it is suggested that the emphasis and use of one's strengths is likely to lead to changes in outcomes.

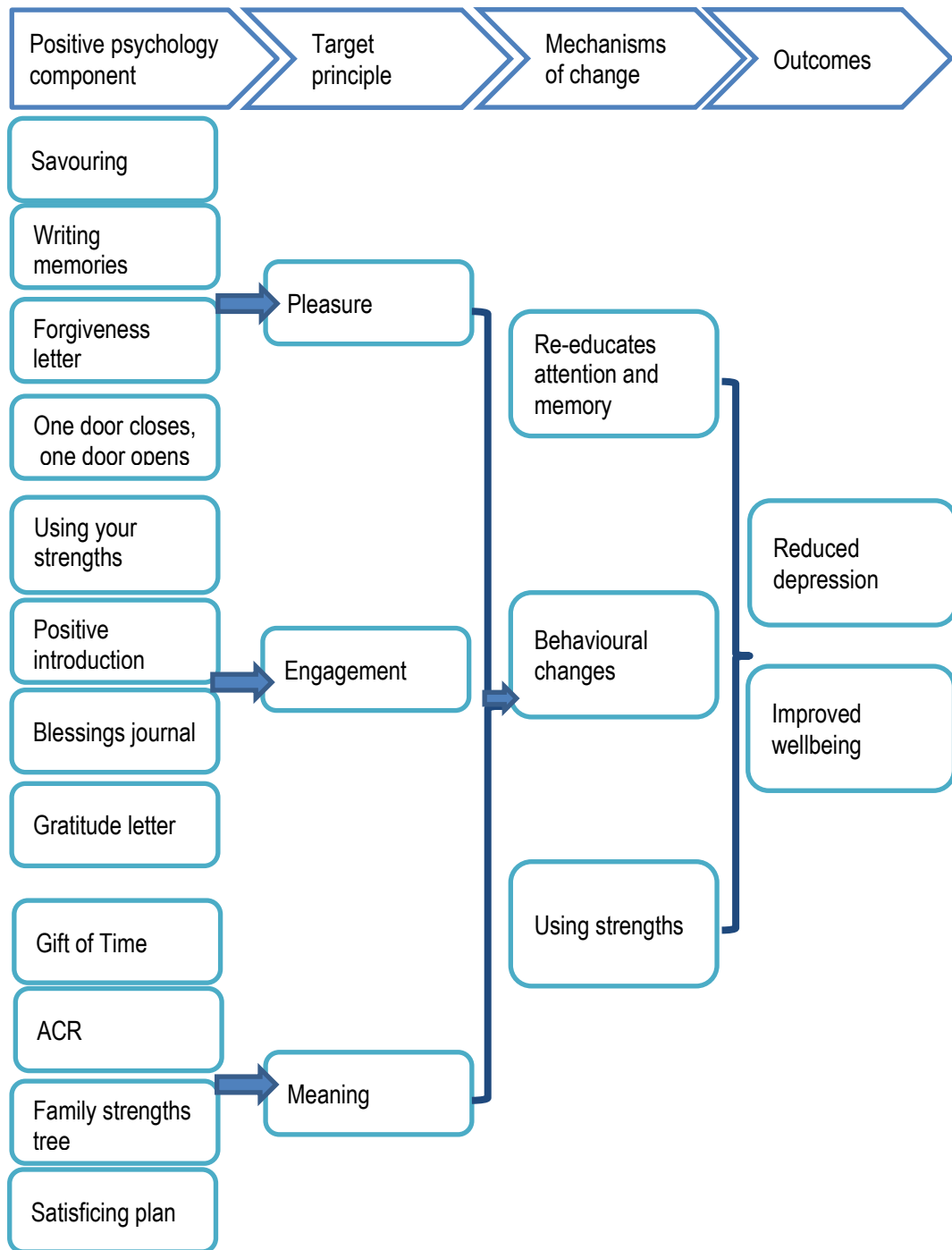


Figure 1.1 Conceptual model of positive psychotherapy

1.4.6 Effectiveness of positive psychotherapy

Both versions of the manual demonstrated promising results when tested by Seligman et al., (2006). In a small RCT, students who experienced mild-to-moderate depressive symptoms were allocated the group version (n=19) or a no treatment

control group (n=21). Significant reductions in depression and improvements in satisfaction with life were established, and maintained over one year (Seligman et al., 2006). The individual version was tested, also in a small RCT, with people meeting the criteria for major depressive disorder (n=13) and compared to treatment as usual (n=15), and treatment as usual with medication (n=17). The results demonstrated that positive psychotherapy improved depressive symptoms, functioning, happiness, and satisfaction with life compared to both treatment conditions (Seligman et al., 2006).

1.5 Critical consideration of positive psychology and positive psychotherapy

Thus far the evidence for positive psychology components tested in the general population and positive psychotherapy tested with people with depression has been presented uncritically. This is addressed in the subsequent sections, which first summarises the current state of the field, followed by a critical consideration of the evidence.

1.5.1 State of current evidence for positive psychology components

Since Seligman and colleagues suggested that positive psychology should develop effective interventions there has been a rapid growth in research in the area (Bolier, Haverman, Westerhof, et al., 2013; Rusk & Waters, 2013; Sin & Lyubomirsky, 2009). RCTs have investigated the effectiveness of single component (Burton & King, 2004) and multicomponent (Schueller & Parks, 2012) positive psychology interventions with a range of populations, including students (Burton & King, 2004), the general public (Buchanan & Bardi, 2010), people with psychosocial problems (Kremers, Steverink, Albersnagel, & Slaets, 2006), and people with diagnosed depression or related disorders (Fava et al., 2005). These interventions have taken a range of formats, varying from interventions practiced independently as online self-help (Schueller & Parks, 2012), as individual therapy (Fava et al., 2005), and in group formats (Feldman & Dreher, 2012). The intensity of interventions has also varied from single sessions (Feldman & Dreher, 2012), to several weeks (Schueller & Parks, 2012), to those spanning several months (Fava et al., 2005).

These various studies have been synthesised in two reviews. The first non-systematic meta-analysis was published by Sin & Lyubomirsky (2009) and included 51 studies, with more than 4,000 participants. It concluded that positive psychology interventions significantly enhanced wellbeing and decreased depressive symptoms with moderate effect sizes and recommended their use for patients with depression.

However, this review was limited as it included quasi-experimental studies, which, without random assignment and control of potential confounders, make it difficult to convincingly demonstrate a link between the treatment and outcome. Secondly, study quality was not assessed as a potential moderator of the treatment effect. This is critical, given that literature suggests that effects of psychological interventions can be overestimated when poor quality studies are synthesised (Cuijpers, van Straten, Bohlmeijer, Hollon, & Andersson, 2010). Indeed, guidelines for systematic reviews routinely recommend assessing and accounting for study quality (Tacconelli, 2010). Finally, Sin & Lyubomirsky (2009) included a range of interventions in their review, such as mindfulness and forgiveness therapy. Although these are conceptually related to positive psychology, it has been argued they are not 'pure' positive psychology interventions (Bolier, Haverman, Westerhof, et al., 2013). To address these limitations Bolier, Haverman, Westerhof, et al., (2013) therefore conducted a stricter systematic review and meta-analysis. It included 39 studies with over 6,000 participants and demonstrated the benefit of positive psychology interventions for improved wellbeing and reduced depression, however, with a smaller effect size than the previous review.

The review evidence suggesting that positive psychology interventions can improve the wellbeing of the general population and people experiencing depression has led to enthusiasm and further research focused on several areas. The first relevant research area is the focus on disseminating interventions online. This is to improve access for the general public as a means of promoting good mental health (Parks, 2014). This has led to the commercialisation of products, such as the 'Live Happy' app, originally tested in a naturalistic study (Parks, Della Porta, Pierce, Zilca, & Lyubomirsky, 2012). It is now available as 'Happify' (2017), a subscription based product for individuals and employers to access positive psychology interventions.

Online dissemination has also been investigated for people with symptoms, or diagnoses of depression (Bolier, Haverman, Kramer, et al., 2013; Roepke et al., 2015). The rationale is that providing positive psychology online is way to sustainably improve access to mental health interventions (Bolier, Haverman, Kramer, et al., 2013; Bolier & Abello, 2014). A key assumption of researchers is that as positive psychology interventions are resource-oriented, they are inherently more appealing to people experiencing depression than so-called problem-focused interventions (Layous,

Chancellor, Lyubomirsky, Wang, & Doraiswamy, 2011; Schueller & Parks, 2012; Seligman et al., 2006).

Another area of research is the focus on establishing what factors affect the effectiveness of interventions. Researchers have developed the theory of person-activity fit to suggest the effectiveness of a positive psychology intervention is likely to depend on the intervention characteristics (e.g. time-focus on present or past) and person characteristics (e.g. affective state), known as the positive-activity model (Lyubomirsky & Layous, 2013). It suggests both factors influence one another to determine an optimal person-activity fit. However, to date there is no conclusive evidence on person or intervention factors that reliably determine effectiveness.

One reason for these many areas of research is that research on positive psychotherapy is encouraged. The authors of the original paper have since suggested and recommended it to be used flexibly; such as with other patient groups, or alongside other therapeutic approaches (Rashid, 2008; Rashid & Seligman, 2014). This has led to adaptations for different populations, including people with schizophrenia, that vary considerably in structure and content (Schrank, Brownell, Tylee, & Slade, 2014).

1.5.2 Unclear definitions and theoretical origins

The first limitation of the field of positive psychology interventions, briefly mentioned in the previous section 1.5.1, is that it is not clear how to actually define them (Bolier, Haverman, et al., 2014; Parks & Biswas-Diener, 2013; Schueller, Kashdan, & Parks, 2014). Some suggest a positive psychology intervention is one which promotes positive emotions, behaviours, and/or thoughts, thereby increasing the wellbeing of an individual or group (Parks & Biswas-Diener, 2013; Schueller et al., 2014). This is in line with the definition used by Sin & Lyubomirsky (2009) in their review, which resulted in the inclusion of mindfulness and life review interventions. It is argued that any conceptually similar interventions, such as acceptance and commitment therapy, should be included in and integrated within positive psychology, in order to advance the field and develop effective interventions (Schueller et al., 2014).

Others disagree and suggest positive psychology should only be defined as training, exercises, or therapies developed within the theoretical tradition of positive psychology which are aimed at raising positive feelings, positive cognitions, or

positive behaviour (Bolier, Haverman, Westerhof, et al., 2013). The argument is to focus on what has been developed in line with positive psychology, rather than other domains, such as old age psychiatry (in the case of life review) or third wave CBT (in the case of acceptance and commitment therapy) (Bolier, Haverman, et al., 2014). This could ensure that more homogenous interventions are compared, which could lead to greater estimations of the effectiveness of components. It could also further the development of theories of how interventions work, which positive psychologists have called for (Seligman et al., 2006).

The debate over the definition of positive psychology centres on the theoretical origins of intervention components. However, there are two reasons that the theoretical origins are unclear. The first is that these were obscured when positive psychology interventions were first described. The previous section 1.3.3 summarised how interventions were selected from 'Buddhism' to the 'human potential movement', and distilled into reproducible exercises to be tested (Seligman et al., 2005). However, Seligman and colleagues do not cite the origins of the particular positive psychology components. This has led to repeated criticisms that they have failed to sufficiently acknowledge important predecessors, such as humanistic counselling psychologists (Tennen & Affleck, 2003; Wood & Tarrier, 2010).

The second reason that theoretical origins of components are unclear is that positive psychologists were not focused on theory, but on generating evidence for effective interventions (Schrank, Brownell, et al., 2014). Parks & Biswas-Diener (2013) state that "data showing that an activity is effective came first, with questions of "how" and "why" tabled for a later date" (p.144). They describe how 'three good things' or the 'blessings journal', in which participants keep a daily record of positive events, was intended to make people happier without any specific underlying theory and that researchers only began to speculate on mechanisms after the research demonstrated effectiveness.

Positive psychologists have countered these criticisms by acknowledging that whilst other traditions have focused on human strengths and potentials, this has not generated an evidence-base of effective interventions and positive psychology therefore aims to address this (Rashid, 2015; Seligman et al., 2006). Yet without an agreed definition and clear hypothesised mechanism, it is difficult to select positive psychology components to use in a novel online intervention for people with

depression. It is necessary to develop a coherent theoretical basis for this intervention. As there is no consensus on the definition of a positive psychology component, in this thesis the components of positive psychotherapy will be investigated (Seligman et al., 2006). These components form a comprehensive and well-described package that can be used to investigate taking positive psychology online.

1.5.3 Unclear conceptual model of positive psychotherapy

Despite positive psychotherapy being the best described package of positive psychology components, it is not without limitations. First, it is unclear how exactly the included components link to hypothesised mechanisms and lead to outcomes. Although some broad principles and mechanisms were described, as depicted in Figure 1.1, they are not well specified. It is unclear how the components 'writing memories' and 'forgiveness letter' promote pleasure, as their focus is not explicitly on positive emotion. It is hypothesised that these components operate by re-educating attention and memory. However, there are competing explanations in the literature. Research into therapeutic writing would suggest that writing about memories could be cathartic and operate by expressing strong emotions which, in turn, could provide psychological relief (Pennebaker & Beall, 1986). Further, Seligman et al., (2006) propose that one mechanism that leads to improved outcomes is the 'use of strengths', yet this is also an intervention component. The authors could have been more specific on how exactly using strengths leads to improvements, for example via a change in patients' self-efficacy. Ideally, Seligman et al., (2006) would have included a conceptual model that specifies how each positive psychology component promotes a particular principle, the hypothesised mechanism by which each component operates, and how these link to a proposed outcome (Sermeus, 2015).

A second limitation is that the processes and rationale for the group and individual versions are not well specified. The psychotherapeutic literature suggests that there are non-specific contextual factors that can facilitate outcomes in group and individual therapies (Wampold, 2001). These could have been acknowledged and included in separate conceptual models for each version of the intervention. This could help other researchers to decide how to apply positive psychology components in different contexts. Further, the two interventions were designed for different populations: group therapy for mild-to-moderate depression and individual therapy

for unipolar depression. It would have been useful if the conceptual models explained the rationale for how the different components included in each version were selected to address patient needs.

It is not possible to construct detailed conceptual models on the basis of what is presented by Seligman et al., (2006). Despite the assertion that the model contains the “best-documented exercises” from the literature (Seligman et al., 2006, p.776), the authors do not provide a citation for each component. This makes it difficult to establish the theory or evidence base for particular components, and to hypothesise how components link to intervention mechanisms and outcomes.

In an attempt to establish how much of the positive psychology components included in positive psychotherapy were evidence-based, Table 1.3 was created. This used various sources describing the positive psychotherapy model (Rashid, 2008, 2015; Rashid & Seligman, 2014; Seligman et al., 2006). It highlights that there is no citation provided in any of these sources to the theory or evidence for several components including ‘obituary/biography’, ‘family strengths tree’, and ‘writing memories’. This raises the question of the extent to which these components are based on either evidence or theory. Other components were based on theoretical constructs, with citations provided to describe these including ‘personal satisficing plan’ (Schwartz et al., 2002), the ‘forgiveness letter’ (McCullough, 2000), and ‘savouring’ (Bryant & Veroff, 2007), yet had not been tested empirically. Some components had evidence of their benefits based on observational studies with the general population including ‘active constructive responding’ (Gable, Reis, Impett, & Asher, 2004) and ‘gift of time’ (Crist-Houran, 1996). Several components including ‘using your strengths’, ‘positive introduction’, ‘blessings journal’, and ‘gratitude letter’ had been tested in an RCT with a healthy population, reported by Seligman et al., (2005). Most of these demonstrated evidence of increased happiness and decreased depression, with the exception of the ‘positive introduction’, which was no more effective than a placebo. It is unclear why an ineffective component was included in positive psychotherapy. Overall, the evidence present in Table 1.3 suggests that many positive psychology components included in positive psychotherapy lacked a theoretical basis or had little empirical evidence.

Table 1.3 Origins and evidence base for positive psychology components included in positive psychotherapy

Positive psychology component	Group	Individual	Origin of component	Where origin referenced	Evidence for component
Positive introduction		✓	Burton and King (2004) who used Maslow 1971 instructions	Seligman et al., (2006), Rashid (2008)	No better than placebo in healthy population (Seligman et al., 2005)
Obituary/ Biography	✓		-	-	-
Using strengths questionnaire	✓	✓	Peterson and Seligman (2004)	Seligman et al., (2006)	Theory of strengths is described (Peterson & Seligman, 2004). And evidence in healthy population of increased happiness and decreased depressive symptoms (Seligman et al., 2005)
Blessings journal	✓	✓	Emmons and McCullough (2003)	Rashid (2008)	Increased positive affect (healthy population) (Seligman et al., 2005)
Writing memories		✓	-	-	-
Forgiveness letter		✓	McCullough (2000)	Seligman et al., (2006)	Describes theory but no effectiveness data (McCullough, 2000)
Gratitude letter	✓	✓	Seligman et al., (2005)	Seligman et al., (2006)	Increased happiness and decreased depressive symptoms in healthy population (Seligman et al., 2005)
Personal satisficing plan		✓	Schwartz et al., (2002)	Rashid and Seligman (2014)	Describes theory but not intervention (Schwartz et al., 2002)
One door closes/ one door opens		✓	Seligman (2002)	Seligman et al., (2006)	Describes theory but not intervention (Seligman, 2002)
Active Constructive Responding	✓	✓	Gable et al., (2004)	Rashid (2008, 2015)	Observational data from healthy population suggests associated with higher intimacy and marital satisfaction (Gable et al., 2004)
Family strengths tree		✓	-	-	-
Savouring	✓	✓	Bryant and Veroff (2007)	Rashid (2015)	Theory described and some anecdotal data of intervention effectiveness (Bryant and Veroff 2007)
Gift of time		✓	Crist-Houran (1996)	Rashid (2008)	Meta-analyses suggesting volunteers from healthy population are happier than non-volunteers (Crist-Houran, 1996)

- = no information

Seligman et al., (2006) acknowledged that further research was needed to understand the mechanisms of positive psychotherapy, yet still recommended it be used flexibly and applied to different populations. This is where the lack of a conceptual model or clear theory of the principles and mechanisms of the intervention becomes problematic. It is unclear which components are absolutely necessary to achieve the desired outcomes, which can be substituted, and for what, and how one might expect patient groups to differ in their response. The MRC guidelines for developing complex interventions clearly state that an understanding of causal mechanisms is needed in order to apply interventions appropriately across groups and settings (Craig et al., 2008). In order to use positive psychology components from positive psychotherapy to inform an online intervention there is a need for further systematic investigation into how principles of pleasure, engagement, and meaning are targeted by particular positive psychology components and the mechanisms that lead to outcomes. This is therefore a key objective of the present thesis and will be addressed in the subsequent chapters.

1.5.4 Poor quality evidence

As described in section 1.5.1 there is some evidence on the effectiveness of positive psychology components in reducing depression. However, positive psychologists have been criticised for exaggerating their claims of effectiveness when their evidence is of limited quality (Coyne & Tennen, 2010). Often, the studies have tested interventions on psychology students (Layous, Nelson, & Lyubomirsky, 2012; Seligman et al., 2006 study 1). Researchers have highlighted that these samples have limited generalisability to real-world settings (Hone, Jarden, & Schofield, 2015). Even where research has occurred with patients with depression (e.g. Study 2 in the Seligman et al., 2006 paper), the researchers acknowledge the generalisability of findings are limited by the relatively small sample size, use of a highly educated sample, and delivery of therapy by the creators of the manual.

Others have criticised positive psychologists for failing to use adequate control groups. Researchers have questioned whether an appropriate control group for 'blessings journal' is to list 'daily hassles' (Wood, Froh, & Geraghty, 2010). Wood and colleagues suggest this makes for an unclear comparison, and that control groups should be appropriate in producing equal expectancy effects. One might expect

listing daily hassles to increase distress and so it could be argued that this not an appropriate control.

Recent systematic reviews of positive psychology interventions have further criticised the quality of the evidence base. Bolier, Haverman, Westerhof, et al., (2013) reported that none of the 39 studies in their review met all of the Cochrane quality criteria (adequacy of randomisation concealment; blinding of participants; baseline comparability; power analysis; completeness of follow-up data; handling of missing data). More recently, a systematic review adopting the RE-AIM framework to test the 'Reach, Efficacy, Adoption, Implementation and Maintenance' of positive psychology interventions in various adult populations, concluded that the field must improve research design and reporting (Hone et al., 2015). Specifically, the review highlighted that studies rarely report participation rates, thus limiting the representativeness of study samples. Further, the review agreed with researchers who have called for studies to conduct intention-to-treat analysis to reduce bias and improve generalisability (Bolier, Haverman, Westerhof, et al., 2013). Finally, studies did not have sufficiently long follow-up periods to determine whether interventions were maintained and so the sustainability of the interventions remains unclear.

This thesis does not directly challenge the poor quality evidence base by conducting a methodologically sound effectiveness study. Instead, the poor quality of the evidence base informs the thesis in the following ways. Firstly, it indicates that it is not possible to conduct any further systematic reviews focused on the effectiveness of positive psychology interventions for depression and related conditions. Such a review would likely reach a similar conclusion to Bolier, Haverman, Westerhof, et al., (2013) that positive psychology interventions have a small effect on reducing depression. Secondly, it indicates the need for preparatory research focusing on developing a thorough understanding of the theoretical processes of positive psychology interventions. Such information could inform the design of future effectiveness research, by indicating appropriate outcome measures, and process evaluations, and by outlining intervention mechanisms and contextual factors to be monitored (Craig et al., 2008). Accordingly, the aim of the present research was to systematically develop a theoretically sound online intervention which could be tested in future effectiveness studies.

1.5.5 Limited data on acceptability

A further issue is that positive psychologists have little data to back up their claims that the resource-oriented nature of positive psychology components makes them particularly acceptable and attractive to people with depression (Layous et al., 2011; Schueller & Parks, 2012; Seligman et al., 2006). Researchers claim that patients with depression may be eager to feel better and therefore may put more effort into the positive activities (Layous et al., 2011). They also suggest that positive psychology exercises may have fewer barriers to entry for people lacking motivation, energy, or enthusiasm, when compared to accessing traditional forms of therapy (Layous et al., 2011). However, researchers have tended to cite anecdotal data to support these assertions. Seligman et al., (2006) report how well patients with clinical depression 'took' to positive psychology interventions, indicating an affinity for this approach. Others have reported that since positive psychology programmes had overwhelmingly positive feedback in the military and in schools, this suggests widespread appeal and informs the use of positive psychology online for self-help (Schueller & Parks, 2012). However, researcher and respondent bias may have influenced these views of the potential acceptability of positive psychology for depression. Positive psychologists might have a more favourable view of their own interventions and could be more likely to pay attention to positive feedback. Also, participants who enjoyed and perceived benefits from such interventions might be more likely to give feedback, or social desirability bias could have influenced their response.

Critics of positive psychology have challenged its acceptability on the grounds that it does not allow people to explore difficult but necessary emotions. It is argued that in a range of mental health conditions it is healthy and understandable to feel 'negative' emotions, such as grief and sadness, in response to life events, yet a focus on feeling good might be exhausting and stressful (La Torre, 2007). By focusing almost exclusively on experiencing positive emotions, it is argued that positive psychology has developed a Pollyanna-ish quality (Lazarus, 2003). This refers to the book by Eleanor Porter, published in 1913, in which Pollyanna is robustly optimistic, irrespective of the situation, rendering her insensitive to others and ill-equipped to deal with problems. Moskowitz et al., (2012) suggest that an intervention promoting positive affect as a cure-all, as Pollyanna did, are unlikely to be acceptable to people

experiencing psychosocial problems, as it would not help them cope with the real and complex issues they face.

To date, few studies have investigated the acceptability of positive psychology to people with depression, to see if practicing components generates positive feedback, or indeed is exhausting and stressful. One exception is the evaluation of Psyfit, an online intervention using components of positive psychology for people with mild to moderate depression (Bolier, Haverman, Kramer, et al., 2013). The authors assessed patient satisfaction with the intervention and found the majority (almost 60%) were indifferent to, or dissatisfied with, the intervention. However, the authors report that due to the ambiguous reply categories used on their satisfaction measure, the Client Satisfaction Questionnaire (CSQ) (Attkisson & Zwick, 1982), which does not distinguish between 'indifferent' and 'dissatisfied', it was difficult to interpret participant satisfaction. Further, the study did not collect any data on why participants were satisfied, or not, with the intervention. Instead, researchers inferred that limited tailoring and interactivity of the intervention website may have contributed to low adherence rates (Bolier, Haverman, Kramer, et al., 2013). This is a plausible explanation of poor adherence. A recent systematic review suggested that how 'persuasively' online health interventions were designed, including how much they used praise, social learning, and tailored content, accounted for a substantial amount of adherence (Kelders, Kok, Ossebaard, & Van Gemert-Pijnen, 2012). Nevertheless, future research must also investigate patient views on the acceptability of the psychological content.

A further challenge to the idea that positive psychology exercises are widely appealing to people with depression comes from researchers who argue that people with higher levels of motivation, interest, and belief in positive psychology exercises might be more likely to find them beneficial (Mongrain & Anselmo-Matthews, 2012; Sin, Della Porta, & Lyubomirsky, 2011). If such an expectancy factor exists it would indicate that they are not universally acceptable, but there are some people for whom they fit more. This is similar to the phenomenon discussed in the literature on psychological therapies where patient expectations are said to influence outcomes (Wampold, 2001). Indeed, as aforementioned in section 1.5.1, the person-intervention fit model suggests that interventions are more beneficial when there is a good fit (Lyubomirsky & Layous, 2013). The authors describe how someone with a 'needy' personality (e.g.

who has a sense of helplessness or relies on others for contentment) might not benefit from a 'blessings journal' because it does not directly promote interpersonal contact and so does not reinforce social bonds which are important for this personality style (Sergeant & Mongrain, 2011). However, it is possible that such people might benefit from the 'active constructive responding' components which is centred on improving communication in interpersonal relationships.

To date, researchers have focused on how person-intervention fit can moderate the effectiveness of interventions (Lyubomirsky & Layous, 2013). However, it is possible that is also related to acceptability, as patients might not find positive psychology components that appealing. Kaczmarek et al., (2013) found some evidence that student participants who displayed depressive symptoms had lower intentions, and were less likely to start a 'blessings journal', than participants without symptoms. They suggest that people might not want to start an intervention designed to help their depression precisely because of their depression which, by its nature, is associated with less interest in previously enjoyable activities and deficits in motivation (Bylsma, Morris, & Rottenberg, 2008). Others have suggested that acceptability might vary amongst people with depression or related conditions, depending on the target or focus of the intervention. Parks, Della Porta, Pierce, Zilca, & Lyubomirsky (2012) suggested engagement-oriented positive psychology interventions, such as applying strengths which could require deep engrossment in an activity, might be problematic when participants are experiencing difficulty concentrating and experiencing joy. Parks and Biswas-Diener (2013) have also suggested that focusing on the future or the narrative of one's life, such as the 'biography' activity from group positive psychotherapy, might be more suitable for people who have been in therapy for some time or are high functioning rather than people who are clinically depressed.

The final aspect related to the acceptability of positive psychology components that has received little attention in the literature is the potential for negative effects. It has been unequivocally stated that positive psychology interventions have no side-effects (Layous et al., 2011). If one accepts that certain components are not appealing, e.g. are not appropriate for certain people, this raises a question about what happens if people are offered interventions that are not appropriate for them. There are several possibilities. The first is that people do not engage and therefore there is no influence

of the intervention. Another possibility is that people practice and receive no benefit. However, a third possibility is that people practice and there is a negative outcome of doing so. There is some evidence that the latter is a possible outcome. As aforementioned, Sergeant & Mongrain (2011) found deleterious effects in the form of decreased self-esteem when people with a 'needy' personality practiced the 'blessings journal'. Similarly, Sin and colleagues found that students with mild depression practicing the 'gratitude letter' experienced decreased wellbeing (Sin et al., 2011). This was attributed to the reflective nature of the intervention that may have been frustrating and difficult and led to feelings of failure, or perhaps reinforced participants' perception that they had little to be grateful for. This has led to calls for researchers to carefully monitor the potential for harm (Parks & Biswas-Diener, 2013).

It is important to note that the above research is far from conclusive. As with the other evidence for positive psychology interventions, the studies have methodological flaws (e.g. use of student samples, low quality design) that limit the conclusions that can be drawn. Further there is little consensus on how acceptable, or appropriate, components of positive psychology are amongst people with depression. Whilst some researchers argue that positive psychology is perhaps most suited to mild-to-moderate depression, and have excluded people with severe depression and suicidality from studies (Bolier, Haverman, Kramer, et al., 2013), others have specifically targeted this patient group (Huffman et al., 2014). However, the lack of acceptability data limits researchers' ability to design appealing and engaging online positive psychological interventions for people with depression. The present research will therefore investigate how acceptable, defined as how suitable or appropriate, satisfying, and attractive (Bowen et al., 2009), patients with depression find positive psychology components online.

1.6 Issues with designing and evaluating online interventions

Section 1.2.2 outlined the rationale for using online means to disseminate low-intensity psychological interventions and indicated that their potential has yet to be realised. This section outlines several issues that have limited the take-up of online interventions that are relevant to the present thesis.

1.6.1 Commercial product development

To date the majority of online psychological interventions available in the UK have been commercially developed (Hill et al., 2017). This has resulted in commercially

usable products that rarely have evidence to substantiate their claims (Leigh & Flatt, 2015). As a result services are uncertain on recommending online services to their patients, and a recent audit reported that patients are referred to a range of different web and smartphone apps by NHS England, for which the evidence base is unclear (Bennion et al., 2017). This is problematic as, if services pay for commercial interventions, there may be associated opportunity costs. These can include the investment of time, effort, and money that individual patients or healthcare systems put into an ineffective resource, which renders these resources unavailable for effective interventions (Murray et al., 2016). There are therefore calls to develop more theoretically sound interventions which are properly evaluated.

1.6.2 Evaluation methods

There is some debate over what can be considered a ‘proper evaluation’ of an online psychological intervention (Murray et al., 2016). The gold standard in medicine is the RCT, however many argue this is unsuitable in this context. One reason is because the speed at which technology is developed outstrips the pace of research procedures (Kumar et al., 2013). The end result is that products are out-dated by the time there is evidence for them and are therefore unlikely to be taken up.

Instead, it is suggested that the focus should be on testing the theoretical principles and concepts of an intervention, which could then be more broadly applied to a particular technology (e.g. an app or website) by developers, designers, or researchers (Mohr et al., 2015). The advantage of this approach is that it can increase knowledge about the underlying principles or mechanisms of action of an intervention, which can then be applied to the changing technological environment, thus increasing the value of research studies (Mohr et al., 2015). With this in mind, the present thesis will focus on developing the theoretical principles and mechanisms of action of an online intervention using positive psychology.

1.6.3 Promoting adherence and engagement

It is often reported that an issue with low-intensity online interventions is that patients drop out (Christensen, Griffiths, & Farrer, 2009; Karyotaki et al., 2015; Richards & Richardson, 2012). This is considered important because greater intervention exposure is associated with better outcomes (Hilvert-Bruce, Rossouw, Wong, Sunderland, & Andrews, 2012). However, it is difficult to conclusively state how many patients drop out because the estimates vary according to how it is

measured and the setting. Treatment drop out can be measured according to how many complete an intervention or how many receive a certain proportion of intervention content. Karyotaki et al., (2015) reported that in ten RCTs of low-intensity online interventions for depression, 83% failed to complete the treatments, with 40% dropping out before completing one quarter of the intervention. Drop-out is substantially higher in open access trials, which the public can register for, as evidenced in a study in which 15% of public participants completed 2 modules, compared to over 60% in the trial (Christensen, Griffiths, Korten, Brittliffe, & Groves, 2004).

Research efforts into understanding drop out have focused on investigating individual level demographic factors that might be predictive. Recently, an individual patient data meta-analysis of ten RCTs reported that lower educational level, a diagnosis of anxiety as a co-morbidity, and male gender significantly increased the risk of drop out (Karyotaki et al., 2015). However, researchers have argued it is also important to consider how factors related to the design of online interventions affect engagement with and dropout from online interventions (Christensen et al., 2009).

This is exemplified in the work of Oinas-Kukkonen & Harjuma (2009) who argue for persuasive design and suggest that technology is not simply a vehicle for intervention delivery, but can be persuasive in changing and shaping attitudes and behaviours. A systematic review and meta-analysis of a broad range of health interventions found that use of these persuasive design principles, including praise, social learning, and tailoring intervention content, accounted for a substantial amount of adherence (Kelders et al., 2012). Their findings suggested that mental health interventions, compared to other health interventions, used fewer of these persuasive principles and rarely used 'self-monitoring', i.e. tracking patient performance and status to help achieve goals or 'personalisation' i.e. allowing patients to adapt content. Further, the mental health interventions were much stricter in set-up and used a weekly modular format. The authors called for more persuasively designed mental health interventions to promote greater adherence (Kelders et al., 2012).

Other researchers have argued that translating face-to-face psychotherapeutic techniques into online forms has restricted innovation (Mohr, Weingardt, Reddy, & Schueller, 2017). They suggest the reason that patients receive new content once per week in a modular, pre-defined order reflects how traditional psychotherapy is

delivered. However, it may not be reflective of how patients engage with technologies in the modern world (Mohr, Tomasino, et al., 2017). Increasingly, researchers are investigating novel ways to improve engagement, through the presentation of bite-sized information, and using interactivity and multimedia to ensure that interventions are engaging (Mohr, Tomasino, et al., 2017). As a consequence, the present research will investigate design principles to inform the present intervention.

It is recommended that people who will use online technologies to manage their health are involved in the design (De Vito Dabbs et al., 2009; Kujala, 2003). This is because it is assumed that designing a tool with the needs and views of potential users in mind is more likely to result in something people will use and benefit from. However, it has been suggested that patients have rarely been involved in the design of interventions but instead have been driven by top down process from clinical researchers (Mohr, Weingardt, et al., 2017). Further, where products have been commercially developed it is not clear if and how patients were involved in their design (Hollis et al., 2015). The present research will therefore elicit patient preferences throughout intervention development, in order to develop engaging intervention content.

1.7 Intervention development frameworks

1.7.1 MRC framework for developing and evaluating complex interventions

The Medical Research Council (MRC) Framework for Developing and Evaluating Complex Interventions (from here-on referred to as the MRC framework) (Craig et al., 2008) is the most widely cited framework for intervention development, particularly those with multiple components. The framework emphasises the importance of developing intervention theory prior to effectiveness testing, on the basis that to adequately test whether an intervention works, there must be knowledge about how it might work. This was particularly relevant in the present project, as the mechanisms of positive psychology components are unclear. A second key aspect of the MRC framework is the importance of checking the feasibility and acceptability of an intervention with proposed users of the intervention. This aims to maximise the likelihood that an intervention can be successfully tested in a later trial, given that any trial with large drop out is likely to be inconclusive. To the candidates' knowledge there is limited published data on the perceived acceptability of positive psychology

interventions amongst people with depression and related conditions and it was therefore critical to establish this.

The MRC framework has four interlinked stages; 1. Development, 2. Feasibility and Piloting, 3. Evaluation, and 4. Implementation. The MRC outlines that the development phase has three stages, including identifying the existing evidence base, ideally via a systematic review, followed by identifying and developing the theory of an intervention, where necessary collecting new evidence to supplement existing theories. It is recommended that where the process of change is unclear, it is important to develop this and this may require supplementary new evidence. The third and final part of the developmental phase of the MRC framework involves modelling intervention processes and outcomes. This often requires graphical representations such as flowcharts or diagrams to illustrate the theoretical processes that are expected within an intervention and its context (Sermeus, 2015).

The second stage of the MRC framework, feasibility and piloting, is focused on conducting small scale studies to identify key uncertainties that need to be resolved in order for a definitive randomised controlled trial to be successful. Feasibility studies would assess whether an intervention can be delivered as intended, and that research procedures are feasible. It is a prerequisite in the evaluation cycle, and forms part of the continuum of research. Feasibility studies are typically under-reported and tend to be confused with pilot studies (Arain, Campbell, Cooper, & Lancaster, 2010). However, the difference, as defined by the National Institute for Health Research (2012), is that feasibility studies aim to assess whether a study can be done. This can include investigating intervention procedures, such as adherence, as well as study procedures, such as feasibility of recruitment. In comparison, a pilot study is a smaller version of a full set of study procedures, usually linked to a main trial.

The third stage is focused on evaluating the effectiveness, understanding the change processes, and assessing the cost effectiveness of a given intervention. Typically this would involve an RCT, process evaluation, and economic evaluation. The final stage of the MRC focuses on implementing evidence into practice, including disseminating findings and monitoring implementation, particularly over a longer term. This thesis is focused on the first two stages, development and feasibility testing and this will be explained in detail in section 1.8.

1.7.2 Person-based approach to digital health-related behaviour change interventions

Although the MRC framework is the most comprehensive and widely used approach to intervention development, it merely provides a guideline of the relevant elements and the research questions to consider. Given the varying contexts in which interventions are used it cannot, and does not, aim to provide a prescriptive approach to the methodologies for developing interventions. For these reasons, the Person-Based Approach to Digital Health-Related Behaviour Change Interventions (from here-on referred to as the person-based approach) was selected as a supplementary framework for developing the intervention (Yardley, Morrison, Bradbury, & Muller, 2015). This approach recognises the specific contextual challenges related to engaging patients with online interventions designed for independent use. The framework argues that interventions must be appealing, easy-to-use, and relevant to patients' needs, otherwise people simply will not use them.

The person-based approach stems from a long line of research into the 'usability' of interventions, that is how easy they are to use, which has argued that when health technologies are developed without consulting end-users the products rarely meet user needs, are difficult to use, and are rarely taken up (Maguire, 2001). Involving users can improve usability, ensure there are no unnecessary features, and prevent wasted resources (Doherty, Coyle, & Matthews, 2010; Kujala, 2003; Maguire, 2001). However, the person-based approach goes beyond this usability literature to argue that not only is it necessary to check whether people might like the end product, it is critical to get a thorough understanding of people's daily lives, the context in which the technology will be used, people's preferences, and psychological and practical barriers and facilitators to the intervention. This approach therefore places great emphasis on using qualitative approaches to elicit, understand, and accommodate the preferences of people who will use the intervention. This was particularly relevant for the present project given the limited data on participant preferences.

A secondary aspect of the person-based approach is that it suggests that the conceptual modelling, described in the MRC framework, should account for specific contextual behavioural issues and challenges that are identified in the process of intervention development. Further, it recommends creating guiding principles for the intervention that consist of two elements used to address contextual challenges; design objectives and key features of the intervention that operationalise the

objectives. Yardley et al., (2015) recommend that such guiding principles can usefully inform the conceptual model of an intervention.

The final important aspect of the person-based approach is its emphasis on general design features that can improve the acceptability of, and engagement with, online health interventions. It suggests that all interventions should aim to promote a positive emotional experience and a strategy to achieve this is the use of autonomy-supporting language, providing reasons for the advice, and acknowledging and addressing potential concerns of participants.

1.8 Overview of research questions and methodology

1.8.1 Summary of research questions and methodology

The central aim of this thesis was to systematically develop a theoretically sound online intervention using positive psychology for depression and to investigate the acceptability of this. Specifically, the research questions were:

1. Which positive psychology components can be applied to an online intervention for depression?
2. What is the acceptability of this online intervention using positive psychology for depression?
3. What are the potential outcomes for individuals with depression of this online intervention using positive psychology?

The following section explains the terms used in the above research questions. Positive psychology components are defined as those outlined in positive psychotherapy (Seligman et al., 2006). The rationale for this, as mentioned in section 1.5.2, is that there is not currently an agreed definition of a positive psychology intervention, whereas positive psychotherapy defines exactly which components it includes. The term online refers to the use of Internet or app-based intervention, and a pragmatic decision was taken during the thesis regarding which format the intervention would use. Acceptability was defined in the present study as whether the intervention was suitable, appropriate, satisfying, and attractive (Bowen et al., 2009)

To address these research questions it was necessary to use a range of quantitative and qualitative methods, as recommended by the two frameworks selected to guide the thesis. When using mixed-methods it is necessary to define one's epistemological

position (Madill, Jordan, & Shirley, 2000). In this thesis a realist approach was adopted, whereby data collected was assumed to reflect something that is happening in the real world that exists independently of the researcher and participants, whilst acknowledging the role of social context (McEvoy & Richards, 2003). This is in contrast to the other dominant epistemology of social constructionism, which argues that realities are shaped through one's experiences and interactions with others (Schmidt, 2001). This was not deemed an appropriate framework for the thesis as it rejects the notion that language represents a way of knowing participants' internal psychological world. As the aim of this research was to gain insight into participants' views on acceptability, it was necessary to choose an epistemology which allows the researcher to identify and reveal these processes in a comprehensible way, which the realist framework allows (Madill et al., 2000).

1.8.2 Overview of the studies

The rationale for the methods used is described in detail in each chapter. Here a brief overview of the studies is provided. The first two stages of the MRC framework 'development' and 'feasibility testing' were used as a guide for this thesis and its studies, as depicted in Figure 1.2.

In the first stage of intervention development, the focus was on clarifying how positive psychology components, defined as those used in positive psychotherapy, were related to outcomes and how this might differ across contexts. A systematic review was therefore designed which aimed to identify the most widely used components and to establish the rationale for applying these in different contexts. In part, this review attempted to address the first research question 'Which positive psychology components can be applied to an online intervention for depression?' by identifying commonly applied components.

To supplement theory development and identify challenges in applying and delivering components of positive psychology online, a qualitative study was designed to explore patient and clinicians views on the acceptability of the proposed intervention. The person-based approach in particular recommends eliciting patient views, so that their preferences can be addressed in the intervention design to ensure acceptability. This attempted to address the first and second research questions regarding which components can be applied online and how acceptable this might be.

The development of the intervention included two aspects: developing a conceptual model and operationalising this into an online intervention. To achieve this, evidence was synthesised from the systematic review, qualitative study, and a patient-advisory panel, to inform the selection of positive psychology components. This chapter addressed the first research question regarding which components can be applied, by selecting those which were theoretically consistent with positive psychology, based on some evidence, and were potentially acceptable in the context of an online low-intensity intervention. This process also identified how the online intervention would be designed to address contextual challenges and maximise acceptability. The conceptual model of the intervention was operationalised in collaboration with a software design company.

In the second stage of this thesis, the focus was on testing the feasibility of evaluating and delivering the developed intervention. This included a quantitative aspect aimed at evaluating the feasibility of recruitment and data collection procedures, exploring the usage of the intervention, and exploring the acceptability of and participant response to the intervention. It also included a qualitative aspect to explore in more depth intervention acceptability. The feasibility study therefore aimed to address the second and third research questions, regarding the acceptability and potential outcomes of the intervention for people with depression.

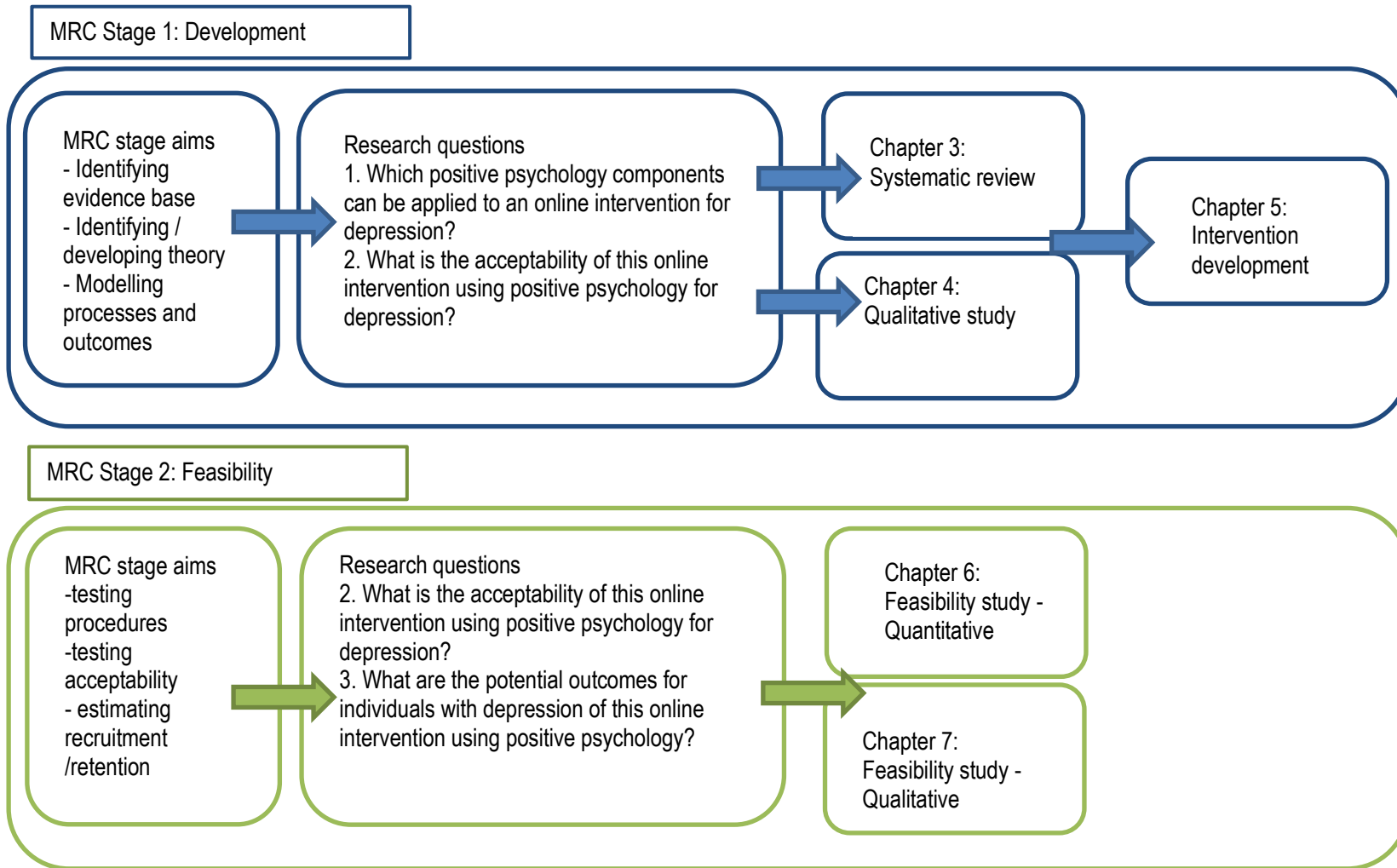


Figure 1.2 Research questions and methods informed by MRC framework

1.8.3 Overview of where studies are reported

The systematic review of how components of positive psychotherapy are currently applied in mental healthcare is reported in Chapter 2.

The qualitative study of patient and clinician views on the acceptability of the proposed intervention is reported in Chapter 3.

The description of the conceptual model of the intervention and how it was operationalised into an online intervention is reported in Chapter 4.

The quantitative aspect of the feasibility study is reported in Chapter 5.

The qualitative aspect of the feasibility study is reported in Chapter 6.

An overall discussion is reported in Chapter 7. This draws together the collective significance of the individual chapters in reference to the research questions and the existing literature. This includes clinical and research implications.

2 Systematic review and narrative synthesis of the application of positive psychotherapy in mental health care

2.1 Rationale

As described in section 1.5.1 of this thesis, evidence syntheses have demonstrated the promise of positive psychology interventions for reducing depression (Bolier, Haverman, Westerhof, et al., 2013; Hone et al., 2015; Sin & Lyubomirsky, 2009). However, the extent to which this evidence could inform the proposed intervention was limited by the lack of consensus about what constitutes a positive psychology intervention, as described in section 1.5.2. Without this certainty, it was difficult to develop a theory of intervention mechanisms and outcomes.

To overcome the limitation of defining a positive psychology intervention, this thesis has focused on a well-defined and described package of interventions; the components described in positive psychotherapy which are potentially effective in reducing depression (Seligman et al., 2006). However, as discussed in section 1.5.3, there is a lack of adequate theory to explain the intervention mechanisms. This is particularly problematic since the authors have recommended positive psychotherapy as a flexible model that can be adapted and applied to other patient groups alongside other treatment approaches (Rashid, 2008; Rashid & Seligman, 2014). As a consequence, it remains unclear which components are required to achieve outcomes, which can be changed, and how this might differ across contexts. This limited the extent to which the components of positive psychology could be applied to the proposed online intervention.

In order to address the uncertainty about applying the components of positive psychology, as defined in the positive psychotherapy model, this study aimed to systematically review the application of this model in mental health care. Specifically, the review aimed to assess how the model is applied and how it is modified. It is hoped these findings might help to understand the plausibility of the model, to identify any incompatible components, and to contribute to developing the theory of the proposed intervention. It is important to note that the review aims were related to assessing the application and modification of the model, rather than evidence of its effectiveness. The reasons for this were two-fold. Firstly, there were several recent reviews of trials of positive psychology, that included the evidence for positive psychotherapy, and indicated effectiveness (Bolier, Haverman, Westerhof, et al., 2013;

Hone et al., 2015). It was therefore clear that another systematic review of effectiveness would not add substantially to the literature. Secondly, and more importantly, an effectiveness review would not address the identified gap in literature, i.e. how to apply positive psychology components defined in the positive psychotherapy model in other contexts. Consequently, the present review was not limited to only including trials, but considered various evidence sources.

It is also important to note that the decision was taken to look across all mental health conditions, not only depression, which was the focus of this thesis. There were two reasons for this. Firstly, the authors of the positive psychotherapy model had called for it to be used in various settings (Rashid, 2008; Rashid & Seligman, 2014). A scoping review undertaken by the candidate, prior to the systematic review, identified a small number of studies that had applied positive psychotherapy in various psychiatric settings. Consequently, a pragmatic decision was taken to assess all literature, with a view to providing an insight into the model's application and modification that might illuminate potential mechanisms of the model. Secondly, given that depression co-occurs with other conditions (Kessler et al., 2003) it was recognised that considering how the model was applied in other health conditions might assist with developing a theory of the proposed intervention.

A version of this systematic review and narrative synthesis was published in the *Journal of Clinical Psychology* (Walsh, Cassidy, et al., 2016) and can be found in Appendix 1.

2.1.1 Objectives

The aim of this study was to systematically review how the components of positive psychology, specifically those used in positive psychotherapy, are applied in mental healthcare and the modifications to this model. This study aimed to inform the development of a theoretically sound intervention. Specifically, it aimed to inform the first research question outlined at the outset of this thesis, 'Which positive psychology components can be applied to an online intervention for depression?'

2.2 Methods

The systematic review methodology followed best practice guidelines and is reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) (Moher, Liberati, Tetzlaff, Altman, & Altman, 2009). At the outset a protocol was developed outlining the approach to searching and identifying papers. A second independent researcher Megan Cassidy (MC) helped to ensure the consistency of paper screening, data extraction, and evidence synthesis. The search was conducted in April 2015. It comprised a search of electronic databases using MeSH and keyword terms provided in Appendix 2, which were amended for each database. These included terms such as ‘positive psychology’, and ‘positive psychotherapy’, and terms related to mental health such as ‘affective disorder’, ‘anxiety disorder’, and ‘schizophrenia’. Key journals were used for a secondary hand search.

2.2.1 Eligibility criteria

Participants

Studies were included if the majority ($\geq 50\%$) of the participants were working age adults (18-65 years) and had either: a) a diagnosis of a mental health condition classified by the treating clinician or researcher or b) met criteria for clinical symptoms of a mental health condition on a recognised scale. The cut-off scores were ≥ 16 on The Centre for Epidemiologic Studies Depression Scale (CED-S) (Radloff, 1977) and ≥ 45 on the Short-form Health Survey Mental Component Summary (MCS-12) (Gill, Butterworth, Rodgers, & Mackinnon, 2007).

Intervention

To ensure that included papers were sufficiently similar to positive psychotherapy, studies were included if they reported an intervention that used at least two of the positive psychology components of the individual protocol described in Seligman et al., (2006). This included the majority of interventions described in the group therapy, with the exception of the ‘obituary’. Table 2.1 briefly describes these 12 components and their proposed target.

Table 2.1 Positive psychology components in individual positive psychotherapy

Exercise name	Brief description	Target
Positive introduction	Write about a time when they were at their best	Engagement
Using signature strengths	Take online inventory of Character Strengths (VIA-IS) to identify top five strengths and plan to develop identified strengths to use more often in the next week	Engagement
Blessings journal	For one week write three things that went well each day with a causal explanation	Engagement
Writing memories	Write three bad memories and distress	Pleasure
Forgiveness letter	Write forgiveness letter to transform anger and bitterness to neutral or positive emotion	Pleasure
Gratitude letter	Write and personally deliver a letter to someone who has never been properly thanked for their kindness	Engagement
Personal satisficing plan	Settling for 'good enough' compared to trying to find the 'best' option	Meaning
One door closes/ one door opens	Write occasions where something important did not happen but other opportunities arose	Pleasure
Active Constructive Responding (ACR)/	React in a visibly positive and enthusiastic way to others' good news at least once per day	Meaning
Family strengths tree	Family members complete VIA-IS and discuss their common strengths	Meaning
Savouring	Each day take time to enjoy something that is usually hurried. Afterwards write what you did, how and what was different	Pleasure
Gift of time	Use strengths in service of others	Meaning

Comparator, outcome, study design

There was no limitation on comparator, outcome measurement, or study type. Papers reporting systematic or non-systematic reviews were excluded, although their reference lists were screened for relevant studies. The papers had to be in English and published in a peer-reviewed journal.

2.2.2 Search strategy and screening

The following databases were searched in April 2015: MEDLINE, Embase, PsycINFO, BNI, CINAHL and Cochrane registers (CENTRAL). Databases were searched from 1998 onwards as this was the inception of the positive psychology movement (Seligman & Csikszentmihalyi, 2000). Web of Science and Google Scholar were used for forward citation searching of the included papers and the original positive psychotherapy paper (Seligman et al., 2006). The references lists of all included papers and any systematic reviews were also screened. Secondary hand searches were completed in the Journal of Positive Psychotherapy, Journal of Happiness Studies, Psychology of Well-being, and International Journal of Wellbeing.

After the removal of duplicates there was a two stage screening process. Firstly, the candidate screened all titles and abstracts, whilst the second reviewer (MC) screened a random selection of 25% of titles and abstracts to ensure the consistency of screening. Secondly, full texts were accessed and both researchers independently reviewed all papers. Any disagreements were resolved through discussion.

In a number of cases the authors had to be contacted to provide clarification on whether the paper met the eligibility criteria. In some cases this confirmed inclusion (Cohn, Pietrucha, Saslow, Hult, & Moskowitz, 2014), whilst in others authors either could not provide the required information to confirm eligibility, or the information provided confirmed that the study was not eligible (Bolier, Haverman, Kramer, et al., 2013; Bolier, Majo, et al., 2014; Dykens, Fisher, Taylor, Lambert, & Miodrag, 2014; Grant, 2006; Schueller & Parks, 2012). A list of excluded studies is provided in Appendix 2. Where authors were contacted to clarify a particular aspect of the intervention, the information was included in the analysis.

2.2.3 Data extraction

Data from each study was extracted into a Microsoft Excel spreadsheet. Study data extracted included design, recruitment procedures, comparators, methods, and outcomes and participant information including diagnoses, number of participants, and demographic details, as outlined in Appendix 2. Intervention data extracted was informed by the Template for Intervention Description and Replication (TIDieR) checklist (Hoffmann et al., 2014) and included the name, rationale, materials, provider, delivery mode, location, duration, and intensity. To ensure accuracy, data extraction was compared with the second reviewer (MC) who extracted data from 50% of studies.

2.2.4 Quality assessment

Quality assessment in systematic reviews usually focuses on appraising the risk of bias related to the methodological aspects of the study design. In systematic reviews of effectiveness that synthesise evidence from RCTs, the Cochrane Risk of Bias tool might be used to assess the risks associated with allocation and blinding, for example (Higgins et al., 2011). Similarly, in a meta-synthesis of qualitative studies, quality could be appraised using a tool such as the Qualitative Checklist (Critical Appraisal Skills Programme (CASP), 2014). However, the present review was less concerned with the methodological rigour of included studies, as the aim was to understand

how studies applied the positive psychotherapy intervention. The quality assessment therefore focused on appraising the quality of the intervention reporting, using the TIDieR checklist (Hoffmann et al., 2014). This is not a traditional quality measure and does not provide an overall score of quality or risk of bias. Instead, it was designed to improve the quality of intervention reporting. Consequently, its 12 items refer to information that can help a reader to understand, and replicate, an intervention. This includes the item 2 'why', which checks whether the intervention describes the rationale, or theory essential to the intervention, and items 3 and 4 'what' checks whether the materials and procedures are adequately described. As recommended, the checklist was used in conjunction with the guide and items were rated as present, absent (i.e. not mentioned or insufficiently reported), or not applicable (Hoffmann et al., 2014).

2.2.5 Analysis

Narrative synthesis was used to analyse the data, which involves four elements; theory development, preliminary synthesis, exploring relationships within and between studies, and assessing robustness of synthesis (Popay et al., 2006). These elements were not undertaken sequentially, the process was iterative as described below.

Developing a theory

The theory of positive psychotherapy and its positive psychology components had been outlined by Seligman et al., (2006) and depicted in Figure 1.1 in section 1.4.5.

Developing a preliminary synthesis

The purpose of this initial synthesis was to organise the findings, provide an initial description of how positive psychology components from psychotherapy were applied and modified, and to begin to explore patterns in this data. Two tools were used for this: tabulating data and grouping similar data; the initial grouping clustered studies that exclusively used positive psychology components from positive psychotherapy, those that included components from the wider field of positive psychology, and those using interventions from other theoretical traditions (e.g. CBT).

Exploring relationships between studies

The purpose of this stage of the analysis was to move beyond the initial synthesis and consider factors that explain differences between interventions and how they applied

positive psychology components. The preliminary synthesis was firstly shared with the second reviewer (MC) and the candidate's supervisors for discussion. It was clear that although it described the different applications of positive psychotherapy it did not compare how or why these were different from the protocol described by Seligman et al., (2006). The tool 'idea webbing' was used to display how modifications and additional interventions used in studies were conceptually similar and dissimilar to positive psychotherapy's target principles of pleasure, engagement, and meaning.

Assessing the robustness of the synthesis

Assessing robustness involved two elements as recommended by Popay et al., (2006); firstly, assessing the strength of intervention reporting. Secondly, the candidate recorded critical reflections on the process of the synthesis to acknowledge assumptions made and to record uncertainties or discrepancies identified during the review process. A discussion of both is provided at the end of the results to allow the reader to assess the robustness and generalisability of the synthesis.

2.3 Results

2.3.1 Included studies

The selection process is depicted in Figure 2.1. First, 889 unique references were retrieved, 821 of which were excluded following title and abstract screening; largely on the basis that they were unrelated (n=504), were not peer reviewed (n=150), involved a non-mental health population (n=82), were not in English (n=33), did not meet the intervention criterion (n=31), did not meet the age criterion (n=12) or were commentaries or reviews (n=9). Sixty-eight full texts were examined, twelve of which were included. A list of excluded studies and reasons for exclusion from this screening stage is provided in Appendix 2. The twelve papers cover nine unique studies as the WELLFOCUS study was described and evaluated both quantitatively (Schrank et al., 2016; Schrank, Riches, et al., 2014) and qualitatively (Brownell, Schrank, Jakaite, Larkin, & Slade, 2015; Riches, Schrank, Rashid, & Slade, 2016).

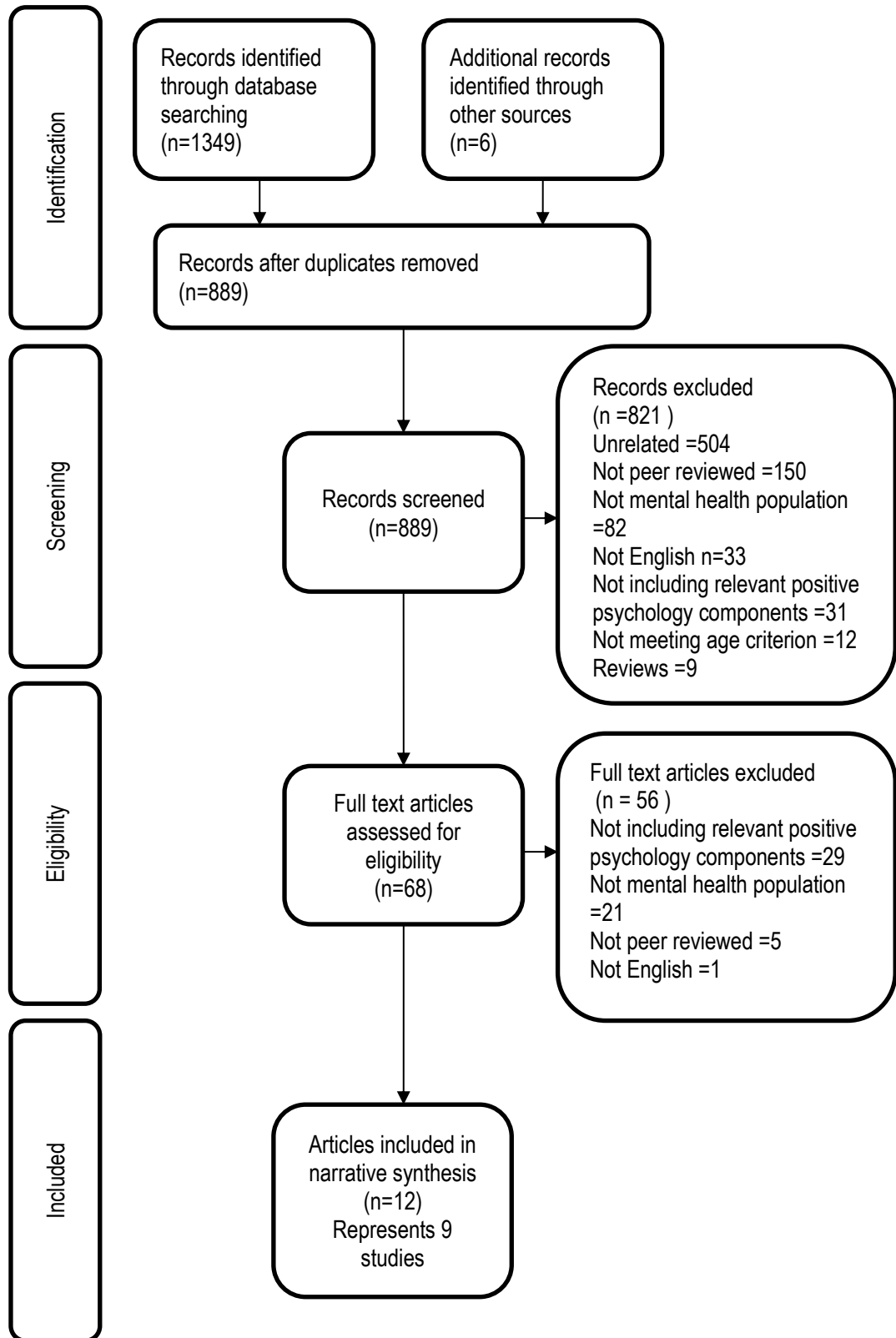


Figure 2.1 PRISMA flow diagram

The study characteristics are outlined in Table 2.2. Study designs included RCTs (Asgharipoor et al., 2012; Cohn et al., 2014; Roepke et al., 2015; Schrank et al., 2016; Schrank, Riches, et al., 2014; Seligman et al., 2006) that reported some evidence of effectiveness, i.e. in improving depression (Cohn et al., 2014; Roepke et al., 2015), happiness (Asgharipoor et al., 2012), and or a combination of such outcomes (Schrank et al., 2016; Seligman et al., 2006). There were also single arm pilot trials (D'raven, Moliver, & Thompson, 2014; Huffman et al., 2014; Meyer, Johnson, Parks, Iwanski, & Penn, 2012), qualitative evaluations (Brownell et al., 2015; Riches et al., 2016) and one protocol paper (Carr & Finnegan, 2014). The total number of participants was 884, 586 in intervention arms and 298 in control arms. Studies were mostly located in the United States of America (USA) (Cohn et al., 2014; D'raven et al., 2014; Huffman et al., 2014; Meyer et al., 2012; Roepke et al., 2015; Seligman et al., 2006) with one each from Canada (Lambert D'raven et al., 2015), Iran (Asgharipoor et al., 2012), Ireland (Carr & Finnegan, 2014), and the UK (Brownell et al., 2015; Riches et al., 2016; Schrank et al., 2016; Schrank, Riches, et al., 2014).

Table 2.2 Study characteristics

First author, Design	N	Clinical status	Conditions	Amendments to PPT	Additional interventions	Delivery	Sessions, duration	Findings
Seligman (2006 <i>Study 2</i>) RCT	45	DSM-IV Criteria for Major Depressive Disorder	1.PPT 2.TAU 3.TAU + antidepressant	-- ^a	-- ^a	Individual	14 12 weeks	Depression, functioning and happiness significantly improved. No difference in life satisfaction
Asgharipoor (2012) RCT	18	DSM-IV Criteria for Major Depressive Disorder	1.Adapted PPT 2.Group CBT	Alternative model of happiness	Activity scheduling, behavioral commitment to values	Group	12, 2hours 12 weeks	Happiness significantly improved in PPT. Significant decrease in distress in CBT. No group differences in wellbeing or depression
Carr (2014) Protocol	-- ^b	Major Depressive Disorder	1.Adapted PPT	VIA character strengths not used but family are asked. Extra session on forgiveness. Gift of time not explicitly strengths based. Savoring is focused on nature	Daily meditation, daily physical exercise, character strengths journal, goal setting, CBT cognitive restructuring, self-talk, using humor, anxiety management, anger management, self-acceptance, dealing with grief, strengthen attachments & compliments, assertiveness training	Group	20, 2hours Unknown	-- ^b
Meyer (2012) Single arm pilot study	16	Current diagnosis of Schizophrenia or Schizoaffective Disorder	1.Adapted PPT	Extra sessions for experiential practice	Mindfulness minute, positive goal	Group	10, 1.5hours 10 weeks	Significant improvement in wellbeing, hope, savoring, self-esteem,

Schrank (2016) ^d RCT and qualitative evaluation	94	Clinical diagnosis of Psychosis	1.Adapted PPT 2. TAU	Character strengths VIA replaced by pictures. Family involvement minimized, focus on significant others. Forgiveness across two sessions and focus on being 'let down'. Blessings journal = good things box (collect mementoes). Savoring (focused on eating, drinking, listening). Celebration to practice positive communication	Mindful music listening	Group	11, 1.5hours 11weeks	symptoms but no effect on social functioning No significant effect on primary outcome wellbeing. Significant effect on psychiatric symptoms, depression and another wellbeing measure
Roepke (2015) RCT	283	Meeting criteria for clinically significant depression (≥16 CES-D)	1. Adapted PPT 2.General Superbetter 3.Waiting list	Used three components	CBT, activity scheduling, acceptance content	App	28, 10minutes 4weeks,	Depression improved in conditions 1 and 2 relative to the waiting list. Similar pattern in secondary outcomes life satisfaction, social support, self-efficacy
Cohn (2014) RCT	49	Target group people with type 2 diabetes and depression (53%)	1.PP components 2.Emotion reporting	-- ^e	Daily positive event scheduling, mindful breathing exercise, goal setting, positive reappraisal, performing acts of kindness,	Online	5 5 weeks	Significant effect on depression. No effect on secondary outcomes perceived

		≥16 CES-D)			character strengths journal			stress, positive and negative affect, diabetes specific psychological measures, health behavior
Lambert D'raven (2015) Single arm pilot study	318	Target group mild to moderate depressive symptoms	1.PP components	-- ^e	Presentation on flow, physical activity Mindfulness, time control, goal setting, reducing overthinking, self-talk and optimism, writing and thinking about positive experiences, best possible self, social event to conclude	Group	6 , 2hours 6 weeks	Significant reduction in participants at risk for depression. Significant changes in secondary outcomes including physical, mental and general health
Huffman (2014) Single arm pilot study	61	Admission to inpatient psychiatric unit for passive or active suicidal ideation or suicide attempt	1.PP components	-- ^e	Activity scheduling, acts of kindness, best possible self (accomplishments, relationships), in social relationships, best possible self-accomplishments, behavioral commitment to values	Individual	9 9 days	Optimism and hopelessness improved significantly for all exercises except forgiveness letter

Abbreviations. PPT = positive psychotherapy.PP=positive psychology.TAU = treatment as usual

^a This paper describes the original intervention therefore no amendments were made

^b This paper describes the intervention therefore no data are provided on design, sample size or findings

^c additional booster session offered 6 weeks after

^d This refers to studis reported in (Brownell et al., 2015; Riches et al., 2016; Schrank et al., 2016; Schrank, Riches, et al., 2014)

^eThis paper did not amend PPT

The quality of intervention reporting is summarised in Table 2.3. None of the included studies provided sufficient description of the intervention to fulfil all criteria on the checklist. Many of the studies reported less than half of the recommended information (Asgharipoor et al., 2012; Cohn et al., 2014; D'raven et al., 2014; Huffman et al., 2014; Seligman et al., 2006), with others reporting half or slightly more information (Carr & Finnegan, 2014; Meyer et al., 2012; Roepke et al., 2015; Schrank et al., 2016). Several of the checklist items were poorly reported across all studies. No studies provided detail on how interventions were intended to be tailored or adapted (item 9), or modifications that occurred during the study (item 10). It was rare for studies to provide detail on intervention materials (item 3), including those used in training or provision of the intervention, or to describe where interventions were delivered (item 7). Further, few studies described how well interventions were delivered, in terms of plans to monitor and maintain interventions and results of adherence or fidelity (items 11 and 12). However, most studies did provide detail on the intervention name (item 1), its rationale (item 2), intervention procedures (item 4), how it was delivered (item 6), and intervention length and dosage (item 8).

Table 2.3 Quality of intervention reporting in included studies

First author, date	1. Name	2. Why	3. Materials	4. Procedures	5. Who	6. How	7. Where	8. When and how much	9. Tailoring	10. Modifications	11. Planned delivery	12. Actual delivery	Total
Seligman (2006)	x	✓	x	x	✓	✓	x	x	x	x	x	x	3
Asgharipoor (2012)	x	x	x	✓	x	x	x	✓	x	x	x	x	2
Carr (2014)	✓	✓	✓	✓	✓	✓	n/a	x	x	n/a	x	n/a	6
Meyer (2012)	✓	✓	x	x	✓	✓	x	✓	x	x	✓	✓	7
Schrank (2016) ¹	✓	✓	x	✓	✓	x	x	✓	x	x	✓	✓	7
Roepke (2015)	✓	✓	x	✓	n/a	✓	✓	✓	n/a	x	✓	✓	8
Cohn (2014)	✓	✓	x	✓	n/a	✓	x	x	x	x	x	x	4
Lambert D'raven (2015)	✓	x	x	✓	x	✓	x	✓	x	x	x	x	4
Huffman (2014)	x	x	x	✓	✓	✓	✓	✓	x	x	x	x	5

¹ This refers to data reported in in (Brownell et al., 2015; Riches et al., 2016; Schrank et al., 2016; Schrank, Riches, et al., 2014)

The subsequent results compare the original description of positive psychotherapy (Seligman et al., 2006) with the eight other studies (Asgharipoor et al., 2012; Brownell et al., 2015; Carr & Finnegan, 2014; Cohn et al., 2014; Huffman et al., 2014; Lambert D'raven et al., 2015; Meyer et al., 2012; Riches et al., 2016; Roepke et al., 2015; Schrank, Riches, et al., 2014; Schrank et al., 2016)

2.3.2 How positive psychotherapy is applied in mental healthcare

The identified studies included five studies that specifically referenced the positive psychotherapy model and described amending it (Asgharipoor et al., 2012; Brownell et al., 2015; Carr & Finnegan, 2014; Meyer et al., 2012; Riches et al., 2016; Roepke et al., 2015; Schrank et al., 2016; Schrank, Riches, et al., 2014), whilst the remaining three studies did not cite the positive psychotherapy model, yet used some of its components (Cohn et al., 2014; Huffman et al., 2014; Lambert D'raven et al., 2015). Table 2.4 summarises how the included studies applied the positive psychology components, which are organised according to whether they targeted pleasure, engagement, or meaning.

Those that cited positive psychotherapy delivered it in various different formats. Several studies modified the individual model to use it as a group therapy in community mental health settings for people with depression (Asgharipoor et al., 2012; Carr & Finnegan, 2014) and psychosis (Brownell et al., 2015; Riches et al., 2016; Schrank et al., 2016; Schrank, Riches, et al., 2014). Others delivered some of the interventions as self-help via a smartphone app for people with symptoms of depression (Roepke et al., 2015). The briefer group model of positive psychotherapy was also modified for people with schizophrenia or schizoaffective disorder (Meyer et al., 2012). Although these studies modified positive psychotherapy, they offered fewer interventions (mean 4.8, range 2-8).

The remaining studies that did not specifically cite Seligman et al., (2006) nevertheless used several of its interventions, alongside other positive psychology components from the literature. The context of intervention delivery varied and included group delivery in primary care to people with depression (D'raven et al., 2014). Interventions were also delivered with brief therapist support to individual inpatients in hospital, following recent suicidal ideation or suicide attempts (Huffman et al., 2014). The final study delivered interventions without therapist support on a website for people with depression and diabetes (Cohn et al., 2014). On

average, these studies offered fewer positive psychology components (mean 3.3, range 2-4) when compared to the studies that cited Seligman et al., (2006).

Table 2.4 indicates that across all studies some positive psychology components were applied more than others. In particular the 'blessings journal' was applied in all studies and many included 'using signature strengths'. Some components were not applied at all, including 'writing memories', 'satisficing plan', and the 'family strengths tree'. Studies included more interventions that targeted engagement (mean 2.6, range 2-4) and pleasure (mean 1.0, range 0-3) and few that targeted meaning (mean 0.6, range 0-2).

Table 2.4 Application of positive psychology components in included studies

Study first author	Target principle of positive psychology											Total	
	Pleasure			Engagement				Meaning					
	Writing Memories	Forgiveness Letter	One door closes	Savouring	Gratitude Letter	Positive Introduction	Using signature strengths	Blessings journal	ACR	Family Strengths Tree	Satisficing Plan	Gift of Time	
Seligman (2006)													12
Asgharipoor (2012)							✓	✓					2
Carr (2014)		✓		✓	✓		✓	✓				✓	6
Meyer (2012)				✓	✓		✓	✓	✓			✓	6
Schrank (2016)		✓	✓	✓	✓	✓	✓	✓	✓				8
Ropeke (2015)							✓	✓					2
Cohn (2014)							✓	✓					2
Lambert D'Raven (2015)				✓	✓			✓	✓				4
Huffman (2014)		✓			✓		✓	✓					4
Total	0	3	1	4	5	1	7	8	3	0	0	2	

2.3.3 How positive psychotherapy is modified

Modifications

Although several studies cited the positive psychotherapy model, a rationale was not always provided for why changes were made, or certain components omitted. Some studies offered just two of the possible twelve components from positive psychotherapy, yet did not give any rationale for this (Asgharipoor et al., 2012; Roepke et al., 2015). However, other studies did explain both why they needed to make changes, and how these changes were decided. Some authors made amendments in order to make the intervention suitable for patients with psychosis (Brownell et al., 2015; Riches et al., 2016; Schrank et al., 2016; Schrank, Riches, et al., 2014) and schizophrenia (Meyer et al., 2012), or to integrate positive psychotherapy with CBT (Carr & Finnegan, 2014). Such adaptations were informed by authors' knowledge of the relevant literature, that indicated particular interventions might be suitable additions (Carr & Finnegan, 2014; Meyer et al., 2012). One study provided a comprehensive description of how it modified positive psychotherapy, in line with the MRC framework, based on a literature review supplemented with expert consultation and qualitative interviews (Riches et al., 2016).

The modifications that were made to accommodate patients with psychosis and schizophrenia focused on omitting interventions that were challenging and potentially unsuitable for this patient group, or could cause distress (e.g. 'satisficing plan', 'gift of time', and 'writing memories') (Riches et al., 2016). Alternatively, the focus of interventions was amended to address psychosis specific challenges. As patients might have a history of trauma the 'forgiveness letter' and 'one door opens' exercises were modified to focus on day-to-day disappointments, rather than serious transgressions, in a bid to minimise potential distress (Riches et al., 2016). Similarly, to accommodate cognitive impairments, interventions were amended from literacy-based exercises, to experiential, interactive activities. The 'blessings journal' was modified to a 'good things box' for storing mementoes and images were used to elicit signature strengths, rather than a written assessment (Riches et al., 2016).

Interventions were also modified to maintain patients' motivation, e.g. by offering 'easier' activities such as 'savouring' prior to more difficult exercises like 'forgiveness letter' (Riches et al., 2016). Similarly, researchers modified the 'active constructive responding' exercise, into activities involving smaller steps, which were demonstrated

and role-played in sessions (Meyer et al., 2012), or at an end-of-therapy celebration (Riches et al., 2016).

When positive psychotherapy was integrated with CBT, modifications included the 'savouring' activity focusing on reconnecting with nature, and 'gift of time' focusing on increasing social networks (Carr & Finnegan, 2014). However, the authors were not explicit about how these modifications were decided, or why other positive psychology components were not included.

In the studies that did not specifically cite positive psychotherapy, yet used some of its components, the choice of interventions was guided by literature reviews (Cohn et al., 2014; Huffman et al., 2014; Lambert D'raven et al., 2015), supplemented by expert views (Huffman et al., 2014). However, only one study (Cohn et al., 2014) provided a citation to a comprehensive description of how the intervention was developed (e.g. Moskowitz et al., 2012).

Additions

All studies provided interventions that were not part of the positive psychotherapy model. The majority of these interventions were conceptualised as promoting similar targets to those described by Seligman et al., (2006); pleasure, engagement, and meaning.

Pleasure

Positive emotions were promoted through the use of positive reappraisal, i.e. changing interpretations of daily stressors (Cohn et al., 2014) and using humour daily (Carr & Finnegan, 2014). Some interventions focused on promoting positive emotions in the future, e.g. the 'best possible selves' exercise in which participants wrote their vision and goals for the future and how their character strengths may help to achieve this (D'raven et al. 2014; Huffman et al. 2014); or through an undefined optimism exercise (Lambert D'raven et al., 2015). Positive emotions about the past were also promoted through the use of positive writing tasks (Lambert D'raven et al., 2015), or reflecting on grieving following loss (Carr & Finnegan, 2014).

Engagement

Various interventions were used to promote engagement, involvement, or absorption in work, leisure, or relationships. Some focused on increasing awareness of character strengths, by keeping a daily strengths journal (Carr & Finnegan, 2014; Cohn et al.,

2014). Others involved goal setting to increase personal relevance of the treatment (Carr & Finnegan, 2014; Cohn et al., 2014; Lambert D'raven et al., 2015; Meyer et al., 2012). The behavioural activation technique of scheduling of important, enjoyable, or meaningful activities was also encouraged (Asgharipoor et al., 2012; Cohn et al., 2014; Huffman et al., 2014; Roepke et al., 2015). Practising time-control, i.e. attending to one's experience of the passing of time was also used to promote understanding of the concept of flow, i.e. being fully immersed in an activity (Lambert D'raven et al., 2015).

Meaning

Participants were encouraged to connect with something greater than themselves through kindness interventions, termed as 'acts of kindness' (Cohn et al., 2014; Huffman et al., 2014), or 'good deeds' (Lambert D'raven et al., 2015). These included pro-social actions such as donating blood, or helping a person in difficulty, sometimes recorded in a reflective journal (Cohn et al., 2014; Huffman et al., 2014). The behavioral commitment to value-based activity, in which participants selected a guiding principle for their life, e.g. creating beauty, and documented how to achieve this (Asgharipoor et al., 2012; Huffman et al., 2014), was also used. Positive relationships were promoted through activities which involved identifying (Carr & Finnegan, 2014) or envisaging (Huffman et al., 2014) their best possible social and interpersonal relationships and planning how to achieve these.

Other interventions

Studies sometimes offered interventions that were not conceptually aligned with the positive psychotherapy model. These included aspects of traditional cognitive behavioral therapy (CBT), such as reducing overthinking (Lambert D'raven et al., 2015), challenging negative core beliefs and self-statements, and managing catastrophising, or anger (Carr & Finnegan, 2014). Some interventions were from the field of coaching e.g. 'self-talk' (Lambert D'raven et al., 2015). Physical activity was also included (Carr & Finnegan, 2014; Lambert D'raven et al., 2015). Other interventions offered could be conceptualized as 'third wave' CBT approaches (Hunot et al., 2013), as they included forms of acceptance and commitment therapy (Roepke et al., 2015) and mindfulness (Brownell et al., 2015; Carr & Finnegan, 2014; Cohn et al., 2014; Lambert D'raven et al., 2015; Meyer et al., 2012). Mindfulness was viewed as useful for the management of psychotic symptoms (Meyer et al., 2012), chronic stress

(Cohn et al., 2014) and depression (Carr & Finnegan, 2014). It was also thought to facilitate intervention practice as it may allow participants to more easily recognize and appreciate positive events (Cohn et al., 2014), and more easily participate in the savoring activity (Meyer et al., 2012).

2.3.4 Robustness of synthesis

Attempts were made to maximise the robustness of the information used in the synthesis. The TIDieR checklist (Hoffmann et al., 2014) was used to inform the extraction of data from papers and two reviewers were used to ensure that the process of sifting was concordant, to confirm inclusion of papers, and to extract data. Further, critical reflections were kept during the synthesis to highlight uncertainties and discrepancies. This process identified that studies did not adequately describe the materials they used to deliver the intervention. It was therefore often difficult to synthesise the interventions, as it was unclear how interventions differed from positive psychotherapy. Also, whilst studies did provide a brief rationale of their theory, it was rare for studies to explicitly describe how they modified positive psychotherapy and so the synthesis of this data was very limited. Incomplete reporting of interventions is, however, a common issue in healthcare research, hence the introduction of the TIDieR checklist (Hoffmann et al., 2014). Nevertheless, this limits the robustness of the synthesis, and it is therefore considered to be moderately robust.

2.4 Discussion

2.4.1 Main findings

This systematic review aimed to identify how positive psychotherapy is applied in mental health care and how it is modified. The main finding is that although positive psychotherapy was applied in various settings, some components were applied frequently (e.g. 'blessings journal' and 'using strengths') whilst others were not applied at all (e.g. 'satisficing plan' or 'family strengths tree'). It was more common for studies to apply components targeting engagement and pleasure, than meaning. These findings may indicate that some components are more acceptable and feasible than other interventions. The most applied interventions constitute those from the shorter group therapy positive psychotherapy, suggesting that this model may be more promising than the individual version. The chapter had limited findings with regard to how positive psychotherapy was modified, as papers rarely reported reasons for this. However, there was some evidence to suggest modifications were made to accommodate diagnosis-related challenges and to improve engagement. These may be useful factors to consider in the proposed intervention. A secondary finding is that a number of conceptually similar interventions have been offered alongside positive psychotherapy, and that it has been integrated with different treatments. Such interventions may be useful substitutes, or complements to the positive psychotherapy model. However, this does call into question the uniqueness of the principles of positive psychology.

2.4.2 Strengths and limitations

This paper is the first to systematically explore how positive psychotherapy is applied in clinically relevant populations. It has the advantages of being replicable and reproducible, and provides a critical consideration of the quality of the intervention reporting. However, the synthesis is only moderately robust.

The main limitation relates to the poor quality of intervention reporting which provided little data on the rationale for using, omitting, or modifying positive psychology components. Indeed only two studies, Cohn et al., (2014) and Schrank et al., (2016), referenced separate papers describing intervention development, i.e. their methodology and decision-making process. Similarly, only two studies explained how and why interventions were modified, limiting the extent to which one can draw conclusions about the factors that affect how positive psychotherapy is applied

(Meyer et al., 2012; Riches et al., 2016). Additionally, studies did not explain the rationale for offering additional interventions. One cannot therefore conclude the extent to which these substitutions are purposely similar to positive psychotherapy. The limitations negatively affect the extent to which the review findings can inform the development of the proposed intervention.

A further limitation relates to how the intervention and population was defined and the influence this had on the studies identified. By defining the intervention as offering at least two components from the original model, this review identified papers that were explicitly modifying positive psychotherapy and those which happened to be offering some of its components. Such papers obviously do not describe how they differ from the model, thus contributing to the moderate strength of the robustness. In addition, the review identified studies on actual psychotherapy delivered interpersonally, and those delivered as self-help, in a range of conditions, making it somewhat difficult to identify commonalities amongst these different contexts, or to make specific recommendations about the proposed online, low-intensity intervention for depression. Further, the review excluded several studies that did not meet the criterion, as the population of interest was not clinical, but perhaps included people with depression (Bolier, Haverman, Kramer, et al., 2013; Schueller & Parks, 2012). However, this was justified on the grounds that such studies were unlikely to have made adaptations on the basis of these mental health conditions, and therefore would not have contributed to identifying principles that could inform the theory of the intervention. Despite these limitations the study still has some use as it identifies, in a broad range of contexts, how positive psychotherapy has been applied, thus contributing to researchers' knowledge about its potential uses.

2.4.3 Comparison with the literature

The findings of the present study support the idea that positive psychotherapy is a flexible model that can be applied with other diagnoses and alongside other treatments, as intended (Rashid, 2008; Rashid & Seligman, 2014). In particular, the review identified some evidence of the factors affecting how positive psychotherapy is applied, including omitting exercises that might be particularly challenging or cause the patients distress (Riches et al., 2016). The review also identified that modifications to positive psychotherapy can be made on the basis of accommodating particular

symptoms of a mental health condition, or for promoting engagement by breaking down skills and providing opportunities to practice (Brownell et al., 2015; Meyer et al., 2012). However, the majority of papers did not describe the rationale for their application or modification of positive psychotherapy, nor their expectations about how the modifications affected the principles or proposed mechanisms of the intervention. It should be acknowledged that the limited description of interventions reflects the literature on health interventions, in which intervention development papers are under-reported (Hoddinott, 2015), and guidelines have been introduced to improve the quality of reporting (Hoffmann et al., 2014). Nevertheless, this finding supports the need to systematically identify the principles that positive psychotherapy is targeting and the mechanisms by which it operates (Rashid, 2015; Seligman et al., 2006).

The following uncertainties about the principles and mechanisms of the intervention ought to be addressed. Firstly, the lack of specificity about how interventions link with outcomes must be made clear. At present, it is proposed that promoting engagement, pleasure, and meaning are equally important (Seligman et al., 2006). Yet, this review identified a greater number of studies applied components focusing on engagement, whilst fewer focused on pleasure, and even fewer focused on meaning. This finding calls into question how important each of these principles are in achieving the proposed outcomes. This deserves further attention in the literature.

More specifically, the review identified that several positive psychology components from positive psychotherapy were rarely or never applied. In terms of components promoting pleasure, this included interventions such as 'writing memories' and 'one door closes, one door opens'. These interventions are said to change the focus of negative emotions and transform them into more positive emotions (Seligman et al., 2006). However, the finding that they are rarely applied suggests they might be less acceptable, and perhaps less relevant to promoting the intervention outcomes than other interventions promoting pleasure, such as 'savouring' that was more frequently applied. It is also possible that researchers have chosen not to include intervention components like 'writing memories' and 'one door closes, one door opens' because they are associated with the tradition of therapeutic writing (Pennebaker & Beall, 1986).

The effectiveness of therapeutic writing for long-term health conditions has recently been called into question by a systematic review and narrative synthesis, which reported that the literature on such interventions is largely atheoretical and there is little evidence of effectiveness (Nyssen et al., 2016). However, this would not explain why the forgiveness letter was included in several studies, as it too is aligned with the therapeutic writing tradition. One possibility is that forgiveness is currently a popular topic, which has received increasing attention in the therapeutic literature, with some arguing that it is an important process and outcome for patients with a range of mental health concerns (Wade, Johnson, & Meyer, 2008). However, there has also been scepticism about the potential harm to clients who may have experienced abuse or trauma (Wade et al., 2008). There was some evidence from studies included in this review that caution is warranted as patients reported negative experiences with the forgiveness letter when it was delivered with minimal guidance (Huffman et al., 2014) and in a group setting (Brownell et al., 2015). Further investigation is warranted into how these components promote pleasure and whether they are necessary to include in a positive psychology intervention.

In terms of positive psychology components promoting engagement, there was one, 'positive introduction', that was rarely applied. It is possible that this intervention is less suitable for people with mental health conditions as research has indicated that some people with depression feel worse having done it, perhaps because it highlights the incongruence between the past that was positive, and a present difficult time (Joormann, Siemer, & Gotlib, 2007). However, the included studies did not cite this as a reason, and so it is not possible to convincingly state the acceptability of this particular intervention.

Finally, of the components promoting meaning, 'family strengths', 'satisficing plan', and 'gift of time' were never or rarely applied. It is possible that these interventions focus on components that are too difficult or complex for patients to address at a time when they are experiencing symptoms. Indeed, Riches et al., (2015) reported that the 'satisficing plan' was excluded for this reason. However, it is also possible that researchers could not find sufficient information in the research literature about these particular components, as Seligman et al., (2006) did not provide citations for them, described in section 1.5.3. The finding that half of the interventions from the

Seligman et al., (2006) model of positive psychotherapy are not put into place calls into question their importance and their relevance in achieving outcomes.

A second uncertainty to address is that, once it is clear how positive psychology components link to mechanisms, it is essential to identify whether it is only those interventions that can be used, or whether other conceptually similar interventions that appear to target similar principles are appropriate. One of the lesser used meaning-focused interventions 'gift of time', was rarely used, however other studies included similar 'kindness' interventions (Cohn et al., 2014; Huffman et al., 2014; Lambert D'raven et al., 2015). It is plausible that interventions where patients practice less time consuming pro-social tasks might operate by the same mechanism and still provide a connection with something greater than the self (Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006). However, future research needs to establish this.

Thirdly, there needs to be greater clarity around what constitutes a positive psychology intervention. As discussed in section 1.5.2 there remains much debate about the extent to which positive psychology includes conceptually similar approaches like mindfulness and acceptance therapy (Schueller et al., 2014), or whether positive psychology interventions are in fact distinct (Bolier, Haverman, et al., 2014). The included studies on this review highlight the issue with a lack of definition. The lack of clarity allows researchers to 'pick and mix' interventions with the result that studies included a range of components from a range of sources. Many of these could be conceptualised as promoting similar principles of pleasure, engagement, and meaning. However, the issue is then that interventions from positive psychology become somewhat indistinguishable from other approaches. This has implications for evaluation, as trials cannot be sure which intervention they are testing the effectiveness of. In future, researchers must consider designing studies that can isolate the effect of offering positive psychology, in comparison to other approaches.

The final uncertainty relates to the delivery of the intervention and how this affects the mechanisms. One could argue that the group positive psychotherapy model shows promise given that the most applied interventions constitute that. This is plausible and requires further investigation. It is possible that it is simply easier to apply a smaller number of interventions. However, a further issue is that the protocol

was adopted for varying contexts, including group therapy (Carr & Finnegan, 2014; Riches et al., 2016), and low-intensity app based intervention (Roepke et al., 2015). By definition without interpersonal contact the latter is not psychotherapy. Yet, one might expect that it has different mechanisms or moderating actors than individual, or group therapy. As such, any process model must account for the context in which the intervention will be delivered.

2.4.4 Implications for research and practice

The main implication and general recommendation for researchers is the need to map the process and outcomes of positive psychotherapy for varying modes of delivery. Such models must explain clearly the relationship between interventions and outcomes, as well as indicate how these can be substituted or integrated with other therapies. Following this process modelling, systematic research needs to explore how person features, intervention features, and person-intervention fit can affect applying positive psychotherapy. This may help to establish whether certain positive psychotherapy components are more feasible and acceptable for certain people in certain settings. Once an appropriate and acceptable model of positive psychotherapy is established, with a clear logic model, it can be rigorously tested in effectiveness trials. This will ensure good adherence during a trial and allow for the collection of rigorous, high quality evidence on its effectiveness. This recommendation is in line with the guidance for developing complex interventions (Craig et al., 2008). The main implication for practice is that positive psychotherapy, or positive interventions from it, can be used alongside existing therapeutic approaches such as behavioural activation, CBT, and third wave CBT. However, as the evidence does not yet firmly indicate effectiveness, the clinically utility remains uncertain.

2.4.5 Implications for thesis

This review suggests that in the proposed intervention it might be necessary to omit positive psychology components that could cause distress, or modify those that might be challenging. However, the review reported little data that could inform which components might be unsuitable in the context of a low-intensity online intervention for depression. This lack of data makes it difficult to select suitable components and develop the theory of the proposed intervention. The guiding frameworks for this thesis, as outlined in section 1.7, recommend eliciting stakeholder perspectives on

acceptability and potential challenges in delivering interventions to supplement theory development. Specifically, qualitative methods are recommended as a useful way to gather rich data on preferences. A qualitative study will therefore be used to elicit patient views on the suitability of and challenges associated with delivering positive psychology online.

3 Qualitative study on patient and clinician views of a proposed online positive psychology intervention

3.1 Rationale

In the previous chapters positive psychology components described in positive psychotherapy were introduced as potentially useful for the proposed online intervention. However, the limitations of this model were also highlighted, including the lack of a well-specified theory of the intervention, or subsequent variations of it. More specifically, the previous chapter suggested that it might be necessary to omit or modify components that could cause distress, or to accommodate challenges related to depression. However, the conclusion highlighted that there was little data available to inform how to apply and modify components of positive psychotherapy in the context of an online intervention for depression. The present study will therefore address what to include and what to change in order to inform the proposed intervention.

A second issue identified in previous chapters, was the limited data on the acceptability of components of positive psychology for people with depression, described in section 1.5.5. Some suggest that positive psychology interventions are particularly acceptable (Layous et al., 2011; Seligman et al., 2006). Others argue that the nature of depression might negatively influence this acceptability and suggest that people actually might find such interventions less appropriate and attractive (Kaczmarek et al., 2013; La Torre, 2007). However, there is little data available on acceptability that can conclusively inform the proposed intervention. Therefore, the present study will assess what patients and professionals consider acceptable, in terms of which positive psychology components are appropriate in order to design an attractive and satisfying online intervention using such components.

The notion of eliciting and addressing stakeholder perspectives on the content and design of an intervention is a key aspect of both of the guiding frameworks for developing interventions used in this thesis, as mentioned in section 1.7. Firstly, the MRC framework recommends collecting new evidence to supplement existing theories of how an intervention might operate in practice (Craig et al., 2008). Secondly, the person-based approach highlights that it is critical to elicit patient views on technology-based interventions, which are to be used independently, to

ensure they are designed to fit with patients' lives (Yardley et al., 2015). Consequently, the aim of the present chapter was to explore patient and clinician views on the acceptability of a proposed online intervention using components of positive psychology. The findings will be used to supplement the existing theories of positive psychology and to inform the development of a theoretically sound intervention.

3.1.1 Objectives

The aim of the study was to explore patient and clinician views on the acceptability of delivering positive psychology components from positive psychotherapy as an online intervention for depression. Specifically, the study aimed to address the second research question outlined at the outset of this thesis in section 1.8.1, 'What is the acceptability of this online intervention using positive psychology for depression?'

3.2 Methods

3.2.1 Design

The present study aimed to explore personal attitudes to a proposed intervention, therefore in-depth semi-structured interviews were deemed most appropriate. This method enables the discussion of particular areas, outlined in a topic guide, whilst enabling the interviewee to explore their thoughts and feelings (Yeo et al., 2014). This was particularly important given the lack of empirical evidence into patients' opinions and motivations for engaging with a positive psychological intervention. To ensure methodological rigour and transparency the present study is reported according to established guidelines, the Consolidated Criteria for Reporting Qualitative Studies (COREQ), developed by Tong and colleagues (2007). The study team included a second independent researcher Justina Kaselionyte (JK) and the candidates' supervisors (SP & ST) who assisted with the analysis. The possible influences of these researchers on the study conduct and analysis is provided in Table 3.1.

Table 3.1 Description of study team and influence on research

	Candidate SW	JK	SP	ST
Professional role and credentials	Health services researcher, BSc	Health services researcher, MSc	Psychiatrist, psychotherapist, researcher	Health services researcher and GP
Role in the research	Interviewer, lead analyst	Supported data analysis	PhD supervisor	PhD supervisor
Potential influence on interview conduct or analysis	Established relationships with interviewees Led on project developing an online positive psychological intervention Familiarity with positive psychology and eHealth literature	Familiarity with mental health services research literature	Familiarity with resource-oriented treatments and existing mental health service practice and literature	Familiarity with eHealth literature

3.2.2 Recruitment and sampling

Participants were recruited via adverts inviting them to discuss the design of a proposed online positive psychology intervention. These were placed in NHS and community treatment settings across East London, including in six General Practices, one university counselling service, and in two charity counselling services provided by

Mind. The adverts were also promoted via online social media including Twitter and Facebook. Patients could take part if they were aged 18-65, reported accessing treatment for depression and/or anxiety within the previous 12 months, and had capacity to consent. The exclusion criteria included patients having insufficient command of English to participate. This was necessary because the present project did not have sufficient resources to provide translation which would be required to avoid misinterpretation and maintain data quality (Temple, 1997). A secondary exclusion criterion was the diagnosis of bipolar disorder as there is a lack of evidence of the suitability of positive psychology in this patient group and a possibility that inducing positive mood might be problematic in the context of hypomania and/or mania (Wright, Lam, & Newsom-Davis, 2005).

Clinicians were recruited from the same General Practices as the patients and from adverts promoted online via social media including Twitter and Facebook. Clinicians were eligible to participate if they had experience of treating depression and/or anxiety of working age adults for at least 12 months.

To ensure that the data incorporated a range of experiences a primarily purposive sampling strategy was employed, whereby participants were selected according to their age, gender, and treatment setting (Ritchie, Lewis, Elam, Tennant, & Rahim, 2014). This was supplemented by snowballing techniques, as occasionally participants volunteered their contacts that met the eligibility criteria (Ritchie et al., 2014). As qualitative enquiry is flexible and pragmatic by nature it is typical for sampling strategies to overlap in this way (Marshall, 1996). Participants were selected and interviewed until data saturation was achieved, i.e. the candidate felt that additional interviews did not provide new ideas. This was achieved as transcription and familiarisation (described in section 3.2.4) was concurrent with data collection. However, it is acknowledged that the concept of saturation is contentious and therefore it is not possible to say with certainty that it was achieved (O'Reilly & Parker, 2013).

3.2.3 Study setting

In line with ethical research practice participants provided written informed consent following a full discussion of the information sheet. Participants then completed a brief demographic questionnaire detailing age, gender, first language, and personal

experience of website and app use, both in daily life and to manage their health, which is provided in Appendix 3.

A topic guide was developed in collaboration with the study team and was iteratively refined following piloting and early interviews (provided in Appendix 3). It was semi-structured and contained key questions and suggested probes. The areas to cover included:

- General views on the principles of positive psychology (e.g. focus on pleasure, engagement, and meaning)
- Specific views on positive psychology components used in positive psychotherapy summarised in Table 3.2
- General views of online interventions in mental health
- Specific views on the structure, features, and design of the proposed intervention

The same topics were explored for patients and clinicians, with the exception that clinician views on specific positive psychology exercises were not explored in depth to minimise the impact on professionals' time. The candidate conducted each interview in a private office or in the participants' home with only the interviewer and interviewee present and audio recorded each interview. Interview duration was on average one hour but ranged between 34 and 130 minutes. Patients received £20 remuneration for their participation.

Table 3.2 Positive psychology component descriptions provided to participants

Exercise name	Brief description
Positive introduction	Write about a time when they were at their best
Using signature strengths	Take online inventory of Character Strengths (VIA-IS) to identify top five strengths and plan to develop identified strengths to use more often in the next week
Blessings journal	For one week write three things that went well each day with a causal explanation
Writing memories	Write three bad memories and distress
Forgiveness letter	Write forgiveness letter to transform anger and bitterness to neutral or positive emotion
Gratitude letter	Write and personally deliver a letter to someone who has never been properly thanked for their kindness
Personal satisficing plan	Settling for 'good enough' compared to trying to find the 'best' option
One door closes/ one door opens	Write occasions where something important did not happen but other opportunities arose
Active Constructive Responding (ACR)	React in a visibly positive and enthusiastic way to others' good news at least once per day
Family strengths tree	Family members complete VIA-IS and discuss their common

	strengths
Savouring	Each day take time to enjoy something that is usually hurried. Afterwards write what you did, how and what was different
Gift of time	Use strengths in service of others

Research governance and ethics

Local research governance and national ethics approvals were received for the study (North West - Preston National Research Ethics Committee 15/NW/0349) and can be found in Appendix 3. Originally, approval was sought for focus groups with some individual interviews intended as supplementary, in the event that patients or clinicians could not practically attend focus groups. The rationale for using focus group methodology was to generate ideas, opinions, and strategies to inform the intervention design (Krueger & Casey, 2014). However, the study instead used individual interviews as a way to explore in detail personal views on preferences and contextual factors that might affect intervention delivery.

3.2.4 Analysis

Thematic analysis, as outlined by Virginia Braun and Victoria Clarke (2006), was selected for the analysis, as it is a flexible tool that can provide complex accounts of data. It enables researchers to integrate such data into higher-order themes in order to address research questions and theorise on broader meanings (Braun & Clarke, 2006). This was particularly suited to address the study aims of exploring perceived usefulness and acceptability of an online positive psychology intervention for depression, which has yet not been investigated, but could be used to inform the development of the proposed intervention.

A specific form of thematic analysis was used, following the guidelines of Braun and Clarke (2006, 2013) who advise a six-stage process. They also recommend that because thematic analysis can be used in both realist and constructionist paradigms researchers should be explicit about which theoretical approach is taken. In this study, as with the rest of the thesis, the analysis was conducted in a realist framework, that assumes experiences and meanings reflect participants' realities, and can be used to theorise motivations, rather than considering how participants' experiences are affected by and constructed within discourses in society. This was appropriate for the context in which the aim was to investigate motivations and interest in the acceptability of using positive psychology online.

Braun and Clarke (2006) also recommend that researchers state whether patterns within the data were identified in an inductive or deductive way. Inductive is a 'bottom up' approach in which the identified themes are strongly linked to the data, rather than the researchers pre-existing idea or coding frame. In contrast deductive is a 'top down' approach driven by a researcher's interest or based on a pre-existing theory or hypothesis, which analysts then use to interpret the data. Although these approaches sound distinct, in reality an entirely inductive approach is not possible as researchers bring their own ideas, thoughts about data collection, and knowledge of the literature to an analysis. Similarly, within a deductive approach where a researcher has a particular analytic interest, there is scope for identifying themes on the basis of the data. Braun and Clarke (2013) therefore acknowledge that inductive and deductive approaches can be combined within one analysis. The present study was driven by the candidate's analytic interest in the perceived usefulness and acceptability of an online positive psychology intervention for depression. A data-led, semantic approach was taken to identify, analyse, and report candidate themes.

The process of analysis followed Braun and Clarke's (2006) six-stage process including: familiarisation, coding, searching themes, reviewing themes, defining and naming themes, and writing up. However, the nature of the process was recursive, i.e. non-linear as described below. To achieve familiarisation the candidate reviewed the verbatim transcripts created by an external company alongside the audio file, whilst also checking for accuracy. The candidate then read and re-read the transcripts to become immersed in the data set and develop notes of things of interest in the data, also known as 'noticings', to inform the subsequent coding (Braun & Clarke, 2013). The process of familiarisation was conducted alongside ongoing data collection.

Following initial familiarisation complete coding was then conducted using NVivo software version 10 (QSR International Pty Ltd., 2012). This involved manually coding all data that were potentially relevant to the research questions, using words or brief phrases intended to capture the essence of a particular part of data. Codes were primarily data-derived, or semantic and summarised the explicit content of the data. The principle of inclusivity was used when coding, so that anything that the candidate was unsure about was coded. The coding was done systematically and chunks of data were coded with as many codes as were needed. Examples of codes can be found in Appendix 4. To ensure the consistency and credibility of coding, a

second researcher (JK) conducted credibility checks on 20% of coded interviews. The aim of this was not to calculate inter-rater reliability, as this would assume that coding can and should be objective, which is not the case in qualitative research (Braun & Clarke, 2013). Instead JK focused on verifying credibility and consistency in the application of codes (Morse, Barrett, Mayan, Olson, & Spiers, 2002).

As the assumption of pattern-based analysis such as thematic analysis is that ideas that recur across a dataset capture something psychologically or socially meaningful (Braun & Clarke, 2013) the next step involved identifying what was meaningful in the data and how this related to the research questions. This required an active process, in which the candidate examined the codes and made choices about how they related to one another. In some cases data were recoded to ensure consistency, thus demonstrating the recursive nature of the process. The candidate remained aware that whilst the frequency with which ideas appear can indicate importance, infrequent ideas can also meaningfully answer a research question. Codes were conceptually organised into broader subthemes and then clustered into overall candidate themes, which were initially named and summarised, and shared with the other study team members (JK, SP, and ST), and discussed with a patient advisory panel. An example of a candidate theme can be found in Appendix 4. The study team checked the coherence, distinctness, and credibility of themes and advised the candidate about refinements (Morse et al., 2002). The candidate then began a process of iterating and refining the themes, their names, and their definitions. This process ensured themes did not have too much variety, or too little data to support them, and involved collapsing some themes that were conceptually similar. The subsequent results section presents the narrative of the finalised themes, alongside interview excerpts.

3.3 Results

3.3.1 Sample characteristics

The final sample had 23 participants; eighteen patients and five clinicians. The patients had an average age of 38 years (range 20-65), were predominantly female (78%), and spoke English as their first language (89%). The majority of patients had received treatment for their depression (61%), although some had received treatment for depression and anxiety (22%), and others primarily for anxiety (17%). The clinicians included General Practitioners (n=2), low-intensity psychological therapists (n=2), and a clinical psychologist. On average, the clinicians were 37 years of age (range 30-49), were predominantly male (60%) and mostly reported English as their first language (60%). Across the whole sample, almost all participants owned a smartphone (96%), and most people reported using apps on a daily basis (87%). However, fewer reported using apps (30%) or websites (43%) for managing their health.

3.3.2 Overall framework

The candidate identified four themes that encapsulate patient and clinician views on the acceptability of the proposed intervention and factors affecting this. The themes and subthemes are provided in Table 3.3 and are summarised briefly here. The first theme focuses on the fit between the principles of positivity and the extent to which this fits the proposed context of a low-intensity online intervention. A further two themes consider the social aspects of the proposed intervention, in terms of ensuring the content of the intervention is balanced with respect to the digital and 'real' world, but also that professional support is considered alongside provision of the online intervention. The final theme identifies potential design features that might positively influence the acceptability of the proposed intervention.

Table 3.3 Overview of themes and subthemes

Theme	The fit positivity and context	Balancing the social	The role of support	Persuasive design
Subtheme	Value of a positive focus Ability to identify positives Feeling misunderstood A complementary approach Cultural fit	Connecting to overcome self-absorption Complexities in social relationships Technology: promoting isolation or connection?	Managing emotions Promoting independence vs. motivation Service capacity	Appeal and accessibility How much is expected Credibility Tailoring and targeting

3.3.3 The fit between positivity and context

A key theme was the perceived fit between positivity and context, which included a number of subthemes related to how participants valued a positive focus, their ability to identify positives, the extent to which they felt misunderstood by the approach, and its fit with their culture.

Value of a positive focus

This subtheme encompasses the notion that there is value in having a positive focus within the context of depression and anxiety. Participants discussed how such an approach might be helpful.

‘I think it could be really good because people are used to people focusing on their negatives so in terms of their lack of motivation or lack of energy but you’re kind of doing the opposite in a way [...] so I think actually it comes at it from a different angle which I think is really useful; ‘cos it’s not talking about what’s rubbish, it’s saying well, you know, you want...we want there to be good things that are positive for you and will pull you out of the depression so... I think it kind of works really.’(1402, IAPT therapist)

It is possible that a positive approach is valuable because it is different to what patients expect and it might redress a patients’ focus. Indeed patients described how a positive focus had helped them to overcome depression, by allowing them space to become more aware of positives, even when experiencing symptoms.

‘so I think what really helped me is to recognise the positives and have positive therapy to make me as I say identify and focus on those good things – not dispel all of this stuff that I was feeling and you know not ignore it and pretend it didn’t happen, but to look at the positive things’ (Patient, 0503)

Participants discussed how they felt exercises might work. When discussing the 'blessings journal' a participant identified the potential for a focus on positivity to counteract negativity:

'I think it's really easy to get in a negative spiral and just focus on that [...]. Like okay maybe one bad thing happened, but how many good things happened?' (Patient, 0201).

Similarly, when discussing 'using your strengths' participants felt it could address the common symptom of depression whereby patients stop doing things they enjoy, that make them feel good, and that they are good at.

'I think that, personally that ['using your strengths'] could be useful 'cos it's easy to forget those obvious points like yeah, what can I contribute, who am I and why and like what makes me feel good, sort of connect with... I like the idea of yeah, getting out of that insular sort of state of mind, and re-engaging. Re-engaging yeah, with positives. Yeah, that sounds good.' (Patient, 0501)

This subtheme encompasses the idea that although a positive focus might seem in contrast to how a patient is feeling, it may have value in addressing some common symptoms of depression and anxiety.

Ability to identify positives

Participants reported that an ability to identify positives might influence how acceptable they found the proposed intervention. There were several factors that participants felt influenced this ability. Firstly, participants recognised that personality might be important. How well positivity fits with a person's disposition or outlook on life might affect how acceptable they find the intervention.

'This sounds really awful but people that are negative in general, even when they are well, tend to have quite a negative outlook on things – those are the people that are at more of a risk I think of not responding well to this treatment because their general...some people's personality is negative.' (Patient, 0504).

Although personality was thought to affect one's overall attitude towards a positive psychology approach, participants acknowledged this was nuanced. They identified someone might enjoy certain exercises, whilst finding others challenging. When discussing 'active constructive responding' a participant commented:

'I guess [...] like certain ones for certain people obviously would be more difficult because of potentially how they interact with people and in their environment. And so for me that would be quite a difficult one to kind of do, if I wasn't feeling particularly good.' (Patient, 0506)

A second factor participants mentioned was the nature of depression itself, where the default negative thinking mode could limit one's ability to identify positives. Patients described not wanting to think about the positives and feeling that they were irrelevant and incongruent to their current context.

'When you're down automatically everything comes out negative. You're never gonna say alright, I'm negative and I want to think about positive things because the mind won't let it.' (Patient, 0401)

The final factor participants mentioned was that patients' circumstances were not always positive, thus limiting their ability to find positive moments.

'That probably was the lowest point in my life, I think I probably would have found it really hard, 'cos actually things weren't going well at that time – actually [...] I hadn't found a job, relationship was in pieces, like things were pretty strained with my parents [...] so I think it would be really hard [laughter] to like, like drawing blood out of stone...' (Patient, 0502).

This subtheme highlights the complex factors that can affect a patient's ability to identify positives in the context of depression and anxiety.

Feeling misunderstood

Another aspect of the fit between positivity and context was that participants described the potential for feeling misunderstood by a positive approach. Participants suggested that being offered a positive psychology intervention might result in patients feeling dismissed, belittled, and misunderstood and therefore unwilling to engage. Participants felt the approach was trite and compared it to common unhelpful responses to depression such as 'be happy', or 'what have you got to feel depressed about?'

'I know people that go, 'Oh there are people that just tell me to smile more' or you know, become more positive, so if somebody has got that kind of feeling about how they are feeling and they want some kind of you know, understanding of the way they are feeling then that might not be the, might not be good for them I suppose.' (IAPT therapist, 1404)

Participants described the feelings that could arise if they felt the approach was reframing their problems as less serious, or not worth exploring.

'I think the biggest kick in the teeth when you're feeling particularly depressed is when it almost feels like people are putting your feelings to one side and saying oh, shh, you know just stop it, whatever, feel good', (Patient, 0503).

'I mean that's...I think when you're suffering through a dark time, even the phrase positive thinking is enough to make you sick; it seems like you know a phrase with which people are refusing to understand you,' (Patient, 0901).

The figurative expressions 'kick in the teeth' and 'make you sick' exemplify the frustration that might occur at a time when patients are seeking, and expecting, support and validation. Participants considered whether there was potential for harm with the intervention. Opinions were divided. One view was that there was little potential for harm.

'I can't imagine that there is like a rebound or like um...what do you call it? That they react to it – there's a special word for it – when you get the opposite reaction to what you want to achieve in a way; I can't imagine that this is possible or is a problem. I would imagine that people maybe get annoyed and just switch it off.' (GP, 1501)

In contrast, another view was that there was a potential for harm if patients felt unable to complete the intervention.

'...what happens if you don't meet, you know your target? You know your target of, well let's say you know you have to come up with something positive every day, at the end of the day, what...what...you know it's gonna make > partly more depressed.../' (GP, 1401)

Another view was that there is potential for patients to feel worse after any therapeutic intervention and that a positive psychology approach might be less problematic than others.

'I don't think it would do as much damage as the reverse if that makes sense. Calling something positive is not gonna do as much as saying you know [...] this is a thinking error or a thinking bias or, you know you're behaving unhelpfully or these kind of things which is the terminology that's used at the moment. So I don't think it would have that adverse an effect.' (IAPT therapist, 1404)

The lack of consensus over whether there is potential for harm to arise, either as a result of feeling misunderstood, or of being unable to complete the intervention, indicates that people are likely to differ in their views on acceptability.

A complementary approach

Participants discussed that the proposed intervention might be most acceptable and useful if the patient's treatment context includes approaches that address their symptoms and problems. Participants discussed that the intervention might not be suitable as a sole approach, but that to meaningfully engage and benefit they might

need their symptoms to be addressed too. Partly, this related to the idea that a positive approach might not be suitable in the initial stages of depression when a person has yet to understand their depression and come to terms with what it means. Another aspect was related to the ability to engage psychologically when symptoms are present.

‘So I think it’s a good thing to start after they have gone through that first course because it takes like about 6 weeks for the antidepressants to actually kick in, and then they’re at the most [f.s.] they’ve got through the worst bit and they can start focusing on their minds then’ (Patient, 0504)

This quote illustrates the view that it might be most useful to begin the proposed intervention after other treatments have begun to take effect. However, it was acknowledged that this could create issues with getting the timing right.

‘You would have to be in a place where you are struggling enough to need it, but not struggling too much not to care, so that’s the difficulty’ (Patient, 0902)

It was therefore suggested that the proposed intervention could be introduced at the outset, when other treatments are prescribed. This could allow patients to think about working towards this, even if they do not currently feel capable of it. However, participants discussed what would happen if the intervention was accessible online without a healthcare professional referral.

‘Yeh so like links to depression because sometimes you need links to the illness as well because sometimes people might come here first’ (Patient, 0507)

Participants discussed that the intervention must manage patients’ expectations that it was a complementary treatment, and therefore include additional information about other treatments. Others felt that the proposed intervention itself should have a way to explore ‘negative feelings’, using mood-monitoring tools, or having a space to record behaviours they wished to avoid, such as self-harming.

Overall, this subtheme discussed how conceptualising the intervention as a complementary approach might facilitate its acceptability. It also covered several options for how to achieve this.

Cultural fit

The final aspect of the fit between positivity and context related to how well an approach developed in North America fits in the UK context. Although the pursuit of

happiness is enshrined in the constitution, in the United States Declaration of Independence, participants discussed how it is not the British 'way' and thus doubted the acceptability of this approach.

'A lot of the American terminology is [...] I could be wrong, but is construed by British people to be a bit over the top,' (Psychologist, 1403)

There was a sense that positivity might not be taken seriously in the UK. Further, participants felt that several terms including 'forgiveness letter', 'blessings journal', and 'gratitude letter' had religious connotations which may not be suitable for everyone.

'You just need to word it differently and yeah. 'Cos it sounds a bit kind of churchy and yeah, like happy-clappy yeah[laughs]. [...] you don't want to go down that route, it needs to be a completely non-religious thing that you're gonna do [...] you want people of all different faiths and people that haven't got faiths to be able to do it,' (Patient, 0504)

Participants also mentioned that whilst gratitude is celebrated in North America's national holiday, Thanksgiving, it was not perceived in the same way in the UK.

'I don't even like the word grateful because I'm like, well I am very grateful but I don't really need to be told to be grateful unless you're being like a spoilt brat – that's different. So I'm just a bit like wary of that word because [...] [its] very like 'this is the way' like gratitude, like that's what you should be feeling' (Patient, 0903)

This subtheme identified how language can differ between cultures and this might affect the acceptability and perceived usefulness of a positive psychology intervention.

3.3.4 Balancing the social

This theme indicated the importance of balancing the social aspects of an online positive psychology intervention to ensure the intervention is acceptable. It covers how participants felt the social aspects could help and hinder, and the role of technology in addressing these issues.

Connecting to overcome self-absorption

Participants recognised that self-absorption, i.e. thinking only of their own difficulties, was common in depression and anxiety and often led to isolation. They discussed how some of the positive psychology exercises, including 'gratitude letter' and 'active constructive responding' could help to address this. Participants described such activities could help to identify people who supported them, spread positive

news amongst their social network, and could strengthen their social relationships. As described by this participant when asked about the 'gratitude letter':

'If we do *do it* I think that makes the bonds stronger [...], the friendship becomes stronger and relationship becomes strong. You know because they know that you appreciate, you know,' (Patient, 0703)

Similarly, participants described the benefits of connecting with others in the 'gift of time' activity including improved mood, raising awareness of others' needs, developing a sense of purpose, and helping to get out of the house.

'I think that would be one of the best things that you can do, because I get such a buzz, I get such a buzz doing things for other people' (Patient, 0702)

These perceived benefits appeared to facilitate the acceptability of the proposed intervention.

Complexities in social relationships

Despite recognising potential benefits, participants discussed that complexities in social relationships and interactions could be a barrier, particularly when depressed or anxious. When asked about 'active constructive responding' participants described how difficult it can be to communicate when unwell.

'I might be thinking very positive myself, I may not come out like that. You know so if it comes out like you know very sort of [pause] blurry and [...], slow or it doesn't come out – my facial actions, my eye contact, stuff like that – if it's not connecting then maybe words doesn't make no difference.' (Patient, 0703)

Participants also identified that it might be problematic to take on the needs of others when unwell. This was particularly in the context of the 'gift of time' activity.

'The only thing that I am a bit hesitant or sceptical about is about the voluntary side of stuff – especially if you can't give too much time or effort because actually maybe you're actually in need of things yourself' (Patient, 0902).

Participants discussed which social relationships were most acceptable to focus on, and felt that activities involving family members (e.g. 'family strengths tree') were less likely to be started. This was due to complex dynamics and potential for conflict, which may even be linked with a patient's' depression. Instead, participants recommended promoting exercises with a broader social network.

‘Something that’s...that encourages an open, alternative form of relationship – it’s about fostering relationships. So ...and family is just one of those. And now you can have a family of friends, you know?’ (GP, 1401)

Another suggestion from participants was to avoid activities that could lead to a direct discussion of mental state (e.g. ‘family strengths tree’). Participants felt their mental health is a private matter, often misunderstood by others and so such discussions might prove too difficult.

This subtheme illustrates how important it is to balance the benefits of social activities with their potential demands.

Technology: promoting isolation or connection?

Participants view on whether technology promotes social isolation or social connection was identified as an important factor affecting acceptability and perceived usefulness of the proposed intervention. One view was that technology is inherently isolating, as it is separate from the social world, thus making it potentially unsuited to people already isolated due to depression.

‘Where depression may relate to isolation, I think technology is inherently isolating, so I think you’d probably meet some resistance on that front’ (Patient, 0901)

Although it was recognised that technology might enable people to access treatment without leaving the house, this was also viewed as reducing opportunities to meet others, to discuss feelings, and to take advantage of encounters in the social world.

Counter to this view, there was an opinion that technology can complement real-life social interaction and might promote awareness of one’s social networks and sense of connectedness.

‘We’re not saying it’s the be-all and end-all, but [it] definitely has a place to get people understanding information or you know ideas. And it...one of the ideas could be this outside-in approach that’s on the app, so they know that it’s not just about the phone, it’s about doing things for friends and family’ (Psychological therapist, 1402)

Participants discussed that although online social networking features could be incorporated into the intervention, it might be better to promote real-world connections. This could include recommending speaking to family or friends and including a directory of local services. This was due to the complexity with patients being able to contact each other and share resources.

'If you want to speak to other people that are going through something similar, it'd be good to have that option but then I suppose on the negative side of that do you really want lots of negative people talking to other negative people, because it could end up putting you in a downward spiral.' (Patient, 0704)

Participants' comments indicated that despite potential benefits of online support networks, there are potential risks that could undermine the intervention aim. However, participants felt social connectedness could be fostered through indirect contact with other users, e.g. sharing positive resources or progress updates.

This subtheme suggests various ways to leverage social connections within the proposed intervention to overcome potential isolation and balance social aspects of the intervention.

3.3.5 The role of support

Although the proposed intervention was described as low-intensity, an important theme identified in the data was in relation to the role of support. Participants suggested that therapeutic support could be necessary to manage emotions and promote motivation. However, patients acknowledged that an unsupported intervention could promote independence. Further, there might not be service capacity to provide support. These subthemes are discussed in more detail below.

Managing emotions

Participants identified that a key function of therapeutic support would be to help manage emotions and difficulties arising from depression or anxiety, by allowing these to be explored in a safe space. Such empathy and respect was described as validating, whereas an intervention that failed to provide that personal support was viewed as potentially dismissive.

'Yeah I mean I think the word app is also almost incompatible with depression - I think it's another thing...it's another word that's kind of revolting in the context of depression; depression plus app. Anything that feels impersonal can be harmful. So for example when I was in a very dark time some years ago I called the Samaritans and I ended up wishing I hadn't, because their responses were so formulaic and came off a, you know, I think a sheet of phrases, that I might as well have been talking to voicemail. And it felt so impersonal, it was just kind of insulting and degrading'. (Patient, 0901)

A second aspect that participants were concerned about was how to manage emotions that might arise as a result of certain exercises. This included 'writing

memories', 'forgiveness letter', and 'one door closes, one door opens', as participants felt that exploring past occasions could provoke difficult emotions.

'when all these emotions come out who's gonna help me deal with 'em? The app cannot give you the answers can it? [...]How would the app say to you oh this is that, oh it wasn't your fault or this shouldn't have happened, or it's not that bad or like it has happened but you've gotta put it in the past – an app can't tell you that. That could be quite, that could be good and it could be very bad; that could trigger something off couldn't it?' (Patient, 0101)

This subtheme identifies that participants had concerns about the potentially negative effects of not including supportive interactions within the proposed intervention.

Promoting motivation vs. independence

Participants identified that therapeutic support could promote motivation to engage with the intervention. This was because the supporter could explain how to use it, check progress, and provide encouragement.

'Yeah, 'cos I'm a terrible sort of procrastinator or whatever – I can put anything off, unless other people are involved and then, if you're accountable then you do it.' (Patient, 0501)

Participants discussed that a supporter could be formal, e.g. a healthcare professional or informal, e.g. a family member or friend. However, participants acknowledged that patient privacy and the burden on the supporter would need to be balanced.

A further issue with the notion of a supporter was the view that it could limit patients' autonomy and development of self-management strategies. It was felt that some patients might come to rely on the supporter, and develop the belief that they need this support to get better. It would also change the proposed nature of the intervention considerably.

'You know what if they give up then that's their choice isn't it? But I think if you say...and I check this [taps the table repeatedly] and you'd better do it because I will check it, then it's not self-help anymore' (GP, 1501)

Evidently, although it may help to provide support, and may increase the chances that the intervention will be used, this must be balanced with the aim of the intervention which is to promote autonomy and personal development of positive strategies.

Service capacity

Although participants recognised that therapeutic support may promote engagement and serve patients' emotional needs, they questioned service capacity to provide this. Participants described a current lack of resources across a range of services that limits their ability to provide follow-ups.

‘And I think it needs support and I think this is where.... this is what is lacking in GP surgeries and all over the country, is the support. The support network, befriending network – like people like Mind who, you know do a fantastic job.’
(Patient, 0505)

This recognises that often non-statutory services are called upon to provide support, where this is lacking in the NHS. Participants did indicate willingness to receive remote support, e.g. via phone or email. However, they recognised that this still comes with implications for services. This issue of providing support requires careful consideration to address patient concerns, whilst ensuring the intervention is not under-resourced.

3.3.6 Persuasive design

The final theme describes how the proposed intervention could be persuasively designed to optimise take up and adherence. Participants described various factors that would be important; including appeal and accessibility, managing expectations of patient input, ensuring credibility, and tailoring and targeting. Each factor is addressed in turn.

Appeal and accessibility

Participants described that appeal and accessibility could be achieved if the information was presented in an engaging way.

‘Presented in a [...] way where it’s softer round the edges [...] so it looks a bit more like an app that you’d wanna kind of play with, but it’s actually helping as well, rather than being something that’s like medical and psychologically necessarily termed.’ (Psychological therapist, 1404)

This indicates how language, layout, and interactivity could facilitate engagement. In terms of language, participants wanted it to be accessible and recommended clear, simple explanations rather than complicated terms.

‘And I think it needs to be in a language which is very understandable, so I’m not one of these down on East End people, I’m an East Ender myself, and I had no education at school. A lot of people won’t always understand big long words; I’m not a big word person. You know seven or eight letters, that’s

about enough for me; it's like if you have all these big, long fancy words – you've lost me you'd lose a lot of people. So it needs to be in words people can understand, in laymen's terms' (Patient, 0505)

Participants also hoped the tool would be interactive and make use of digital features, e.g. touch screen technology and multimedia videos or audios. They suggested that the tool should not simply present text and ask them to input text. Yet, it should be simple to use.

'Maybe not necessarily how it looks but how you actually use it would be quite important to me. I often notice things in apps that like are a bit 'buggy' or actually that's a bit of a pain to do.' (Patient, 0201)

Good design therefore includes careful consideration of how patients navigate through the interface and exercises. It also includes the visual elements of the intervention, which participants felt should avoid a contrived, traditional 'self-help' feel that uses out-dated imagery and graphics. Instead, they wanted the intervention to give a positive appealing impression, to facilitate their engagement with the intervention.

How much is expected

Participants discussed that an important factor affecting whether the proposed intervention seemed acceptable and useful was how effortful and time consuming it seemed. There was a preference for positive psychology exercises that needed lower input as participants did not feel that a website was suited to writing a lot of information. Further, participants seemed to feel a low-intensity digital intervention was less suited to exercises requiring more emotional effort.

'I guess if you're doing it [forgiveness letter] in the sense of an app I wouldn't...like things which is like questionnaires and you know write three things positive about yourself and all that, like I think that sounds all good, because it's like much more surface level, whereas a letter is much more, you know it's getting to the nitty-gritty. So I probably wouldn't...yeah I'd probably just skip over.' (Patient, 0903)

An important aspect related to expected effort was ensuring that the exercises were designed to be as easy as possible to complete. Rather than writing a 'gratitude letter', patients described the possibility of sending a thank you text. Similarly, patients described how 'blessings journal' could be completed mentally, i.e. thinking of the good things, rather than keeping notes. When discussing potential options for adapting 'using your strengths' it was felt the questionnaire should be as short as possible and easy to rate.

'I prefer clicking on five it's just I think it takes up more energy to go through each one and rate it. If I think there were maybe ten and we could rate it that'd be fine but to do 24 and rate it would feel like a long quiz' (Patient, 0102)

The final aspect related to perceived expectation of effort related to the overall presentation of the exercises within the intervention. Participants discussed the relative benefits of presenting all content from the outset, versus presenting minimal content and sequentially releasing new content on a fixed schedule.

'I think you should have more than one because I think people lose interest quickly if it's just one thing I think.' (Patient, 0101)

'I wouldn't wanna be bombarded, because one a day is quite good, one at a time, and then you go on to a next level. Whereas if it's all at once you don't know what's hitting you and you can get bored with that, and you give up, 'cos it's too much – overwhelming.' (Patient, 0701).

The preferences for this differed, yet this subtheme illustrates the importance of ensuring patients do not feel that too much is expected of them.

Credibility

The credibility of an intervention, i.e. how trustworthy and reliable it seems, was deemed important in affecting acceptability. Participants had varying suggestions of how credibility could be achieved, including use of NHS branding.

'It makes sense [to have the NHS logo] because then I think people trust this app more than when it's just a commercial thing. Yeah, it's like you know when they look on the Internet for advice, they always trust 'NHS Choices' or the NHS website more than any other website.' (GP, 1501).

Another view was that credibility could be achieved based on recommendations from a trusted source.

'So somebody's opinion that you trust whether that's a person in position of authority or a person that you know has been through similar things.' (Patient, 0506).

Participants also discussed that an impression of credibility can be facilitated if intervention content includes appropriate advice, reflects patient perspectives, and if the technology works reliably.

Tailoring and targeting

Participants recommended that the intervention could be tailored and targeted to make it more acceptable and useful. Although patients felt that general reminders

could be sent to address the fact that people might forget about the intervention, it was felt that these might have more impact if they were tailored.

‘I think it’s gonna be hard to rely on somebody to log back in and look at the good things that they’ve said about themselves that day [...] so it’d be good to have something to come up and say look, this is what you’ve said about yourself in the week – just to make you feel good.’ (Patient, 0704)

This exemplifies the view that tailored reminders could provide positive reinforcement for patients to continue, with the potential to make an intervention self-propelling, rather than reliant on a third-party for encouragement.

Another possibility participants recommended for tailoring the content was progress tracking as it allows people to quickly visually check their personal progress, e.g. in the intervention itself, or towards a particular goal, and may promote motivation to continue.

Participants suggested that targeted examples of how to apply the intervention content were more likely to have impact than generic tips.

‘Cos that was something about 'Beating the Blues', that some of the examples are quite specific and they were quite difficult to relate to if you weren't whatever, 44, you were an old man or whatever it was.’ (Clinical Psychologist, 1403)

This hints that intervention content could be tailored according to patient demographics (e.g. age, gender, and living situation) and depression symptoms.

Tailoring could also be utilised to provide patients with new content relevant to their interest and needs.

‘You know there’s an algorithm that goes right they’re thinking about that thing so that kind of unlocks a different element about it [...] you know if they are engaged in doing this exercise then having loads more unlock levels of that thing I suppose.’ (Psychological therapist, 1404)

This subtheme illustrates the many ways to use tailoring and targeting to facilitate acceptability and helpfulness of the proposed intervention.

3.4 Discussion

3.4.1 Main findings

The present study findings indicate that an online intervention using positive psychology for depression might be acceptable and useful for some, yet numerous factors affect this. A critical factor is the perceived fit between the positive psychological approach and the context, which is multifaceted. It includes the extent to which patients value a positive focus, their ability to identify positives, the extent to which they feel misunderstood by the approach, whether it complements other treatments, and how well it culturally fits. Other important factors identified include balancing the social aspects of the intervention to encourage use, whilst being flexible to allow patient choice and promote connections in the real world. The role of support was considered as a way to make the intervention more helpful. However, it was acknowledged that this might limit a person's capacity to autonomously develop these strategies, and further was impractical given limited service capacity. The final finding related to persuasively designing the intervention to promote its acceptability and usefulness, which included ensuring appeal and accessibility, limiting the amount of effort required, ensuring credibility, and tailoring and targeting content to patient interests.

3.4.2 Strengths and limitations

A key strength of this study is that, to the candidate's knowledge, it is the first to qualitatively explore patient and clinician views on the acceptability and helpfulness of an online intervention using positive psychology for depression and anxiety. The fact the study used a qualitative approach enabled the generation of nuanced findings that can help, not only to design the proposed intervention, but in the wider understanding of potentially relevant factors affecting acceptability of positive psychology in the treatment of common mental health conditions. This is critical given the wide interest in using positive psychology online for clinical and related populations (Bolier, Haverman, Kramer, et al., 2013; Bolier & Abello, 2014; Roepke et al., 2015). Despite this strength, the study nevertheless has some limitations.

The first relates to the sample. Although attempts were made to maximise the diversity of participants using purposive sampling, it was not possible to construct a sampling frame from which to select participants as recommended (Ritchie et al., 2014). Instead participants were recruited via adverts and were self-selected. This self-

selection means that participants might not represent the views of those less interested in an online positive psychology intervention. It was not possible to create a sampling frame, for instance based on GP surgery records, because the candidate did not ethically have the permission to access patient records without consent. Further, it was not possible to negotiate this with recruitment sites, as it created an administrative burden that the present study did not have the resources to mitigate. This is not a critical limitation because, in practice, low-intensity interventions are likely to be accessed by self-selected help seekers. However, it is important to be aware the study might not have identified all relevant factors affecting the acceptability and perceived helpfulness in a sample of motivated participants.

A second limitation is the possible influence of the candidate, who was the interviewer and lead analyst. All participants were aware of the candidates' intention to use the data to inform the development of an online positive psychology intervention. Consequently, social desirability bias may have resulted in an under-reporting of issues around acceptability, or of possible barriers to the helpfulness of the intervention. To redress the influence of the candidate, the analysis was conducted within a multidisciplinary team, whose contributions and possible influences are made explicit in Table 3.1. Further, excerpts have been provided to support the analysis.

The final limitation of the study is that participants were discussing a proposed design and therefore the results present what people imagine will be important and relevant. It is possible this might differ from what is important in practice. However, this limitation is relevant to all investigations of proposed interventions for digital health, yet the method is still deemed critical to investigate prior to designing digital tools (Yardley et al., 2015). This limitation should be considered in context, as the method sits within the wider evaluation and iteration of interventions prior to effectiveness studies. Consequently, the present study has gained useful information at this stage, as will later evaluations of the intervention.

3.4.3 Comparison with the literature

The present results could be considered in light of the positive-activity model, proposed by Lyubomirsky and Layous (2013) that suggests the success of a positive psychology intervention is likely to depend on the fit between person and intervention characteristics. As mentioned in section 1.5.1, this model generally

focuses on the factors that determine effectiveness. However, researchers have also considered the role of motivation and expectancy amongst people with depression in initiating positive psychology interventions (Kaczmarek et al., 2013; Mongrain & Anselmo-Matthews, 2012; Sin et al., 2011). They have also considered how the focus or target of an intervention might affect whether people with depression engage with it (Parks & Biswas-Diener, 2013; Parks et al., 2012). To date, such research has not been conclusive and the present findings could inform further avenues for exploration.

Firstly, the current findings contradict researchers who have argued that expectancy and motivation for positive psychology intervention might be higher amongst people with depression, and that these interventions have fewer barriers to access than traditional deficit-oriented interventions (Layous et al., 2011). Whilst the current study did find evidence that people with depression might value a positive approach, it also suggested that there are specific barriers for people with depression, including their ability to identify positives and the potential for feeling misunderstood by the approach. This supports research which suggests a focus on positives might be unhelpful for those who want to explore difficult emotions (La Torre, 2007; Moskowitz et al., 2012). However, positive psychologists have been sensitive to the criticism that a 'positive' approach fails to account for other, 'negative' emotions and have argued that they do validate and explore negative feelings (Parks, Schueller, & Tasimi, 2013; Rashid & Seligman, 2014). Yet, it must be acknowledged that the context is likely to be different in a low-intensity online intervention compared with supported therapies. Unlike in a therapeutic environment, where a therapist can validate patient emotions and prioritise the positive, this might be more difficult to achieve online without therapist interaction. This was particularly highlighted by the present findings, as some interventions were deemed unsuitable without facilitation (e.g. 'writing memories', 'forgiveness letter'). These findings supports research by Huffman et al., (2014) who found that the 'forgiveness letter' was difficult for patients with severe depression to complete and generated negative feelings as they recalled a past event. Further research is required to investigate how to present positive psychology online so that it does not appear dismissive of patients' symptoms and has minimal potential to cause harm.

The current study supports research which suggests that the target and focus of positive psychology components might affect their acceptability amongst people with

depression (Parks & Biswas-Diener, 2013; Parks et al., 2012). Researchers previously suggested that where activities require deep engrossment, such as ‘using your strengths’, this might be difficult for people with depression (Parks et al., 2012). The current findings support this notion as patients reported that activities that were effortful or time consuming were less acceptable. However, this did not seem to be related to ‘using your strengths’ per se, rather components such as ‘the forgiveness letter’ were felt to be emotionally effortful. Other writing based components, such as ‘gratitude letter’ or ‘blessings journal’ were seen as requiring practical effort. Previously researchers have suggested that exercises that focus on the narratives of a person’s life might be more suitable with people who are high functioning rather than currently depressed (Parks & Biswas-Diener, 2013). This might explain why these activities appeared less acceptable to the participants in this study. However, the perceived acceptability of such components could also be related to their experiences of technology. Evidence suggests that people are used to accessing the Internet ‘on the go’ using a mobile phone or smartphone (Prescott, 2017), which would be a less suitable context for engaging in a reflective, written positive psychology component.

The authors of the positive activity model have suggested that activities that are socially oriented might be more suitable for people who are isolated, whilst reflective cognitive activities, e.g. ‘blessings journal’, might suit those experiencing stress (Lyubomirsky & Layous, 2013). However, this has yet to be investigated in the context of depression. The present research does however support the notion that socially-oriented activities are likely to be acceptable to people who are isolated, as patients identified that the ‘gratitude letter’ and ‘active constructive responding’ could help to address the isolation common in depression. Nevertheless, the present findings suggest that there are complexities with involving social networks, including the difficulty in being asked to give the ‘gift of time’ when unwell, or to engage with family members for the ‘family strengths tree’, as there may be complex dynamics. Previous research has mentioned that another challenge with using socially oriented interventions is to ensure participants feel supported, without being overwhelmed, and whilst maintaining their sense of autonomy (Layous & Lyubomirsky, 2014).

This notion of balancing being connected to others whilst maintaining autonomy has also been discussed in the literature on patient experiences of online psychological interventions for depression (Knowles et al., 2014). Researchers have mentioned the

importance of using technological features that allow participants to feel connected to each other and so less alone in a low-intensity intervention, whilst maintaining their privacy. Future research should investigate whether it is possible to balance both the social aspects of the positive psychology components and of technology to enable patients to benefit whilst maintaining their autonomy and choice. The following paragraphs compare the current findings to broader literature on positive psychology.

Previous research has suggested that a positive psychology intervention might be most useful for people who are not benefitting from, or accessing, traditional treatments (Layous et al., 2011). Indeed, the premise of the present thesis is that novel interventions are required to address the treatment gap, i.e. those who are without access to appropriate treatments. However, the present findings in fact indicate that positive psychology might be more acceptable to people with depression if delivered alongside another treatment that is addressing symptoms. This has implications for future research. Firstly, in terms of theory there must be further research to clarify conceptually how the models operate and the value of integration. Some research on integrating CBT and positive psychotherapy has begun (e.g. Bannink 2014, Carr and Finnegan 2014). However, this must explicitly address the hypothesised mechanisms of the intervention. Secondly, the implication is that future trials must compare this new combination of complementary therapies with a suitable comparator that controls for the effect of any additional time and attention received. This is in contrast to existing trials, which have focused on positive psychotherapy compared to CBT (Asgharipoor et al., 2012).

To date researchers have suggested that a benefit of delivering positive psychology interventions online to address the treatment gap is that it does not require therapist time or resources to deliver (Bolier & Abello, 2014). However, the present findings in fact suggest that the use of support might facilitate the acceptability of positive psychology online. The literature does suggest that online interventions including some form of therapeutic support have greater adherence and effectiveness than entirely unsupported interventions (Richards & Richardson, 2012). Yet, it is currently unclear what type or level of support can be employed to maximise engagement and outcomes, and new models are being developed to guide researchers (Schueller, Tomasino, & Mohr, 2017). However, this thesis aims to use positive psychology as a

low-intensity intervention given the resource issues outlined at the outset of the thesis, in section 1.2, that were also highlighted in the present findings.

The current study identified that intervention acceptability might be affected by the cultural context. This supports previous researchers who found that when Asian-American students delivered gratitude letters to their parents, this was sometimes perceived by the recipients as suspicious or insulting (Parks & Biswas-Diener, 2013). Researchers theorised that where cultural norms are based on avoiding attracting attention, such activities might be uncomfortable for participants (Parks & Biswas-Diener, 2013). However, to date most research has focused on comparing the efficacy of interventions in different cultures, rather than on tailoring and adapting interventions to the cultural context (Layous & Lyubomirsky, 2014). In future, researchers could clarify acceptability of interventions in order to inform tailoring. For instance, the present findings highlight that it is likely to be necessary to adopt non-religious names to facilitate acceptability of the proposed intervention in the present context. It is possible that in other contexts different adaptations will be necessary and these should be documented in the literature.

In terms of the design of the intervention, the current findings support literature which suggests that using persuasive design is likely to facilitate its acceptability and perceived helpfulness (Kelders et al., 2012; Oinas-Kukkonen & Harjumaa, 2009). Participants suggested similar strategies that would support and persuade them to use the intervention that other researchers have recommended, including creating an intervention that was accessible, used plain English, and was easy and appealing to use (Yardley et al., 2015). Participants discussed the importance of credibility, which has previously been identified as important in convincing people to make use of technology (Oinas-Kukkonen & Harjumaa, 2009). It was suggested this might be achieved via the use of the NHS branding. However, there has recently been some controversy over a library of apps that was collated by the NHS due to limited security settings of the apps recommended which put patient data at risk (Huckvale, Prieto, Tilney, Benghozi, & Car, 2015). It is therefore not only important to consider the branding, but that the intervention itself is credible and addresses such issues.

The current study did not have conclusive findings on how to present the content of the intervention. On the one hand, participants supported the idea that tunnelling, in which people are lead sequentially through intervention content, usually, in a defined

order, can promote engagement (Oinas-Kukkonen & Harjuma, 2009). This is often the reason why it is used in mental health interventions (Kelders et al., 2012) and positive psychology interventions delivered online (Schueller & Parks, 2012). However, the findings also indicated that participants could perceive this as too restrictive and could lead to disengagement. This supports researchers who have allowed people to choose their positive psychology components more flexibly (Bolier, Haverman, Kramer, et al., 2013; Parks et al., 2012). Future research ought to investigate the relative advantages and perhaps compare the acceptability of each approach to presenting intervention content.

3.5 Implications for research and practice

This study produced novel insights into potential factors affecting the acceptability and usefulness of an online positive psychology intervention for depression and anxiety. The findings indicate several potential areas for future research; including how best to present positive psychology exercises online so that they do not appear dismissive of patients symptoms, how to adapt interventions to different cultural contexts, how best to use positive psychology interventions to complement other treatments, and how to use principles of persuasive design to inform the design of online interventions. In practice, the current findings have indicated the potential for online positive psychology to complement current treatments. However, how this will be integrated with existing interventions and how it might complement their effectiveness is yet to be explored.

3.6 Implications for thesis

This study suggests that it will be important to develop an intervention that promotes a good fit between positivity and depression. This is likely to involve omitting positive psychology components that could cause distress in the context of an unsupported intervention. The intervention will need to be explicit about how included components are relevant to patients' depression and help patients to identify positives, whilst minimising the potential for harm. Intervention components may also need to be modified to be culturally appropriate to the UK rather than the USA, as well as suited to the context of online delivery. The intervention, and its components, should promote a sense of social connectedness, whilst maintaining patient choice and autonomy. It will also be important that the intervention is designed in a way that is appealing and credible. The guiding frameworks for this

thesis, outlined in section 1.7, recommend that once there is a clear idea of potentially acceptable intervention components and contextual factors influencing intervention mechanisms and delivery, these should be conceptually mapped. This allows the intervention to then be operationalised. The process of intervention development will therefore focus on developing the conceptual model of the intervention to be operationalised.

4 Intervention development

4.1 Rationale

This chapter describes the process of developing a theoretically sound intervention using principles of positive psychology. It addresses the widespread problem that intervention development is a critical but elusive stage in the research process, in which it is rarely clear how decisions are made, or how relevant stakeholders have been involved (Hoddinott, 2015). It also addresses the specific problem in positive psychology research, discussed in sections 1.5.3 and 2.4.4, that the developers of positive psychology interventions, and those who have subsequently investigated them, have not adequately specified how selected intervention components influence hypothesised mechanisms and outcomes.

The process of developing the intervention involved two aspects: development of the conceptual model and its operationalisation online. The methods and results of each of these stages are reported separately in this chapter. Firstly, the development of the conceptual model followed the recommendations of the two guiding frameworks for this thesis, the MRC framework and the person-based approach, which were outlined in detail in section 1.7. Both frameworks specify the importance of illustrating the theoretical processes that are expected within an intervention and its context. Secondly, the online operationalisation involved experts and methods, such as think-aloud usability testing, to optimise the intervention procedures and materials. Figure 4.1 briefly illustrates the methods involved in the two stages of intervention development.

4.1.1 Objectives

The aim of this chapter was to develop the conceptual model of the proposed intervention and to operationalise this into an online intervention.

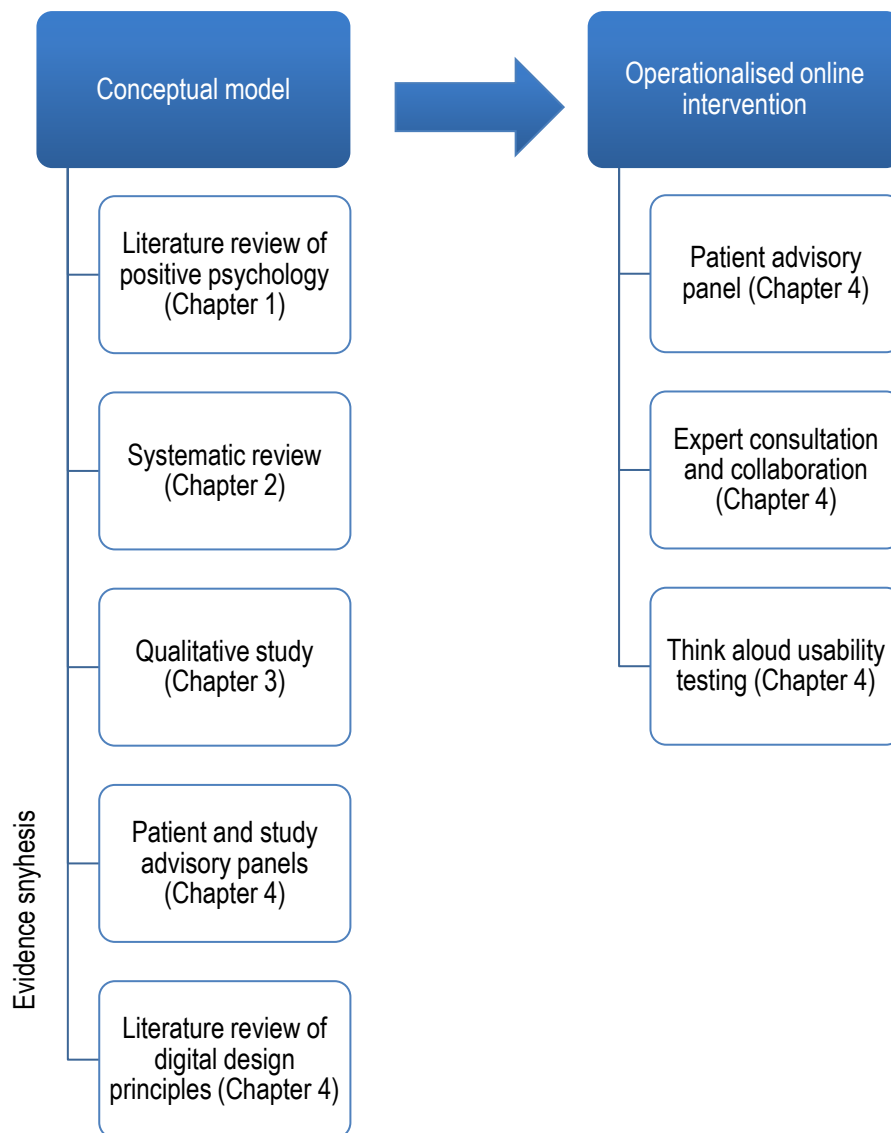


Figure 4.1 Methods informing development of conceptual model and operationalised intervention

4.2 Methods informing the conceptual model

This methods section first describes how suitable positive psychology components were selected and then how the guiding principles of the intervention were created. Guiding principles consist of two elements; intervention design objectives and key features that operationalise these objectives. The selected positive psychology components and guiding principles inform the conceptual model of the intervention. These were based on a synthesis of evidence derived from various sources, including literature reviews, a systematic review, a qualitative study, and patient and study advisory panels. Table 4.1 outlines how the MRC framework and the person-based approach informed the methods.

The processes include methods that have been previously reported in this thesis, therefore a brief summary is provided and the reader is directed to the corresponding thesis section. Further, the processes are described as linear, in which each method and its findings contributed to the subsequent one. However, in practice, as is typical, some methods occurred concurrently and there were iterations within the process. As far as possible these are described where they occurred.

Table 4.1 Methods and activities used to develop conceptual model of intervention informed by MRC and person-based frameworks

Aim	MRC recommendations	Person-based approach recommendations	Methods and activities used and where reported in detail
Identify the evidence base	Examine relevant evidence from previous trials preferably via systematic review		Literature review of positive psychology (Chapter 1), Systematic review (Chapter 2)
Identify and develop theory of intervention	Examine relevant theory		Systematic review (Chapter 2)
	Supplement with primary research with stakeholders (those targeted by or delivering intervention)		Qualitative study (Chapter 3)
Identify key behavioural issues, needs, and challenges	Consult with experts and stakeholders		Patient and study advisory panels (Chapter 4)
		Conduct primary qualitative research to elicit user views on planned behaviour changes including previous experiences, barriers, and facilitators	Qualitative study (Chapter 3)
Create guiding principles		Create guiding principles comprising design objectives to address behavioural challenges and distinctive features to address objectives	Literature review of digital design principles (Chapter 4) Evidence synthesis (Chapter 4)
Model process and outcomes	Graphically represent, e.g. flowchart or diagram illustrating hypothesised mechanisms of action and context		Evidence synthesis (Chapter 4)

4.2.1 Process of selecting suitable positive psychology components

The following section describes how each method contributed to the process of selecting suitable positive psychology components for the conceptual model.

Literature review (Chapter 1)

In the background chapter of this thesis, in section 1.5.2, the literature describing positive psychology components used in positive psychotherapy was checked to identify the extent to which components were based on existing theory and/or empirical evidence. The results were used to select intervention components that had some theoretical basis or evidence base.

Systematic review (Chapter 2)

To further examine relevant evidence and theory for the proposed intervention, a systematic review was used to identify which components of positive psychology, specifically those used in positive psychotherapy, have been applied in mental healthcare and how these have been modified. The full methodology of this was reported in section 2.2. The results were used to indicate which components might be usefully applied in the current intervention.

Qualitative study (Chapter 3)

In order to develop the theory of the intervention and identify key issues and challenges with delivering it, a qualitative study was conducted. The full methodology of this was reported in section 3.2. The results were used to indicate which components would be appropriate to deliver online and used to inform how these would be modified.

Patient advisory panel

A patient advisory panel was established to supplement the identification of key behavioural issues and challenges with delivering the proposed intervention. The panel consisted of four people with lived experience of anxiety and depression and related mental health conditions that applied for the role, which was advertised within local services and patient participation networks. Patients were selected on the basis of demonstrating interest in the project and having relevant experience. The panel was conducted in line with good practice guidelines (National Institute for Health Research, 2009). The panel met six times between June 2015 and February 2016 for meetings lasting between one hour and one hour and a half, chaired by the

candidate. The meeting agendas are provided in Appendix 5. Meetings involved discussions based on written materials or presentations. Patient advisors were reimbursed for their time in line with the local Trust policy. In the initial stages, meetings one and two, the panel advised on the suitability of positive psychology components described in positive psychotherapy and identified factors that might help or hinder their use in patients with depression. This helped inform the choice of suitable components for the intervention. The focus of later meetings is discussed in sections 4.2.2 and 4.4.1.

Study advisory panel

Weekly meetings with the primary supervisor (SP) and monthly meetings with the secondary supervisor (ST) were used to discuss the process of intervention development and selection of suitable positive psychology components. The progress of intervention development was also discussed with the wider multidisciplinary team at the Unit for Social and Community Psychiatry, including PhD students, research psychologists, therapists, and psychiatrists. Such discussions rarely raised controversies about how the intervention should progress and the components it should include.

Evidence synthesis to decide intervention components

The findings of the aforementioned methods were synthesised to identify the most suitable components for inclusion in the intervention. Selection was on the basis of interventions that were based on theory and/or evidence, were consistent with the principles of pleasure, engagement, and meaning, were previously applied in studies included in the systematic review, and were potentially acceptable in the context of a low-intensity online intervention (e.g. had few barriers, or could be modified). Conversely, positive psychology components that were excluded were those that were based on limited theory or evidence, were rarely applied in studies included in the systematic review, and were likely to be unacceptable, or even harmful, in the proposed context.

4.2.2 Process of developing guiding principles

The following section describes the methods that informed the development of the guiding principles of the intervention. As explained in section 1.7.2, and summarised in Table 4.1, guiding principles aim to address the contextual challenges likely to

affect intervention delivery. They consist of two aspects; the design objectives and the key features of the intervention used to operationalise these.

Qualitative study (Chapter 3)

As mentioned in the previous section, an important finding of the qualitative study, reported in detail in section 3.3.6, was that the intervention should be persuasively designed, which included being appealing, credible, and tailored to patient needs. This data was used to inform the development of the guiding principles to ensure that the intervention met patient expectations.

Literature review of digital design principles

As both the qualitative findings, previous studies (as mentioned in section 1.6.3), and the person-based approach suggested that good design could facilitate intervention acceptability, a literature review was conducted to identify key papers and theories of digital design. The paper describing the person-based approach was used as a starting point to identify relevant papers (Yardley et al., 2015). Those identified included Michie and colleagues' (2013) behaviour change taxonomy (BCT) and the persuasive design framework described by Oinas-Kukkonen & Harjuma (2009). These were used to inform the design objectives and associated key features of the intervention.

Patient advisory panel

The theories and design principles identified in aforementioned publications were discussed with the patient advisory panel, described in the previous section 4.2.1, in meetings 3 and 4. The discussions focused on how to present instructions (e.g. written, audio) and make the intervention attractive to participants (e.g. visually, retaining motivation, and using interactive exercises). These discussions were further informed by the emergent data from the qualitative study (Chapter 3) on patient preferences for a persuasively designed intervention.

Evidence synthesis to inform the guiding principles

The findings of the aforementioned methods were synthesised in an iterative process to inform the design objectives and key features of the intervention. These were created on the basis that they addressed the identified challenges, were acceptable to patients, were informed by theory, and could pragmatically be achieved within the allocated time and budget. Conversely, design principles and key features that were excluded were those that were not consistent with the design objectives and overall

theory of the intervention, and /or could not pragmatically be achieved with the allocated resources.

4.2.3 Depiction of model processes and outcomes

A graphical representation of the conceptual model of the intervention was iteratively refined alongside the processes described in sections 4.2.1 and 4.2.2. The model depicts the components of positive psychology, linked to the hypothesised mechanisms and outcomes. It also depicts the design objectives articulated to address the context-specific challenges with the intervention.

4.3 Results: conceptual model

This section describes the conceptual model of the intervention. This is followed by an explanation of why particular components of positive psychology were included (section 4.3.4) and excluded (section 4.3.5). The subsequent section explains the rationale for why particular design objectives were incorporated into the intervention (section 4.3.6) and those that could not be addressed (section 4.3.7).

4.3.1 Overall intervention objectives and context

The objective of the online positive psychology intervention was to get people with depression to practice components of positive psychology, as described in positive psychotherapy (Seligman et al., 2006) in order to reduce their depression and improve their subjective quality of life. The context for delivery was low-intensity, i.e. as an unsupported online intervention, to be accessed independently by adult patients experiencing symptoms of depression. It was decided that the intervention would be available for six weeks, as systematic review evidence suggested that positive psychology interventions of longer duration (>four weeks) were more effective than those with shorter durations (Bolier, Haverman, Westerhof, et al., 2013).

4.3.2 Conceptual model

Figure 4.2 depicts the conceptual model of the intervention. It includes the particular positive psychology components that were selected, the positive psychology principles these promote, their hypothesised mechanisms of change, and how these link to outcomes.

The figure illustrates that six positive psychology components were included. Firstly, to promote pleasure and re-educate patients' attention and memory towards pleasurable moments and sensations a modified version of the 'savouring' component was used. Secondly, to increase 'engagement' with day-to-day life several components were used including the 'using your strengths', 'blessings journal', and 'gratitude letter'. It was hypothesised that these would increase patients' self-efficacy, activity, and social engagement. Finally, to promote meaning, the 'gift of time' and 'active constructive responding' components were included. It was hypothesised these would also increase patients' activity and social engagement. The expected outcomes include reduced depression and increased subjective quality of life.

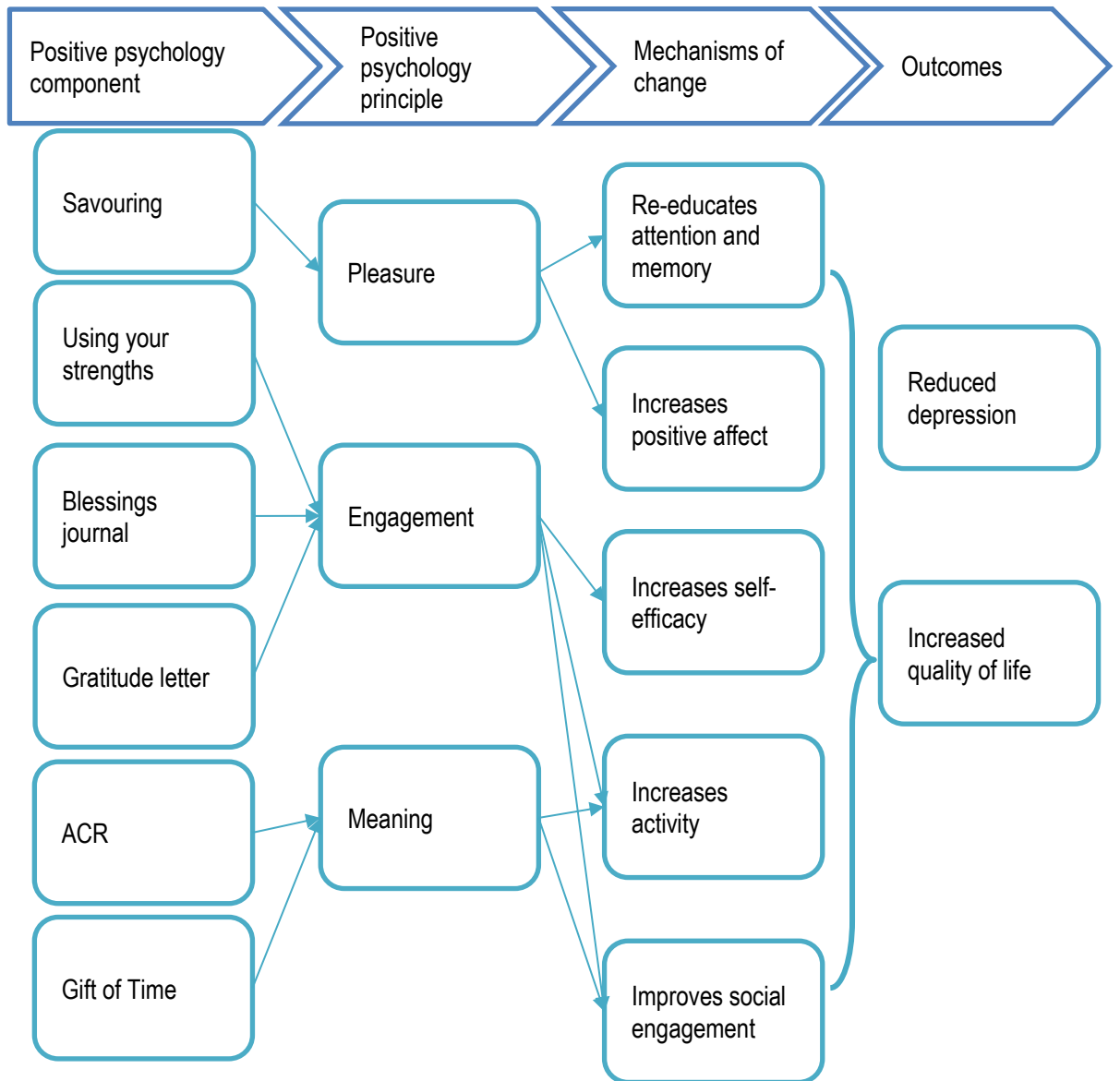


Figure 4.2 Conceptual model of the developed intervention

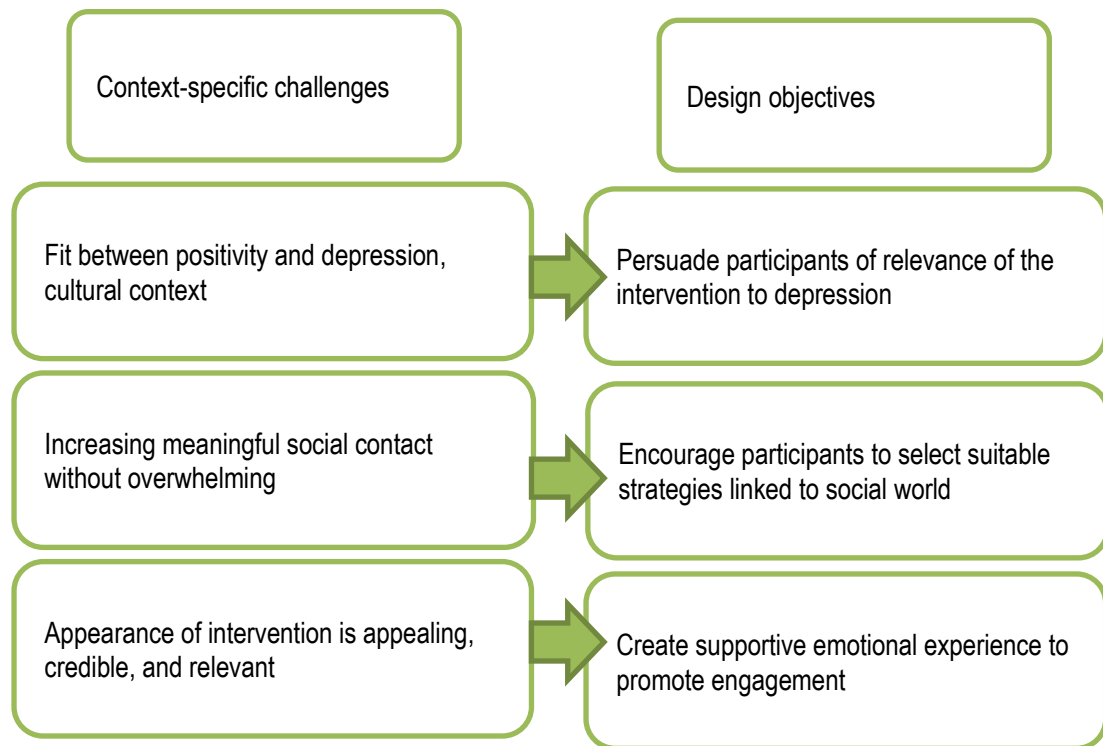


Figure 4.3 Guiding principles of the developed intervention

4.3.3 Guiding principles

The guiding principles of the intervention communicate how the design objectives and key features of the intervention addressed the particular contextual challenges identified in the process of intervention development. These are outlined in detail in Table 4.2.

Figure 4.3 summarises the three design objectives intended to address contextual challenges affecting intervention acceptability. This included the objective to persuade participants of the relevance of the intervention content, in order to address how well the intervention fit patients’ depression and their cultural context. A second design objective was to encourage patients to select suitable strategies linked to their social world. This was to ensure that the intervention provided meaningful social contact without overwhelming patients. The final design objective was to create a supportive emotional experience of the intervention, to address the issue that a more acceptable intervention is one that is appealing, credible, and relevant.

Table 4.2 Guiding principles of the intervention

Context-specific challenges affecting intervention delivery	Design objectives	Key features
<ul style="list-style-type: none"> • Participants might feel an inability to identify positives and might feel misunderstood by a positive approach • Participants felt as a low-intensity unsupported intervention it should promote development of autonomous strategies whilst minimising eliciting potentially difficult emotions • Participants might not engage with activities that are not culturally appropriate • Participants felt that the intervention would complement, not replace other treatments for depression 	<p>Persuade participants of the relevance of the intervention content to depression and cultural context</p>	<p>Each section includes rationale for why advice is relevant to depression Intervention names and descriptions adapted to suit UK context Intervention is described as complementary and links are provided to other treatments</p>
<ul style="list-style-type: none"> • Participants wanted to overcome social isolation associated with depression and increase meaningful social contacts, without being overwhelmed • Participants wanted choice • Participants identified the intervention should engage them with the social world beyond the website 	<p>Encourage participants to select components that suited them and linking intervention to social world</p>	<p>Emphasising autonomous choice of intervention components in a non-prescriptive, flexible way Minimising effort and lifestyle disruption Linking intervention strategies to real-life context through relevant examples for daily life</p>
<ul style="list-style-type: none"> • Participants more likely to adhere to an intervention that uses persuasive design features e.g. appealing, credible, tailored 	<p>Create a supportive positive emotional experience of the intervention to promote engagement and motivation to return</p>	<p>Reminders for participants to use the intervention Using positive language that supports autonomy throughout Inclusion of interactive activities providing information in novel ways Visually attractive, 'professional looking' system Presenting credible sourced information Tailoring and targeting information</p>

4.3.4 Rationale for included positive psychology components

As described in section 4.2.1, a range of data sources were synthesised to inform the selection of positive psychology components. These are summarised in Table 4.3.

Table 4.3 Sources of evidence synthesised to inform selection of positive psychology components

Positive psychology component	Brief description	Literature review (Chapter 1)	Systematic review (Chapter 2)	Qualitative interviews (Chapter 3)	Patient advisory panel	Decision
Positive introduction	Write about a time 'at your best'	No better than placebo in healthy population (Seligman et al., 2005)	Included in 1 study, comparison to literature suggested could worsen depression (Joormann et al., 2007)	Difficulty spontaneously generating and articulating positives. Preferable as bullet points rather than prose. Could create negative self-feelings	Not easy but something to come back to reflect on. Useful if discussed with others (e.g. therapist, family)	Exclude
Using your strengths	Take online inventory of Character Strengths (VIA-IS) to identify top five strengths and plan to develop them	Cross-culturally validated questionnaire (Peterson & Seligman, 2004). Increased happiness and decreased depression in healthy population (Seligman et al., 2005)	Included in 7 studies	Useful to select statements not self-generate but how valid is questionnaire and is it affected by depression. Planning is helpful if practical and based on smaller goals and but not easy to execute may need support	Long questionnaire too overwhelming, reduce number of items. Useful activity if can provide suggestions	Include a short version as a 'quiz' with example of how to apply strengths
Blessings journal	For one week write three things that went well each day with a causal explanation	Increased positive affect in healthy population (Emmons & McCullough, 2003; Seligman et al., 2005)	Included in 8 studies	Intuitive appeal but religious connotations so rename, provide example of a positive, three may be too many	Familiar activity that could be practiced with pictures, audios not written	Include rename as 'good things' with flexibility on number to add
Writing memories	Write three bad memories and	No theory or evidence cited	Included in 0 studies, comparison to literature	Could be cathartic but possibly harmful, may create	Possibly difficult and validate 'excuses' for	Exclude

	distress		indicated no clear benefit of therapeutic writing (Nyssen et al., 2016)	negative feelings and need support	depression but could help some 'move on'	
Forgiveness letter	Write a forgiveness letter to transform anger and bitterness to neutral or positive emotion	Theory is described but no effectiveness data (McCullough, 2000)	Included in 3 studies, comparison to literature indicated it is popular but should be used with caution (Wade et al., 2008). Patients reported negative experiences when delivered with minimal guidance (Huffman et al., 2014) and within group therapy (Brownell et al., 2015)	Religious connotations, unsuited to complexity, can depend on event and depression	Too 'deep' and may cause people to stop the intervention	Exclude
Gratitude letter	Write and personally deliver a letter to someone who has never been properly thanked for their kindness	Increased happiness and decreased depression in healthy population (Seligman et al., 2005)	Included in 5 studies	Benefits within and beyond relationships but may be too self-absorbed, useful in other modes (e.g. SMS)	Gratitude sounds big and heavy, can be grateful to self, religion	Include but rename 'saying thanks' and option to email, text, or write
Personal satisficing plan	Settling for 'good enough' compared to trying to find the 'best' option	Theory is described but no effectiveness data (Schwartz et al., 2002)	Included in 0 studies, too difficult and complex for patients experiencing psychosis symptoms (Riches et al., 2016)	Uncertainty around concept and benefits of written plan, needs support	Could be relevant if monitoring effort needed to achieve goals to become more realistic	Exclude
One door closes/ one door opens	Write occasions where something important did not happen but other opportunities arose	Theory is described but no effectiveness data (Seligman, 2002)	Included in 1 study, comparison to literature indicated no clear benefit of therapeutic writing (Nyssen et al., 2016)	Empowering, hopeful but requires self-reflection and positivity	Good to spin negatives into positives but hard in the moment of depression	Exclude

Active Constructive Responding	React in a visibly positive and enthusiastic way to others' good news	Observational data in healthy population (Gable et al., 2004)	Included in 3 studies	Useful to make people aware but needs to be natural	Apply to 'people around you' not just 'significant other' as may not have	Include but rename 'connect'
Family strengths tree	Family members complete VIA-IS and discuss their common strengths	No theory or evidence cited	Included in 0 studies	Potentially useful but unrealistic for some and highly dependent on family dynamic	Too difficult to use questionnaires given variety of family structures	Exclude
Savouring	Each day take time to enjoy something that is usually hurried. Afterwards write what you did, how and what was different	Theory is described but no effectiveness data (Bryant & Veroff, 2007)	Included in 4 studies	Appealing, comforting activity needs practical instructions and range of tasks	Nice to 'enjoy the moment' but needs to be well explained	Include renamed as 'enjoy' including audio instructions
Gift of time	Use strengths in service of others	Meta-analyses on volunteering in healthy population (Crist-Houran, 1996)	Included in 2 studies	Appealing for self and others but when feeling better, barriers to volunteering	Include options for lower levels of commitment than traditional volunteering	Include renamed as 'sharing strengths' providing suggestions

All included components were proposed to theoretically promote pleasure, engagement, or meaning. The subsequent sections highlight the strength of theory, evidence, and acceptability data that guided the decision to include, and, where necessary, modify each component. The modifications and operationalisation of included components is described in detail in section 4.5.2.

Promoting pleasure

'Savouring' was included as it was based on theory and the systematic review suggested that it had been used in several studies. Data from the qualitative study suggested it had the potential to generate positive affect. Patient advisors also felt it was a nice way to enjoy moments throughout one's day. The component therefore appeared to be well aligned with the principle of pleasure. However, participants felt it might need specific instructions to explain its application. The savouring component therefore focused on providing instructions for participants on how to use their five senses (taste, touch, smell, sound, sight) to appreciate the pleasure that can be derived from routine activities, including having something to eat, taking a shower, and going outside.

Promoting engagement

'Using strengths' was viewed as a theoretically sound (Peterson & Seligman, 2004) and had an evidence based component (Seligman et al., 2005), that had been applied in most of the studies included in the systematic review. The qualitative study findings indicated that identifying strengths was an important step in enabling positive actions, although participants were uncertain how much their depression would influence their responses. Similarly, participants felt that enacting strength plans might be affected by depression, but it might be possible to put small, practical plans into action, especially if there were examples of how to do this. The patient advisory panel felt the strengths questionnaire should be modified to a shorter version, as it might be overwhelming. The included component therefore split the component into two exercises; finding strengths, via a shorter quiz, and planning how to use these, by providing participants with examples they could apply.

The 'blessings journal' was included in all studies in the systematic review and appeared to have evidence of effectiveness in the general population (Emmons & McCullough, 2003; Seligman et al., 2005). It held intuitive appeal to participants in the qualitative study, and was a familiar concept to the patient advisors. There was a

sense that the 'blessings journal' was useful way to recognise positive aspects of one's day-to-day life; although it would not necessarily be something that was written three times daily, it could perhaps be practiced more flexibly in differing formats. The included component therefore invited participants to record at least one positive event but they could add more.

The evidence synthesis suggested that the 'gratitude letter' was potentially effective (Seligman et al., 2005) and had been applied in many studies in the systematic review. In the qualitative study, participants felt it could be beneficial for promoting positive relationships, but might be useful in other formats (e.g. SMS based). The advisory panel felt it might sound 'heavy' if the term gratitude was used. The included component therefore suggested people could send SMS, emails, or letters to their chosen recipient.

Promoting meaning

The 'active constructive responding' was based on observational data indicating it was a healthy form of communication in interpersonal relationships (Gable et al., 2004). It had been applied in several studies included in the systematic review. Participants in the qualitative study reported the tendency not to communicate positively and felt that this should be encouraged, although in a natural, not forced, manner. The patient advisors recommended that not all patients would have a 'significant other' and so instructions should not include this phrase.

The 'gift of time' component had some data to suggest it could positively influence patients (Crist-Houran, 1996). It was included in a couple of studies in the systematic review. The qualitative study findings and patient advisors suggested that volunteering is often helpful, but that there should be options for lower levels of time commitment to account for people's depression and the fact that traditional volunteering schemes can involve burdensome application processes. The included component therefore provided some examples of how participants could use their strengths in day-to-day ways to help others.

4.3.5 Rationale for excluded positive psychology components

As described in the methods section 4.2.1, positive psychology components were excluded if they were not based on theory or evidence, did not appear to be aligned with the theoretical principles of pleasure, engagement, or meaning, were rarely

applied, and were likely to be unacceptable, or even harmful, in the proposed context. Consequently, the following interventions were excluded; 'positive introduction', 'writing memories', 'forgiveness letter', 'one door closes', 'satisficing plan', and 'family strengths tree'. Further detail on the rationale for exclusion is provided below.

Possibility of generating negative feelings

The evidence synthesis indicated that several components had the potential to generate negative feelings in participants. These included activities that were based on eliciting difficult experiences, i.e. the 'writing memories' and the 'forgiveness letter', as well as positive experiences, i.e. 'positive introduction'.

The 'writing memories' component did not appear to be based on theory or evidence, and was not used in any of the studies included in the systematic review. The qualitative study findings suggested that while it was potentially cathartic, it could create and evoke negative feelings. Rather than promoting pleasure, as Seligman et al., (2006) suggested, it appeared more aligned with therapeutic writing (Pennebaker & Beall, 1986) which has little evidence of effectiveness (Nyssen et al., 2016). Similarly, the 'forgiveness letter' appeared to be informed by theories of therapeutic writing. Though it had been applied by studies included in the systematic review, there was evidence that participants had negative experiences both when minimally supported (Huffman et al., 2014) and in a group setting (Brownell et al., 2015). As these interventions appeared to be aligned with a different theoretical approach, had little evidence of effectiveness, and might elicit difficult emotions, it was concluded that they would not successfully promote the intended outcomes.

It is proposed that the 'positive introduction' elicits positive memories and thus makes participants more hopeful (Seligman et al., 2005). However, it was rarely applied in studies included in the systematic review and evidence suggested it might counter-intuitively make someone with depression more aware of their current difficult circumstances and reinforce a sense of hopelessness (Joormann et al., 2007). The qualitative study findings supported this. There was no evidence to suggest it was more effective than a placebo (Seligman et al., 2005). Consequently, it was decided that this component would not contribute significantly to the process of the intervention and was therefore not included.

Requiring self-reflection and therapeutic support

The 'satisficing plan' had been described in theory (Schwartz et al., 2002) yet had no evidence of effectiveness and was not included in any studies in the systematic review. Riches et al., (2015) omitted it from their intervention, as it was too complex for participants with psychosis. However, qualitative study findings suggested it might also be too complex for patients with depression. Participants reported that overcoming a tendency to try and 'maximise' (e.g. pick the best option) rather than 'satisfice' (e.g. settle for a good enough option) was more complicated than making a plan and may in fact require in-depth conversations with a supportive other, in order to generate any meaningful insights. The level of self-reflection required was too burdensome to include in the present intervention. Further, as there was little theoretical and empirical support for this intervention it was not included.

The 'one door closes' component had been described in theory (Seligman, 2002), yet had been used little in practice. The qualitative study and patient advisors suggested that in order to see an event in a positive light one required sufficient time and perhaps guidance to self-reflect. It was felt this might be too difficult in the context of depression and a low-intensity intervention. The component also appeared to be aligned with the therapeutic writing movement, for which there is little evidence (Nyssen et al., 2016; Pennebaker & Beall, 1986). Thus, it was excluded from the present intervention.

Complexity in involving others

The evidence synthesis indicated that the 'family strengths tree' involved interpersonal disclosure and discussion that was unrealistic and highly dependent on family dynamics. The synthesis also identified no theoretical or empirical basis for the intervention, which had never been applied in the studies include in the systematic review. Together, these findings suggested it was a not a useful component and so it was not included.

This section has described the rationale for the inclusion and exclusion of particular positive psychology exercises. The subsequent section provides a rationale for the inclusion and exclusion of design objectives in the present intervention.

4.3.6 Rationale for design objectives

As described in Table 4.2 a series of design objectives were created to address the issues identified in the evidence synthesis that could affect how acceptable and useful patients found the intervention. The theory, evidence, and literature supporting these decisions are described in this section. The operationalisation of these objectives into key features of the intervention is described in section 4.5.2.

Persuade participants of the relevance of the intervention content to depression and cultural context

The first design objective related to ensuring the intervention persuaded participants of its relevance, both to their depression and cultural context. The rationale for this objective was that both the qualitative study findings, specifically those reported in section 3.3.3, and the patient advisory panel indicated there might be a limited fit between positivity and the patients' context. It was a key challenge for the intervention to address this and to persuade participants that it was relevant.

Encouraging participants to select components that suited them and linking intervention to social world

The second design objective to allow participants to select components that suited them was based on several findings from the evidence synthesis. Firstly, the person-based approach recommends that in general digital interventions should aim to promote user autonomy and offer choice where possible (Yardley et al., 2015). Secondly, the qualitative study findings indicated that people varied in their preferences for intervention components. These findings indicated that a 'tunnelled' approach (Oinas-Kukkonen & Harjuma, 2009) in which participants are lead sequentially, usually in a predefined order, or based on a needs assessment, through intervention content, might not be suitable. Although researchers suggest that tunnelling is less overwhelming than allowing patients free choice (Oinas-Kukkonen & Harjuma, 2009), and it is often used in mental health interventions (Kelders et al., 2012), the candidate felt it was a priority to allow patients to choose. The candidate did consider tunnelling patients towards intervention content based on a preference questionnaire for positive psychology components. However, the only known questionnaire is an unpublished and unvalidated Person-Activity Fit Diagnostic (PAFD) (Lyubomirsky & Sheldon, 2014). When this has been used elsewhere, patients had trouble understanding it (Müller et al., 2016). Further, the advisory panel suggested

that such a questionnaire might be a barrier to using the intervention. A second issue is that to point participants towards their preferred interventions would require costly programming. As a result, a pragmatic decision was taken to provide participants with access to all intervention components that they could choose from.

The second aspect of this design principle was focused on ensuring the intervention was linked to the social world. This was based on the qualitative study finding that participants wanted the intervention to overcome isolation by connecting them to their existing social contacts, or local services.

Create a supportive positive emotional experience of the intervention to promote engagement and motivation to return

The final design objective was to ensure that the intervention created a positive emotional experience for participants, in order to promote engagement and motivation to return. This was largely informed by one of the principles of the person-based approach, which recommends that all digital interventions should provide users with a positive, enjoyable, and interesting experience of the intervention in order to motivate users (Yardley et al., 2015). This includes using autonomy supportive language that is non-directive, rather than using language that is explicit, directional, and provides instructions.

An enjoyable experience can also be promoted by presenting information well, both ensuring that it is maximally accessible to people with lower literacy, or cognitive impairments, and thus includes short sentences, lists, and audio-visual formats (Yardley et al., 2015). Further, the authors of the persuasive design framework, Oinas-Kukkonen and Harjumaa (2009) suggest that people are more persuaded by systems that are visually attractive. It was also important, both to participants in the qualitative study (3.3.6) and in the persuasive design framework (Oinas-Kukkonen & Harjumaa, 2009), that the intervention was credible. According to the framework this includes appearing trustworthy, i.e. providing fair, unbiased information, and having surface credibility, which includes appearing to be a competent system. Further, Yardley et al., (2015) recommend reminding participants how their data is being used to reassure them of the intervention credibility. As these aspects about visual appeal and credibility were mentioned by several sources of data, they were prioritised in the operationalisation of the current intervention.

Another important aspect identified in the evidence synthesis, was that reminders could enhance participants' motivation to return to the intervention. This was mentioned both by participants in the qualitative study, reported in section 3.3.6, and in the persuasive design framework, which indicated that reminders are an important form of 'dialogue support', i.e. a way of keeping users moving towards a target behaviour (Oinas-Kukkonen & Harjumaa, 2009). Specifically, patients in the qualitative study wanted tailored reminders, linked to their use of the intervention. The idea of tailored content was also deemed an important aspect of creating persuasive system (Oinas-Kukkonen & Harjumaa, 2009). However, although evidence suggests reminders in general can improve engagement with digital interventions compared to not using a reminder strategy, there is as yet insufficient data to indicate what types of message are most likely to promote adherence (Alkhaldi et al., 2016; Fry & Neff, 2009; Webb, Joseph, Yardley, & Michie, 2010; Whitton et al., 2015). Further, although reminders can be designed to include tailored behavioural change strategies (Michie et al., 2013), it remains unclear how people will respond to these so-called motivational messages. What one person sees as encouraging might de-motivate another (Hsu & Blandford, 2014; Walsh, Golden, et al., 2016). Further, there is evidence that creating a database of tailored messages can be an extensive project in and of itself, and to do it well can require many stages of research and multiple stakeholders (see Fletcher et al., 2016; Redfern et al., 2014). This process was felt to be beyond the scope of the present doctoral research study. Instead, the recommendations from Yardley et al., (2015) were considered and the candidate opted to give users control over receiving reminders, as evidence suggests people are therefore more likely to engage with these reminders (Dennison, Morrison, Conway, & Yardley, 2013).

4.3.7 Rationale for design objectives that were not included

This section outlines why several important design objectives identified within the evidence synthesis, including social elements and rewards, could not be addressed within the developed intervention.

Social support within the technology

The Oinas-Kukkonen and Harjumaa (2009) framework suggest a series of principles related to 'social support' that involve some form of connecting with others within the technology. These principles were similar to what participants in the qualitative

study had requested (as described in section 3.3.4). However, these could not be implemented in the current intervention, as they required some way of sharing patient data. For example, the principles of social learning and social comparison require the function to access what other people are doing and their progress. This was deemed inappropriate for the current intervention as the patient advisory panel suggested that participants might be unwilling to share their data. Further, the research was subject to ethical requirements in which participants are promised anonymity. One possible solution would be to set up a fake account that participants could use for comparison, but the candidate did not deem this an ethical way to proceed. Other social principles in the Oinas-Kukkonen and Harjumaa (2009) framework include an element of competitiveness that was deemed inappropriate in a self-help intervention for depression. The aim was not to create competition amongst users or see who uses it the most, or to compare recovery rates, but instead to find principles and solutions that are perceived personally useful.

Another way of achieving social support would have been to use a peer-support forum, although it was clear from the qualitative data that this could raise other problems (again, see section 3.3.4 for details). Not only would there be a requirement to monitor the site, which then raises obvious questions about the scalability, there are issues with how this affects the proposed mechanisms of the intervention. Peer support is a theoretical intervention in and of itself and has been used in online psychological interventions to promote co-operation, expertise, and reduce loneliness (Naslund et al., 2016). However, the current intervention aimed to promote engagement and meaning through pre-existing and real-life relationships, rather than new online relationships. For these reasons, it was decided that the present intervention should not include specific social principles as outlined by Oinas-Kukkonen and Harjumaa (2009).

Rewards and praise

It is argued that an intervention should offer praise in the form of words, images, and symbols, as a way to feedback to users on their behaviour. Similarly rewards or 'credits' should be given for performing target behaviours. These are part of the Oinas-Kukkonen and Harjumaa (2009) framework of dialogue support. They also form the key basis of 'gamification'; the idea that things will be more enjoyable and more likely to be used if they have a game element such as goal setting, comparing

progress, or reinforcement. These ideas are receiving increasing attention in the literature on digital health interventions (Cugelman, 2013), although a recent systematic review of health apps found that gamification techniques are implemented in a very small proportion (Edwards et al., 2016). The review reported that feedback and monitoring are often used, in particular self-monitoring and non-specific rewards and incentives. However, the review reported no relationship between the use of gamification strategy and user ratings of the apps, indicating that it is unclear how people respond to these techniques. It is unlikely that rewards or praise will suit every person, indeed it has been suggested that people can perceive praise as inauthentic when it comes from a computer (Walsh, Golden, et al., 2016). Consequently, in the absence of solid evidence for the usefulness, and in the presence of data suggesting that praise might be negatively received, praise and rewards were not included in the present intervention.

This section of the results has focused on describing the conceptual model of the intervention, providing a rationale for included and excluded positive psychology components, and a rationale for included and excluded design objectives. The subsequent section will provide a description of the methods and results related to operationalising this model into an online intervention.

4.4 Methods informing operationalising the intervention

In order to operationalise the conceptual model into an online intervention, several methods were used, including the patient advisory panel, consulting experts, and think-aloud usability testing. Table 4.4 outlines how the two guiding frameworks, the MRC framework and the person-based approach, informed these methods. Where methods have previously been described, the reader is directed to the relevant section. The process of operationalising the intervention involved the development of the intervention and its optimisation.

Table 4.4 Methods and activities use to operationalise intervention informed by MRC and person-based frameworks

Intervention stage	Aim	MRC recommendations	Person-based approach recommendations	Methods and activities used and where reported in detail
Operationalising the intervention	Optimise intervention procedures and materials	Provide full description that can be replicated Consult with experts and stakeholders	Elicit user reactions to intervention and iteratively modify e.g. using think aloud methods	Intervention description (Chapter 4) Expert consultation and collaboration (Chapter 4), Patient advisory panel (Chapter 4) Think aloud usability testing (Chapter 4)

4.4.1 Development process

Patient advisory panel

Based on the guiding principles a paper-based prototype of the intervention content and wording was created and discussed in the fifth and sixth meetings of the patient advisory panel (described in section 4.2.1). Patient views were elicited on the specific wording of the content, which was then refined.

Expert advisors

Once finalised, the paper-based prototype of the content and wording and the intervention specification outlining the practical software functionality, were shared with software companies to estimate the development costs. These documents can be found in Appendix 6. It was established that an app would be far more costly to

develop than a website. A pragmatic decision was taken therefore to develop a website. This was done in collaboration with a software design company, Winona esolutions, a preferred provider of the NHS Trust funding the project. The team at Winona worked collaboratively and iteratively to translate and refine intervention specification and paper-based prototype into a working website. The study advisory panel, described in section 4.2.1, helped to refine the emerging design. Specifically, a design specialist, Dr Nikolina Jovanovic, provided expert advice on appropriate colour palette, layout, and imagery that was incorporated into the design. Other colleagues from the panel repeatedly tested and provided feedback on versions of the website.

4.4.2 Process of website optimisation

Think aloud usability testing

Once developed the website was subject to think aloud usability testing. The aim of this method was to practically assess the extent to which people found the website easy to use and effective for a series of tasks. Usability testing involves observing people using software whilst they narrate their actions, in order to uncover potential problems (Bastien, 2010). It is a crucial stage in developing digital interventions. Usually, it is conducted with the intended users of the intervention, in an iterative process, whereby once problems are identified and addressed, further testing is completed until no further issues are identified (Bradbury, Watts, Arden-Close, Yardley, & Lewith, 2014). In the present study, due to time and resource pressures a pragmatic approach was taken to identify any obvious navigational issues that might affect the acceptability and usage of the intervention in the subsequent feasibility study. One round of usability testing was conducted with three colleagues, a sample chosen as it is accepted that using 3 to 5 participants can uncover the most severe issues (Virizi, 1992). The candidate developed a protocol and script with key functions of the website for users to test, which is provided Appendix 5. An independent researcher, Eoin Golden, moderated sessions by providing participants with key tasks and prompting them to narrate their experiences. The candidate acted as an observer and note taker and subsequently prioritised the identified issues for discussion and resolution with the team at Winona esolutions.

4.5 Results: the operationalised intervention

This section provides an overview of the intervention, which is detailed in full in Appendix 7. The first section describes how the think aloud usability testing informed the intervention refinement.

4.5.1 Think aloud usability testing results

Understanding instructions

The intervention instructions were provided in a carousel (e.g. 3 pages that moved like a slideshow) that switched pages approximately every 6 seconds. Participants struggled to read the instructions in this time and so an edit was made to slow the speed of the carousel so that the pages switched after fifteen seconds. Navigation buttons were also added so that the user could more easily control the carousel screens.

Completing 'using your strengths'

Participants struggled to successfully complete the strengths quiz and often selected more items than required. The error message that appeared to inform users was not easily visible (it was at the bottom of the screen and participants had to scroll to see it). This was addressed by editing the layout of the strengths items, the instructions, and changes to the location of the text to improve the visibility of the error message.

Added entries not always immediately visible

When users completed the tasks, their entries did not consistently appear to have been recorded by the site and sometimes a page refresh was required. In practice this meant users repeated a task and then had duplicate items and this was frustrating. Further testing with the design company was conducted to uncover when this occurred and a series of fixes were employed to eliminate this issue.

4.5.2 Summary of operationalised intervention

In summary the website contained six positive psychology components, adapted from positive psychotherapy. As summarised in Table 4.5, components were organised into four sections of the website. The strengths section included the ‘using your strengths’ component, in which participants could complete the strengths quiz and then plan how to use these based on examples that were provided. The good things section included the ‘blessings journal’ component and participants had space to record and revisit their good things. The enjoy section included the ‘savouring’ component and provided audio instructions on how to ‘savour’ and a space to record participant reflections on this. The ‘connect’ section included the social components, including ‘active constructive responding’, ‘gratitude letter’, and ‘gift of time’. Participants were provided with instructions for each activity and a space to record how they had performed it. The ‘gift of time’ activity included personalised suggestions depending on participants’ responses to the strengths quiz. The website also included links to resources about depression and FAQs about the intervention.

Table 4.5 Uplift website interventions

Website section	Exercise name	Description	Intervention adapted from Seligman et al., (2006)
Strengths	Strengths quiz	Participants select five character strengths from 24 statements	Using Strengths: Values in Action Inventory of Strengths (VIA-IS)
	Strengths plan	Based on selected strengths the website provides a tailored suggestion of how to use a selected strength and provides a space to record a plan	Using strengths: Cultivation of signature strengths
Good things	Good things	The website gives space for participants to record good things that happen and why	Blessings journal
Enjoy	Enjoy	Audio instructions guide participants on using their five senses to enjoy physical sensations and give a space to record enjoyable moments	Savouring
Connect	Connect	Tips are provided on having positive conversations with others and space is given to record these connections	Active constructive responding
	Saying thanks	The participant is encouraged to say, text or email thanks to someone who has helped him or her and record it on Uplift	Gratitude letter
	Sharing strengths	Based on selected strengths the website provides a tailored suggestion of how to share their strength to help others and provides a space to record a plan	Gift of time

Participants received a guideline to practice one exercise on the website per week for six weeks and weekly reminders were sent to this effect. The intervention was delivered as flexible and low-intensity whereby patients could determine which exercises to practice over the course of six weeks, i.e. participants could choose to repeatedly practice one exercise, or try a different one each week. Participants were advised that the website was flexible and if they wished to use it more frequently they could.

4.5.3 Key features of the intervention website based on design objectives

This section is organised by ‘design objectives’ with screenshots to illustrate how the particular key features of the intervention were operationalised, along with supporting text to explain these. The full screenshots of the intervention are provided in Appendix 7.

Persuade participants of the relevance of the intervention content to depression and cultural context

Intervention names and descriptions adapted to suit UK context. Table 4.5 summarises how the positive psychology components were renamed to be more suitable for the context, i.e. less American and religious. The overall intervention was named Uplift, with a tag line ‘lift up your mood’.

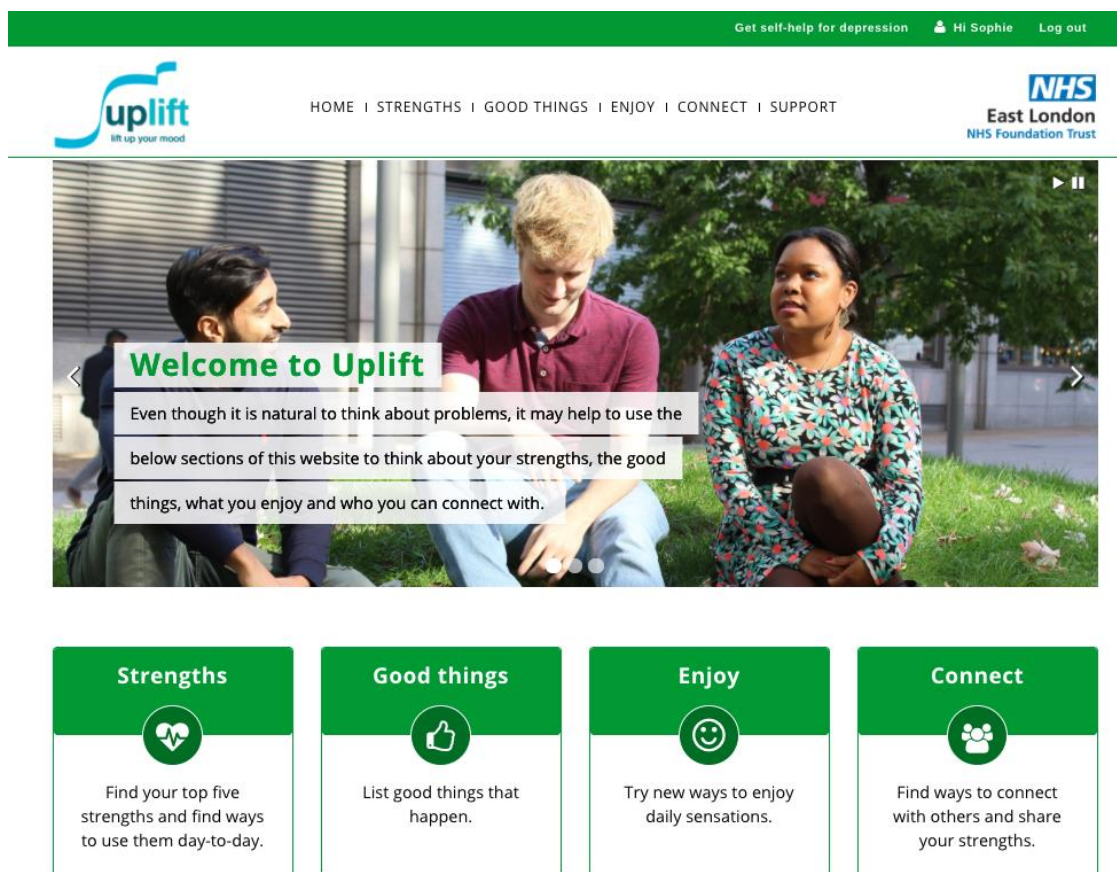


Figure 4.4 Illustrative screenshot of intervention homepage (screen 1 of 3)

Each section includes rationale for why interventions are relevant to depression. Within each of the four sections of the website there was supportive text to explain which aspect of depression the particular intervention components are intending to address. This text is summarised in Table 4.6.

Table 4.6 Explanations of why interventions are relevant to depression

Website section	Supportive text explaining rationale
Strengths	Everyone is good at something. We all have strengths. But we don't always find it easy to think about how our strengths can help us. What are your strengths? You might like to try this quiz to find out. See your top five strengths and plan ways to use these in your day-to-day life.
Good things	If you are depressed it is natural to think about things that may be going badly, rather than things that are going well. It might feel like no good things happen. But by listing even one good thing once a day you may start to feel better.
Enjoy	When you are depressed it might seem like there is nothing to enjoy. But you might still find there are moments in the day when you can enjoy sensations and physical comforts. You might like to try and appreciate and take pleasure in every day things you usually rush through. Try and slow things down and use all your five senses.
Connect	Here you will find different ways to connect with others. These activities may help as it is easy to lose touch with others when you are depressed.

Intervention is described as complementary and links provided to other treatments. On the intervention homepage Uplift is explicitly described as being for use alongside other support, as illustrated in Figure 4.5. Further, a section of the website included links to existing sources of depression support.

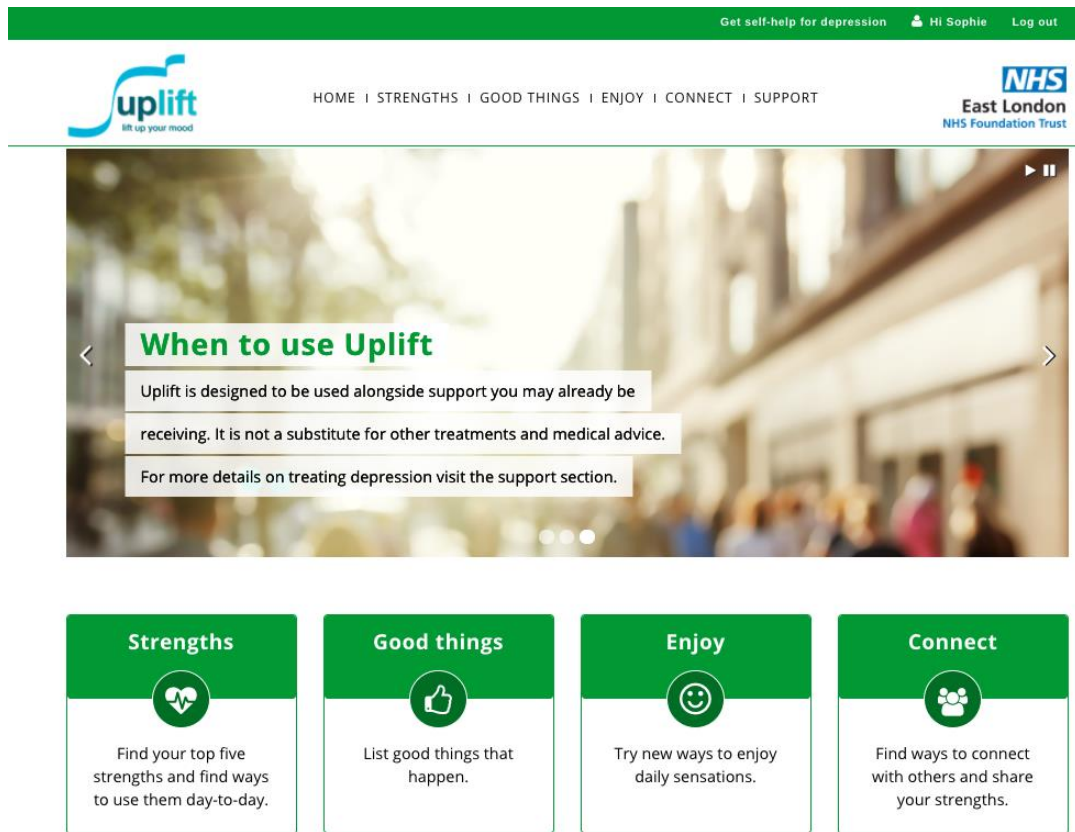


Figure 4.5 Illustrative screenshot of intervention homepage (screen 3 of 3)

Encourage participants to select components that suit them and link intervention to social world

Emphasising autonomous choice of intervention strategies in a non-prescriptive, flexible way. On the homepage it is clearly explained that participants can choose how to use Uplift (see Figure 4.6).

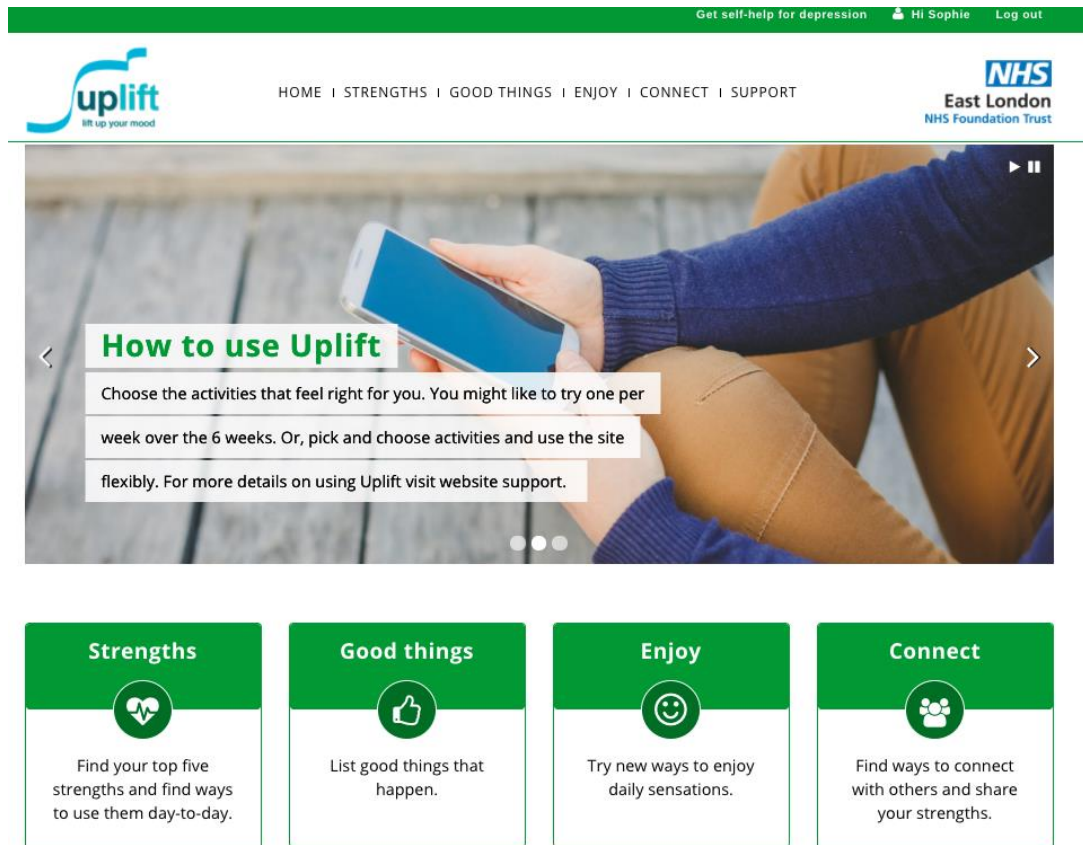


Figure 4.6 Illustrative screenshot of intervention homepage (screen 2 of 3)

Minimising effort and lifestyle disruption. One example of how the intervention was designed to minimise participant effort was that the ‘Using your strengths’ component was adapted to use a questionnaire that had fewer items. The original strengths inventory is available in several formats with varying numbers of items (72, 120 and 240). To minimise patient effort the candidate searched for and gained permission to use an adapted version that was 24 statements and participants selected five (see Appendix 6).

Linking intervention strategies to real-life context through relevant examples for daily life. The examples used within the website were based on self-help tips provided on the NHS Choices website on coping with depression (Choices, n.d.), or adapted from a programme designed to improve use of strengths (Scarborough, n.d.). These were shared and refined in discussion with the patient advisory panel, who suggested alternatives based on local contexts and resources. For example, if a tip was to ‘take a picture of the sunset on a beach’, this was adapted to appreciate nature in the local park. Similarly, the ideas presented for sharing strengths were refined to provide a mixture of things that provided participants with ideas for actions that were lower in time commitment than traditional volunteering, such as helping a neighbour or relative. A full list of strengths and suggestions for the plan and sharing section are provided in Appendix 6.

For the ‘savouring’ activity, instructions were developed to apply the activity to three everyday situations: eating, taking a shower, and being outside. These were intended to be mindful of the context of people with depression who might be so depressed that they rarely leave the house and so the instructions mentioned ‘stepping on the doorstep’ so that people felt they could still apply the activity, even if they were less able to take a long walk. The audio descriptions can be found in Appendix 6.

Another way to link the strategies to daily life was to ensure that the ways of practicing the exercises accounted for what people realistically do. Whilst the ‘gratitude letter’ is intended to be a letter, the panel and qualitative study indicated that this was a less practiced aspect in modern life. Accordingly, the instructions were adapted to mention SMS, email, and phone. Similarly, it was felt that people might take pictures of things to add to their ‘blessings journal’ and so the instructions mention taking photos. However, it was not deemed necessary to provide the option to upload these to the intervention website; in part due to practical issues with server

space, but also because the advisors felt it might be off-putting for users who were less technically literate.

Create a supportive positive emotional experience of the intervention to promote engagement and motivation to return

Reminders for participants to use the intervention. Participants were offered the choice of reminder mode (SMS, email, both) and time for this to arrive on weekdays between 9-5 (within the doctoral candidate's office hours as reminders were sent manually). A second important aspect was to create a positive experience by providing new, potentially useful or relevant information to the users. For this purpose the BCT model was chosen in order to simply remind users of the website, give invitations to use the site, and advertise and describe content. Table 4.7 provides an overview of the message content, when this was sent, and how this linked to particular BCT strategies. Although the candidate did not tailor message content, personalisation was approximated through the use of participant first names, as has been recommended (Redfern et al., 2014). One important aspect of the reminders was the ability for participants to opt out of receiving them. This is an ethical requirement, as it is suggested that they technically meet the definition for 'spam' (Murray et al., 2009). To address this all SMS included the instruction to reply 'STOP' to stop texts and emails included an 'unsubscribe' link.

Table 4.7 Reminder messages for intervention participants informed by behavioural change techniques

Message timing and aim	Content	BCT according to Michie et al., (2013)
Week 2: Reminding / inviting to complete sessions	[username], Did you know uplift.elft.nhs.uk has tips to enjoy daily sensations? Find ways to enjoy being outside, eating or showering. Reply STOP to stop texts	1.4 Action planning – prompt detailed planning of behaviour performance including detail of context/ duration / intensity
Week 3: Advertising / describing content	[username], with uplift.elft.nhs.uk you can find tips on connecting with your friends, family, or local community & using your strengths. Reply STOP to stop texts	3.1 Social support (unspecified) – advise on social support for performance of behaviour 13.4 Valued self-identity – advise person to write about personal strength
Week 4: Advertising / describing content	[username], Did you know uplift.elft.nhs.uk has space for you to record the good things that happened, things you enjoyed and people you connected with? Reply STOP to stop texts	2.3 Self monitoring – establish method for person to record behaviour as part of strategy
Week 5: Reminding / inviting to complete sessions	[username], you might like to try adding 1 good thing, 1 enjoyable sensation or 1 connection each night before bed at uplift.elft.nhs.uk Reply STOP to stop texts	8.1 Behavioural practice / rehearsal – prompts practice and rehearsal 8.3 Habit formation – prompt rehearsal and repetition of behaviour in same context
Week 6: Advertising / describing content	[username] this week is your last week to use uplift.elft.nhs.uk You might like to record how it feels to use your strengths. Reply STOP to stop texts	5.4 Monitoring of emotional consequences – prompt assessment of feelings after performing the behaviour

Using positive (autonomy supportive) language throughout. The instructions in the website contained phrases such as ‘you might like to’, ‘you can visit’, ‘you might find’. This is also illustrated in the intervention reminders listed in Table 4.7.

Inclusion of interactive activities providing information in novel ways (e.g. audio). The instructions for the ‘savouring’ activity, ‘enjoy’ were provided as audio files. In order to support users’ progress with the intervention their progress was visible on each activity. See Figure 4.7, which illustrates this for the intervention component ‘good things’. For each of the intervention components participants could review

their entries at any time to support them and positively remind them of their progress with the intervention.

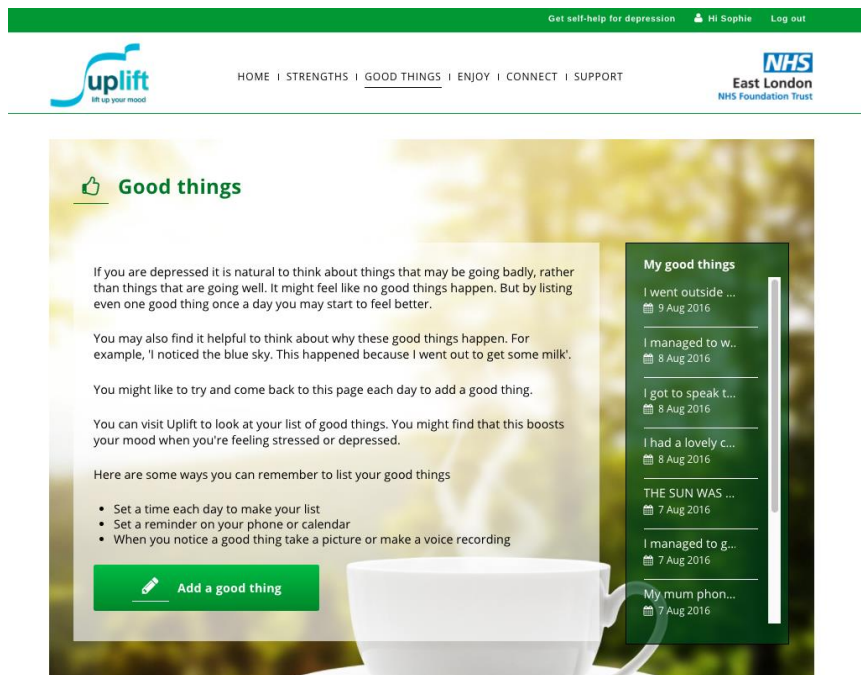


Figure 4.7 Illustrative screenshot of 'good things' intervention component

Visually attractive system. In collaboration with an expert designer, it was decided that the colour green would be the primary hue, as it is a neutral colour that it is not associated with a particular gender or mood. A warm colour (like red) or a cool colour (like blue) could influence emotions and moods that may not be consistent with the aims of the intervention. An often cited paper supports the notion that green is a pleasant colour, not associated with eliciting dominant emotions such as anger or hostility (Valdez & Mehrabian, 1994).

Another important aspect was the use of attractive and relevant imagery. Where possible images were used that were representative of multiple ethnicities, genders, and ages so that a range of people could identify with the intervention. This approximates the principle of similarity mentioned by Oinas-Kukkonen & Harjumaa (2009). It was also important to avoid out-dated imagery or use so called 'head clutcher' images that present depression in a stereotypical and inaccurate manner (Hulatt, 2016). Instead, positive imagery was selected that depicted people going about their daily lives, in line with the principles of the intervention, as depicted in Figure 4.4. See Appendix 7 for screenshots of the intervention and imagery used.

Presenting credible sourced information. This was achieved through the use of the NHS logo, the design services offered by Winona solutions, and by the consistency of webpages. Authority is an important aspect; again through branding using East London NHS trust logo this was achieved. Where possible, the candidate attempted to generate a real world feel by highlighting the role of the researcher in the website. In addition, a set of frequently asked questions (FAQs) was provided that reiterated how participants' data was being used as this is deemed necessary for reassuring participants of the intervention credibility (Yardley et al., 2015).

Tailoring and targeting information. The most obvious place to achieve this was in the 'strengths' section. The strengths planning and strengths sharing examples were personalised, based on the strengths selected, i.e. participants saw only five suggestions for each activity based on what they had chosen in the quiz, rather than the full set of 24. This was to encourage people that the content was for them and based on their abilities. A full list of strengths and suggestions for the plan and sharing section are provided in Appendix 6.

4.6 Discussion

This section briefly summarises the main findings and strengths and limitations of the study. It briefly outlines the implications of intervention development. To avoid repetition of Chapters 2 and 3 it does not include a comparison to literature section, e.g. comparing the intervention to the Seligman et al, (2006) model, or the studies included in the systematic review.

4.6.1 Summary of main findings

This chapter reported the conceptual model of the online positive psychology intervention. In summary, the model contained six components of positive psychology ('savouring', 'using your strengths', 'blessings journal', 'gratitude letter', 'active constructive responding', and 'gift of time'). These components were chosen as they were evidence-based, were consistent with the principles of positive psychology (of pleasure, engagement, and meaning), were previously applied in other studies, and were potentially acceptable in the context of a low-intensity intervention. The model hypothesised several mechanisms of change linked to each principle of positive psychology. The components targeting pleasure were thought to re-educate attention and memory and increase positive affect. Engagement focused components were thought to increase self-efficacy, activity, and improve social engagement. Meaning focused components were similarly thought to increase activity and improve social engagement. In turn, the model hypothesised that these mechanisms might lead to reduced depression and increased subjective quality of life.

The conceptual model also included three design objectives, selected to address contextual challenges that would likely affect the intervention's acceptability. The first was to persuade participants of the relevance of the advice, given the potential lack of fit between positivity and the patients' context. The second was to encourage participants to select suitable strategies, linked to their social world; this was in order to promote patient autonomy and increase meaningful social contact without being too prescriptive. The final design objective was to create a supportive emotional experience to promote engagement, as appealing and credible interventions were thought to be more engaging.

In the final section of this chapter, the operationalised intervention was presented. This demonstrated how particular key features of the intervention were realised to address the design objectives. For instance, it described the renamed components

that were more suited to the context (e.g. 'blessings journal' became 'good things'). It also illustrated how the interventions were adapted to be suited to participants' lives, through use of relevant examples. Further, the website used autonomy supportive language throughout to promote a positive and enjoyable experience for patients.

4.6.2 Strengths and limitations

A key strength of the intervention design was the systematic approach taken to intervention development, which was informed by relevant frameworks, the MRC framework (Craig et al., 2008) and the person-based approach (Yardley et al., 2015). Both are clear that intervention development should be conducted with rigour and recommend the use of both quantitative and qualitative approaches. This enabled the candidate to use the best evidence and most appropriate methods to inform the intervention development. Further, it ensured that the process was transparent and well-documented. This is particularly important given the lack of systematic development of positive psychology interventions reported thus far in the literature, as highlighted by the findings of the systematic review reported in Chapter 2. A second benefit of this approach is that the intervention development involved patient perspectives throughout, both as advisors to the research process, and as participants shaping the developing intervention. This is important given that the literature indicates this is critical to ensuring the success of digital interventions (De Vito Dabbs et al., 2009; Kujala, 2003) which has often been absent from the development of low-intensity psychological interventions (Hollis et al., 2015; Mohr, Weingardt, et al., 2017). Related to this point, both frameworks also emphasise the importance of collaborating with experts and stakeholders. It is also recommended that researchers make clear how this involvement influenced the development process (Hoddinott, 2015). Again, this chapter clearly demonstrates how stakeholders informed both the conceptual model and how it was operationalised into a website.

Although the approach taken has clear strengths, there are nevertheless limitations. The first relates to the conceptual model, which, for clarity, depicts the main hypothesised pathways between positive psychology components, principles, mechanisms, and outcomes. In reality, as acknowledged in section 1.4.5, it is likely that intervention components operate on multiple principles, and therefore mechanisms. It is plausible that the 'blessings journal' also targets the principle of pleasure, by improving awareness of current pleasant events, which could promote

positive affect. However, the candidate felt that depicting all of the potential links would result in an unreadable model, and instead the main hypothesised mechanisms are presented.

The second limitation of the conceptual model relates to the fact that components were limited to those from positive psychotherapy. This was because there is little clarity in the definition of a positive psychology component, as discussed in section 1.5.2, leading to positive psychotherapy being investigated within this thesis. However, the intervention could reasonably have included alternative positive psychology components such as ‘funny things’ as a variation of the ‘good things’ component (Gander, Proyer, Ruch, & Wyss, 2012). However, the developed intervention is nevertheless a useful starting point as it is the first positive psychology intervention to be systematically developed.

Another limitation is that in the process of intervention development, many of the more challenging components of positive psychotherapy (e.g. ‘forgiveness letter’, ‘writing memories’) were rejected. This might have resulted in the removal of potentially effective components, or have created an imbalance in which the intervention focuses more on positive emotions and less on difficult ones. As previously discussed, in section 3.4.3, positive psychologists have often been criticised for failing to explore more difficult emotions. However, the decision to remove these components was based on the context in which it would be delivered, in a low-intensity intervention. In this context there is little evidence that therapeutic writing is effective (Nyssen et al., 2016) yet it may be useful in supported interventions, either face-to-face therapy, or online with therapeutic support.

The final limitation relates to the relatively static process of intervention development in which one process fed into the next (e.g. the conceptual model was informed by a series of studies, which in turn informed the operationalised intervention). This approach is advocated by the person-based approach (Yardley et al., 2015) and other approaches to developing health technologies (Van Velsen, Wentzel, & Van Gemert-Pijnen, 2013). However, it is in contrast to agile software development, which prioritises quickly and iteratively adapting software in response to user feedback, known as an ‘agile’ approach (Dybå & Dingsøyr, 2008). The key differences between the two approaches are that, in the ‘static’ approach design objectives and key features are based on what patients hypothesised would be

important. In contrast, in an agile approach, a paper-based prototype, or 'mock up' of the operationalised website would have been presented to participants in the qualitative study to interact with and feedback on, and this would have been repeatedly and iteratively refined. This could have led to a prioritisation of different guiding principles and associated key features, as participants' feedback would be based on response to a stimulus, rather than a hypothetical concept. Researchers suggest that the 'agile' approach and process of rapid development can result in products that work better for users, as it limits the development of unnecessary features and functions, and prioritises those that meet peoples' needs (Boardwell & Roberson, 2014).

The reason the candidate did not adopt an agile approach is because it is recognised that this is less suited to, and less widely adopted in healthcare settings as it can be too time consuming and emotionally demanding for patients and healthcare professionals to engage with (Van Velsen et al., 2013). Further, the candidate had concerns about how to practically facilitate an agile process with NHS patients. In this context ethical committees generally require a defined intervention prior to giving a favourable opinion, rather than one that is subject to change and repeated refinements. It is unclear whether an agile approach would have received approval for testing in this context. Secondly, it would have also required collaboration with the software developers at an earlier stage, which is again something that could not practically be achieved within the allocated budget.

Although it might not have been possible to adopt a wholly agile approach, it is acknowledged that in reality it can complement traditional methods (Boardwell & Roberson, 2014). The person-based approach suggests that think-aloud techniques can be used to iteratively modify and optimise an intervention (Yardley et al., 2015). In this study, think aloud testing was conducted pragmatically, due to budget and time constraints, and was limited to checking the most obvious design flaws with a small number of colleagues and might not have identified issues that would affect patients. However, despite the largely static process of intervention development that involved little iteration, this chapter documents, to candidate's knowledge, the most systematic process of developing a positive psychology intervention to date. It is therefore a useful starting point for investigating the acceptability of positive psychology online for people with depression.

4.6.3 Implications for research and practice

The findings of this study could inform future research as it provides a clear map of processes and outcomes of an intervention using components of positive psychology. This study has provided a useful starting point for other researchers who wish to use such interventions in varying contexts. The model developed here accounts for the particular contextual issues present in a low-intensity intervention and could provide future researchers with a platform for amending this to account for other settings (e.g. individual, group therapy).

4.6.4 Implications for thesis

The second implication relates to testing. The guiding frameworks for this thesis recommend that once a conceptual model of an intervention has been developed and operationalised, it is necessary to test this in a feasibility study. This can help to establish whether it can be delivered, whether patients use it, whether they find it acceptable, and to find out what the potential outcomes are. This information can then inform a decision on whether it is worth continuing to develop and evaluate the intervention for further testing in an RCT.

5 Feasibility study: quantitative evaluation

5.1 Rationale

As the MRC framework describes, feasibility testing is an essential step in the process of evaluating complex interventions (Craig et al., 2008). Feasibility studies aim to establish whether an intervention can be delivered and whether studies can be conducted. In turn, this allows for an intervention to be refined prior to being tested in a full-scale effectiveness trial. Feasibility is critical to establish because if an intervention cannot be delivered, or is not delivered as intended, then an effectiveness trial would at best be inconclusive, or at worst impossible to complete. Similarly, if research procedures are infeasible a study might not have sufficient data to establish effectiveness. Thus, establishing feasibility is a prerequisite in the evaluation cycle.

Feasibility studies have received increased attention in recent years (Arain et al., 2010; Orsmond & Cohn, 2015). They are typically under-reported and often confused with pilot studies (Arain et al., 2010). The National Institute for Health Research (2012) provide a clear definition of the distinction between the two; feasibility studies aim to assess whether an intervention can be delivered, and/ or a study can be done. This can include investigating intervention procedures, such as adherence, as well as study procedures, such as feasibility of recruitment. In comparison, the NIHR define a pilot study as a smaller version of a full set of study procedures, usually linked to a main trial. Feasibility studies are therefore conducted first, as part of a continuum of research and often the focus is on testing an intervention and preliminary examination of participants' response to this (Orsmond & Cohn, 2015).

5.1.1 Objectives

The aim of the study was to address a number of uncertainties regarding the feasibility of the study procedures and the intervention. In particular, the research aimed to address the following research questions outlined at the outset of this thesis in section 1.8.1, 2) What is the acceptability of this online intervention using positive psychology for depression? and 3) What are the potential outcomes for individuals with depression of this online intervention using positive psychology? The specific research objectives and sub-objectives are as follows:

- Evaluate feasibility of recruitment and data collection procedures
 - Feasibility of eligibility criteria
 - Feasibility of recruitment including time to recruit
 - Study retention and follow-up rates
 - Feasibility of measures
- Explore usage of intervention
 - Establish adherence to the intervention guidelines
 - Explore patterns of intervention use
- Explore the acceptability of, and participant response to, the intervention
 - Participant views on exercises and overall intervention
 - Explore change in outcome data
 - Explore if participant characteristics are associated with intervention use

5.2 Methods

5.2.1 Design

A pre-post design was chosen as the most appropriate method for addressing the study objectives. It is typical for feasibility studies to use more flexible methodology, such as an observational design, given the aims focus on evaluating acceptability and feasibility of intervention and study procedures (Arain et al., 2010). It is therefore unnecessary to use control groups and randomise participants at this early stage in the intervention development process, although this may be necessary in a later pilot study (Arain et al., 2010). This study was designed and reported in line with recent guidance that was developed to assist researchers in determining objectives and research questions when assessing the feasibility of health interventions (Orsmond & Cohn, 2015). The study was registered with the ISRCTN database (ISRCTN96366571).

When evaluating an online intervention, it is recommended that online methods are used to collect data in order to enhance the external validity of the study and reduce participant burden (Murray et al., 2009). Consequently, all participants provided consent and completed pre and post measures online, facilitated by Bristol Online Surveys software (University of Bristol, 2016).

5.2.2 Recruitment and sampling

Due to the nature of the intervention, online self-help, which in practice will be taken up by people who self-select, it was most appropriate to use a self-selected sample. The aim was to recruit people currently experiencing symptoms of depression and recruitment occurred in clinical and non-clinical settings. Adverts were designed in collaboration with feedback from SUGAR (Service user and carer group advising research) and included brief details of the study, along with a link to the intervention website through which participants could request to be contacted by the researcher. These adverts were placed in clinical settings including seven GP practices, two counselling services, and in the waiting areas of six community mental health teams (CMHTs). One counselling service mailed out adverts with patient appointment letters.

In addition, healthcare professionals were invited to refer patients to the study during routine clinical meetings in GPs and counselling services. Clinical study officers met with patients in CMHTs and referred interested patients to the study. The clinicians

and clinical study officers could pass on patient details to the lead researcher, or could encourage patients to self-refer. Adverts were placed in community venues (e.g. local libraries, charities, community centres) in East London. Advertisements were also distributed online via social media including Twitter and Facebook, advertising sites like Gumtree, and via mailing lists or newsletters of existing organisations.

Inclusion criteria

Participants were eligible to participate if they:

- Were over 18
- Had regular access to the internet
- Had sufficient command of English to complete the study measures
- Endorsed one of the two Whooley screening items (Whooley, Avins, Miranda, & Browner, 1997), derived from the PRIME-MD (Spitzer et al., 1994) 1) During the past month, have you often been bothered by feeling down, depressed, or hopeless? 2) During the past month, have you often been bothered by little interest or pleasure in doing things?

There were no exclusion criteria used in the study (e.g. suicidal ideation, duration of depressive episode) because a recent review of depression research suggests that using such criteria can exclude between 75-85% of potential participants, thus making study findings difficult to generalise into clinical practice (Halvorson & Humphreys, 2015). Instead, the present study used wide inclusion criteria in line with one of the study aims to assess how acceptable the intervention was in the real-world context.

The decision to use the Whooley screening items to assess depression was pragmatic. The tool is highly sensitive and moderately specific, thus is likely to include people who experience some depressive symptoms but may not meet full criteria, yet is unlikely to include people who are not depressed (Bosanquet et al., 2015). This was appropriate, given that the study aimed to assess the acceptability of the intervention in a broad sample where depressive symptoms varied. Secondly, the screening tool is routinely used in primary care practice as an initial depression screen and is quick to administer, thus reducing participant burden and making telephone screening more feasible.

Sample size

There is little available guidance on sample sizes for feasibility studies (Billingham, Whitehead, & Julious, 2013). However, if a study aims to investigate a rate it is recommended that researchers should construct confidence intervals around the anticipated value (Hertzog, 2008). As one aim of the present study was to assess the participation rate in the intervention, which previous studies have suggested is around 50% (Bolier, Haverman, Kramer, et al., 2013; Schueller & Parks, 2012), a sample size of 100 allows this rate to be estimated to within a 95% confidence interval of +/- 10%.

5.2.3 Intervention

The intervention was outlined in full in the previous chapter and full details are located in Appendix 7. Briefly, the intervention website consisted of six positive psychology components, adapted from positive psychotherapy, including ‘using your strengths’ which was split into two exercises, ‘strengths quiz’ and ‘strengths plan’, ‘blessings journal’, ‘savouring’, ‘active constructive responding’, ‘gratitude letter’, and ‘gift of time’. Participants were advised to use the website for six weeks and log in once per week to complete one component. However, participants could choose which component to practice, and could practice more often if desired.

5.2.4 Measures

Table 5.1 outlines the measures used in the study, which are provided in full in Appendix 8. All outcome measures were selected on the basis that they presented minimal burden to participants to complete independently. This was to maximise the follow-up rate in the study.

Demographics and treatment history

At baseline, participants reported their demographics and psychiatric treatment. The demographic measure asked about age, gender, first language, highest educational qualification, region, and employment status. Participants were asked about their first experience of depression, whether they had ever received treatment for this and, if so, which treatments they were currently receiving. They were also asked to report whether they had ever received treatment for another mental health condition, and, if so which treatments they were currently receiving.

Table 5.1 Measures used at baseline and follow-up

Measure	Item (n)	Baseline	Follow-up
Demographics	6	x	
Treatment history	7	x	
Depression symptoms:PHQ-9 (Kroenke, Spitzer, & Williams, 2001)	9	x	x
Subjective quality of life: life domains from DIALOG scale (Priebe et al., 2007)	8	x	x
Intervention acceptability	6		x
	Total n	29	23

Intervention usage data

In order to assess patterns of intervention use the website was programmed to automatically collect participant level data of the date and time of participant actions. This included when they logged in. It also included exercise completion, defined as when a participant entered information onto the website, e.g. they completed the ‘strengths quiz’ or added a ‘good thing’. This allowed the calculation of the types of components participants completed from the seven available: ‘strengths quiz’, ‘strengths plan’, ‘good things’, ‘enjoy’, ‘connect’, ‘saying thanks’, and ‘sharing strengths’. A Microsoft Excel 2010 database was used to organise participants’ login and exercise completion data according to the week the event occurred. It was not possible for the website to collect individual level data of time spent on the website.

Intervention acceptability

The acceptability of the intervention content was measured at follow-up by three items asking participants to rate the extent to which the exercises on the Uplift website felt ‘natural’, ‘enjoyable’, and ‘difficult’ on a seven point Likert scale from ‘strongly disagree’ to ‘strongly agree’. The acceptability of the website was assessed by three items rating the ‘helpfulness’, ‘negative effects’ and ‘satisfaction’, again on seven point Likert scales ranging from ‘not at all helpful’ to ‘extremely helpful’, ‘extreme negative effects’ to ‘no negative effects’, and ‘totally dissatisfied’ to ‘totally satisfied’. For each of these three items participants could provide brief open-ended comments.

These items were adapted from previous scales used to measure the acceptability of positive psychology interventions. The items regarding the extent to which exercises were ‘enjoyable’ and ‘difficult’ were previously used by Schueller (2010). The items on ‘helpfulness’, ‘negative effects’, and ‘satisfaction’, with the option to provide open-ended comments, were previously used by Müller et al., (2014). However, in the

present study these items were adapted from a 5-point Likert scale to 7-points for consistency. Müller et al., (2014) used the Person-exercise fit diagnostic (PAF-D) to assess the extent to which participants found the interventions ‘natural’, or fitting with their preferences, but participants struggled to understand this questionnaire. Consequently, the present study used a single item to assess the extent to which participants felt the exercises were ‘natural’.

Outcome measures

As the conceptual model of the intervention, described in section 4.3, indicated that the intervention may affect depression and subjective quality of life, appropriate outcome measures were selected.

Symptoms of depression were measured by the Patient Health Questionnaire 9 (PHQ-9), a widely validated and well-used measure (Kroenke et al., 2001). This 9-item scale asks participants to rate their extent of agreement, based on the last two weeks, to items such as ‘little interest or pleasure in doing things’. There are four available response categories ranging from ‘not at all’ (0) to ‘nearly every day’ (3) and scores are totalled and correspond to the severity of depression.

Subjective quality of life was measured by the 8-item version of the DIALOG scale, a well-validated measure, based on the Manchester Short Assessment of Quality of Life (Priebe, Huxley, Knight, & Evans, 1999), which asks participants to rate their satisfaction with 8 life domains on a seven point Likert scale from ‘Totally dissatisfied’ to ‘Totally satisfied’ (Priebe et al., 2007; Priebe, Golden, McCabe, & Reininghaus, 2012). Mean scores can be reported for the total scale or for individual items.

5.2.5 Study procedures

A screening log was maintained, using Microsoft Excel 2010, throughout the study to monitor participant progress and the feasibility of study procedures.

Screening and consent

Where online methods are used to evaluate interventions, particularly where financial reimbursements are provided, it is recommended that checks are put in place to minimise the risk of participants repeatedly registering (Murray et al., 2009). Whilst it is possible to automate this process, it requires programming expertise to do so, or to manually check requires considerable researcher time (Kramer et al., 2014).

Consequently, it was decided that each participant should have a brief screening telephone, or in-person conversation with the researcher to attempt to minimise issues with repeat registration. A second benefit was that this initial phonecall met the ethical obligation of providing an opportunity to discuss the research and address any questions. If participants were eligible they were sent a survey link where they could independently read the full participant information sheet, consent statement, and then complete the initial assessment.

As consent was taken electronically, it was possible that participants may experience technical difficulties with this process (e.g. not receiving the email, not being able to access the survey website). In order to minimise the potential for this to impede participants wishing to participate, if participants had not completed the consent and baseline questionnaire within a week of it being sent, they were telephoned to resolve potential technical issues.

As the initial assessment included the PHQ-9, which has one item measuring suicidal ideation, i.e. 'have you thought that you might be better off dead or of hurting yourself in some way?' participants were followed-up with a telephone call or an email (depending on their preference) if they endorsed this item. In the phonecall participants were advised to contact a health professional immediately if they were feeling suicidal. This was in line with recommendations for when suicidal ideation is expressed (Lakeman & FitzGerald, 2009).

Intervention allocation

Once the initial assessment was completed the candidate then assigned participant access to the intervention for six weeks and set up their weekly reminders, as described in section 4.5.3.

Follow-up

At the end of the six weeks participants were emailed with a link to the follow-up survey and asked to complete this within a week. If no data were returned participants were sent a second email inviting them to respond. If, after this second request, no data were returned participants were telephoned or sent an SMS inviting them to complete the study measures.

In order to maximise follow-up rates to the study, participants received a £10 Amazon voucher for completion of each questionnaire, at baseline and follow-up, in line with

research suggesting this level of compensation can increase follow-up rates in online trials (Khadjesari et al., 2011).

Research governance and ethics

The study received a favourable ethical opinion prior to commencement (Manchester National Research Ethics Committee 16/NW/0447), along with regulatory approvals from the Health Research Authority and local Governance office of East London NHS Foundation Trust (see Appendix 8).

5.2.6 Analysis

Analysis was completed in Microsoft Excel 2010 or in SPSS version 24.0.

Descriptive statistics

Descriptive statistics including mean, median, and standard deviation were used to summarise the sample characteristics and treatment history, data on intervention usage, and acceptability and outcome measures.

Percentages were used to calculate the intervention acceptability, based on the proportion of participants who indicated agreement with each statement (e.g. those who selected 'slightly agree', 'agree' or 'strongly agree'). Percentages are also used to assess the feasibility of study procedures.

To assess change in outcome measures, the recovery rates were calculated in line with recommendations from IAPT, who use both PHQ-9 and the General Anxiety Disorder 7 scale (GAD-7) to measure recovery (Community and Mental Health Team, 2016). As only PHQ-9 data were collected, recovery was defined as the number of participants that moved from caseness (PHQ-9 score ≥ 10) to not caseness (PHQ-9 score ≤ 9). This is based on data from participants who completed the follow-up questionnaire and does not include participants who were not at caseness at the outset of the intervention.

T-tests and regression analysis

T-tests were also used to explore the potential change in outcome measures. In order to explore the association between participants' characteristics and intervention usage, negative binomial regression was used. This is a version of Poisson regression used to model count data (in this case the count data being number of logins and number of exercises completed in the Uplift intervention) that accounts for the fact that the variance of the count is higher than the mean (Lawless, 1987). The

exponential Beta is reported in the results, as this is an interpretable representation of the expected mean difference.

Content analysis of open ended survey responses

Participants' open-ended responses were analysed using qualitative content analysis in which categories were inductively developed and then applied to the data (Hsieh & Shannon, 2005; Mayring, 2000). The codes were applied, and are reported, at a case level, rather than question level. This is because the answers included repeat data or data that linked to more than one question. The qualitative analysis is reported in this chapter, rather than the subsequent chapter, as the data collected were brief open-ended responses collected from all study participants in response to fixed questions. In contrast, the qualitative study reported in Chapter 6, is based on in-depth qualitative data from semi structured interviews with purposively selected participants.

5.3 Results

5.3.1 Screening

Figure 5.1 displays the recruitment and enrolment flow for the study; of the 160 participants screened 103 were enrolled in the study, 93 accessed the intervention website and 89 completed the follow-up questionnaire.

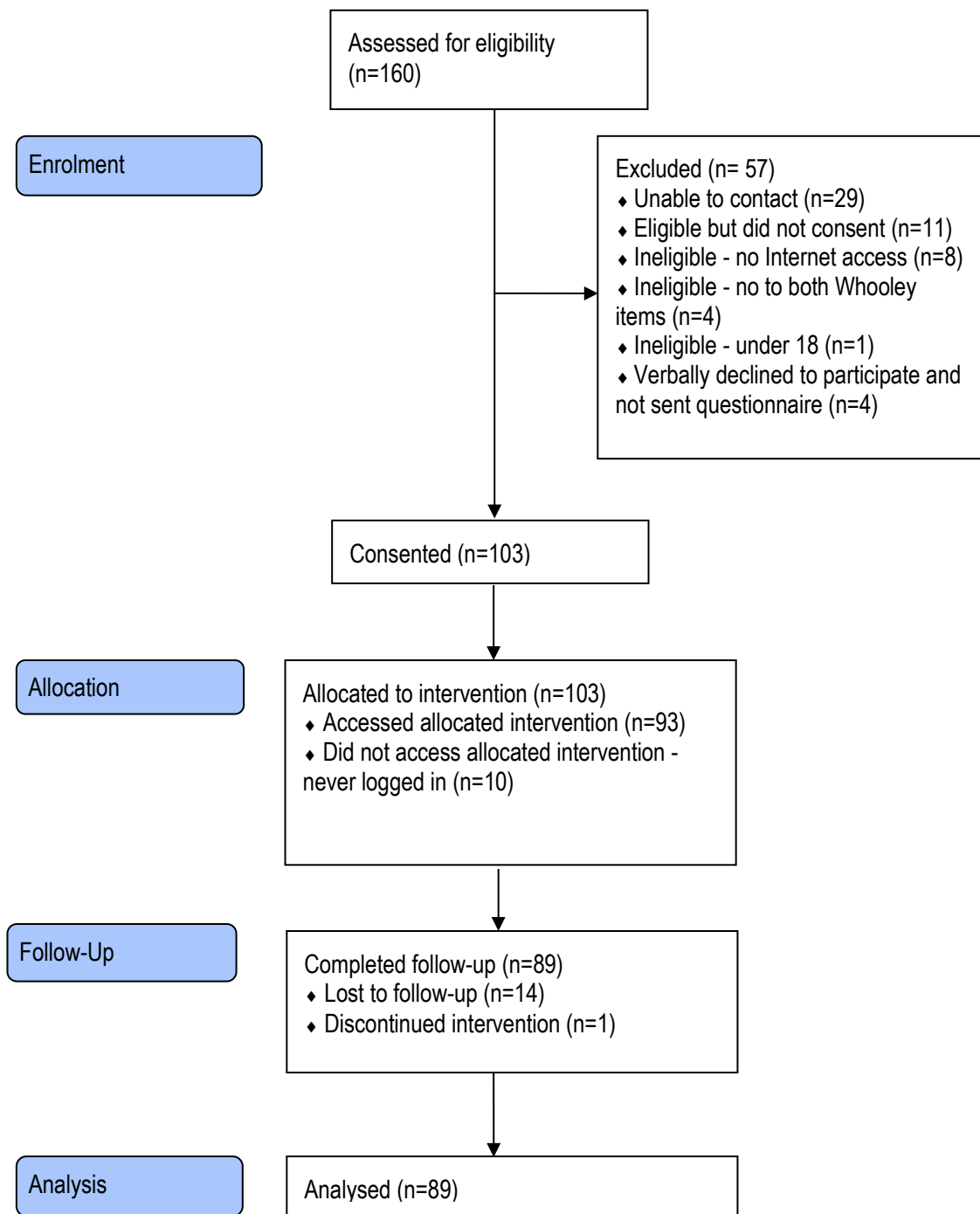


Figure 5.1 Participant flow diagram

5.3.2 Sample

Participant characteristics are displayed in Table 5.2. Participants were on average 37 years old and were mainly women (72%) who spoke English as their first language (82%). Overall the sample was highly educated as two thirds (64%) had a degree or postgraduate qualification. Most participants reported living in East London (49%) or other areas of London (29%).

Half of participants were employed, either in full time-employment (33%), self-employed (7%), or part-time employment (12%). A third reported being unemployed (31%), with the remainder studying (10%), in voluntary employment (4%), or retired (3%).

Participants reported their duration of depressive illness was, on average, almost 16 years, although the range was very wide (0-52 years). On average, participants scored 16.8 on the PHQ-9 scale, in the range of moderate to severe depression. The majority of participants were moderately severe (38%) or severely depressed (30%).

Almost all participants had previously been treated for depression (93%) whilst a minority had never received treatment for any mental health concern (6%). Most participants were currently receiving treatment for depression (75%) and many were also receiving treatment for another mental health concern (45%).

Current treatments for depression were mainly medication (74%) or therapy (58%). A third reported seeing a psychiatrist (33%), with a minority receiving care co-ordination (15%) or hospital treatment (<1%). Only a small number of participants reported being on the waiting list for psychological therapies (n=4).

Participants' subjective quality of life, measured by the eight items of the DIALOG scale, was on average 3.6 indicating dissatisfaction with life. Specifically in the domain of mental health, the average score was 2.5 indicating explicit dissatisfaction with this domain.

Table 5.2 Sociodemographic and clinical characteristics of participants

		Mean	(SD)
Age		37	(11.8)
Gender	Women	n 74	(%) (72)
Region ^a	East London	50	(49)
	Rest of London	30	(29)
	Rest of England	14	(14)
	Scotland	2	(2)
	Wales	2	(2)
	Northern Ireland	3	(3)
	Outside of UK	1	(1)
First language	English	84	(82)
Highest educational qualification	None (left prior to GCSE)	4	(4)
	GCSE	6	(6)
	Intermediate level 3-5 (A level to diploma)	27	(27)
	Higher (6-7 degree, postgraduate degree)	65	(63)
Employment status	Working full-time	34	(33)
	Working part-time	13	(12)
	Self-employed	7	(7)
	Unemployed	32	(31)
	Education full-time	10	(10)
	Voluntary employment	4	(4)
	Retired	3	(3)
		Mean	(SD)
Duration of depression	Years	15.9	(12.2)
Depression (PHQ-9)	Total	16.8	(5.9)
Subjective quality of life (DIALOG)	Overall score	3.6	(1.0)
	Mental health score	2.5	(1.3)
Current depression treatment	Yes	n 77	(%) (75)
	Medication ^c	57	(74)
	Therapy ^d	45	(58)
	Psychiatrist ^d	25	(33)
	Care co-ordinated ^d	11	(15)
	Day hospital ^d	1	(<1)
Depression severity (PHQ-9)	Minimal (0-4)	3	(3)
	Mild (5-9)	11	(11)
	Moderate (10-14)	19	(18)
	Moderately severe (15-19)	39	(38)
	Severe (20-27)	31	(30)

Note sample n=103 except where stated

^a n= 102

^b n=101

^c n= 76

^d n=77

5.3.3 Feasibility of recruitment and data collection procedures

Feasibility of eligibility criteria

Figure 5.1 illustrates the participant flow through the study and indicates that less than ten percent of participants screened were ineligible for the study (n=15/160, 9%). Participants were excluded because they did not have Internet access (n=8), did not endorse either of the Whooley items (n=4), or because they were under 18 (n=1).

The eligibility criteria appeared feasible for identifying suitable participants as the majority of participants (86%, n=89) met the 'caseness' threshold of PHQ-9 ≥ 10 (Community and Mental Health Team, 2016). This suggests that the Whooley screening items were a sensitive screening tool (Bosanquet et al., 2015).

Feasibility of recruitment

Online recruitment appeared feasible as only a small number of participants were screened as eligible but did not provide consent to the study (n=11). No reports of encountering technical difficulties with online consent or data collection were received.

The average time to recruit was 2 days (SD 5), calculated as the time between the participant being invited to take part, following their screening call, and their consent. A minority of participants required a reminder email or follow-up call after one week (n=12, 12%). The recruitment period ran from 22nd August to 2nd December 2016 a total of 74 working days or 14.8 working weeks, excluding weekends and bank holidays. The average recruitment rate was almost 7 participants per working week.

The majority of participants self-referred to the study (n=93, 90%) and the sources of recruitment are summarised in Table 5.3. Most participants were recruited via adverts distributed online (n=55), often via newsletters of existing mental health organisations (n=24). Around a third of participants were recruited from clinical sources, most self-referred having seen an advert (n=17) with a small number of participants referred by their clinician (n=10). Around a fifth of participants reported hearing about the study from someone else (n=18), and a few participants were not sure where they had heard about it (n=3). Despite repeated attempts it was not possible to recruit in East London NHS IAPT services.

Table 5.3 Sources of participant recruitment

Source	Participants recruited (n)
Adverts online	55
Mental health newsletter	24
General newsletter	6
Facebook	11
Gumtree	5
Trials website (e.g. ISRCTN, UKCTG)	5
Other (e.g. Google, Twitter)	4
Adverts in clinical settings	17
Other provider (e.g. Mind)	8
Psychological service	5
GP	2
Referred by clinician	10
CMHT and day hospital	7
GP	2
Psychological services	1
Other	21
Word of mouth	18
Unknown	3

Due to the nature of advert-based recruitment it is not possible to accurately estimate the take-up rate in all settings. However, in the CMHTs and day hospital, because clinical study officers were asked to keep records of patients approached, participation rate in this setting was 24% (n=7/29 approached participate).

Study retention and follow-up rates

As illustrated in Figure 5.1, eighty-nine participants completed the follow up questionnaire; a follow-up rate of 86%. The average time taken to collect this data was 5 days (SD 7), calculated as the time between the sending of the follow-up invitation and the completion of the online survey. Many participants were sent reminder emails after one week to complete the follow-up (n=55, 53%). Around a third of the sample were contacted again either via phone, SMS, or email for a final reminder (n=38, 37%).

Table 5.4 compares the characteristics of completers and those lost to follow-up. A greater proportion of those who were lost to follow-up were unemployed (50% compared to 31% of completers). Generally, those who were lost to follow-up (n=14) had a higher baseline depression score (M=19.2, SD 6.8) than completers (M=16.4, SD 5.8), a longer history of depression (M=19.6, SD 12.7 compared to M =15.3, SD 12.0), and were less likely to be in treatment (57% compared to 78% of completers). They also had lower intervention use both in terms of logins (M=1.4, SD 1.3 compared to

M=4.1, SD 4.3) and exercises completed (M=1.4, SD 1.6 compared to M=7.4, SD 9.9). Participants that completed and dropped out were similar in terms of age, first language, and level of education.

Table 5.4 Characteristics of study completers and participants lost to follow-up

	Completers (n=89)	Lost to follow-up (n=14)
Age (mean, SD)	37 (11.5)	37 (13.8)
Female (%)	71	78
English first language (%)	86	81
Average highest educational qualification	4.6	5.2
Unemployed ¹ (%)	31	50
Currently receiving depression treatment (%)	78	57
Years of depression treatment ^a	15.3 (12.0)	19.6 (12.7)
PHQ-9 Total score (mean, SD)	16.4 (5.8)	19.2 (6.8)
DIALOG score (mean, SD)	3.6 (1.0)	3.8 (1.0)
<hr/>		
Total logins (mean, S.D)	4.1 (4.3)	1.4 (1.3)
Total exercises completed (mean, SD)	7.4 (9.9)	1.4 (1.6)

¹ Employed = working full time, part-time, voluntary, self-employed, or studying. Unemployed = retired or unemployed

^a n=87

Feasibility of study measures assessed by missing data

The study measures generally proved feasible with very little missing data at baseline and follow-up. The baseline demographic measure had missing values on the following items: educational qualification (n=1), duration of depression (n=2), current medication (n=1), and current care co-ordination (n=1).

On the depression symptom scale, the PHQ-9, just two participants were missing values at baseline (n=1 missing one item, n=1 missing two items). At follow-up three participants were missing values (n=2 missing one item, n=1 missing nine items). Where participants were missing one or two values mean imputation was used to account for these.

The subjective quality of life scale, DIALOG, had very few missing values at baseline (n=1 missing one value, n=2 missing two values) and at follow-up (n=1 missing two values, n=1 missing eight values). Where participants had 80% of values complete it was not necessary to adjust the mean.

Two participants were missing values on overall intervention acceptability (n=1 missing one item, n=1 missing three items).

5.3.4 Intervention usage

Most participants (90%) logged into the intervention at least once. The mean number of intervention logins was 3.7 (median 2.0, SD 4.2). Most participants attempted at least one component (83%) and participants completed a mean of 2.6 of the 7 available components (median 2.0, SD 2.0). In total, participants completed a mean of 6.6 exercises on Uplift (median 3.0, SD 9.4). Participants logged in and completed exercises for a mean of 1.9 weeks (median 1, SD 1.6). During the course of the study only one participant opted to unsubscribe from the email reminders, as they wished to stop using the intervention.

Establish adherence to the intervention guideline

The guidance given to participants was to log in once per week for six weeks and complete at least one exercise per week. In practice, very few participants adhered to this guidance for the six weeks (n=4, 3.9%).

Explore patterns of intervention use

Whilst relatively few participants followed the intervention guidance, some patterns of intervention use were observed related to the frequency of exercise completion, popularity of components, order effects, and the relationship between intervention logins and exercise completion. These findings are presented below.

Patterns of exercise completion

Three patterns of exercise completion were observed based on the total number of weeks that participants completed at least one exercise (this is non-consecutive weeks). The patterns are summarised in Table 5.5 which indicates that half of the sample had 'minimal' exercise completion; they either practiced no exercises or practiced for only one week. A third of the sample had 'moderate' exercise completion and practiced for a total of 2 or 3 weeks (30%). The final fifth of the sample had 'high' exercise completion and practiced at least one exercise a week for \geq four weeks (20%).

Table 5.5 Patterns of exercise completion

Pattern of exercises completion	Total weeks ≥ 1 exercise completed	n	%	Logins (mean, SD)	Exercise completion (mean, SD)
Minimal		52	50	1.7 (1.6)	1.6 (2.0)
	0 ^a	18	17		
	1	34	33		
Moderate		43	30	3.9 (1.9)	6.7 (5.3)
	2	23	22		
	3	8	8		
High		18	20	8.9 (6.3)	19.5 (13.3)
	4	12	12		
	5	4	4		
	6	4	4		

The three patterns of exercise completion are depicted in the figures below, which display the variability of intervention logins and exercise completion present within each pattern. Figure 5.2 displays the participants who had minimal use of the intervention. It includes participants who logged in just once and completed no or few exercises, as well as those who logged in repeatedly and completed many exercises, yet did so for only one week.

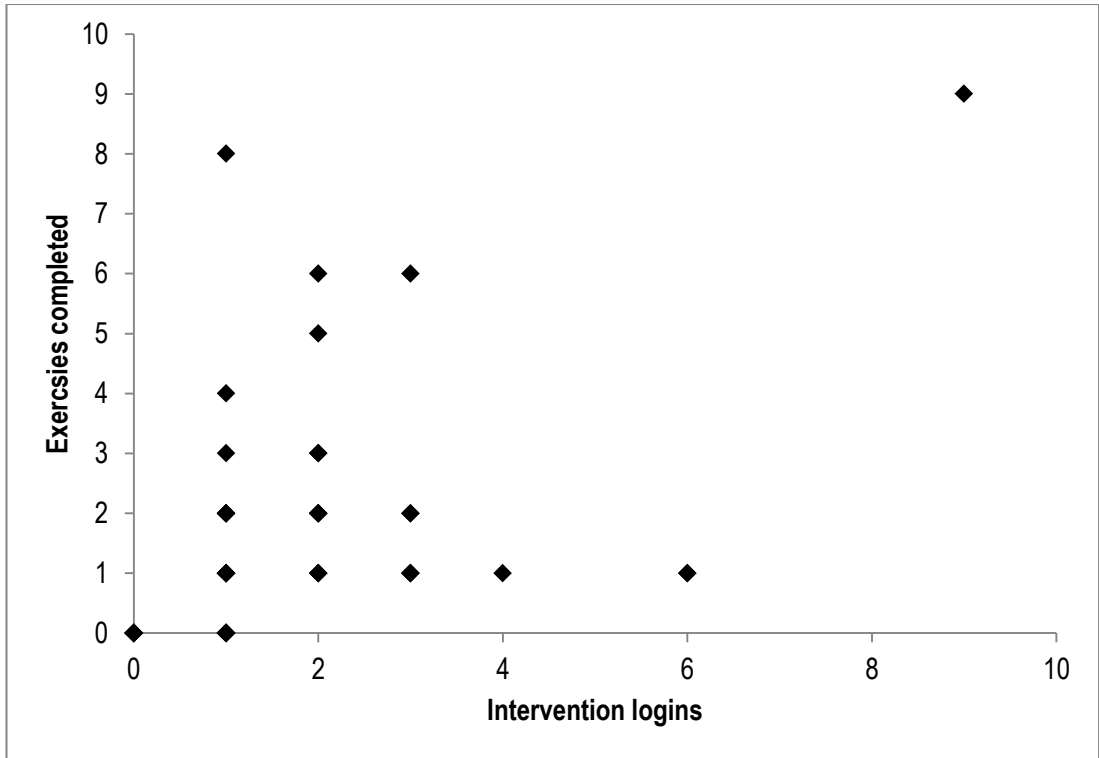


Figure 5.2 Scatterplot of intervention logins and exercise completion of minimal use participants (n=52)

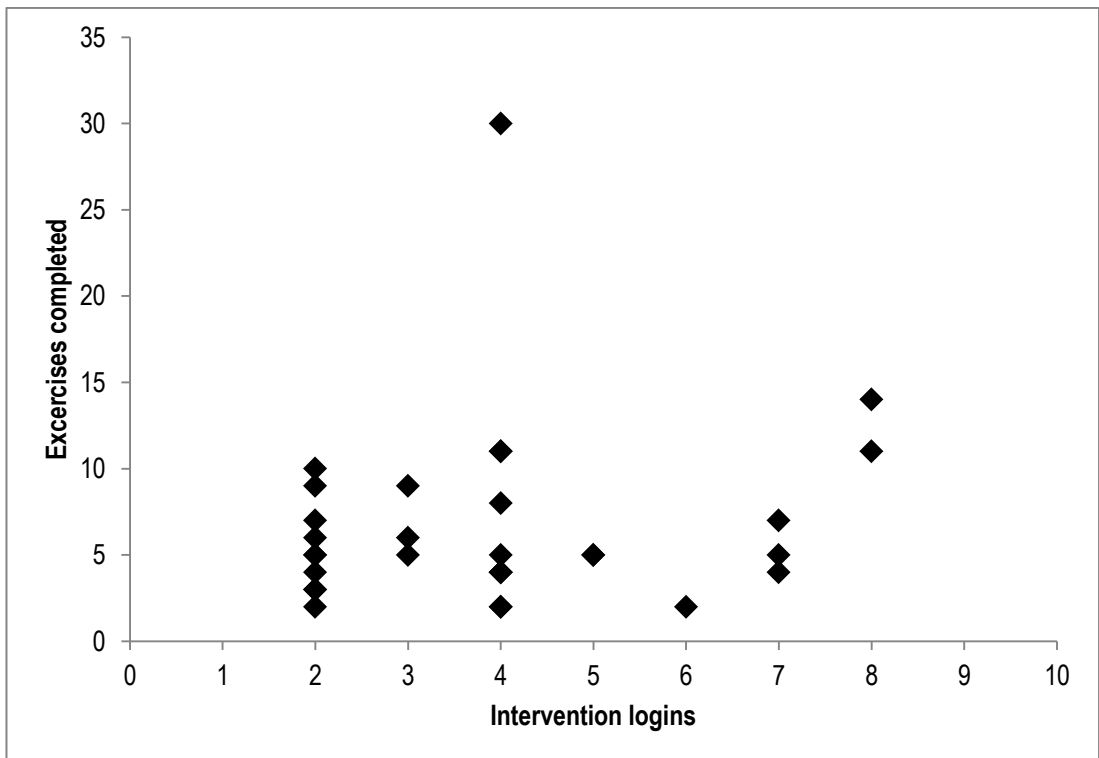


Figure 5.3 Scatterplot of intervention logins and exercise completion of moderate use participants (n=43)

Figure 5.3 displays the participants who had moderate use of the intervention, i.e. completed exercises for two weeks or three weeks. Figure 5.4 displays the fifth of the sample who had high intervention use, i.e. completed exercises on Uplift for four, five, or six weeks.

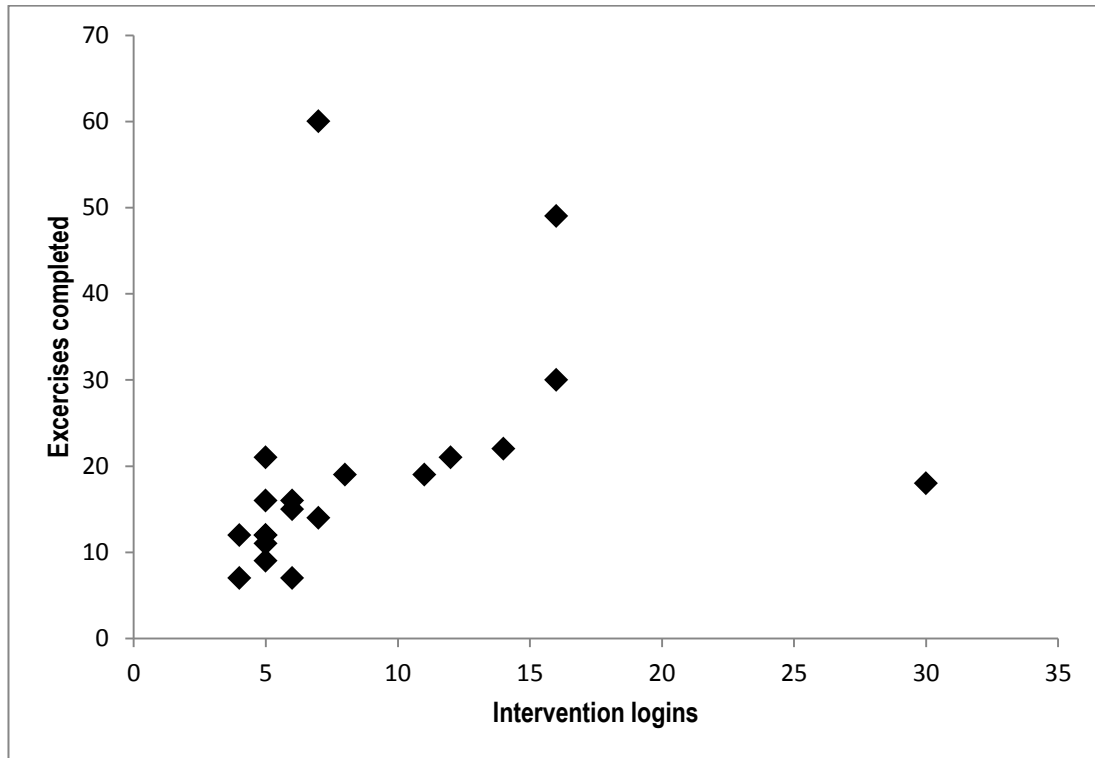


Figure 5.4 Scatterplot of intervention logins and exercise completion for high use participants (n=18)

Popular components

The data on how participants used intervention components is presented in Table 5.6 and indicates that some components were more popular than others. Most participants attempted the 'strengths quiz', although this tended to be practiced once, on average, yet few participants subsequently completed their 'strengths plan' (17%), or 'sharing strengths' (16%). Most participants tried the 'good things' (57%) at least once and on average, this was repeated 2.5 times although the SD suggests there was large variation. Many participants attempted the 'enjoy' component (40%); again this was repeated once although there is some variation in this. Almost a third of participants tried the 'connect' (28%) and 'thanks' (26%) components and these were rarely repeated.

Table 5.6 Participants use of intervention components

Component	Attempted at least once (n, %)	Average number of times completed (mean, SD)
Strengths quiz	82 (80)	1.0 (0.8)
Strengths plan	17 (17)	0.4 (1.0)
Good things	59 (57)	2.5 (4.0)
Enjoy	41 (40)	1.3 (2.6)
Connect	29 (28)	0.7 (2.0)
Thanks	27 (26)	0.4 (0.8)
Sharing strengths	16 (16)	0.2 (0.6)

Order effects

The third finding on intervention usage patterns was the order effect. Although participants were advised that they could use any component at any time, participants seemed to follow the order in which they were presented, i.e. from left to right on the website. This meant that the ‘strengths quiz’ was practiced mainly in week one, whilst ‘connect and ‘thanks’ were practiced more so in weeks three and four. Figure 5.5 displays these patterns. It also highlights that the ‘good things’ and ‘enjoy’ components were practiced throughout the course of the study although with declining frequency.

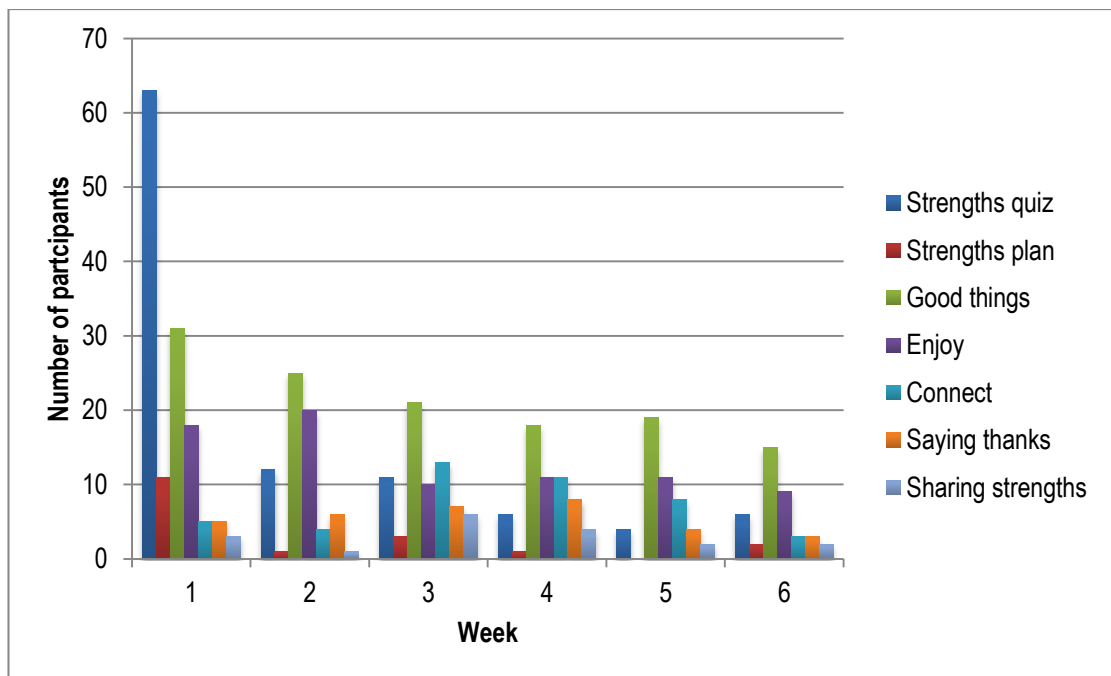


Figure 5.5 Number of participants completing Uplift components over time

Relationship between intervention logins and exercise completion

The fourth finding was that although exercise completion was generally higher in those who logged in more, this was not always the case. Figure 5.6 plots exercise completion against intervention logins for the sample. This graph excludes one outlier, a participant with 30 logins, to increase the clarity of the graph. It shows a cluster of participants, close to the x-axis, with increasing logins but no corresponding increase in exercise completion. A quarter of the total sample (n=25, 24%) had intervention logins that were higher than the number of exercises completed.

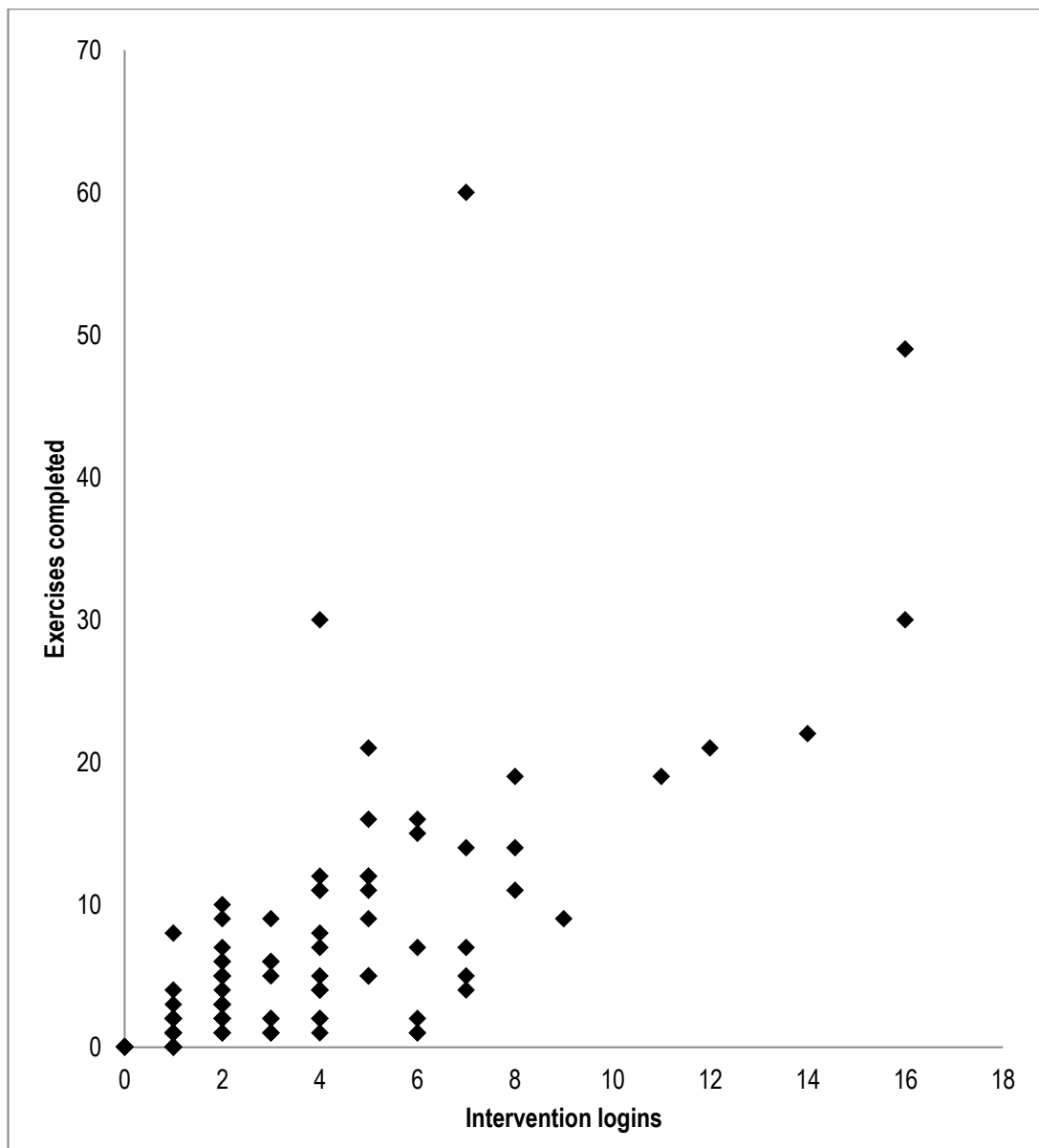


Figure 5.6 Scatterplot of intervention logins and exercise completion (n=102)

To investigate further, graphs of intervention logins and exercise completion were plotted for each of these 25 participants (see Appendix 9) and several patterns were observed, summarised in Table 5.7. As expected, one pattern is that those participants who disengaged from the intervention did so without completing an exercise (n=8). However, another pattern of disengagement was participants who completed an exercise and then disengaged, either logging in occasionally without completing exercises or not logging in again (n=7). Some participants repeatedly logged in to the website and occasionally completed exercises (n=6). A small number repeatedly logged in to the intervention and did not complete exercises (n=4).

Table 5.7 Patterns of engagement for participants with intervention logins higher than exercise completion (n=25)

Pattern	Description	n	Login (median)	Exercise completion (median)
Disengagement without exercise completion	Participants who logged in once and completed no interventions without returning to the intervention	8	1	0
Disengagement following exercise completion	These participants completed the exercises, occasionally logged in and then subsequently disengaged	7	3	1
Repeated engagement with occasional exercise completion	These participants repeatedly logged into the intervention and occasionally completed exercises	6	6.5	3
Repeated engagement without exercise completion	These participants initially completed an exercise and then repeatedly logged in without completing further exercises	4	4.5	1

5.3.5 Acceptability of and participant response to the intervention

This section of results is based on those returning the follow-up questionnaire (n=89), unless otherwise stated.

Participant views on exercises and intervention

Participants' responses to the questions about Uplift exercises are shown in Table 5.8. Nearly half of respondents reported that the exercises on Uplift felt 'natural' (n=41, 46%) with a similar proportion reporting them as 'enjoyable' (n=38, 43%). Over a third of participants reported that the exercises were 'difficult' (n=33, 37%).

Participant responses to questions about the website are displayed in Table 5.9. The website was rated as helpful by a fifth of participants (n=18, 20%), a minority reported negative effects (n=6, 7%). No participants reported extreme negative effects. Overall, 39% of participants were satisfied with the intervention (n=34).

Table 5.8 Participant views on Uplift exercises (n=89)

	n (%)						
	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
Natural	5 (6)	12 (14)	19 (21)	12 (14)	17 (19)	18 (20)	6 (6)
Enjoyable	2 (2)	14 (17)	12 (14)	22 (25)	16 (18)	19 (21)	3 (3)
Difficult	12 (14)	15 (17)	13 (15)	16 (18)	20 (23)	7 (7)	6 (6)

Table 5.9 Participant responses to overall intervention (n=89)

	n (%)						
Helpfulness ^a	Not at all helpful	A little helpful	Somewhat helpful	Moderately helpful	Quite a bit helpful	Mostly helpful	Extremely helpful
	13 (15)	32 (36)	14 (16)	11 (12)	10 (11)	4 (5)	4 (5)
Negative effects ^a	No negative effects	Minimal negative effects	Some negative effects	Moderate negative effects	Quite a few negative effects	Mostly negative effects	Extreme negative effects
	48 (55)	23 (26)	9 (10)	2 (3)	3 (3)	3 (3)	0 (0)
Satisfaction ^b	Totally dissatisfied	Very dissatisfied	Fairly dissatisfied	In the middle	Fairly satisfied	Very satisfied	Totally satisfied
	3 (3)	4 (5)	18 (21)	28 (32)	15 (17)	14 (16)	5 (6)

^an=88 ^bn=87

Most participants provided at least one comment to the open-ended survey items (n=79). Participant comments from the open-ended questions were grouped under three categories: intervention effects, person-intervention fit, and practical issues. These are displayed in Table 5.10 with example quotes.

Intervention effects

Many participants (n=42) commented that the exercises on Uplift improved their mood or emotions by helping them to pay attention to, recognise, and become more aware of pleasant things. Participants described that the exercises had an impact on their thoughts as it helped them to focus more, to put things into perspective, and provided a space to reflect. Fewer participants described an improvement in daily exercises (n=9), but those that did talked about increased socialising or doing more daily activities. A sizeable number of participants (n=29) reported worsening. Typically, this was a result of being unable to apply the exercises to their lives; perhaps as they felt too isolated to connect with others, or did not feel they had strengths or positive exercises to add. Others reported that the exercises reminded them about their depression and this was unhelpful. There were also a number for whom the intervention appeared not to benefit (n=20), and these participants commented that it did not seem to work for them or that they did not notice feeling better. Other participants reported no negative effects related to using the Uplift website (n=17).

Person-intervention fit

A number of participants reported that the intervention structure and content was suited to them and fit their needs (n=16). This included liking the positive nature of the tasks, finding the structure easy to navigate, and enjoying the amount of information and how it was presented. However, others commented that the content was unsuited to their needs (n=18). Participants wanted more personalised pathways through the intervention that could offer more personalised content. However, they also requested a greater range of content, including links to more external resources, or more exercises, such as a physical exercise programme, because they found it too simple and superficial and easy to 'complete'. In contrast, there were a number of participants who commented that the content of the intervention was burdensome and time-consuming (n=14). They felt that they had to write a lot and it was difficult to think of their own points to add to the site.

Several participants reported that the format of the intervention was not suited to them (n=11). Participants commented that it did not feel natural to use the Internet to record their feelings. For others, the design did not fit with them; both in terms of its visual appeal but also the unstructured approach left some uncertain how to progress through the intervention. Another factor mentioned by several participants (n=10) was that the site did not engage them; they wanted interactive exercises including, video and more 'fun' content, such as positive quotes.

Depressive symptoms were mentioned as affecting use of the intervention (n=15). People reported that when they felt too down or tired the exercises were too challenging. They felt it might be suited to people with less severe depression than they were currently experiencing. Another important factor was feeling unmotivated to repeatedly log in and practice the exercises (n=18). This was also related to feelings of depression, because people reported they were hard to inspire when depressed or lacked the willpower to see things through, and this resulted in not feeling committed to the intervention.

A few participants felt the intervention did not fit their needs as it provided content that they were already familiar with and this lack of novelty was repetitive and unhelpful (n=6). Others were disappointed there was no interaction with a therapist or peer support, and they felt the presence of this might have helped them to feel more motivated to use the intervention (n=6).

Practical issues

A number of participants reported practical issues with the intervention. Participants reported that they did not always remember the intervention and so wanted more frequent reminders (n=7). Some reported experiencing issues with accessing the intervention through their mobile and reported it might be useful if it was available as a smartphone app that could be accessed on the go (n=8). A few participants reported the benefit of being able to access the intervention whenever they wanted but reported that it might be useful to continue beyond six weeks (n=4). For others, the barriers to accessing it were to do with life events such as holidays or physical illness (n=5). A few people reported experiencing issues with website functionality, either in terms of it not working as expected or wanting other functions such as tracking progress (n=4).

Table 5.10 Categorisation and examples of open-ended feedback (n=79)^a

Category	Subcategory	Feedback example	n
Intervention effects	Improved emotions, thoughts	“It was good to think about things which were positive, as I hadn't thought I had any positives in my life” “The tips were practical and useful. Good reminders of simple things to do to improve mood”	42
	Improved exercises	“Tried to go out more to see nice things. Said thank you to some people who have really helped me”	9
	Worsening	“I struggled to identify strengths in myself which left me feeling worse than when I started” “Made me feel I couldn't achieve what it asked me to do. Such as see friends...think positive thoughts about myself etc.”	29
	No benefit	“It just didn't work at all for me”	20
	No negative effects	“I didn't experience negative effects related to using Uplift”	17
Person-intervention fit	Suitable structure and content	“The website has been just perfect, not too much packed with information and just enough light and airy to feel comfortable”	16
	Unsuitable content for needs, too limited, basic	“I thought that some of the exercises were very basic. This might work for someone with mild to moderate depression but otherwise they felt a bit lacking in depth” “It was a good idea but felt a little superficial at this stage. It could have been more comprehensive and linked to further resources”	18
	Unsuitable form and structure	“I found the site a little confusing in what element of the different aspects to do first” “It is true you could keep adding to it but I am not naturally drawn to write things on a computer”	11
	Time-consuming, effortful	“Entering or planning information into the Uplift website felt more like a burden”	14
	Depression severity	“It felt forced. Trying to look at the bright side of things is not easy when you feel very down”	15
	Motivation to practice	“I know everything I should be doing, I struggle to do them, the website did not help develop the motivation I needed to do them, other than prompt you to do them”	18
	Interactivity	“I would prefer more interactive exercises, more videos and maybe a page with fun content”	10
	Familiar content	“Uplift was similar to other information I had been provided with so I think it maybe more useful if this was the only resource you were using”	6
Needs therapist or social links	“I can see this being effective [...] if there is some live interaction for suggesting new perspectives on exercises and attitudes. However, as it currently stands, it feels static, and even adds to the sense of isolation within a depressive episode”	6	
Practical issues	Reminders	“It could do with a few more prompts”	7
	Mobile access	“I also realize that you are just testing the website but it would be much better as an app. It was difficult to load the website through a phone browser and I wanted to use it most when I was out and about”	8

Availability	"I do feel as though another support tool has gone now the trial is over"	4
Life events	"I am so sorry I just did not have the energy, internet connection or time to make as much use of the website as I would have liked"	5
Functionality	"It was not a good thing at all because it often did not log what you had written"	4

^a Response categories were not mutually exclusive therefore n does not add up to 79

5.3.6 Change in outcome data

The scores at baseline and follow-up for the two outcome measures are shown in Table 5.11

Depression (PHQ-9)

At follow-up participants reported an average PHQ-9 score of 12.7 (SD 6.8), indicating moderate levels of depressive symptoms. On average participants experienced lower scores in depression at the end of the intervention compared to the beginning of the intervention (mean diff = 3.6, 95% CI: 2.4, 4.8). Of those who started treatment at caseness (i.e. PHQ-9 score ≥ 10) and provided follow-up data (n=75), almost a third moved to 'recovery' (i.e. PHQ-9 score ≤ 9) at follow-up (n=24, 32%).

Subjective quality of life (DIALOG)

At follow-up participants reported an average DIALOG score of 3.7 (SD 1.1). On average, participants experienced higher satisfaction with life scores at the end of the intervention compared to the beginning of the intervention (mean diff = 0.2, 95% CI: 0.2, 0.4). Satisfaction with mental health also increased (mean diff = 0.5, 95% CI: 0.2, 0.8).

Table 5.11 Outcomes baseline to follow-up (n=88)

	Baseline (Mean, SD)	Follow-up (Mean, SD)
PHQ-9	16.3 (5.7)	12.7 (6.8)
DIALOG overall	3.6 (1.0)	3.7 (1.1)
DIALOG mental health	2.5 (1.3)	3.0 (1.4)

Table 5.12 compares the baseline and follow-up scores of participants with different patterns of intervention use. It indicates that those who used the intervention more had a slightly higher PHQ-9 score at baseline. The mean difference in depression scores in the minimal use group was 4.2 (95% CI: 2.2, 6.1). In the moderate use group it was 3.1, (95% CI: 1.1, 5.0) and in the high group it was 3.2 (95% CI: 1.0, 5.8).

Table 5.12 Comparison of PHQ-9 scores at baseline and follow-up in different patterns of intervention use (n=88)

Pattern of intervention use	n	Baseline (M, SD)	Follow-up (M, SD)
Minimal (0-1 weeks)	41	16.4 (5.6)	12.2 (7.0)
Moderate (2-3 weeks)	27	15.3 (6.4)	12.2 (6.6)
High (4-6 weeks)	20	17.5 (5.0)	14.2 (6.8)

5.3.7 Association between participant characteristics and intervention use

Participants were grouped according to intervention usage patterns described in section 5.3.4. A descriptive comparison of these three groups of intervention users is presented in Table 5.13.

Table 5.13 Characteristics of participants according to pattern of intervention use

	Minimal (n=52)	Moderate (n=31)	High (n=20)
Age (mean, SD)	37.5 (11.8)	36.7 (12.8)	37.0 (10.8)
Female (%)	73	67	75
English first language (%)	79	90 ^a	84 ^b
Average highest educational qualification	5.1	4.7	5.9
Unemployed ¹ (%)	35	36	30
Currently receiving depression treatment (%)	78	74	94
Years of depression	16.1 (12.0) ^c	15.7 (12.8)	15.9 (12.2)
Baseline PHQ-9 Total score (mean, SD)	17.1 (6.1)	15.8 (6.3)	17.5 (5.0)
DIALOG score (mean, SD)	3.5 (1.1)	3.6 (0.9)	3.6 (1.1)
Total logins (mean, SD)	1.7 (1.6)	3.9 (1.9)	8.9 (6.3)
Total exercises completed (mean, SD)	1.6 (2.0)	6.7 (5.3)	19.5 (13.3)
Exercises felt natural (%)	41 ^d	41 ^e	65
Exercises were enjoyable (%)	33 ^d	44 ^e	60
Exercises were difficult (%)	38 ^d	33 ^e	40
Uplift was helpful (%)	20 ^f	19 ^e	25
Uplift had negative effects (%)	7 ^f	11 ^e	0
Satisfaction with Uplift (%)	34 ^f	35 ^g	55

^a n=30 ^b n=19 ^c n=50 ^d n=42 ^e n=27 ^f n=41 ^g n=26 ¹ Employed = working full time, part-time, voluntary, self-employed or studying. Unemployed = retired or unemployed

Participants were broadly similar in terms of age, gender and employment status in each of the three groups of intervention usage. However, some demographic characteristics differed. A greater proportion of participants spoke English as their

first language in the 'moderate' and 'high' groups. Participants had slightly higher levels of educational qualifications in the 'high' usage group compared to the other two groups.

In terms of depression status and treatment, all groups seemed to have broadly similar symptom levels at baseline and had experienced depression for a similar length of time. However, those who were 'high' users of the intervention were much more likely to be currently receiving treatment for depression, compared to the 'minimal' and 'moderate' users.

In terms of intervention acceptability, 'high' users were more likely to report that exercises were 'natural' and 'enjoyable'. All groups were similar in the extent to which they perceived the exercises as 'difficult'. However, those who completed the intervention more were slightly more likely to report it as helpful, reported fewer negative effects and greater overall satisfaction.

Regression analysis

Univariable models were used to explore the relationship between predictor variables and intervention usage: intervention logins and exercise completion. There were no significant predictors of intervention logins (see Appendix 9). Table 5.14 displays the results for each model when the total number of exercises completed on Uplift was the outcome. It indicates that there was a difference between men and women in how much they completed the exercises on Uplift; male exercise completion $M=4.34$ (SD 5.23) ($n=29$), female mean exercise completion $M=7.49$ (10.53). This was despite the fact the participants did not differ in their intervention logins; male logins ($M=3.86$, SD 5.60), female logins (3.70, SD 3.48). According to the regression model the expected total number of exercises that men would complete would be 0.58 (95% CI: 0.36, 0.93), lower than women. No other variables appeared to predict how many exercises participants completed.

Table 5.14 Regression (negative binomial) results of predictor variables and exercise completion

Predictor variable	Exponential Beta ¹	95% CI	p value
Age	0.99	0.97-1.01	0.29
Gender	0.58	0.36-0.93	0.02
English first language	0.74	0.43-1.29	0.29
Educational qualification	0.79	0.51-1.22	0.28
Employment status	1.01	0.65-1.56	0.98
Current depression treatment	0.72	0.44-1.17	0.18
Years of depression	1.00	0.98-1.01	0.99
Baseline PHQ-9	1.02	0.99-1.06	0.25
Baseline DIALOG	0.95	0.78-1.15	0.58

¹ Exponential Beta is reported as it represents the expected mean difference

5.4 Discussion

5.4.1 Main findings

The findings indicated that the recruitment and data collection procedures were feasible and appropriate. This was evidenced by the recruitment of participants with relatively high levels of depression and low subjective quality of life, indicating a population that was experiencing distress. The study had relatively complete data and a large proportion of participants completing the follow-up.

In terms of intervention usage, few participants adhered to the intervention guideline of completing at least one component per week, yet around one fifth of the sample did regularly engage with the intervention. The most popular positive psychology components were 'strengths quiz', 'good things', and 'enjoy', whilst few used 'sharing strengths' and 'strengths plan'. Most participants completed an intervention component when they logged in, however some participants did repeatedly log in without completing an intervention component.

The intervention was perceived as helpful by a fifth of participants and one third reported being satisfied with it. However, one third of participants did report that the intervention components were difficult. The subgroup of participants who used the intervention regularly reported higher acceptability of the components and overall intervention compared to those who used it occasionally or rarely. For these participants, Uplift was felt to improve their awareness of daily good events and was deemed a good fit with their needs. The findings suggest that the positive psychology website, Uplift, was acceptable to some people with depression. An important finding is that those who dropped-out of the intervention (i.e. did not use it regularly) did not report harm. This suggests that while the intervention is not suited to all, it does not negatively affect those to whom it is not acceptable.

The exploratory analyses of participant responses to the intervention indicated the potential for change in outcomes as participants experienced lower depressive symptoms and small improvements in subjective quality of life following the intervention. Further, the findings indicated that the only statistically significant predictor of intervention usage was gender, with women completing a higher number of exercises (but not logins) on Uplift than men. However, there were no differences in levels of depression, current depression treatment, or illness length across

subgroups. This is important because although some participants reported that their depression affected their ability to use the intervention, it may be that the other factors, such as perceived fit of content and structure, are more relevant to acceptability than actual symptom levels.

5.4.2 Strengths and limitations

There are two key strengths of the present study. Firstly, as the positive psychology components were offered flexibly, this study is able to assess their acceptability to people with depression in a real-world context. To our knowledge, it is the first of its kind to do so. Secondly, the study collected data on intervention acceptability, including potential negative effects. These are rarely studied and the findings indicate that there were no extreme negative effects and that those who did not find it beneficial did not find it harmful. Nevertheless, the study has two limitations. Firstly, the nature of the sample may limit the generalisability of the findings to patients in routine services, such as IAPT, in which it was not possible to recruit, as the participants were predominantly female, highly educated, and were recruited online. However, it is important to note that such samples are common in online self-help (Bolier, Haverman, Kramer, et al., 2013; Schueller & Parks, 2012) and may reflect the characteristics of people seeking online self-help. Secondly, there were some differences between completers and non-completers of the follow-up questionnaire, with non-completers experiencing higher symptoms and longer histories of depression, with fewer currently in treatment. It is therefore possible that the acceptability and outcome data is favourably skewed. However, the present follow-up rate is higher than previous studies into positive psychology online (Bolier, Haverman, Kramer, et al., 2013; Schueller & Parks, 2012) indicating that the present study is likely to include a greater range of views than those previously reported.

5.4.3 Comparison to the literature

It is possible that the way participants were enrolled in the current study explains its higher follow-up rates compared to previous studies, which had 75% follow-up at post-test in the Bolier, Haverman, Kramer, et al., (2013) study and 55% in the Schueller & Parks (2012) study. In those studies, participants had no contact with a researcher and the research process was entirely automated (e.g. participants self-registered online and completed all study procedures electronically), whereas in the present study all participants received a screening telephone call. Previous research

has suggested that this can improve participant retention in online studies (Murray et al., 2009). However, it has also been argued that this may reduce the external validity of a study because it does not represent routine practice; yet it is acknowledged that it might be necessary to ensure adequate rates of follow up in studies and minimise internal risks of bias (Murray et al., 2016). It will be important for future research studies to investigate whether participants feel it is important to have a first contact with a person who can briefly explain an intervention such as Uplift, as this would have implications for the resources needed to provide the intervention.

To date, research investigating positive psychology interventions for people with depression has provided little data on acceptability. However, it has been assumed that positive psychology components will be particularly acceptable to people with depression (Layous et al., 2011; Schueller & Parks, 2012; Seligman et al., 2006). The current study findings challenge this notion and suggest that, at least in the context of delivering intervention as low-intensity online, positive psychology components are acceptable to some but not all patients. There are several aspects of acceptability to consider.

The first is regarding the general acceptability of positive psychology amongst people with depression. The findings support the literature that suggested that participants with depression who dropped out of an online positive psychology website might have felt disappointment or an inability to complete the interventions (Bolier et al 2013). The present research supports this notion as some participants reported that the intervention did not fit their needs, either in terms of its content or its structure. For some they wanted more in-depth activities, for others they wanted less time consuming activities. This contrast in participants' preferences, and the fact that some participants found the intervention acceptable as it was, indicates that there is no one size fits all approach. The implications of this will be considered later in this section.

The second aspect of acceptability to consider is the notion that particular positive psychology components might be more attractive or acceptable to people with depression. A popular intervention component was the 'strengths quiz', but very few went on to complete the 'strengths plan' or to 'sharing strengths' (an adaptation of the meaning-focused activity, 'gift of time'.) This suggests the actual use of strengths was potentially less acceptable or less appropriate for the participants experiencing

depression. It supports other researchers who have suggested that components that require deep engrossment, such as 'using your strengths' might be difficult for people with depression (Parks et al., 2012). The findings indicated that participants most often practiced the 'good things' component, which was hypothesised as promoting engagement but may also promote pleasure, and 'enjoy', that promoted pleasure through focusing sensory awareness on daily pleasures. In contrast, few participants completed the other activities focusing on meaning, e.g. 'connect', 'sharing strengths' or engagement, e.g. 'thanks', 'strengths plan'. Again, this is similar to previous research in which participants were more likely to practice positive emotion than exercises related to developing positive relationships (Bolier, Haverman, Kramer, et al., 2013).

There are two possible reasons for this pattern of exercise use. The first is that, when facing difficulties, it is easier for participants to attempt activities that are based on momentary feelings or experiences, and require minimal time input. All three components 'strengths quiz', 'enjoy', and 'good things' had the potential to alter a person's focus towards the good and to improve positive affect and could therefore be considered as promoting pleasure. In contrast, those focusing on 'engagement' or 'meaning', such as 'strengths plan', or 'sharing strengths', are more psychologically demanding; they relate to patients' schemas about how they feel about themselves and /or other people. Given that depression is a condition affecting self-concept and is associated with isolation, it is possible that these are too difficult for patients to independently engage in when feeling unwell. Lyubomirsky and Layous (2013) have suggested that socially-oriented positive psychology components might be more suited to those who are isolated, whilst those who are stressed might prefer pleasure-focused components. It is possible that the social focused components were overwhelming (as described in the findings of section 3.3.4) and may have required engrossment and concentration that patients felt less capable of (Parks et al., 2012). Future research should consider whether there is benefit in offering a range of interventions that promote different aspects and require effortful engagement, as the present study did, or whether it is more acceptable to focus on interventions that promote momentary pleasure.

A second possibility for the finding that participants most often practiced the 'strengths quiz', 'good things', and 'enjoy' is that exercise use was influenced by the

design of the website and participants may have found these components easier to navigate than the others. Each had a dedicated page with simple navigation (see Appendix 7), whereas the 'connect', 'thanks', and 'sharing strengths' components appeared in the same website section which may have been off-putting. Similarly, the layout of the overall site may have affected how participants navigated through activities (as discussed in section 5.3.4), with people reading from left to right and so being less likely to try the activities on the connect page. It is possible that a more refined approach to usability testing might have uncovered some of these issues. However, as discussed in section 4.4.2, the think aloud usability testing sample size was purposively small to detect the most significant issues, rather than more nuanced ones that are likely to have been detected with a large number of participants (Faulkner, 2003). If research indicates that participants would like a positive psychology intervention to include a range of activities, i.e. not only focusing on promoting pleasure, then future research could test alternative presentation strategies, e.g. activities presented in a circular formation to see if this affects how the exercises are used.

Another aspect of acceptability relates to the design of the intervention website. Previously researchers proposed that one reason participants might have been dissatisfied with or indifferent to the intervention was because participants might have desired a more 'persuasively' designed intervention, e.g. one that includes personalised content or was more interactive (Bolier, Haverman, Kramer, et al., 2013). The present study had similar rates of dissatisfaction and the research data supports the idea that this was due to participants wanting intervention content that was better matched to their needs or more 'fun'. The development of such fun and engaging content ought to be addressed in future research, using the person-based approach to elicit users preferences and test out new strategies (Yardley et al., 2015). This research might benefit from working across disciplines, given that gamification strategies are being used in a range of digital health technologies but with little targeting and matching to behaviour change techniques (Edwards et al., 2016). The present research also indicated that there were some practical issues that may have affected engagement with the intervention, such as requiring more frequent reminders or needing better mobile access to the intervention. Future research could implement these suggestions and monitor the impact on intervention uptake.

It is important to consider the patterns of engagement of Uplift. In this study three patterns of engagement were identified based on how many weeks participants logged in and completed an exercise on Uplift. This resulted in participants being classified as minimal, moderate, or high users. The assumption was that greater intervention exposure and adherence over time is associated with an improvement in outcomes (Hilvert-Bruce et al., 2012). However, researchers have questioned whether this is so straightforward, and have argued that greater engagement within each exposure to the intervention (e.g. spending more time logged in, completing more activities) is a better predictor of benefitting from the intervention, than longer-term engagement (Donkin et al., 2013). This would indicate that the patterns observed within the present study might not be the best indicator of engagement or acceptability. For instance, within the 'minimal' use pattern, there were participants who repeatedly logged in and completed several exercises, but did this for one week only. This might reflect an important pattern of brief, but intense, engagement that was sufficient for those participants to gain benefit. Another pattern that was observed was participants who repeatedly logged in but did not always complete an exercise online. This raises the question of whether spending time engaging with content, without completing it, can confer benefits for participants. This should be investigated in future research into Uplift.

There are several issues to consider as a result of the finding that there was a group of participants for whom Uplift was acceptable. Firstly, if there is a subgroup it might be important to target this intervention towards these people. To do so requires knowing who the intervention is most suited to and the present findings indicate some potentially relevant person factors that have been discussed in previous research but for which there is little consensus (Lyubomirsky & Layous, 2013). Research has previously been inconclusive about the role of the depression (Layous, 2014), with some researchers arguing that those with more severe depression might be more likely to seek out these types of interventions (Parks et al., 2012), others excluding those with severe depression and /or suicidality (Bolier, Haverman, Kramer, et al., 2013), and others still directly targeting those recently expressing suicidality (Huffman et al., 2014). However, the present study found no association between self-reported depression symptoms and intervention use. This is an interesting finding because in the open-ended comments a number of participants mentioned that their depressive symptoms affected engagement. Instead, it is

possible that other factors or beliefs associated with depression affected the person-intervention fit. For instance, participants discussed not feeling motivated to engage, and that might be a more relevant factor than subjective symptom measures.

The present study found that gender appeared to predict intervention usage, with men completing fewer exercises on Uplift than women, although there was no difference in logins. It is possible that this is a reflection of a greater person-intervention fit between women and positive psychological techniques, as previously reported (Thompson, Peura, & Gayton, 2015). Another possibility is that men are more likely to drop out of online self-help interventions for depression, as indicated in a recent meta analyses (Karyotaki et al., 2015). The authors suggested this might be a result of women making a higher effort to cope with depression, or perhaps being more conscientious. However, these explanations are not widely supported, indeed the authors reference one paper about gender differences in diabetes self-care to support their assertions (Babwah et al., 2006). Instead, it might be that both the format of the intervention, online, and its content, based on thinking about yourself and your experience is more suited to women than men. Researchers have previously suggested that men and women have different preferences for coping with changes in mood, with men apparently preferring using physical or instrumental activities, whilst women prefer cognitive strategies (Piccinelli & Wilkinson, 2000). Indeed, given the greater levels of women participating in other positive psychological internet based interventions for mental health (Bolier, Haverman, Kramer, et al., 2013; Schueller & Parks, 2012) but also in other online interventions (e.g. Crisp & Griffiths, 2014) this hypothesis deserves further investigation. Importantly, future research should focus on how to increase the acceptability of such interventions amongst men, given the higher rates of suicide completion in men that have been attributed, in part, to differences in help seeking behaviour (Schrijvers, Bollen, & Sabbe, 2012). Such research ought to investigate psychological treatments that are acceptable to men, and whether the Internet can play a role in disseminating these treatments.

Aside from gender, no other characteristics predicted intervention use. This means that it remains unclear how to target the intervention. One possibility is the use of a screening questionnaire to assess the person-intervention fit (Lyubomirsky & Sheldon, 2014). However, previous research indicates that this may not be that useful in real-world contexts as participants struggle to understand it (Müller et al., 2014). It

is possible that including a questionnaire to assess fit might add another barrier to accessing the intervention, as discussed in the previous chapter. It may also be harmful to reject people from using an intervention without providing an alternative. In the context of online interventions, where patients have the ability to self-refer, it may be less possible to restrict access based on preferences, but instead patients would drop out if the intervention were not acceptable. The present research suggests that this is what happens and this does not cause harm, instead people report the intervention was not for them. This is an important finding as researchers have previously called for further research into potential detrimental effects of positive psychology components (Parks & Biswas-Diener, 2013). The current findings indicate there are unlikely to be harm as a consequence of such interventions. However, it has been argued that with online interventions there are potential opportunity-costs as patients may develop beliefs that they are not capable of responding to treatments, digital or otherwise (Murray et al., 2016). In future, it might be necessary for research to investigate whether this is the case; although no evidence was found in the present study, it may require a longer follow-up, or more specific questions about future likelihood of intervention use.

One possibility that cannot be excluded about the present study is that the subgroup that used the intervention a lot, and reported it was helpful, is not distinct from patients that would respond favourably to other digital psychological treatments. Indeed, it has been suggested that there might be a subset of people who can reliably be identified as having positive perceptions of digital interventions (Knowles et al., 2014). If this is the case, it might be useful to develop measures of treatment expectancy that can be used to identify these patients. However, this will require extensive research given the debate and disagreements in how to measure treatment expectancy in face-to-face psychological treatment (Constantino, Ametrano, & Greenberg, 2012). If it can be established that there is a subgroup of patients for whom digital interventions in general are acceptable and beneficial, then future research ought to focus on establishing the 'best' intervention to disseminate, i.e. the one with the most evidence for effectiveness.

Another possibility is that patients have preferences for the psychological content included in these digital interventions, i.e. some prefer interventions informed by positive psychology, and others prefer CBT, then the implication is different. In this

case, researchers should focus on developing myriad interventions and establishing how to target patients towards these. This approach could be fruitful as many intervention principles would be common, such as using persuasive design principles (Oinas-Kukkonen & Harjumaa, 2009), but the actual content would differ.

Finally, in light of the present findings, the role of future evaluation is important. The findings highlighted the potential for the intervention to decrease depression scores. The findings indicated that those who used the intervention the least had a slightly greater improvement in their depression scores and had a lower level of depression to start with than those in the 'high' use group. This might indicate that those who used it most were most in need of it and benefitted somewhat, whilst those who did not use it were possibly already on their way to improving and thus did not use the intervention. However, this is based only on participants who completed the follow-up and there was some evidence that participants who dropped out had higher depression scores at baseline. Further, the regression analysis did not indicate that depressive symptoms predicted usage. This interpretation is therefore speculative, as it is not possible to conclusively state that Uplift reduced patients' depression, given the lack of control group and potential for regression to the mean. Nevertheless, there is sufficient data to suggest that it is a promising intervention, which requires further evaluation. Further, as overall subjective quality of life did not appear to improve, and it improved only a little within the domain of mental health, this could suggest that the observed changes were not due to social desirability, or it would be expected that outcomes would have changed equally. Instead, the findings suggest the intervention is plausible and has potential to improve depression, as has been shown in previous RCTs into positive psychology online with people with mild-to-moderate depression (Bolier, Haverman, Kramer, et al., 2013; Schueller & Parks, 2012).

Following a successful feasibility study, the MRC framework would recommend refining Uplift, and then making it the subject of an RCT to establish effectiveness (Craig et al., 2008). However, this approach has two critical issues. Firstly, the long timelines involved in trials, in comparison to the fast pace of technology development, has been shown to result in interventions that are obsolete by the time there is evidence for them (Kumar et al., 2013). The solution to this might be to use more flexible research designs that test intervention principles, whilst allowing the technology by which they are delivered to evolve (Mohr et al., 2015).

The second issue is that RCTs test the effect of offering an intervention and are based on the intention to treat principle (Bell, Fiero, Horton, & Hsu, 2014). Thus, when drop out is high there is no statistical methodology that can account for this in order to demonstrate an effect of the intervention. This does not mean that trials cannot be done, but instead, the research should first establish how to identify patients who might be suited to Uplift and then trial it with these patients. This might then allow the development of a more nuanced evidence base about the potential of digital to close the treatment gap. However, the use of alternative evaluation methodologies is still subject to debate. Murray et al., (2016) agree that RCTs are the most suitable method to test interventions, providing that the intervention is stable, can be implemented with high fidelity, and there is good likelihood that benefits are clinically meaningful. This position assumes that a substantial proportion of patients must clearly benefit from a proposed intervention and it could be argued that the small proportion identified in the present study (around a fifth) is too small to warrant further research. However, it can be argued that this is comparable to the benefit that is found in other treatments for depression in which number needed to treat is 7-8 for antidepressants, i.e. selective serotonin reuptake inhibitors (Arroll et al., 2009) and 8 for low-intensity online CBT (Karyotaki et al., 2017). Secondly, at a population level this proportion represents a large number of patients with depression. It can therefore be argued that an online positive psychological intervention has the potential to address the mental health needs of some patients, and in a climate where few interventions are available, this is a useful finding.

5.4.4 Conclusions

Overall, the findings provide evidence that for some patients an online positive psychological intervention is perceived as acceptable and beneficial. This is particularly important given the context in which few systematically developed low-intensity low-cost interventions are available to supplement the treatment-gap. Future research should establish whether the acceptability of the intervention could be increased through the employment of a greater number of persuasive design features. A critical issue is to identify the target population to assess whether it is acceptable to a distinct group of people, or more generally to those who would like any digital intervention for depression.

6 Feasibility study: qualitative evaluation

6.1 Rationale

One objective of the feasibility study was to explore the acceptability of and participant response to the intervention. Although quantitative methods are useful in addressing this they cannot tell the whole picture of participants' views. As discussed in section 3.2.1, qualitative methods are valuable in exploring in much more depth what people think and feel. This method can allow the matter to be explored in the way the person wants to talk about it and does not limit answers to pre-defined categories. The result is that a richer, more complex understanding can be gained of a phenomenon (Yeo et al., 2014). In this case it can help us to answer questions about how helpful Uplift was for people and the things about it that helped and hindered. This can help to understand more about the acceptability of the intervention, but can also allow the development of explanations of acceptability which can then be further explored in future research. This is particularly important to know since previous evaluations of online positive psychology in mental health have rarely explored participant views and there is an absence of qualitative data (as discussed in section 1.5.5). Taken together with the previous chapter, this mixed methods approach is complementary and allows for a more sophisticated picture of the feasibility of this intervention to be delivered, than either method could in isolation.

6.1.1 Objectives

The present study aimed to explore participants' views and experiences of using the Uplift intervention in order to address the second research question outlined at the outset of this thesis in section 1.8.1, 'What is the acceptability of this online intervention using positive psychology for depression?' The specific objective and sub-objectives were as follows:

- Explore the acceptability of and participant response to the intervention
 - Explore how Uplift is helpful and unhelpful
 - Establish what helped and hindered people in using Uplift
 - Develop an explanation of the acceptability of Uplift

6.2 Methods

6.2.1 Design

In-depth semi-structured interviews were deemed the most appropriate method to explore participants' views, whilst still allowing the interviewee to explore other related thoughts and feelings (Yeo et al., 2014). As in the previous qualitative study, reported in Chapter 3, the COREQ guidelines developed by Tong and colleagues (2007) were used to structure the study reporting. The study team included a second independent researcher Paulina Szymczyńska (PS) and the candidates' supervisors (SP & ST). The potential influence of each study team member on the study conduct and analysis is reported in Table 6.1.

Table 6.1 Description of study team and influence on research

	Candidate	PS	SP	ST
Professional role and credentials	Health services researcher, BSc	Health services researcher, MA, PGCert	Psychiatrist, psychotherapist, researcher,	Health services researcher and GP
Role in the research	Interviewer, lead analyst	Supported data analysis	PhD supervisor	PhD supervisor
Potential influence on interview conduct or analysis	Established relationships with interviewees	Familiarity with mental health services research literature	Familiarity with resource-oriented treatments and existing mental health service practice and literature	Familiarity with eHealth literature
	Led on project developing Uplift			
	Familiarity with positive psychology and eHealth literature			

6.2.2 Recruitment and sampling

Participants were recruited from the main sample of Uplift participants reported in the previous chapter. During the consent process for the main study participants were asked to give assent to be contacted about completing an interview at the end of the study, which was optional and most agreed to (n=97, 94%). The selection process is outlined below and participants received an invitation, via email or telephone, along with a participant information sheet.

Participants were selected and invited to interview following completion of the follow-up measures, according to a stratified purposive sampling strategy based on three key factors: age, gender, and number of intervention logins (Ritchie et al., 2014).

This approach was chosen to ensure the qualitative sample included participants of varying characteristics.

As the qualitative sampling was occurring concurrently with the data collection in the quantitative study, the sampling criteria were developed as the characteristics of the main sample emerged. At the outset the candidate was aware of selecting participants of varying age and gender. After six interviews the main study sample characteristics were calculated; the sample had a median age of 35 and 70% were women. Thus, the sampling criterion was based on purposively sampling more women than men and on sampling participants that were below and above the average age.

Similarly, at the outset, the criterion of number of intervention logins was chosen as a pragmatic measure of the intervention guideline that participants would log in once per week and complete one exercise for six weeks (i.e. it was assumed intervention logins were related to intervention completion). Following the first eight interviews the intervention logins were calculated for the sample, and the median was 3.5, which was rounded to 4. The selection criterion was then to choose participants with a number of logins that were average (=4), below average (<4), or above average (>4).

Figure 6.1 contains the sampling frame used for the study. In addition to sampling on the basis of intervention logins, age, and gender, the candidate paid attention to baseline symptom severity of depression symptoms measured by the PHQ-9 (Kroenke et al., 2001) (e.g. mild ≤ 9 , moderate 10-19, severe ≥ 20) in an attempt to ensure different severities were present in the sample.

Age and gender	Females aged ≤ 35	Females aged ≥ 36	Males aged ≤ 35	Males aged ≥ 36
Intervention logins				
Below average (<4)	2	2	1	1
Average logins (=4)	2	3	1	1
Above average (>4)	3	2	1	1

Figure 6.1 Final sampling frame for sample target (n=20)

In addition to the stratified purposive sampling strategy, which aimed to recruit 20 participants, a constant comparative approach was used towards the end of sampling (Ritchie et al., 2014). This consisted of checking the emerging data from the sample and selecting the subsequent case accordingly with the view to finding similar or different data. This was possible due to participants' open-ended survey responses that indicated opinions that could be explored further. For example, one participant was selected on the basis of dropping-out of the intervention (i.e. requesting to unsubscribe from intervention reminders and discontinuing the intervention after week 3) as it was felt she might have different views to those who had passively dropped out (i.e. stopped logging in). This overlap of sampling strategies was necessary to ensure that the qualitative data collected covered the widest range of possible views, and it is typical for sampling strategies to overlap in this way (Marshall, 1996). As data collection occurred concurrently with the main sample, the candidate sampled views throughout the period of data collection and slightly exceeded the intended number of interviewees until data saturation was reached. However, as mentioned in section 3.2.4, in qualitative research saturation is a concept that is aimed for, rather than a definitive outcome.

6.2.3 Study setting

The study protocol outlined that interviews would take place face-to-face in a private space at a convenient location in a private research office, the participants' home, or other appropriate space, with only the interviewee and researcher present. However, an amendment was made to allow video-call interviews (i.e. using FaceTime or Skype software) following several requests from participants. Interviews were arranged based on the participants' preference for in-person or video-call. Most interviews took place in person (n=16), with some completed via video-call (n=7). On two occasions interviews were changed from video-call to in person due to practical issues with participants' access to Skype software. Participants completed the interviews within a mean of 14 days of finishing the intervention (range 1-44, median 11 days). In order to aid participant recall and/or elaborate their viewpoint, several participants were given access to the website shortly prior to, or during, the interview (n=15, 65%). All interviews were audio-recorded. Interview duration was on average 50 minutes but ranged between 34 and 85 minutes.

For practical reasons, the nature of consent and reimbursement depended on the modality of the interviews; in person participants provided written informed consent and received £20 cash, plus local travel expenses, whilst remote interviewees provided online consent through clicking a survey and received a £20 Amazon voucher upon completion.

The topic guide was developed in collaboration with the supervisory team and colleagues and underwent minor refinements following early interviews (see Appendix 10). The guide was semi-structured and included key questions and suggested probes based on the following areas:

- Helpfulness/ unhelpfulness of Uplift website
- Things that helped / hindered the use of Uplift
- Suggestions for improvements to Uplift

Local research governance and national ethics approvals were sought as part of the Feasibility Study into Uplift (North West - Manchester National Research Ethics Committee 16/NW/0447). Full details can be found in Appendix 8.

6.2.4 Analysis

Framework Analysis, as outlined by Ritchie & Spencer (1994) was chosen as the most appropriate method of analysis. Framework Analysis is part of the family of techniques that look for patterns in qualitative data. The approach uses similar steps to Thematic Analysis (Braun & Clarke, 2006), as described in Chapter 3, as it begins with familiarisation, labelling, and sorting data. However, the ‘hallmark’ of Framework Analysis is the use of data summary and display in a framework matrix. This data management tool allows the researcher to look for patterns across cases and linkage within and between cases, thus allowing the researcher to develop explanatory accounts, find explanations, or develop new theories (Ritchie & Spencer, 1994). As the present study was posing research questions that related to appraising the acceptability of an intervention and the factors that affect this, Framework Analysis was deemed an appropriate way of facilitating the exploration of associations between attitudes and behaviours, in order to develop explanations of acceptability.

The process of framework analysis is designed to be systematic and involves five interlinked stages, including familiarisation, identifying a thematic framework, indexing, charting and mapping, and interpretation.

In the familiarisation stage, following transcription by an external company, all transcripts were checked for accuracy and notes were made on emergent issues relevant to the research questions. These notes were then used to construct an organising framework to be used to sort data into. In order to create this organising framework, shown in Table 6.2, the candidate made decisions about the structure and hierarchy of issues. For this, as recommended, an inductive and deductive approach was used (Gale, Heath, Cameron, Rashid, & Redwood, 2013), whereby some categories were based on the emerging data, such as 'nature of self-help'. Other categories such as the 'person-intervention fit' category were based on previous qualitative findings, reported in Chapter 3. A second independent researcher (PS) checked and refined the organising framework to ensure categories were not omitted and that they did not overlap.

Table 6.2 Organising framework used to index qualitative data

Category	Subcategory
1. Effects of intervention	1.1 Management of thoughts and feelings
	1.2 Behaviour changes
	1.3 Seeing progression
	1.4 Rewards for intervention use
2. Nature of self-help	2.1 Patient taking action
	2.2 Understanding the why and how of activities
	2.3 Feeling valued
	2.4 Responsiveness to individual needs
3. Feeling connected	3.1 Direct social networking with other users
	3.2 Indirect social support
	3.3 External support services
4. Practical factors	4.1 Remembering to use the website
	4.2 Presentation and layout
	4.3 Length of time /intensity of intervention
	4.4 Mobile access
	4.5 Availability
5. Content	5.1 Amount of suggestions and examples
	5.2 Amount of content
	5.3 Novel content
	5.4 Navigating content
6. Person-Intervention fit	6.1 Familiarity with depression
	6.2 Current treatment context
	6.3 Familiarity with Uplift content
	6.4 Mental health app/website familiarity
	6.5 Technical literacy
	6.6 Perceived usefulness of online writing
	6.7 Personality
7. Fit with depression	7.1 Depression affecting intervention access
	7.2 Depression affecting benefitting from intervention
	7.3 Activities understand /acknowledge depression
	7.4 Resources about depression

The transcripts were then indexed according to the framework in Table 6.2, using NVivo 10 software (QSR International Pty Ltd., 2012). Throughout this process analytic notes were kept, particularly where indexing overlapped, to inform later analysis. Each transcript was reviewed to ensure all relevant material was indexed. Summaries of the indexed data were systematically created, transcript-by-transcript using the framework tool in NVivo. This enabled the candidate to chart these in a matrix where participants are rows and the columns are the subcategories of the initial framework. The process of charting summaries aimed to reduce the data, whilst keeping the participants' voice (Gale et al., 2013). An example of an indexed transcript can be found in Appendix 10. Once charting was complete a second researcher (PS) reviewed the charting of a selection of 20% (n=5) transcripts to ensure the credibility of the indexing and summaries, as recommended (Morse et al., 2002).

In the final stage of mapping and interpretation, a number of techniques were used to first map the range of phenomenon and then to develop linkages and explanations; including reading across the matrices by participant, reading down by theme, detecting elements, organising these into dimensions, and combining findings into higher level themes. As the authors of this method admit, this process can sound mechanical when described, but in fact involves leaps of intuition and interpretation resulting in abstraction of the data, whilst moving back and forth between the original transcripts, the matrices, and the emerging themes (Ritchie & Spencer, 1994). Throughout this stage regular meetings and discussions were held with the study team to discuss the emerging patterns, linkages, and explanations presented in the subsequent section, in order to ensure these were distinct, credible, and trustworthy.

6.3 Results

6.3.1 Sample

A total of 23 participants were recruited, from 43 that were approached. Reasons for not participating included actively (n=4) or passively declining, i.e. not responding to requests for interviews (n=10), or not attending arranged interviews due to mental health (n=4), or other practical issues (n=2).

The sample included nine people with below average intervention logins, two with average intervention logins, and 12 with above average intervention logins. Participants were on average 37 years of age (range 18-58), 70% were female, and the average score on the PHQ-9 at baseline was 16, indicating moderately severe depression (range 5-25, indicating mild to severe depression). Table 6.3 shows the participants' characteristics, arranged by intervention login. This indicates that the sampling frame target of seven participants with average logins was not achieved. However, there was a good representation of participants of the required age and gender amongst those with below and above average logins. Further, across the sample there were participants with a range of depression severities.

Table 6.3 Participant characteristics

UPID	Gender	Age	PHQ-9	PHQ-9 severity	Intervention login n	Category of intervention logins
179	Female	18	18	Moderate	1	Below average
253	Female	36	18	Moderate	1	Below average
258	Male	43	18	Moderate	1	Below average
170	Female	25	19	Moderate	2	Below average
177	Female	49	15	Moderate	2	Below average
217	Male	37	12	Moderate	2	Below average
255	Female	34	18	Moderate	2	Below average
105	Female	36	25	Severe	3	Below average
152	Male	34	12	Moderate	3	Below average
101	Female	21	10	Moderate	4	Average
159	Male	45	16	Moderate	4	Average
115	Female	31	12	Moderate	5	Above average
260	Female	35	24	Severe	5	Above average
157	Female	52	22	Severe	6	Above average
160	Female	37	18	Moderate	6	Above average
173	Female	59	6	Mild	7	Above average
188	Male	42	14	Moderate	7	Above average
198	Male	28	22	Severe	7	Above average
145	Female	27	7	Mild	8	Above average
132	Female	54	5	Mild	14	Above average
102	Female	31	23	Severe	16	Above average
114	Female	58	18	Moderate	16	Above average
120	Male	24	22	Severe	30	Above average

6.3.2 Overview

The results are structured as follows. The first section describes two subgroups of participants that were constructed in the analysis; those who found ‘some benefit’ from Uplift and those who found ‘no benefit’. This broad classification is not black and white; there are shades of experience within each that are explained further in section 6.3.3. However, the study team deemed these two groupings sufficient to distinguish between participants and to explore potential reasons for these differences. These reasons why certain people benefited and others did not are depicted in Figure 6.2.

Some benefit	No benefit
Recognising small achievements, pleasures, awareness of strengths, new activities. Shorter and longer term benefits	Unhelpful and unable to benefit from. Highlighted depression and low functioning
Factor 1: Relevance to depression	
Tone of positivity OK, short - benefits, credible exercises	Positivity overwhelming and disconnected from experiences, exercises unrealistic and ‘typical’ advice
Factor 2: Feeling empowered vs. unsupported	
Appreciate invitation to take action and gain sense of autonomy and value	Struggle to motivate self to take action and have sense of isolation

Figure 6.2 Factors explaining the acceptability of Uplift

It includes the extent to which participants perceived the intervention to be relevant to their depression and the extent to which they found the intervention supportive and empowering. These are explored in section 6.3.5 and 6.3.6 respectively. Finally, the more general findings related to engaging with the structure and content of the intervention and suggestions for improvement, as displayed in Table 6.4, are presented.

Table 6.4 Overview of themes and subthemes

Theme	Subtheme	Brief description
Improving engagement	Following the intervention	Flexibility and choice vs. uncertainty and overwhelm
	Applying the intervention	More examples and suggestions within activities to better apply and help generate ideas
	Responsiveness: tailoring	Include tailoring based on personal attributes or symptoms
	Responsiveness: human support	Include option for human support for contact, feedback, and counselling and to improve review
Creating habitual users	Amount of content	Across subgroups varying preferences for increasing content to include meditation and acceptance activities
	Rewards for using Uplift	Rewards could include gamification
	Seeing progress	Option to see progression with Uplift and/or mood monitoring
Making it friendly and fun	Reminders	Improving frequency and content of reminders
	Including social support	Via direct social networking forum, peer stories or in-person support groups
Making it easily available	Presenting information attractively	Improving layout and style of presentation
	Better mobile access	Improving mobile access via an app
	Length of time	Increasing length of time or having open-access intervention
	Availability	Making available without referral

6.3.3 Subgroups

Some benefit from Uplift

Participants who experienced some benefit from Uplift described that the exercises helped them to recognise and acknowledge small achievements in their day-to-day lives or in aspects of their self care that they would have otherwise discounted. Participants reported being more aware of daily pleasures and subsequently feeling calmer or more joyful. Uplift’s exercises helped to interrupt the downward spiral of negative thinking or overthinking typifying depression, and improved their frame of mind.

“It kind of gets you thinking about what’s going on in your experience at that point in time, rather than um, just wondering around letting it all go past you basically, because you’re caught in your own head with your own thoughts. So it was nice to sort of like someone saying like ‘kind of pay attention to this’. It kind of brings you to the present really.” (Participant 188, M, above average logins)

The strengths focus was appreciated by participants, who felt it helped them to recognise they did have strengths that they were perhaps already using but were unaware of. This provided a confidence boost and made people feel more hopeful.

“I did like the one a lot about finding a strength and sharing a strength 'cos I think when you feel really low you tend to think you haven't got any strengths. So that's really positive to think about a strength and share it with someone.” (Participant 132, F, above average logins)

Participants in this subgroup varied in how long they felt the intervention benefits lasted. One view was that whilst the impact was positive, it was brief.

“yeah so I'd do the exercise and um, and I'd see some positivity and stuff but then 'cos of my mood it fluctuate so much it's hard to regulate my mood, then maybe like even an hour later I could go downhill bit by bit.” (Participant 260, F, above average logins)

Despite the limited impact participants recognised it was useful to have the positive experience, even if it lasted a short time. For others, intervention benefits were more long-lasting. Participants noticed a change in behaviour during the intervention such as doing a greater range of activities or being more social and connecting more, or having different conversations with friends or family where they were able to focus more on others' needs.

R: [...] also the fact that I would never think of the aspect of connecting or saying thanks to other people that can, er you know, that can feel er, somehow making me connect with those people, with some feelings that I had, and brought some new feelings into me. So yeah.

I: And what kind of feelings did it...?

R: Um, [0.8] it's hard to describe right now, but er, it's not a, you know it's not a daily thing that we say thank you, like er in a very meaningful way. Um, so [0.5] it's kind of touching and making me feel soft inside[laughs]. Um, yeah. (Participant 217, M, 'below average logins').

For others, positive changes in behaviour continued beyond the intervention.

“I think it made me a bit more *active* again, because [...] like just going for a walk round the park and then that...[0.3] in turn kind of made me want to do sport again and I have...the sport's been quite good. So I guess it could have been recording that doing, going for a walk was a good thing to see that I had *done* something then made me want to go for another *walk*, and that made me want to do some *sport* and then doing exercise in *itself* is a little bit of good isn't it? So [0.5] I guess it opened up a chain.” (Participant 198, M, above average logins)

Participants who experienced some benefit from Uplift described practicing the exercises in a variety of ways. One pattern was to complete the activities online as participants felt this offered a useful structure; it helped to see feelings more objectively and helped with memory.

“I liked it that you could go back and see in the diary what you've been writing. So I'd go back and have a look. 'Cos when it come up and I don't recognise from when I've written that, and then I [h] go back to it, and then it sort of refreshes my memory that yes, you did do that bit. So um, that was good.” (Participant 114, F, above average logins)

However, others found the activity of writing on the website to be less useful and preferred to record their exercises in a personal notebook, based on their personal preference for keeping a hard copy. Others still used the website as fuel for thinking and reported practicing interventions ‘in their head’ and not feeling the need to write them down.

“And the ‘good things’ um, I *did* use that and I kind of, yeah tried to think about it even when I didn't actually go...like write it down. (Participant 101, F, average logins)

Overall, participants in this subgroup experienced a range of benefits from Uplift, including short-term to longer lasting effects.

No benefit from Uplift

The second subgroup held different views and reported that the intervention was not helpful. Participants described how Uplift did not seem to resonate with them.

“I have been going through quite a bad time the last few months, so um, [0.4] I didn't, agh [sighs] I didn't really find it particularly helpful. I kind of went on it now and again [...] Um, but I didn't really feel [0.3 sighs heavily] sort of totally connected to um,...[...] I think a lot's been going on so it was kind of...I'm not seeing a lot of positive thinking really.” (Participant 159, M, average logins)

This idea that this particular intervention was not suitable was not a particular concern for some.

“I had different types of help: like group therapy or one-to-one therapy or body therapy – you know, like I had a few things, so it was a bit like it's not the therapy is shit; it's just like this just didn't work, like this wasn't for me” (Participant 253, F, below average logins).

Others found it more concerning that Uplift did not benefit them and participants reported that it highlighted their depression and confronted them with it.

Participants described already feeling less capable when depressed and that not finding the intervention beneficial felt like another failure.

R: [...] there was only one activity that I did, I think twice, which was about changing the way, like writing down the positives out of something rather than thinking of it in a negative way, and I think that's what made me...like I liked the activity but then it also made me feel as if: um, why am I not thinking this way for example – if that makes sense.

I: Ahah, yeah.

R: like why...um, if they're basically suggesting that you should think this way why is that everybody else does think that way but not myself.

(Participant 179, F, below average logins).

Participants who did not experience a benefit from Uplift had somewhat negative responses to the idea of keeping a written record of the exercises online. Participants described feeling like they were being asked to write 'essays' and that writing down was not going to be useful for them as it did not add value.

"I can write my Strengths on my own piece of paper you know, and throw away. I can write some Good Things on there and throw away. And the only thing you have on there that I couldn't do on paper is 'Connect' you know? That's the only thing. But I can go to Facebook and connect with people with depression on there. So I don't know. It doesn't appeal to me you know to be really honest it's just a generic website where I type things on there you know." (Participant 258, M, below average logins).

Overall, participants in this subgroup perceived no sense of benefit from the Uplift intervention.

6.3.4 Factors not explaining subgroup differences

Participants could not be identified as experiencing 'some benefit' or 'no benefit' on the basis of number of intervention logins, digital literacy, or their depression profile (e.g. symptom severity, treatment history, and treatment context), although it might be expected that these would explain subgroup membership.

It might be expected that those who experienced 'some benefit' were those who logged in frequently. However, there were participants in the 'some benefit' subgroup that logged in below the average number of times. Equally, there were participants in the 'no benefit' subgroup with above average intervention logins.

Further, participants' digital literacy did not appear to be related to whether they perceived a benefit from Uplift. Participants in both subgroups discussed that they

had a range of experience with technology both in their day-to-day life, but also for managing their health. Participants mentioned use of information websites such as NHS Direct, mood monitoring tools, and more structured programmes such as MoodGym (Christensen, 2004). Some had found these sites useful and others less so, but this did not appear to be related to their perception of Uplift.

Finally, subgroup membership did not appear to be related to participants' self-reported depressive symptoms on the PHQ-9 (Kroenke et al., 2001); participants with mild and moderate depression appeared in both subgroups. Nor was it related to their familiarity with depression; participants reported short-term and long-term experiences of depression in both subgroups. Similarly, the relevance also seemed unrelated to their current treatment context; in both subgroups there were participants on waiting lists and in therapies and this did not seem to differentiate the extent to which the therapy was relevant to them.

The subsequent section describes factors that did explain subgroup differences.

6.3.5 Factor 1 explaining acceptability: Relevance to depression

The first factor that seemed to differ between the subgroups was the extent to which they perceived Uplift and its exercises to understand them and be relevant to their needs. Secondly, where the intervention content was familiar to participants this affected the extent to which participants felt it was credible.

Extent of feeling understood and relevant to needs

Those who experienced some benefit from the intervention broadly reported that they found the tone of the website accepting of depression and did not feel it was ignoring their experiences. They mentioned that although the activities might appear difficult in the face of depression, such as finding a good thing when you feel negative, they nevertheless found at least one exercise that was relevant to their needs.

“it can actually be quite challenging because you might think *nothing* good has happened, everything in my life is bad or whatever, you know you might have that sort of catastrophising feeling, but I think it's good because you're really having to focus and *find* something um, that was good. And of course there are good things that happen. You know, however small it is.”
(Participant 102, F, above average logins)

Although participants found some part of Uplift relevant to their needs, that is not to say that every exercise was relevant to them. One view was that the 'strengths plan'

and 'sharing strengths' exercises were less relevant than other exercises because they required a big change in their thinking.

"I just felt um, you know 'cos it was asking you to think about the good things about yourself, initially when I read that I thought 'oh shut up, there's noth[ing], I don't have anything good about myself [laughter]'. So I can't use this site. Er, [0.5] I am quite used to thinking that, so I guess that didn't affect me that much but it wasn't...[0.8] it was hard to think the opposite to what I think about myself" (Participant 177, F, below average logins)

For others, the strengths aspect was a useful source of ideas and helped participants to remind themselves of positive things they were already doing. Others found the 'good things' or 'enjoy' exercises more challenging, and expressed a preference for the strengths-focused exercises.

Related to this, participants reported that although there were some relevant exercises, the extent of this was somewhat limited by their depression. Participants described that when feeling low they had less mental energy to give to the activities, but also that as a consequence of not being very active, they did not have many 'good things' or moments they had enjoyed to add to the site. Consequently, participants recognised they might have had more benefit had they been feeling a little better.

In contrast, the subgroup of participants who found no benefit from Uplift reported that the content did not seem at all relevant to their needs and this was an insurmountable issue. They described feeling unable to participate in an intervention that was too positive when they were trying to manage their depression. For them Uplift seemed to try to mask their feelings and was disconnected from their experience.

"I think it just mentioned all the good points and it makes you feel you can't *achieve*; it's like, it's not...to me it's not acknowledging the depression, it's just saying these are all the positive things, but where is about your illness, so maybe more understanding that when you feel *down*, just linking it rather than saying 'this will make you happy' – because even happy things don't get rid of the depression – they can help and it's not...it didn't feel it was acknowledging that kind of thing" (Participant 160, F, above average logins).

These participants reported that it was overwhelming to receive suggestions that seemed unrealistic for their situation.

“I guess something I found difficult is that it was...it’s difficult to describe; it was all these kind of like positive things, rather than feeling like I was being kind of met where I was *at*, and kind of working from there and moving up? I think that was something that kind of overwhelmed me, was like how I needed to think of all these ‘Good Things’ and things that I ‘Enjoy’ and it didn’t really feel *doable*.” (Participant 170, F, below average logins)

Participants in the ‘no benefit’ subgroup described feeling unable to complete the exercises. They couldn’t think of a single ‘good thing’ to add, nor were they experiencing pleasurable sensations to add to ‘enjoy’. In addition, patients mentioned feeling isolated from friends and so didn’t feel able to reach out, and they were not seeing themselves in a positive light and so could not identify their strengths.

Familiarity with exercises

Whilst participants in both subgroups reported that the content of Uplift was somewhat familiar (e.g. they had heard it previously), there did appear to be some differences in how people responded to being given familiar advice. In those who found some benefit from Uplift, being familiar with the content seemed to foster a sense of credibility to the site and reinforced techniques for managing their depression.

“I used to try to do that [‘Enjoy’] as well – try and focus on thing[s] – but this is...motivates you more because it’s actually not you doing it; there’s somebody else who’s actually thought of this, so it was like oh wow, you know, it is a valid thing that I can do and it’s more guided than your own thing: so it’s still quite useful.” (Participant 157, F, above average logins)

Yet, not all participants who experienced benefit were familiar with the ideas in Uplift, for some it was new. In contrast, participants in the subgroup who reported no benefit from Uplift were all familiar with the ideas and felt it was standard advice. For them Uplift did not add to what they already knew and the ideas did not stand out. In part, an issue was that these participants had tried and not benefited from the activities.

“*Part* of the reason I didn’t use it so much was that it was already similar to stuff that I was already *doing*? Um, and part of it ‘cos the stuff that I was already doing didn’t seem to be helping anyway [laughs] so I thought not much point in doing *more* of it” (Participant 152, M, below average logins)

For others, there was a sense that they had heard it all before and therefore did not see Uplift offering anything novel or particularly relevant to them.

6.3.6 Factor 2 explaining acceptability: Feeling empowered vs. feeling unsupported

The second factor that appeared to differ between the subgroups was the extent to which they felt Uplift was empowering or it was unsupportive. The two subgroups had different viewpoints of Uplift's emphasis on the patient taking action. They also had different experiences of feeling valued by the intervention.

Patient taking action

The subgroup of participants who benefited from Uplift found comfort and a sense of achievement came with being in control of the intervention. They appreciated having their own space to document feelings and activities that were not going to be judged by others or interfered with. This may have been related to their personality, as participants described themselves as quite insular and the kind of people who just like to get on with things themselves. Yet, more broadly, participants who experienced some benefit from Uplift appreciated that it was 'self-generating', i.e. based on them taking responsibility for taking action for themselves.

“That’s definitely one of the um, big advantages of that: that it’s interactive and you can have your input and not just reading, receiving or, you know?”
(Participant 217, M, below average logins)

This idea of being motivated to take action was clearly contrasting in those that found no benefit from Uplift. For them, being invited to take action was difficult as they struggled to motivate themselves when left to get on with something and to generate answers for the exercises. For some, being asked to take action was perceived as though they were to be told what to do, almost like a child being given homework activities. They saw themselves as being both the input and output of the intervention and being asked to give without receiving a helpful response.

“I feel it was quite sort of limited – I don’t know really why – but then it’s kind of like you’re just left on your own; so in a way there’s no real input other than what you’re putting in and so it’s just like a bit of a one-way *process*? So you’re not...you’re still not really getting [0.4] the *help*.” (Participant 159, M, average logins)

Feeling valued

Those who found some benefit from Uplift experienced a sense of value from the website.

“I felt like supported by something – even if it’s not like a person [laughs]. So maybe just like a little bit less *alone*” (Participant 145 F, above average logins)

The site was described as a ‘friend in the corner’. Some related this sense of supportiveness to the reminders they received from the candidate that felt like someone was thinking of them, or that indirectly the candidate was ‘there’ in the site as it had the appearance of a live site that someone was taking care of, even if their activity on the site was not being monitored.

In contrast, those who did not find a benefit from Uplift discussed how it did not seem to value them. They described feeling unable to relate to others in wider society and so coming to the website looking for help and to feel less alone, but instead were still talking to themselves. In part this was to do with the site being automated.

“Yeah, like some might feel really comfortable with doing it all remotely and not really having a face in front of them and that made them feel safe. But for me it’s already quite robotic and quite impersonal and it felt like oh no, it...I felt *worse*. Er, it just kind of accentuated the, the loneliness.” (Participant 253, F, below average logins)

In summary, there are two factors that appear to explain the why some participants found some benefit from Uplift, whilst others found none; the extent to which participants felt the intervention was relevant to their depression and the extent to which participants felt empowered by the intervention.

The subsequent section describes the more general findings related to how participants engaged with Uplift and their suggestions for improvement. These findings did not appear to differ by subgroup.

6.3.7 Engaging with the intervention

This theme describes how participants experienced the intervention in terms of the extent they could follow it, apply it, how responsive they found it, and how they experienced the amount of content.

Following the intervention

Uplift was designed as a flexible intervention in which all exercises were available from the outset for participants to choose from. One view of participants was that

this successfully enabled them to choose their preferred activities that were relevant to them and their depression and this was the only way to organise an intervention such as Uplift. Another view was that being faced with all exercises was overwhelming and left participants unsure of where to start or how to progress through the intervention. Therefore, these participants wanted a clear start point and route to follow that would enable a sense of progression through the activities. Yet, how participants felt about following the intervention was not always clear-cut. A participant commented:

“I liked the fact that all the options were open to you. Um, but it was...I have to say it was kind of hard to explore and then because all the options were there you did tend to forget what options were there. Um, [0.3] but I did like it; that you had the freedom to just explore all the options. It sounds a bit contradictory but....[tails off]” (Participant 177, F, below average logins)

This suggests there is perhaps not a straightforward way to organise the intervention. One solution, suggested by a participant, would be to release one exercise per day during the first week of the intervention and encourage participants to try each one. Then, from week two onwards, participants could choose their preferred activities. This may minimise overwhelm by giving people one new thing per day, whilst still providing autonomy to choose.

Suggestions and examples

Participants suggested that they might have been better able to engage with the intervention had it provided a greater range of suggestions and examples within the exercises. This could help to awaken ideas for new experiences but also a broader range might help participants to identify something relevant to them. For the ‘enjoy’ component participants felt there could be additional audios, beyond the three included, that describe everyday activities, such as taking a moment with your pet or at the coffee shop. Similarly, participants felt that the ‘strengths plan’ and ‘sharing strengths’ could include broader examples, that do not just focus on social relationships but are designed to bring people out of isolation, although not necessarily into contact with others. Examples suggested included doing some gardening or making use of community spaces, to allow people without close social relationships to apply the exercises.

In the ‘good things’ exercise participants felt it might be easier if the instructions prompted you to think of ‘good things’ that you remembered, saw, ate, etc. Having

these categories might help people to think of a specific thing, when thinking of a 'good thing' in general might feel too difficult. Others wanted even more guidance and would have preferred to select 'good things' or moments to 'enjoy' from a predefined list that included examples, such as 'coffee', 'being in the park', 'sun', 'meeting someone', or 'other' (to allow the option to add their own). This was because these participants struggled to generate ideas for these sections. However, participants identified disadvantages associated with providing a list of 'good things', or moments to 'enjoy' for participants to choose from. Firstly, it has the potential to make participants feel worse if they cannot identify a single thing from the list. Secondly, it takes away from the purpose of the activities; to encourage self-reflection and identification of what that person views as good. One participant talked about what might happen if a predefined list of examples was available.

“And that’s why it works, because the trick is to get people to reflect and highlight what was good that happened in that day. Um, so by having an option you're kind of breaking that 'cos it...you know in a way they're not kind of...they're not helping themselves because they're kind of in the thought process and then perhaps something flashes up to say 'oh, did you see this?' then they're like oh yeah-yeah, I did see that, and just almost it's kind of like um, er, what's the word I'm looking for...not er, solving the problem.”
(Participant 120, M, above average logins)

Linked to this, some felt that the intervention provided enough suggestions and examples to spark off their own ideas of how to apply the exercises and no more were needed.

Responsiveness: tailoring

Participants felt that their engagement with the intervention could be improved if the intervention was more responsive and provided tailored information according to their personality, in terms of their interests and abilities, or according to their psychological symptoms and needs. This tailoring might then enable them to make better use of the intervention content.

Firstly, in terms of the content being matched to the participants' personality, participants described a lack of fit. This was due to a mismatch between their physical abilities and a suggested action, such as listening to music or going for a walk. It was also due to differences in personal circumstances that meant they were less close to family or friends and so found the content in the 'connect' section less relevant.

Participants suggested that a solution could be to elicit needs in a questionnaire and tailor content based on this.

“I don’t *know* if it would be valuable sort of in the first instance finding information about people so it feels more kind of for you. But I don’t know, ‘cos that *could then* I suppose be experienced as like a *huge* questionnaire, so I’m not sure” (Participant 255, F, below average logins)

Participants highlighted the importance of asking the right questions, such as checking about isolation or employment status to ensure suggestions are appropriate. Others felt it was more important to tailor the intervention based on psychological symptoms and needs. They felt that as it stands the intervention assumed that one-size fits all.

“What I wanted was something that direct[s] me, to treat me differently from someone who has different symptoms – *symptoms* is not the word – different *needs* from me.” (Participant 258, M, below average logins)

One solution participants came up with was for the website to elicit their current feelings, needs, or symptoms and then offer corresponding Uplift exercises.

“I think that would be helpful and it’s like um, just to tell you that it’s a common symptom of like depression; that it’s nothing to like you know worry that much about. And then give you...offer a suggestion of an activity that would help – exactly that symptom that you’re feeling. That would be nice, and I think that would be like something that I would think I would go back to the website more often to do.” (Participant 179, F, below average logins)

For others, the solution would be that Uplift would offer different activities to the positive psychology ones currently available if they indicated a particular level of depression. Participants wanted the option to explore their negative feelings; they wanted to see and hear about different types of depression, and different ways to manage it as a way to understand their condition. However, participants noted the possible issues with linking activities to symptoms. Firstly, participants were not sure that the website would be able to tailor properly and wanted the ability to change what the website was offering if it was too easy, or too difficult. Secondly, participants felt it could be patronising to see information about how depression feels, when people experiencing it know best. Thirdly, the description might not capture someone’s experience and then might put him or her off engaging with the intervention.

“Like whereas *this* one it just accepts that you've got depression, you wanna help yourself – so here's a way of helping you. Rather than, this is what you might have, this is some like...and then, and then not feeling like you can actually *do* that bit 'cos you don't feel like you're quite right for it.” (Participant 198, M, above average logins).

Although tailoring might be important and there are possible solutions to overcome this, these must be carefully designed to ensure that people are not put off.

Responsiveness: therapist support

Another factor that participants identified as impacting their engagement with the intervention was therapist support. Participants described that having someone to support them with the intervention might increase their use of it. They suggested that Uplift could be linked to their current therapist and be a way for therapists to monitor or check their progress prior to in-person sessions. Another option was to have an Uplift therapist who could provide remote support by reviewing participants' usage, offering clarifications on things they are finding difficult, and encouraging intervention use.

“if there was some kind of like feedback or, or kind of looking at your mood and how you are progressing. Um, that might then motivate me to kind of keep going with it a bit longer” (Participant 170, F, below average logins)

It is interesting to note that the suggestions to include therapist support were made even by those who described Uplift as beneficial and empowering as self-help. Participants could see the benefits of Uplift both as self-help and supported:

“I'm contradicting now what I was saying before about it'd be good for therapists to be able to see it. It's also good though that people are able to use it independently, so that they are doing it for themselves; that they're not being forced to do it by some medic or whatever, but they are actually wanting – yeah wanting to get better rather than just being told to. So I think that's important too.” (Participant 102, F, above average logins)

This highlights that although therapist support has advantages it is not without drawbacks. Indeed, other participants mentioned they would have been less likely to use an intervention that included even remote therapist support as they might feel like a burden and someone who needs to be monitored in order to complete basic tasks.

Amount of content

Participants had varying opinions about how much content should be in Uplift. One view was that Uplift included the right amount of content and the simplicity was an

important aspect of it. Another view was that there should be some provision of a more neutral activity within the site to allow the expression, or exploration, of things that do not fit neatly into the positive activities provided. For some this could just be a blank box to write feelings in, for others it could include meditation or relaxation exercises. Similarly, others felt that when experiencing negative emotions it might be useful to see activities based on acceptance or on distraction. Participants mentioned that it might be useful if there was a starting activity to first instil calm and make the mood more stable, before introducing a positive activity that might have made them better able to make use of the website.

For some the website totally ignored their more negative experiences, yet participants still wanted the option to explore these. They felt a website that did not allow this was not empathic and would not be something they wanted to use. Yet others cautioned against including ways to explore negative feelings, or even more neutral feelings in an intervention like Uplift.

“If there was a neutral box and it said ‘how do you feel?’ everything would be negative on 90% of people’s things, and that won’t work – because they can do that anywhere they want: they can go to a public forum and do that; and people do do that. It works because it doesn’t say that” (Participant 120, M, above average logins)

There was a feeling that providing these options would detract from the purpose of the site, as people would begin to use just these parts and not engage with the challenge of trying to find something positive.

Participants felt that the more activities available the more likely they would be to find one that suits their needs. However, it was recognised that this can have an unintended consequence of making some people feel too overwhelmed by the amount of options available. One possibility participants suggested was to change the content periodically, as a way to entice people to return. This might include new news items about things that could help with depression. It might include daily challenges or tips, or new items each week.

“Some news would be nice on there – news like research, research and images about what, you know discovering new therapies or discovering new approach you know: do exercise and you feel better, and eat mangoes and you feel happier, or things like that you know? Because that will get our attention there also. You know, it’s like oh I’ll go on there, they have some...they give me something” (Participant 258, M, below average logins)

As indicated this might have the added benefit that participants feel their various needs are being met if there is novel content in the intervention.

6.3.8 Creating habitual users

Participants discussed that they did not necessarily use Uplift as a matter of habit, yet they felt that had they practiced more often they would have gained more from the intervention. Participants made various suggestions for how to improve Uplift in order to get people to use it more regularly, including rewards, showing progress, and improving the reminders.

Reward for using Uplift

Participants described a desire to feel rewarded for coming to the intervention and felt this might increase their likelihood of returning regularly. Upon exercise completion, participants suggested that the site could give a visual reward, such as a star flashing up, incurring points, or receive a supportive congratulatory message. Participants said this might sound inconsequential but is something that might help build the habit. However, others voiced concerned about how useful such a system would be.

“like for me it would seem a bit silly maybe or a bit sort of contrived or irrelevant maybe? Because it wouldn't...your score wouldn't necessarily correlate very closely with the amount of benefit that you are getting from it.” (Participant 152, M, below average logins).

There is also the issue that given participants will not, and are not expected to, use all parts of the site equally, seeing lower scores in particular areas may nevertheless affect participants negatively.

Seeing progress

Participants wanted a better way to see the progress they were making in Uplift and had different suggestions of how this could be achieved. One way could be to give feedback on how long the participant had engaged with the intervention for.

“So yeah, but it is quite nice to go oh, you've been tracking for 50 days, so even if you've got something like that going oh you've been...you know you've been taking care of your mind for four sessions” (Participant 105, F, below average logins)

Another way would be to provide a different display of how the exercises within Uplift had been used to make participants feel more rewarded. The website could make participant progress visible on its homepage. Or, within exercises, how progress

is displayed could be altered, so rather than have a list of good things, these could be arranged 'piled up by day' and could give a better sense of progress.

The second way to track progress would involve mood tracking to enable people to increase their awareness of own mood, when it might be most useful to engage in the activities, and to assess how their mood is progressing. Participants suggested it might also be useful to rate how difficult it was to do an exercise, to give a sense of progress. Despite these possible benefits participants recognised that including a mood-monitoring feature might not be the best thing. Participants were unsure if it would take away from the focus of Uplift, which is to find and document positives.

Reminders

There were a range of opinions on the weekly reminders provided as part of the intervention. For some, the reminders appeared to serve their function of helping people to remember the intervention and logging in as a consequence of receiving a reminder.

“I found the sort of getting the ‘reminders’ and everything were a *really key* part of *it*, because it really *encouraged* you to use it. So yeah, I think that sort of, I think it’s very easy that you *have* these things you here, but actually *making yourself* get on and *do them* is a different thing, but the reminders was sort of a, a way to incorporate into life more.” (Participant 102, F, above average logins)

Others wanted more frequent reminders to increase the likelihood of one arriving at the right time to encourage them to log in. Participants felt frequency and timing could be something participants could control for themselves through the site, given that there were different preferences.

Another view about the reminders was that it would have been a nice detail had content been personalised, for instance if it was a sunny day it could have mentioned this. Or, it could have been related to participant’s use of the intervention content, or suggested an action such as to try a ‘good thing’, based on what they had already recorded in the website. However, others noted that the most important function was to be reminded that Uplift was there for use, not to be invited to try a particular part of the Uplift site. It was also felt that a computerised reminder suggesting what activity to try might feel impersonal, especially if it was received multiple times.

6.3.9 Making it friendly and fun

An important aspect of generating engagement with the Uplift site was the idea that Uplift should be as friendly and fun as possible.

Including social support

One way participants suggested to introduce friendliness would be to create more opportunities for social support within the website. Including some form of social support was described as a way to help people to feel less isolated in an intervention such as Uplift.

“And unfortunately when you feel *that* depressed, it’s acute loneliness as well and you just...and that kind of adds to it[laughs] if you’re...if...that’s why it might be nice to see faces on there and other people’s experiences, and maybe you know some kind of meet-up” (Participant 173, F, above average logins).

As indicated, participants suggested different ways to achieve social support. One way would be to enable direct peer-to-peer contact through a forum or chat room. Participants felt this would be a useful way of sharing tips and ideas about how to make use of Uplift’s exercises, which might make them more likely to try them. However, they mentioned that forums can often become ‘negative spaces’ where users share problems and so would need to be monitored to ensure it stayed on topic.

Another possibility would be to give an indication that others are using the site or have benefited from it. The inclusion of peers’ stories or testimonials of a range of real-life users might help. This would give the option for people to see how Uplift had helped others with different types of depression and/or how to literally achieve some of the suggestions, and thus may increase the perceived relevance of the advice given. Yet, it was acknowledged that being able to see others progress in the intervention might lead to a sense of competitiveness that would not be helpful. Or people might feel sceptical about seeing others’ progress if they felt that they themselves were not progressing.

Another option would be to provide more options for face-to-face contact with peers either in support groups, befriending, or by linking it to existing peer networks. For some this would be necessary for feeling part of a community.

Presenting information attractively

There were differing views on how attractive the presentation of Uplift was. One view was that the presentation was clear, well set out and attractive, and achieved the right

balance of credibility, whilst not looking too formal. For others this was less so. Participants made some specific recommendations that they felt would improve the presentation. Participants recommended relocating the audio clips from the bottom of the 'enjoy' page to the top to make them easier to find. They also recommended changing the layout of the 'strengths' page to make it easier to find previous results of the quiz. Participants suggested including more alternative forms of presentation than text, such as images, videos and audios.

“but rather than like just text, more pictures and diagrams or maybe videos. Maybe someone saying that like...yeah, more audio or videos with someone saying this is what you can do. So I'd sort of say it's too much to read, rather than this site.” (Participant 160, Female, above average logins)

Participants also wanted to input information in different ways than just adding to written lists. Although participants could see the benefits of this they felt it would have been nice to add their own images, say of a 'good thing'. Or they wanted to do more quiz-based activities and be led through the activities based on clicking through.

In terms of design, some felt the colours and layout were good, whilst others felt that it was too large and bright, which drew unwanted attention and so would have preferred muted colours. Others still wanted the option to change the colours and design based on their preferences.

6.3.10 Making it easily available

Better mobile access

Participants described experiencing some issues with how the website was displayed when accessed from a mobile device. Not all the activity options appeared on screen and it sometimes was not possible to see what was being typed in. Participants wanted to be more easily able to access the site from their mobile phone. This is because they described being more likely to have their phone on them and reported having an intimate relationship with it, compared to their computer. It was felt it was cumbersome to access the intervention via the web link. Further, the activities were the kind of things people wanted to try out when they were 'on the go'. Consequently, participants recommended that Uplift might be available as an app.

“But again, going back, if it was kind of app format it might be more integrate able to my day-to-day life than it would be, I don't know...say I was going out for a walk, I'd put me headphones in anyway, I could just push a button on

the app and sort of listen to [it] while whatever is going on around me kind of.” (Participant 188, M, above average logins)

Another benefit would be creating a user-friendly layout for the mobile phone and better integrating reminders onto smartphone home screens via notifications.

Length of time

There were varying views about whether the time of six weeks was sufficient. One opinion was that an intervention like Uplift should not have a time limit, as this implies progress is linear and gives an unrealistic deadline for feeling ‘better’, when in fact these activities should be things that are practiced on an on-going basis. Or they are things that someone could return to as and when needed. Others felt there should be some kind of time limit, but perhaps ten or twelve weeks to give people longer time to get used to the ideas on Uplift and make them part of their life. For some, a time limit gives the idea that an intervention is exclusive and this acts as positive form of pressure to encourage people to make use of it. There was a middle ground between these views; that perhaps the intervention could be offered on a time-limited basis, with the option to extend if people feel this would be beneficial.

Availability

Participants described the benefit of being able to access Uplift as and when they wanted to, unlike other NHS resources that were limited by working hours and waiting lists.

“And I like the concept of, you know, helping yourself through a different, like say exercises, or online...because one of the problems I’ve found is um, if you want *help* in this country from the NHS you have to wait a long time. And um, you know 'cos in my country it’s not like that, and I’m not used to it [laughs]; like when I have a problem I’m used to...you deal with that the second I have a problem. And er, I like the idea that I can access as much content as I want, whenever *I* want it. Um, and that’s what appealed to me (Participant 115, F, above average logins).

Participants reported it was good to have a tool that you can access without referral from a health professional, as this can be a barrier to getting treatment. However, participants recognised the limitations of Uplift as a complementary tool, not a stand-alone treatment. Indeed, participants described how it complemented courses of treatment that they had recently finished, such as CBT and mindfulness based therapy. Yet, it was felt the website needed to be more explicit about the treatment

options available, and how Uplift complemented those, for cases where people are not in treatment.

“You know like, yeah like more points of contact of what sort of thing you are actually looking for. Because you are saying this is not a substitute, but you are not giving the options for what’s the other thing that I should be doing. ‘cos if this is your first time and you don’t really know how to look for a therapy or *what* sort of therapy is there, um, available for you, and things that are paid or things that are not paid. Er, I’ve done even like acupuncture and I found that *great*. you know like some people find this useful bla-bla-bla you know? Like I think that yes okay this is only a tool, it’s not the treatment but here is a list of treatments.” (Participant 253, F, below average logins).

Participants felt that the website currently recommends the first step (i.e. GP) and last step (i.e. Samaritans if suicidal) of what might be needed when depressed, but it does not cover what other services are available. It was suggested by participants that the site could include a glossary of the kinds of sources of support that are statutory and non-statutory, such as counselling services, charities, and crisis cafes, or other online services. This need not be a directory, as that might be overwhelming, but to simply give people an idea of what is available. Further, it was suggested that these might be more visible and once an exercise is completed a pop up could ask if the person still needs more help, and if so direct them to the website section listing sources of support.

6.4 Discussion

6.4.1 Main findings

The findings of this study developed an explanation of how Uplift, and its positive psychology components, was more acceptable and potentially beneficial to some participants than to others. This acceptability and perceived helpfulness appeared to depend on two factors: the extent to which the intervention was relevant to depression and secondly, the extent to which the intervention was empowering. Those who found some benefit described appreciating the tone of positivity relative to their depression and found at least some activities relevant to their needs. In contrast, those who did not benefit reported that the positive activities seemed disconnected from their feelings of depression and activities seemed irrelevant and unrealistic. Further, those finding some benefit described a sense of ownership and autonomy associated with having a private space to document achievements and experienced a sense of value from Uplift. In contrast, those who experienced no benefit from Uplift felt unsupported. This subgroup of participants appeared to have difficulty with self-motivating in the context of a low-intensity intervention and felt this was not responsive to their needs, but was impersonal and reinforced a sense of loneliness. It is interesting to note that these differences did not appear to be related to measurable factors, such as number of intervention logins, digital literacy, or depression profile (e.g. symptom severity, treatment history, and treatment context). Instead, these appear to be attitudinal differences between participants, related in part to their perception of the relevance of positives and in part to the perceived usefulness of a low-intensity intervention in this context.

The study also reported on how participants across both subgroups more generally engaged with Uplift, and their views on what helped, hindered, and might improve the experience of Uplift. The findings indicated that the intervention could have been more responsive to participants' preferences and needs, in order to promote greater engagement. This could also have been facilitated by the inclusion of a greater number of strategies to encourage habitual use, such as more rewards or reminders. The findings also mentioned the ways in which the intervention could have appeared more friendly and fun, and suggestions for how it could be made more easily available in future.

6.4.2 Strengths and limitations

The main strength of the present study is the sampling, which allowed for a diverse sample that had a range of experiences and viewpoints on the Uplift intervention. This enabled the candidate to develop a plausible explanation of the factors that affected acceptability that can be explored in future research.

The main limitation of the study is that although a range of views and experiences were highlighted, in some cases these are contradictory and do not offer a clear path for future research. For example, the finding that some people liked the flexibility of the intervention whilst others found it overwhelming cannot easily be resolved. It is possible that such findings represent actual differences in opinions and may mean that there needs to be interventions that are designed differently to suit different audiences, or that interventions need to be flexible to allow patients to choose. It may be necessary to explore such contradictions and uncertainties in future research using focus group methodology, in which it is possible to expose people with different views to each other (Krueger & Casey, 2014), and this may generate a more sophisticated understanding of the pros and cons of particular design decisions.

A second limitation is related to the nature of the data collected. Often participants had to be reminded of the intervention in order to discuss it and so were provided access shortly prior to, or during the interview. This may have led to discussions that focused more on the appearance and design of the intervention rather than its psychological content. Whilst the former is not unimportant, the candidate felt it was more difficult to explore the principles and possible mechanisms of the intervention that were helpful or unhelpful. As a consequence, the present study is somewhat limited in the extent to which it can address questions about the principles and possible mechanisms of the intervention.

6.4.3 Comparison to literature

The finding that two factors, the extent to which the intervention was perceived as relevant, and as empowering, can explain patient attitudes towards the intervention, is interesting. It echoes the findings of a recent meta-synthesis of qualitative studies of patient experience of low-intensity digital psychological intervention conducted by Knowles et al., (2014). Their findings indicate that the extent to which an intervention is sensitive to the needs of the individual and the extent to which it provides collaboration and connection are likely to affect how patients engage with such

interventions. The findings of the present study support this and each factor is considered in turn.

Firstly, in relation to the sensitivity of the intervention, patients who did not benefit reported that their circumstances did not fit with what the intervention was requesting, they could not find anything positive, and were unable to engage. This was also echoed in the subtheme, section 6.3.7 'engaging with the intervention', where participants suggested the intervention could have been more responsive to their personal interests and needs. Knowles et al., (2014) argue that a key challenge in low-intensity interventions is to incorporate a greater sensitivity to patient identity. The authors cite examples where content, based on patient needs, has been recommended and this has improved engagement (e.g. Carlbring et al., 2011). However, such studies have used a therapist to perform the tailoring. As mentioned at the outset of this thesis, it was the aim to generate a low-intensity intervention that did not require therapist support. Future research should therefore focus on ways to automate this process of providing tailored information to patients. This will obviously require knowledge of the factors that will affect this sensitivity, which ought to be the subject of future research, since few reliable factors were identified in the present project (e.g. fit appeared unrelated to depression profile). Instead, the present research indicated it might be relevant to assess level of isolation. Research should therefore focus on ways to assess this, on developing appropriate suggestions, and then investigating technological solutions for linking this within the intervention. Throughout these stages of research there should be continual consultation with potential users to assess and ensure acceptability, as recommended in the person-based approach (Yardley et al., 2015).

Participants suggested that to improve the intervention's relevance to depression it could include a more explicit link between positive psychology exercises and particular symptoms of depression. In the current study, a rationale was provided for why each exercise was relevant to depression, (described in section 4.5.3) but these could be made more obvious. The icons for each activity on the homepage could be replaced with symptoms phrased as questions, which would then direct a patient to a particular activity. The question 'Feeling lonely?' could link to the 'connect' component, whilst 'Feel like nothing good is happening?' could link to the 'good things'. Such modifications should be discussed with potential users prior to being

implemented, as some participants raised concerns that this still may not provide sensitivity to individual needs, as each person's experience of depression is different. Secondly, it is possible that by attempting to redress the positive focus the intervention becomes too negative and could be equally off-putting. It might also render the intervention less acceptable to those who liked it in its current form. Future research should therefore investigate whether these strategies, or indeed others, can reasonably address participants concerns about the relevance of positive psychology exercises to depression, and in so doing make the intervention more sensitive to the needs of the individual.

The second aspect that Knowles et al., (2014) argue affects engagement with digital low-intensity interventions is the extent to which it provides collaboration and connection. These factors could be considered on a continuum, where all aspects have pros and cons, but the intervention ought to balance these. Collaboration could be conceptualised as the level of independence in an intervention, which when high (e.g. patients have high autonomy) could be empowering, but can equally be perceived as too demanding. This is a likely explanation of the differences between those who perceived benefit, and those who did not, in the current intervention. However, Knowles et al., (2014) caution going too far the other way, as although a low level of autonomy can confer greater perceived support, it could equally render the patient more passive, rather than having ownership. This is similar to what was discussed previously, in section 3.3.5, where patients recognised the tension between providing support and promoting autonomy. Similarly, connection with others in terms of level of social contact can be experienced as negative or positive, because a greater level of personal contact can provide interpersonal connection, yet also be seen as threatening. Whilst a low level of contact allows privacy and safety, it could feel isolating. Again, this is a useful model for considering the present findings, where patients who did not like the intervention found it difficult to be asked to take action and experienced isolation with the intervention.

It is interesting to note that those who perceived Uplift to be acceptable reported some sense of support from the candidate as they perceived that the candidate was 'part of the intervention, they felt someone was thinking of them, and they received reminders from the candidate. This feeling of being valued existed despite the fact that participants were aware their input to Uplift was not being monitored. Previous

research suggests that supported interventions have greater adherence and effectiveness than unsupported interventions, perhaps because some form of contact promotes accountability (Richards & Richardson, 2012). However, it is not always clear what is meant by support as this can include therapist support, in which patient sees a qualified therapist, and also administrative support, which varies from having someone who provides guidance on the content participants should access, to a person, such as a researcher, to contact with technical queries (Richards & Richardson, 2012). The latter definition would indicate that the processes in the current study, in which the participant received a verbal introduction to the intervention via telephone, and automated reminders from the candidate, may have inadvertently conferred support to participants. This raises question about the utility of the intervention in the real world, if it is to be delivered without any human contact. As mentioned in the previous section, future research should consider the importance of this and its resource implications.

More generally, patients also requested more social contact, either via social networking within the intervention, via peer stories, or being linked to social events. In light of this, and the findings that Uplift did not sufficiently balance collaboration and connection for all users, it is important to consider what changes could be made in future to redress this. Unfortunately, Knowles et al., (2014) have no clear recommendations for research; instead they argue that it is a delicate art to balance these factors. However, interestingly, they suggest that if researchers consider collaboration and connection, this can address the previously mentioned issue of sensitivity to the individual. It is easy to see how if connection with others was included, e.g. through a chat room, a patient has greater potential to be exposed to an idea, or tip, that is relevant to their needs and preferences. Future research into Uplift should consider how to improve the collaboration and connection, and specific recommendations are below.

Although a chat room might confer benefits by providing social contact with others (Oinas-Kukkonen & Harjuma, 2009) it might be unhelpful for two reasons (as mentioned in section 4.3.7). One, it is conceptually a different intervention, which is subject to its own literature (Naslund et al., 2016). Secondly, there are resource implications involved with monitoring, in order to minimise potential risks. However, asynchronous communication may be possible, as suggested by participants, where

current users can post which tips help them the most. However, this too introduces resource implications. Firstly, for participants who must agree to share this information (which raises issues in itself in terms of privacy and competitiveness), but secondly, for a moderator who must approve what can be shared. A simpler solution might be to generate some real-life user testimonies, perhaps in collaboration with an advisory panel or group that could offer an insight into the ways that Uplift could help. Future research could then test whether this is sufficient to foster a sense of connectedness in a future version of the intervention.

The present findings offered some support for the conceptual model of this intervention (reported in section 4.3.2). It also lends credibility to how the outcomes are achieved, as patients described increased positive affect, noticed differences in attention / awareness, as well as increased confidence, and some changes in daily behaviours, all of which were conceptualised as mechanisms of the interventions. This suggests that these are useful processes for future researchers to consider when designing evaluations of how positive psychology exercises might affect outcomes. However, the findings also indicate that, even for those who reported benefiting from the intervention, improvements were sometimes short-lived and did not always lead to the hypothesised outcome of reduced depression and improved subjective quality of life. This warrants further investigation, as it suggests that there are other factors that might mediate the process of change. It could be that patients with labile mood struggle to reap the same benefits. Alternatively, it might be that the outcome takes longer to achieve and requires more habitual practice, potentially over a longer time period. Indeed, participants did suggest improving the intervention to create more habitual users, and potentially making it available for longer than six weeks. The intervention guideline was based on previous systematic review that indicated that this length of time and intensity was appropriate and potentially effective (Bolier, Haverman, Westerhof, et al., 2013). However, this review did acknowledge that this was based on a limited number of studies, and potentially greater effects might be observed when interventions were supported. However, as the aim of this thesis was to investigate a low-intensity intervention to address the treatment gap, future research ought to investigate a more appropriate intensity and intervention length, that might allow these outcomes to be experienced by participants, even within the context of a low-intensity intervention.

In the previous chapter it was discussed that patients with depression were potentially more likely to use positive psychology exercises that promoted pleasure, than those promoting engagement and meaning (see section 5.4.3). However, this qualitative study did not find support for this. In fact, participants reported a range of views on the usefulness of the different positive psychology components, rather than a universal acceptance of one type over another. This implication lends support to the approach taken in this intervention, of testing a range of components promoting different principles of positive psychology, rather than focusing on one type (e.g. pleasure). This is because different patients are likely to find different ones acceptable and potentially helpful.

6.4.4 Conclusions

Overall, the findings suggest that there are reasons why certain people found Uplift, and its positive psychology exercises, more acceptable and potentially useful compared to others. Future research is needed to establish whether it is possible to improve the acceptability of Uplift; by increasing how sensitive it is to patient needs, and improving collaboration between the intervention and users, as well as connection to other users. However, as mentioned in the previous chapter, it remains a priority to investigate the population that liked, and appeared to benefit from Uplift, and whether they are a distinct group, or whether they are in fact those who would be amenable to other therapeutically oriented digital low-intensity interventions.

7 Discussion

7.1 Overview

This chapter provides an overall discussion of the thesis. It aims to draw together the collective significance of the preceding chapters, and discuss these with reference to the initial research questions and existing literature. The chapter also considers the strengths and limitations of the overall thesis. This is followed by a discussion of the implications of the findings for research and clinical practice.

7.2 Summary of context and problem

This thesis aimed to systematically develop a theoretically sound online intervention using positive psychology for depression, and investigate the acceptability of this. The rationale was that a low-intensity online intervention, using components of positive psychology, might usefully address the treatment gap, whereby large numbers of patients are experiencing depression and associated distress, but have limited access to appropriate psychological treatments. A low-intensity treatment was deemed suitable, given its potential to address the mental health needs of large numbers of patients, without being used up as a resource. Positive psychology was used as the theoretical basis, as there was some evidence that it could be effective for depression, and researchers suggested it might be more acceptable to some than deficit-oriented interventions. However, the existing evidence base for positive psychology components was limited by poor quality evidence that failed to accurately specify mechanisms of action and rarely investigated its acceptability.

7.3 Summary of approach and methods

This thesis was guided by two frameworks for intervention development: The Medical Research Council (MRC) Framework for Developing and Evaluating Complex Interventions (Craig et al., 2008) and the Person-Based Approach to Digital Health-Related Behaviour Change Interventions (Yardley et al., 2015). The MRC framework places an emphasis on developing the theoretical basis of an intervention, prior to testing its feasibility. The person-based approach recommends eliciting and addressing the views of the people that will use the intervention, in order to address contextual challenges with its delivery. This thesis employed several methods recommended by the two frameworks to systematically develop and test the feasibility of the intervention.

In the first stage of intervention development, the candidate completed a literature review to synthesise existing systematic reviews of the effectiveness of positive psychology (Chapter 1). This identified that the field disagrees on the definition of a positive psychology component and led to the selection of positive psychotherapy to inform the intervention development, because it is a relatively well defined and described package of components. However, it was unclear which components are required to achieve outcomes, which can be changed, and how this differed across contexts. The candidate therefore conducted a systematic review to investigate how the positive psychology components used in positive psychotherapy are applied and modified (Chapter 2). This identified that some components were applied frequently (e.g. 'blessings journal' and 'using strengths') whilst others were not applied at all (e.g. 'satisficing plan' or 'family strengths tree'), suggesting that some components might be more acceptable and feasible than others. However, as studies rarely described their rationale for applying or modifying components, this study contributed little to developing the theory of the intervention.

To supplement theory development and identify challenges with delivering the intervention, a qualitative study investigated patient and clinician views on the acceptability of the proposed intervention (Chapter 3). This identified that acceptability was influenced by the extent to which patients perceived a fit between positivity and context, whether the social elements of the intervention were balanced, whether they felt supported, and whether the intervention was persuasively designed.

The evidence from the aforementioned studies was synthesised with stakeholder views, elicited from a patient advisory panel, in order to inform the conceptual model of the intervention this was then operationalised into a website (Chapter 4). The conceptual model described how the positive psychology components ('savouring', 'using your strengths', 'blessings journal', 'gratitude letter', 'active constructive responding', and 'gift of time') promoted the principles of pleasure, engagement, and meaning, the mechanisms by which these were hypothesised to influence change, and affect the outcomes of reducing depression and increasing subjective quality of life. The model also described how design objectives were created to address contextual factors likely to affect acceptability. For example, to address the issue that the intervention needs to fit with participants' context it was designed to persuade participants of the relevance of the advice. These design objectives were addressed by

key features of the intervention, such as adapting intervention names and descriptions to be suitable to the UK context, when the model was operationalised into a website with the help of a software design company.

In the second stage of the thesis, the developed intervention, Uplift, was tested in a feasibility study. This included a quantitative, pre-post study, to address the uncertainty on the usage of the intervention and its acceptability (Chapter 5). This established that despite few participants adhering to the intervention guideline, around a fifth of the sample regularly engaged and perceived benefit from the intervention. Importantly, those who did not perceive it to be acceptable or beneficial did not feel the intervention was harmful. A qualitative study was designed to explore in more depth the acceptability of and response to the intervention, and participants were purposively selected according to their age, gender, and intervention logins, to ensure a range of views were elicited (Chapter 6). This identified that the acceptability of the intervention was affected by whether it was perceived as relevant to depression and the extent to which it was empowering. Those who perceived a benefit found at least some components relevant to their needs, and reported a sense of autonomy and value associated with independently completing the intervention. In contrast, those who did not benefit reported that the components were disconnected, unrealistic, and irrelevant to their depression, and they felt unsupported and unable to self-motivate.

7.4 Answers to research questions

7.4.1 1) Which positive psychology components can be applied to an online intervention for depression?

In order to answer this research question it was necessary to define a positive psychology component. However, it was evident that this is subject to debate. Some view positive psychology components as exercises or therapies developed in the theoretical tradition of positive psychology that primarily aim to raise positive feelings, cognitions, or behaviours, as opposed to those that primarily aim to reduce symptoms, problems, or disorders (Bolier, Haverman, Westerhof, et al., 2013). Others suggest that the definition is wider and can include interventions developed outside the field of positive psychology, as long as the interventions goal is to promote positive emotions, behaviours, or thoughts to improve wellbeing, and do so through a known mechanism (Schueller et al., 2014). Yet, both of these definitions appear

flawed. The issue with the first definition is that it is not clear what has been developed within the theoretical tradition of positive psychology, since Seligman et al., (2005) describe identifying and testing interventions from a range of disciplines, including Buddhism and the human potential movement. Similarly, the second definition allows a range of interventions to be defined as components of positive psychology, such as mindfulness and acceptance based therapy (Schueller et al., 2014). It then becomes impossible to differentiate positive psychology components from other therapeutic interventions and this could serve to obscure the development of intervention theory, and limit the ability to identify intervention effects.

Consequently, this thesis focused on positive psychology components in positive psychotherapy, as these were relatively well defined and described by Seligman et al., (2006). This research identified that of the 12 positive psychology components described by Seligman, six of these can be applied to an online intervention for depression, because they were supported by evidence or theory, were consistent with the principles of pleasure, engagement, and meaning, had previously been applied, and were potentially acceptable in the context of a low-intensity online intervention (e.g. had few barriers, or could be appropriately modified). The components that can be, and were applied, to the online intervention include: 'savouring', 'using your strengths', 'blessings journal', 'gratitude letter', 'active constructive responding', and 'gift of time'. It was hypothesised that 'savouring' promoted pleasure and could re-educate participants' attention and memory towards the positive and increase positive affect. 'Using your strengths', 'blessings journal', and 'gratitude letter' were thought to promote engagement and increase self-efficacy, activity, and social engagement. The 'active constructive responding' and 'gift of time' components were hypothesised to promote meaning and also could increase activity and social engagement. Together these mechanisms of change were thought to influence the outcomes of reduced depression and increased subjective quality of life.

The other aspect of the answer to this research question is that it was determined that there are some positive psychology components that did not appear suitable for applying in the context of an unsupported online intervention for depression. This included 'positive introduction', 'writing memories', 'forgiveness letter', 'one door closes', 'satisficing plan', and 'family strengths tree'. The decision not to include these was because they appeared not to be based on adequate theory or evidence, did not

appear aligned with the principles of pleasure, engagement, and meaning, had rarely been applied in other studies, and were likely to be unacceptable, or even harmful, in the proposed context. The evidence synthesis suggested that some components had the potential to generate negative feelings that might be harmful to elicit in the context of an unsupported intervention. This included the 'writing memories' and 'forgiveness letter' components, that encourage patients to explore difficult memories and events, and also the 'positive introduction' which encourages a focus on when things were going well, which was thought might be overwhelming. Other components, including 'one door closes' and 'satisficing plan' were thought to be more suitable, acceptable, and potentially effective if facilitated by therapeutic support. Finally, the complexity with involving family in the 'family strengths tree' led to this component being excluded.

Although this research question has been answered in terms of which positive psychology components from positive psychotherapy were most suitable to apply online, it remains unclear which components from the wider positive psychology movement could also have been used. In the systematic review described in Chapter 2, several conceptually similar components to those used in positive psychotherapy were identified. The 'acts of kindness' component, in which people complete small pro-social tasks for others, was conceptualised as promoting meaning and was seen as very similar to the 'gift of time' exercise, which involved using personal strengths, rather than generic pro-social tasks to help others. However, as this thesis focused on the components described within positive psychotherapy, it was not possible to identify whether such components can be applied to online interventions for depression.

7.4.2 2) What is the acceptability of this online intervention using positive psychology for depression?

The findings indicate that an online intervention using positive psychology is not acceptable to all. Instead, around a fifth of participants indicated that the intervention was acceptable and perceived as useful, according to the feasibility study findings (Chapter 5). The remainder of participants did not find it acceptable and disengaged with the intervention, although they did not report it was harmful. The findings show that it is not a one size fits all approach.

In order to investigate whether acceptability was related to patient characteristics, exploratory analyses investigated whether any demographic characteristics predicted intervention use. Intervention logins and exercise completion were used as a proxy measure of intervention acceptability, as it was assumed that those who found the intervention acceptable would use it more frequently. However, intervention use did not appear to be related to age, depression severity, education, employment status, depression treatment, length of illness, or subjective quality of life. The only significant predictor was gender, as women completed more exercises than men. However, there was no difference in logins between the genders.

Although depression, measured on the PHQ-9, did not predict intervention usage, it did appear to play a role in the acceptability of the intervention. In the qualitative aspect of the feasibility study (Chapter 6), an important factor affecting acceptability was the extent to which the intervention was perceived as relevant to depression, and this appeared to differ in patients. Some found at least one positive psychology component relevant to them and therefore felt the intervention was acceptable. Others did not feel that the intervention was at all relevant to their needs and found the intervention components too demanding. These findings were similar to what patients and clinicians articulated in the qualitative study that informed the development of the intervention (Chapter 3), where an important theme was the fit between the participants' context and their depression. Specifically, participants felt that the extent to which the patient could identify positives would influence intervention acceptability. Further, this also identified that positive psychology had the potential to be interpreted as misunderstanding depression. It therefore appears that a positive psychology intervention is more appealing to some than others.

The second factor identified in the qualitative study that appeared to affect acceptability of the intervention was the extent to which patients felt empowered by a low-intensity intervention, or whether they felt unable to self-motivate to complete it. This was linked to what participants said in the qualitative study (Chapter 3) where they mentioned balancing the tension between providing an unsupported intervention that could promote autonomy for patients developing strategies, but might not be sufficiently motivating for patients to engage. These findings could indicate that some people find low-intensity interventions more acceptable and appealing in general.

7.4.3 3) What are the potential outcomes for individuals with depression of this online intervention using positive psychology?

The conceptual model of the intervention (reported in Chapter 4) proposed that the positive psychology components included in the intervention would reduce symptoms of depression and improve subjective quality of life. These outcomes were measured in the feasibility study (Chapter 5) by the PHQ-9 and DIALOG scale respectively. Participants' depression reduced, however, overall subjective quality of life did not appear to improve, and it improved only a little within the domain of mental health. The findings indicate the potential for this intervention to improve depression. Yet, this evidence should be interpreted cautiously, given the lack of control group and potential for regression to the mean. However, it could be argued that the observed changes were not due to social desirability, or it would be expected that both the depression and subjective quality of life outcomes would have changed equally. Furthermore, the feasibility study collected open-ended survey data that supports the hypothesised mechanisms of the intervention that might lead to improvement in outcomes. Participants reported experienced benefits such as improved emotions and thoughts, and completing increased daily activities. This is further supported by the findings of the qualitative study (Chapter 6), as participants reported both short-term and longer-term improvements, such as brief boosts to mood and returning to exercise routines.

It must be noted that many patients reported no benefit from Uplift. As aforementioned, they also did not report harm, but felt that the intervention did not help in any way and was not for them. This further supports the interpretation that a positive psychology intervention is not a one size fits all approach, but will be acceptable and beneficial for a few. However, the findings indicate that the developed intervention is a potentially promising treatment option for depression.

Within this thesis, the intervention was conceptualised as complementary to existing treatments. This was because participants in the qualitative study (Chapter 3) indicated that an online positive psychology intervention would not be suitable as a stand-alone intervention, as it was not perceived to directly address symptoms of depression. The conceptual model of the intervention, described in Chapter 4, outlined proposed mechanisms, such as re-educating attention and memory towards the positive, that were hypothesised to lead to a reduction in depression. However, as

this study was the first to test the feasibility of the intervention, it was appropriate to conceptualise it as complementary and allow study participants to continue existing treatments.

7.5 Comparison to the literature

7.5.1 Comparison to literature on components of positive psychology

When compared to the previously hypothesised model of how positive psychotherapy operates, depicted in Figure 7.1, the current thesis has vastly improved the proposed model, as depicted in Figure 7.2.

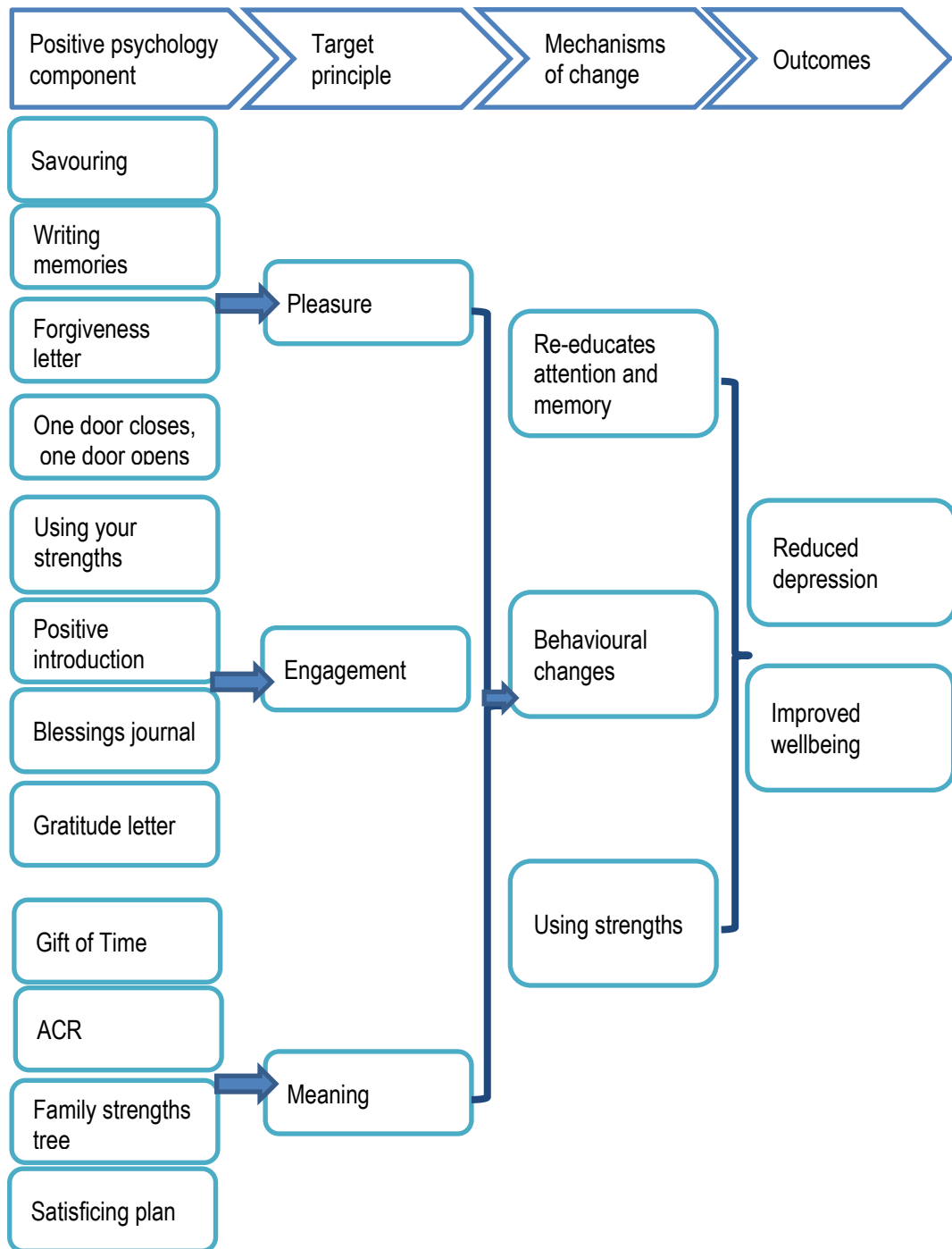


Figure 7.1 Conceptual model of positive psychotherapy

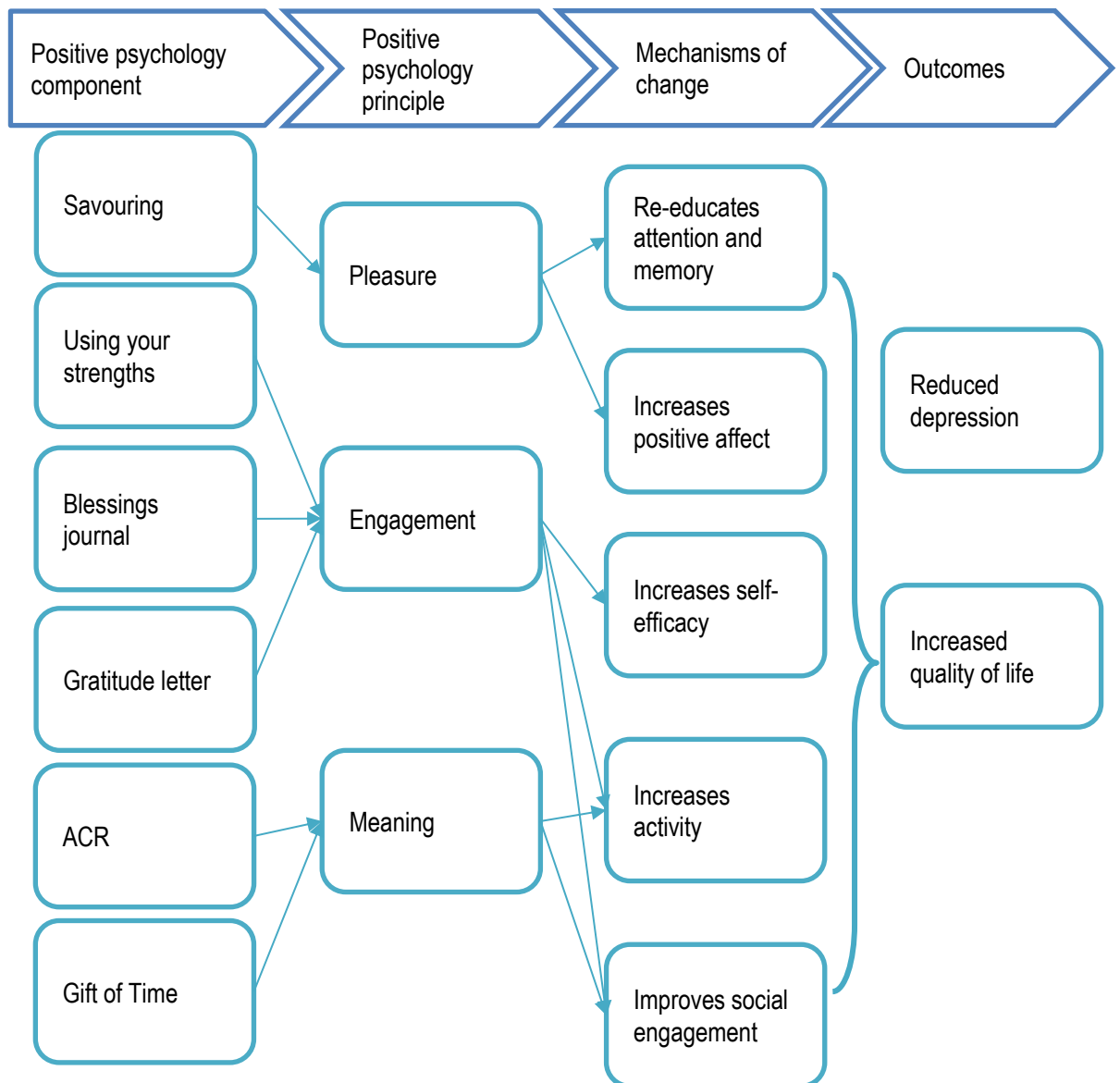


Figure 7.2 Conceptual model of the developed intervention

The new model depicts how particular positive psychology components relate to principles of pleasure, engagement, and meaning, and to particular hypothesised mechanisms of the intervention. This was absent from the original model depicted in Figure 7.1. This was problematic because researchers suggested that the components could be delivered flexibly (Rashid, 2008; Rashid & Seligman, 2014), but it was not possible to make an informed decision about which components were necessary for outcomes, and which could be adapted. This has been addressed by the present research, because it is clear from the conceptual model in Figure 7.2 how components are hypothesised to link to principles and mechanisms, which in theory could allow future researchers to substitute appropriate components. However, the model

remains hypothetical as it depicts proposed mechanisms that should be the subject of further research.

Further, the new model acknowledges the contextual challenges hypothesised as affecting the acceptability of the low-intensity intervention, as depicted in Figure 7.3. Previously, despite describing two different contexts of therapy provision, individual and group, Seligman et al., (2006) failed to account for how these contexts might affect intervention delivery. Again, this was problematic because it was unclear how to adapt the intervention to other contexts. As a result, as demonstrated in the systematic review, interventions that adapted positive psychotherapy employed a range of different components in different contexts (e.g. in an app reported in Roepke et al., (2015) where just two components were used). However, studies rarely specified whether factors related to the context of delivery affected which components were delivered. In contrast, the conceptual model developed in this thesis allows other researchers and clinicians to clearly see the features of the context that are hypothesised as influencing acceptability, and how the intervention was designed, and components were selected, to address these. This provides a theoretically sound model that other researchers can consider when designing future interventions.

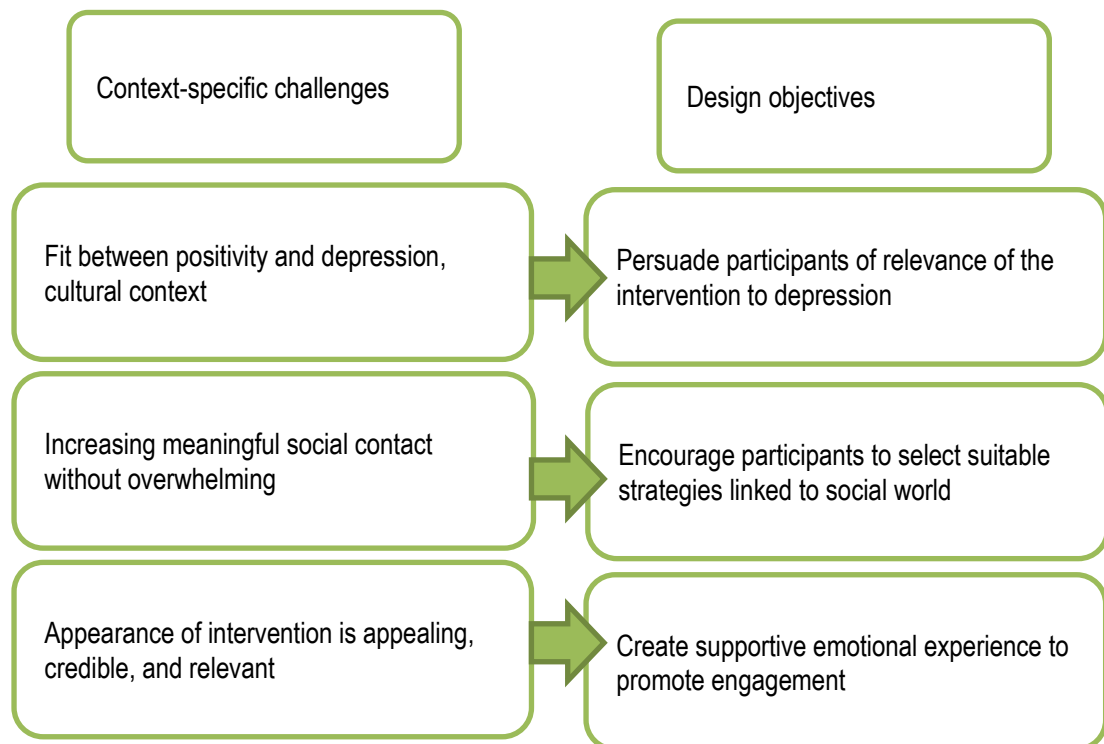


Figure 7.3 Guiding principles of the developed intervention

Although this thesis has systematically developed the theory of positive psychology components from positive psychotherapy beyond what was previously discussed in the literature, it remains unclear how other components of positive psychology fit in. As aforementioned, in previous systematic reviews, components such as ‘three funny things’, which is similar to three good things but the participants documents amusing events (Gander, Proyer, Ruch, & Wyss, 2012), ‘best possible selves’ (King, 2001), in which participants repeatedly write about their imagined future, and ‘acts of kindness’ (Otake et al., 2006), in which the participant documents pro-social tasks completed for others, have been considered part of positive psychology (Bolier, Haverman, Westerhof, et al., 2013). However, as these are not described within positive psychotherapy, they were not investigated within this thesis. Yet, it remains plausible that such components could usefully contribute to an online intervention for depression, as well as positive psychology delivered in other contexts. However, this will only be possible if it is clear how these components operate, in terms of which principles they promote, and the associated mechanisms. Some researchers have provided a rationale for their modifications of ‘good things’ into ‘funny things’, as humour is conceptualised as an important aspect of positive emotion, and this would therefore promote the principle of pleasure (Gander et al., 2012). Other modifications or variants of positive psychology components will need to be clearly described in order for the field to move forward.

It should be noted that the field of positive psychology has begun to investigate components that promote two further principles; relationships and achievement. This is now known as the ‘PERMA’ model (pleasure, engagement, relationships, meaning, and achievement) (Seligman, 2011). To the candidate’s knowledge, this has not been discussed with reference to people with depression, but is being investigated as the target of positive psychology components tested with the general population. Future research may wish to consider whether these principles are useful targets for interventions for people with depression.

7.5.2 Comparison to literature on acceptability of positive psychology online

The present thesis provides a challenge to the existing literature, which suggests that because the components of positive psychology focus on pleasure, engagement, and meaning, this will foster greater acceptability than other traditional deficit-oriented approaches (Layous et al., 2011; Schueller & Parks, 2012; Seligman et al., 2006).

Previously, researchers have suggested that interventions informed by positive psychology may have fewer barriers to entry for people lacking motivation, energy, or enthusiasm, when compared to accessing traditional forms of therapy (Layous et al., 2011). However, the current study finding that positive psychology was not conceptualised as an alternative intervention to deficit-oriented treatments evidenced the first challenge to these ideas. Instead, the evidence from this thesis indicated that an online positive psychology approach was not sufficient to address symptoms and problems, and therefore should be offered alongside treatments that tackle these.

The second challenge to the notion of acceptability among patients with depression is that, even within a self-selected sample, only a fifth of patients in the feasibility study reported it was acceptable. This is not an all-out challenge to researchers that suggest positive psychology is valuable; merely it provides some evidence that it is not a one-size fits all approach. A key reason for disengaging was that the intervention components were not perceived as relevant to participants' experiences of depression. This finding can help to shed light on why patients might have been indifferent to or dissatisfied with previous online interventions using positive psychology (Bolier, Haverman, Kramer, et al., 2013). Previously, researchers have hypothesised that patients might have felt incapable of completing the intervention or disappointed by its content. The present research suggests this might be the case. This raises the question of whether it is necessary to make the intervention more acceptable, so that more patients might benefit. However, there is a possibility that in doing so this might make it less acceptable to those who benefited from it in its current form.

If future studies want to amend the intervention to improve its acceptability, then they might focus on addressing the issue that the psychological content of the intervention did not sufficiently acknowledge participants' symptoms. This is a criticism that positive psychologists have previously faced (Coyne & Tennen, 2010). In response positive psychologists have argued that they do not ignore peoples' distress but that they attend to this sensitively, with a focus on bringing out the positives (Rashid, 2015). However, the finding of the current research suggest that in the context of a low-intensity online intervention, which presents the same set of positive psychology components to all users, patients feel unsupported and that their emotions are unvalidated. There are several options for improving the perceived relevance of the intervention content to people with depression.

The first option would be to explicitly incorporate positive psychology with deficit-oriented treatments such as CBT, and some researchers have begun to investigate this in the context of individual and group therapies (Bannink, 2014; Carr & Finnegan, 2014). This would require systematic development, with a similar approach evidenced in this thesis, which addressed how theoretical aspects of the deficit oriented treatment address contextual challenges, and the hypothesised mechanisms that could influence outcomes. This would be necessary to ensure the developed intervention was conceptually distinct from existing interventions and would be used to inform evaluations. A further challenge with this approach is that care needs to be taken to ensure that it does not overwhelm participants, as research indicates that there might be a curvilinear relationship, whereby additional content does not benefit patients (Donkin et al., 2013; Schueller & Parks, 2012).

A second option would be to refine positive psychology exercises so that they more explicitly address patients' symptoms and concerns. For instance, rather than just include a brief sentence about how components are relevant to symptoms, instead the intervention would be structured around symptoms for patients to select and then be offered a relevant positive psychology component. This would be a theoretically more pure intervention than the first option, which might be easier to evaluate.

A third option would be to include positive mood induction techniques to get people 'in the mood' for receiving instructions (Layous & Lyubomirsky, 2014). For instance, music, pictures, or videos could be used to induce positive or relaxed mood states. Similarly, this might address the concern that the intervention remains 'pure' positive psychology. However, it is possible that encouraging more positivity would not sufficiently address patient concerns and might lead to the criticisms evidenced in this thesis that, for some, the intervention appears to misunderstand depression. This could be checked in future research.

Nevertheless, implementing the above-described options to refine Uplift might result in losing the appealing simplicity of the intervention, which has a clear focus and is distinct from other interventions. It might also be that this intervention is simply acceptable to a small number, and that rather than be a problem that should be addressed, research should instead focus on reliably identifying these people, so that the intervention can be appropriately targeted.

The current research provides support for the suggestion of previous positive psychology researchers, who indicated that more persuasively designed positive psychology interventions might be more acceptable to participants (Bolier, Haverman, Kramer, et al., 2013). Both the quantitative and qualitative aspects of the feasibility study generated data indicating that patients had hoped for more interactive exercises (e.g. quizzes, video clips) and content that was tailored to their needs. Indeed, the presence of such aspects has also facilitated acceptability, as measured by adherence, with other digital interventions (Kelders et al., 2012). Ways to incorporate such persuasive design features ought to be addressed in future research. However, this would incur further expense.

7.5.3 Comparison to literature on low-intensity online interventions

It is important to compare the findings of the present thesis in light of the existing literature on low-intensity online interventions. The present research potentially supports the findings of a recent meta-synthesis into cCBT, which suggested that patient engagement with online psychological interventions is influenced by the extent to which the intervention is sensitive to their needs, and how much collaboration and connection it provides (Knowles et al., 2014).

The findings of the present thesis indicated that a key factor in disengaging with the intervention was that the content did not seem relevant to participants' depression. In the previous section, some ways to overcome this were outlined alongside the potential limitations of changing the intervention. However, the suggestion from the Knowles et al., (2014) study is that the interventions that are most sensitive to patient needs are those that recommend personalised content, on the basis of patient circumstances or symptoms. In their review, Knowles et al., (2014) provide examples of when this has been achieved by therapists who recommend suitable intervention content to users. However, this presents a challenge for research into low-intensity interventions that aim to be non-consumable (Muñoz, 2010), and therefore would not use therapists to recommend content to patients. Research may therefore focus on investigating how the process of recommending suitable content can be automated. This will require knowledge of how to assess and match patient needs to psychological content, as well as technological solutions to automate this process.

The second aspect of Knowles et al.,'s (2014) paper is that engagement with digital interventions can be influenced by how much collaboration and connection is

provided. The developed intervention was low-intensity, and the social aspects of the persuasive design framework, such as social learning (e.g. providing ways to see how other users had benefited from positive psychology components) (Oinas-Kukkonen & Harjumaa, 2009), were not included based on privacy, ethical, and scalability concerns. However, the tension, acknowledged by Knowles et al., (2014) is that an intervention that promotes such autonomy can suit some, whilst being too challenging for others. This was the case in the current study. However, it was apparent that some participants perceived support from the telephone introduction and reminders from the candidate. Previously, researchers have suggested that this administrative support can be beneficial, as it creates a sense of accountability within an intervention (Richards & Richardson, 2012). Future research may investigate how important it is to have a human point of contact to provide administrative support within an intervention such as Uplift, and investigate the resource implications of this.

Knowles et al., (2014) raise the possibility that there is a subset of people that can reliably be identified as having positive or negative perceptions of online interventions. One possibility is that those who did not like Uplift and perceived it to be isolating rather than empowering, would consistently experience any low-intensity online intervention in the same way. This could mean that improving Uplift to make it more collaborative and more sensitive to user needs would not improve the experience of the intervention for those people, as they will not gain benefit from these changes. Further, making these changes would mean that those who did like it in its current form might no longer perceive it to be acceptable and beneficial. Alternatively, even if people can be reliably identified as being suited to online interventions, these people might still have different preferences for these interventions. Some might prefer a private experience with little contact, whilst others might like and want to exchange communication with people experiencing a similar condition.

This idea that there might be people who can reliably be identified as having a favourable response to digital interventions raises another possible interpretation of the Uplift findings. It is not clear whether those that perceived it to be acceptable would have had a favourable opinion of another digital intervention, such as cCBT. In other words, is Uplift uniquely appealing? Research has rarely investigated patient

preferences for digital interventions, with the exception of a questionnaire study by Musiat, Goldstone, and Tarrrier (2014) which suggested that people had unfavourable expectations of digital interventions. However, future studies may need to employ a more nuanced approach to eliciting patient preferences. Musiat and colleagues asked participants to rank treatment options, including online and traditional face-to-face therapy, if they were to 'seek help right now'. The study authors acknowledge that this might have led participants to perceive traditional therapy as a 'benchmark'. Further, it cannot be assumed that people know about different digital treatments and their advantages, such as greater privacy and control (Knowles et al., 2014), or the context in which they might seek them (e.g. whilst on a waiting list). Previously, research has provided information about digital interventions and found that this can positively influence attitudes; for instance because information address concerns about privacy (Ebert et al., 2015). Future studies should investigate patient preferences for online interventions more thoroughly, to determine patient preferences for these interventions overall, but also preferences for particular elements, such as connectivity and collaboration, or psychological content. This could help to inform the development of future interventions that are suited to needs, and also to reliably identify patients with favourable preference so that interventions can be targeted towards patients.

7.5.4 Comparison to literature on designing and evaluating online interventions

To date the majority of online interventions in the UK have been developed commercially, and few have a sound theoretical basis or evidence to substantiate their claims (Bennion et al., 2017; Hill et al., 2017; Leigh & Flatt, 2015). In order to address this limitation and to inform the development of a theoretically sound intervention, two intervention development frameworks were selected; the MRC framework (Craig et al., 2008) and the person-based approach (Yardley et al., 2015). These frameworks were successfully applied in this thesis and generally helped to inform the selected research methods and activities. However, there were some recommended activities that could not be undertaken. For example, the MRC framework generally recommends that a systematic review is conducted to identify the evidence base of an intervention. However, as several recent reviews had been conducted that indicated potential effectiveness (Bolier, Haverman, Westerhof, et al., 2013; Hone et al., 2015), it was not deemed necessary to conduct another. Instead, a systematic review was conducted on how intervention components had been applied in previous studies, in

order to understand potentially acceptable and theoretically important components. However, this review was only moderately robust, due to the poor quality of study intervention reporting, and did not establish sufficient data to contribute to the theory of the intervention. However, new data was collected in the qualitative study, to supplement the development of the theory of the intervention.

In terms of the person-based approach, there were two recommended methods that were not possible to implement. The first was the suggestion to synthesise user experiences of similar interventions, ideally through synthesis of qualitative data to identify barriers and facilitators (Yardley et al., 2015). However, as few studies had actually investigated the acceptability of positive psychology this was not possible. The approach also recommends repeatedly testing and refining the intervention, through usability studies in real-world contexts. This would have required an extended phase of think aloud usability testing, as well as longitudinal mixed method case studies of how people used the intervention independently in real life. These processes would have led to further refinements prior to a feasibility study. However, due to practical resource and time constraints, these optimisation methods were not feasible. Overall, the two frameworks complemented one another well. As neither are overly prescriptive, but instead, suggest methods and activities that might be used depending on available resources, they fitted well in the context of an independent researcher, with a limited time and budget to complete the development. The frameworks therefore made an important contribution and enabled the development of a theoretically sound intervention.

Future evaluations of the Uplift intervention ought to be considered, particularly as the MRC framework would suggest that there are two stages remaining; 'evaluation' and 'implementation'. One important aspect for future evaluations would be how to measure acceptability, defined in the present study as whether the intervention was suitable, appropriate, satisfying, and attractive (Bowen et al., 2009). In the present study, a proxy measure of acceptability was adherence and it was assumed that a higher number of logins and completion was associated with greater acceptability of the intervention, and that in turn this might lead to better outcomes (which would then be the subject of a future evaluation). However, this assumption of a linear relationship between acceptability, adherence, and dose and response in online psychological interventions is subject to debate (Donkin et al., 2013). It has been

suggested that the greater level of engagement within each exposure to the intervention (e.g. spending more time logged in, completing more activities) is a better predictor of benefitting from the intervention, than longer-term engagement (Donkin et al., 2013). However, others argue that engagement is multidimensional; there is engagement at the micro level, e.g. logging into an intervention, and macro level, e.g. making a behaviour change (Michie, Yardley, West, Patrick, & Greaves, 2017). Further, they argue this is likely to vary by intervention depending on the target behaviour, and recommend that each digital behaviour change intervention defines what is important. In some contexts, one in-depth period of engagement might be sufficient to teach new skills, whilst for other interventions, brief but timely context-triggered prompts might be needed over a longer term to achieve change. Future research into Uplift should more carefully consider what level of engagement might be required to achieve behaviour change. As it was, the intervention guideline recommended logging in once per week and trying one intervention. However, few adhered to this, and it is unclear whether a more intensive or longer period of the intervention would be required to sustain behaviour change. This should be the subject of future research.

Engagement must also be considered in light of how people use technology; if it is the case that people use technology in frequent but short bursts of time (Mohr, Tomasino, et al., 2017), how do researchers generate sustained engagement? The current study findings suggested that there was 'offline' practice of the intervention components, with patients in the qualitative study reporting practicing the components in notebooks. This demonstrates the importance of using multiple methods to evaluate acceptability and usage, rather than relying on technology usage. It has been suggested that researchers ought to develop more complex measures of intervention use, such as time spent, number of pages visited (i.e. clicked on), exercises started but not completed, to create a composite measure of engagement (Couper et al., 2010). If this had been used in the current study, it might have allowed exploration of the 'breadth' of engagement, e.g. how many activities accessed and 'depth' of engagement, e.g. length of time spent. However, this was not possible as it would have required further programming of the website that was not compatible with the resources available. Nevertheless, future research may investigate technological processes involved in measuring engagement, alongside the research

into establishing what engagement means in relation to the behaviour change outcomes expected in Uplift.

The second methodological aspect relates to how future evaluations would be designed. The guiding frameworks for this thesis would both recommend iteratively refining Uplift before testing it in an RCT (Craig et al., 2008; Yardley et al., 2015). Some argue that it is not sufficient to rely on formative studies (e.g. non-randomised or observational studies), because trials often contradict such study findings and overturn assumptions of effectiveness (Murray et al., 2016). It is therefore proposed that online interventions should be subject to the same level of evidence as required by other interventions, as they are not without costs or potential for harm. One such cost is the opportunity cost, whereby individual patients or healthcare systems invest time, effort, and money into an ineffective resource, thus rendering these resources unavailable for effective interventions (Murray et al., 2016). The recommendation is therefore to develop and refine an intervention until it is stable, can be implemented with high fidelity, and has evidence that benefits are clinically meaningful (Murray et al., 2016).

There are a number of problems however with these conditions. Firstly, although intervention stability might be desirable, it should be recognised that pace of technological development is at odds with this. Some argue that given how much technology changes and how quickly this happens, in comparison to slow cycles of intervention development and evaluation, that interventions are obsolete by the time we have evidence for them (Kumar et al., 2013). A solution for this is to use more flexible evaluation designs that test the theoretical principles of an intervention, i.e. its conceptual model that can be stable, whilst allowing the technological aspects that might be less stable and subject to external changes, to evolve alongside testing (Mohr et al., 2015).

Secondly, if one assumes, as Murray et al. (2016) suggest, that interventions ought to have 'high fidelity' prior to testing, this requires researchers to address the problem of high drop out. As evidenced in the present study, and in the literature reviewed at the outset in section 1.6.3, few participants adhere to online interventions. As a result, when RCTs are analysed using the intention to treat principle (which analyses people as they were randomised), it is not statistically possible to account for these rates of drop out and demonstrate an effect. The focus of researchers therefore must be on

carefully identifying patients that might be suited to interventions, and targeting these participants in a trial.

7.6 Strengths and limitations

7.6.1 Theoretically driven approach

A key strength of this thesis is the theoretically driven approach to intervention development, which has allowed the clarification of how components of positive psychology link to particular principles and mechanisms. To date this had not accurately been specified, thus this research has made an important and novel contribution to the literature on positive psychology. Whilst this is a key strength, that allows others to build on the conceptual model, there is nevertheless an associated weakness with the focus on just one model of positive psychology; that of positive psychotherapy. As aforementioned, it is possible that this limited the inclusion of other conceptually similar interventions, such as ‘acts of kindness’, as an alternative to ‘gift of time.’ However, the choice of positive psychotherapy was nevertheless a useful starting point, given the lack of clarity in the literature over what constitutes a positive psychology component. The current study provides a platform for other researchers to investigate the principles of pleasure, engagement, and meaning. It is likely that without this choice to restrict the intervention to using those from positive psychotherapy, it would have been more difficult to generate the conceptual model. Further, there is no evidence, to the candidate’s knowledge that a particularly crucial or effective positive psychology component was omitted. For instance, the evidence for ‘acts of kindness’, is subject to the same flaws described in section 1.5.4, e.g. use of student samples (Otake et al., 2006).

7.6.2 Systematic approach to intervention development

Another key strength of the approach to intervention development is that a systematic process was documented, using the most relevant research methods as recommended by the guiding frameworks (Craig et al., 2008; Yardley et al., 2015). The benefit of this is that the process is transparent, clear, and a useful starting point for other researchers developing online interventions using positive psychology, or other theoretical frameworks. At all stages good methodological rigour was ensured, by following guidelines, such as PRISMA for the systematic review (Moher et al., 2009), and COREQ for reporting the qualitative chapters (Tong et al., 2007). Further, where methods required it, a second independent researcher was used. In the systematic

review, this ensured the consistency of paper screening, inclusion, and data extraction, thus improving the methodological quality. Similarly, in the qualitative studies, the candidate ensured that independent researchers checked the coherence, credibility, and distinctness of the data analysis. These processes ensure that the intervention was based on good quality evidence and can increase the validity of the overall findings.

The candidate has evidenced that it is possible, within the confines of a PhD budget and timeline, to deliver a systematically developed theoretically sound intervention. Further, the developed intervention is not out-of-date, as has been suggested when traditional research methods are used (Kumar et al., 2013). However, participants expressed that the intervention might have been more useful as an app, which might reflect the expectations people have of smartphones, given their ubiquity (Prescott, 2017). Nevertheless, as the current research provides a conceptual model, including guiding principles that articulate how design objectives could address contextual challenges and related key technology features, in future it would be relatively easy to translate the intervention into other forms of technology, such as an app.

Although the approach taken to intervention development has strengths, there is nevertheless a possibility that incorporating agile processes, such as showing the paper-based prototype to potential users and iteratively refining it (Boardwell & Roberson, 2014), might have led to a more acceptable and engaging digital intervention. Using software experts earlier, and dedicating more resources to further rounds of think-aloud usability testing and refinement, could have identified issues with mobile access etc., which could have improved intervention acceptability in the feasibility study. However, one of the guiding frameworks of the thesis recognises that the context can dictate the extent to which all recommended activities can be achieved (Yardley et al., 2015). In this case, there were clear time, budget, and ethical constraints that limited the ability of the candidate to use iterative methods to optimise the intervention delivery

7.6.3 Development with the population of interest

Another important strength of this thesis was that the intervention was developed with the population of interest in mind. This is a key limitation of commercially available websites and apps, such as Happify that promotes positive psychology (“Happify,” 2017) and is designed for a general population, and may therefore fail to

meet the needs of patients experiencing depression. It is also an important limitation of previous research has targeted a more general population of the so-called 'worried well', resulting in a sub-clinical sample (Schueller & Parks, 2012). Instead, the approach to intervention development has involved patient perspectives of people experiencing depression and related conditions throughout, both as advisors to the research process, and as participants shaping the developing intervention. Again, the literature indicates that this is critical to ensuring the success of digital interventions (Doherty, Coyle, & Matthews, 2010; Kujala, 2003; Maguire, 2001). It is therefore assumed that using patient perspectives in this way has resulted in an intervention that is more aligned with patient needs than previous research.

A further strength is that this thesis conceptualised depression in its broadest sense, rather than restricting to a particular population. Previous researchers have excluded patients with severe depression or suicidality (Bolier, Haverman, Kramer, et al., 2013), or specifically have targeted this population (Huffman et al., 2014). However, the present research did not use any such restrictions. Indeed, a range of settings and samples were used throughout the study. For instance, the systematic review included studies of patients with a range of mental health conditions in various settings, in order to understand broadly how positive psychology components were applied. Similarly, the qualitative study investigated patients with depression and anxiety, given the evidence of co-morbidity (Kessler et al., 2003). Finally, the feasibility study recruited participants self-identifying as depressed, according to the Whooley screen (Whooley et al., 1997). The advantage of this was that a range of patients, from a range of settings, were recruited. In the feasibility study participants with relatively high levels of distress were recruited. Such approaches to the sampling are likely to have resulted in research findings that are more generalisable. Evidence shows that where various exclusion criteria are used in research, the findings cannot then easily be applied to the more 'messy' real-world, where patients experience a range of physical and mental co-morbidities (Halvorson & Humphreys, 2015).

One limitation of the sample, which should be acknowledged, is that in the qualitative (Chapter 3) and feasibility studies (Chapters 5 & 6), participants were recruited by adverts and so were self-selecting. This was deemed appropriate given the nature of the intervention, which would be used by people who opt for it, and indeed may find it online. However, the limitation is that this approach, and the

resulting sample, might not represent the people who are most in need of a low-intensity treatment. For instance, in the feasibility study, the sample was mainly female, well-educated, and had English as a first language. There is some evidence that such participants are typical in online intervention studies, and could reflect the higher proportion of women with depression, or the higher proportion of women who seek help online (Bolier, Haverman, Kramer, et al., 2013; Crisp & Griffiths, 2014; Schueller & Parks, 2012). However, critics argue that developing interventions for well-educated women does not address gaps in health inequalities. In fact, some argue that this can contribute further to health inequalities, as patients from socioeconomically disadvantaged backgrounds are overlooked in the development of interventions and become further marginalised (Showell, Cummings, & Turner, 2017). Indeed, previous research suggested that those with lower educational levels were at greater risk of dropping out of digital interventions (Karyotaki et al., 2015). The second risk factor identified in that meta-analysis was male gender (Karyotaki et al., 2015). This is a problem because the rates of completed suicides in men far exceed those of women, in part, to differences in help seeking behaviour (Schrijvers et al., 2012). It could therefore be argued that rather than choose a self-selected sample, the present research could have more consciously targeted a particular demographic, in order to better address the issue with the treatment gap that was outlined at the start of this thesis. Obviously, this was not the aim and would have required a different approach and research questions. Nevertheless, it is important to recognise that this research and its findings might apply to a particular demographic.

7.6.4 Challenge of low-intensity interventions

A central aim of the thesis was to develop a low-intensity intervention that was accessible to patients without support. However, the findings indicated that some participants perceived a sense of support from the candidate as a result of contact related to the research procedures (e.g. brief phonecall to explain research participation that included a summary of the intervention). This highlights the difficulties with evaluating low-intensity interventions as research procedures may inadvertently confer administrative support to participants that would not be present if implemented in routine services. This is problematic because the evidence suggests that where participants receive some form of support, including administrative support, these interventions have greater adherence and effectiveness than unsupported interventions (Richards & Richardson, 2012). A limitation of this study is

therefore that the intervention evaluated included administrative support, rather than no support as intended.

A secondary limitation is that even with this level of administrative support many participants still did not try the intervention. This calls into question how useful such a low level of support actually is. Indeed, a recent large scale RCT of cCBT in primary care concluded that unsupported interventions should not routinely be offered as patients do not adhere or engage (Gilbody et al., 2015). Instead, it is suggested that patients are offered professional support, e.g. through phone calls, to augment computerised interventions. However, it could be argued that low intensity interventions still have a place and deserve further research for two reasons. Firstly, some people engage with them, as demonstrated by a fifth of the sample in this study. If this was scaled up this has the potential to help large numbers of patients. Secondly, developments in technology may allow for patients to feel 'supported' without the presence of a therapist and these have yet to be fully explored. Indeed, the Gilbody et al., (2015) study was of an out-dated modular intervention, which may be one reason for disengagement.

7.7 Implications for research

7.7.1 Defining positive psychology components and their mechanisms

To further develop the field of positive psychology, researchers must now focus on agreeing on a definition of a positive psychology component, clarifying how components target particular principles of pleasure, engagement, and meaning, and the hypothesised mechanisms of these interventions. The field will remain of limited use if it is not clear how the components operate, nor clear how they are distinct from other theoretical approaches. A useful starting point would be for researchers to collate all components, and their instructions. This would allow the identification of which components are conceptually similar, or indeed are the same intervention by a different name. Such an exercise might encourage positive psychology researchers to see that they have sufficiently distinct components from other therapies, thus resulting in a consensus that it is unnecessary to include mindfulness or acceptance based therapies in their definition. Instead, the focus could be on increasing the transparency of positive psychology components, aligning these with relevant principles and mechanisms, which can then be rigorously tested. This would allow

researchers and therapists to select appropriate components from a good body of evidence.

7.7.2 Investigating patient preferences for low-intensity online interventions

The present research has raised the possibility that there are certain people for whom online interventions are more acceptable. The question for future research is to establish whether such patients would like and use any online intervention, or whether patients have particular preferences. These have different implications for research. If patients would like and use any online intervention, for instance those who liked Uplift would as happily have used cCBT, research should focus on reliably identifying these people and then developing the best evidenced intervention to target those patients. This would be a deductive approach, in which the best available evidence for treatment for a particular mental health concern is translated into an online treatment. Alternatively, if patients have different preferences for intervention content, format etc., researchers should focus on eliciting the different needs of patients and developing a range of interventions that address these needs. This is more of an inductive approach, in which patient preferences will drive the development of interventions. The implication is that future researchers must establish which of these explanations is more plausible.

7.7.3 Developing and evaluating online interventions

The implication of the present research is that, despite what the guiding frameworks would suggest, refining the intervention to test it in an RCT might not be the most suitable next step. Further research is needed to establish whether Uplift is uniquely beneficial to patients, or if patients would also benefit from an online intervention with a different therapeutic focus. If it is established that patients have preferences for a range of online treatments, this has implications for how these treatments should be developed and evaluated. One approach would be for researchers to develop and investigate the acceptability of their particular intervention, which would include testing the effectiveness of the psychological content, as well as the technological aspects of the design. However, it might be that these latter aspects are more generic, e.g. acceptable interventions are those that include autonomy-supportive, patient-centred language. The implication would therefore be that researchers from different institutions or groups could collaborate to identify and develop more generically acceptable design principles for online interventions, e.g. to

understand how to promote connectedness, or practically how to achieve sensitivity to patient needs. Concurrently, researchers would independently investigate ways to optimise theoretical principles for their particular interventions. For instance, the focus of positive psychology researchers might be to investigate how to increase the relevance of positive psychology to depression.

This approach would lead to more theoretically driven online interventions and might allow for interventions to be evaluated using principle-based trials (Mohr et al., 2015). These studies would investigate the effectiveness of the theoretical principles, both in terms of psychological principles, such as CBT or positive psychology, as well as the design principles, such as the use of autonomy-supportive language. However, crucially the technology by which such interventions are delivered would not be static. The trials could test a website; however, this could be updated throughout a study to allow for changes in technology. The advantage of this approach is that it can increase knowledge about the underlying principles or mechanisms of action of an intervention, which can then be applied to the changing technological environment, thus increasing the value of research studies in this field (Mohr et al., 2015).

The implications of this approach would be that there would be several varying interventions available, and patients or services might be uncertain about which to choose. This might require quality guidelines to be applied, so that patients know they are accessing evidence-based intervention. Such guidelines would need to be effective in checking the rigour of an intervention, whilst not being so restrictive that they stifle innovation in the field (Torous, Levin, Ahern, & Oser, 2017).

7.8 Implications for clinical practice

7.8.1 Delivery and maintenance costs

This research began with an assumption that low-intensity interventions are cost-effective, as, once developed, they do not require much further costs, compared to interventions requiring staff support or infrastructure to deliver (Muñoz, 2010). However, the findings indicate that there are cost implications in hosting interventions, ensuring they stay up-to-date, and secure, as technology develops. For instance, if Uplift is developed into an app, the costs of updating this as manufacturers release new and updated operating systems must be met to ensure that developed intervention does not become obsolete. However, it is unclear how such costs would

be met in clinical practice. Research shows that already there is great variety in which online interventions clinical commissioning groups pay for, meaning that patients have access to varying interventions (Bennion et al., 2017). This should be discussed further in future research, to understand resource implications and ensure cost-effectiveness, whilst maintaining patient choice.

A second aspect of this is that the research indicated that while intended as a low-intensity unsupported intervention, some study participants perceived support and value from the administrative support associated with study procedures. If this is necessary for successful delivery in services, there are clear cost implications for clinical practice.

7.8.2 Positive psychology online as a complementary treatment

The implication for clinical practice is that positive psychology online may be acceptable for a subset of patients. In this study it was tested as a complementary approach, but in future it would need to be clarified exactly how it could complement treatments. For instance, whether it could successfully be used for patients on the waiting list for therapies, or to maintain gains following therapy. The potential complications of this are that clinicians must ensure that positive psychology fits with patient's overall treatment plan when offered, and is conceptually aligned to ensure that patients are not overburdened by different treatments.

7.9 Conclusion

This thesis has made several contributions to the literature on the use of online positive psychology components for depression. It described the systematic development of a theoretically sound intervention that proved acceptable to some participants. This was necessary, given the context in which few low-intensity, low-cost interventions are available to support the vast numbers of patients with depression.

Future research should establish whether it is possible to refine the intervention, to include other positive psychology exercises that promote similar principles, and to include a greater number of persuasive design features to increase the acceptability of the intervention. A critical issue is to establish whether the intervention is attractive to a distinct population of participants, in which case it should be refined with their interests in mind; or, whether there are people who would generally prefer an online

approach to depression, in which case research should focus on developing the best-evidenced approach.

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Appendices

The Application of Positive Psychotherapy in Mental Health Care: A Systematic Review

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Objective: Positive psychotherapy (PPT) stems from the positive psychology movement and is a multicomponent model promoting therapeutic change by developing engagement, pleasure, and meaning. There is some evidence it is effective for depression. PPT is recommended as a flexible model that can be applied to other patient groups alongside other treatments approaches. However, it remains unclear which of the many components are applied. The study aimed to identify how PPT is applied in mental health care. **Method:** We systematically searched online databases, including Medline, Embase, PsycINFO, British Nursing Index, Cumulative Index of Nursing and Applied Health, and Cochrane registers (CENTRAL), and completed complementary hand and citation searches. Narrative synthesis was used for analysis. **Results:** A total of 12 papers (from 9 studies) widely applied some PPT components (e.g., blessings journal, character strengths) and scarcely applied others (e.g., satisficing plan or family strengths tree). However, papers poorly described the intervention and rationale for applying components. **Conclusion:** Given the lack of rationale for applying PPT, further research is needed to establish which components are acceptable and feasible for use in different patient groups and settings. © 2016 Wiley Periodicals, Inc. *J. Clin. Psychol.* 00:1–14, 2016.

Positive psychotherapy (PPT) originates from the positive psychology movement (Seligman, Rashid, & Parks, 2006), a discipline that promotes well-being and flourishing in individuals, institutions, and society (Seligman & Csikszentmihalyi, 2000). The focus of the movement is to not only treat mental distress but also ensure people's lives are productive and fulfilling and they are using talents (Seligman & Csikszentmihalyi, 2000). The conceptual framework of PPT, therefore, focuses on treating depression by promoting engagement (involvement in daily life), pleasure (positive emotions), and meaning (belonging to and serving something greater than the self; Rashid, 2015; Seligman et al., 2006). This is in contrast to some traditional psychotherapies, which focus on problems or changing maladaptive patterns of thoughts and behaviors (Seligman et al., 2006). PPT is therefore recognized as a resource-oriented approach aiming to use patients' personal and social resources to promote therapeutic change (Priebe, Omer, Giacco, & Slade, 2014).

There is some evidence that PPT is effective. The complex and multicomponent intervention model, shown in Table 1, was trialed with major depressive disorder and significantly improved symptoms of depression and well-being, compared to treatment as usual or treatment as usual with medication (Seligman et al., 2006). A shorter version of the model also was piloted as group therapy and improved depressive symptoms in students with mild-to-moderate depression

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(Seligman et al., 2006). Both versions of PPT are described in detail in the original paper (Seligman et al., 2006) and elsewhere (Rashid & Seligman, 2014; Rashid, 2008, 2015).

However, further systematic trials are lacking. One impediment to further trials is that there is no clear model of processes or mechanisms of change (Rashid, 2015), which is necessary for the evaluation of complex interventions (Craig et al., 2008). This is important because it can help to clarify how effective different stages of the intervention are likely to be and how each component may contribute to improving outcomes. Although the authors suggest the model is flexible and can be adapted to different patient groups (Rashid, 2008) or applied alongside other treatment approaches (Rashid & Seligman, 2014), there is no guidance on this. This had led to adaptations for different populations that vary considerably in structure and content (Schrang, Brownell, Tylee, & Slade, 2014). Accordingly, the aim of the present study is to systematically review how PPT is applied in mental health care, including modifications to the model.

Method

A systematic review was conducted in April 2015 to identify papers using PPT in mental health-care. A protocol informed by PRISMA guidelines (Moher & Liberati, 2009) was used for the electronic database search and hand searches in key journals. Search terms were a combination of MeSH and keywords amended for each database and included positive psychotherapy terms (“positive psychotherapy,” “positive psychology,” “positive psychology interventions”) and key words related to mental illness (“schizophrenia,” “affective disorder,” “anxiety disorder”).

Eligibility Criteria

Studies were included if the majority (at least 50%) of the participants were working age adults (18–65 years) and had either (a) a diagnosis of a mental health condition classified by the treating clinician or researcher or (b) met criteria for clinical symptoms of a mental health condition on a recognized scale. The cutoff scores used were 16 for the Center for Epidemiologic Studies Depression Scale (20 items; Radloff, 1977; Ware, Kosinski, Turner-Bowker, & Gandek, 2002) and 42 for the Short-Form Health Survey Mental Component Summary (Gill, Butterworth, Rodgers, & Mackinnon, 2007).

To ensure that included papers were similar to the original model, a minimum of two components of the original multicomponent PPT (Seligman et al., 2006) had to be present. There was no limitation on study design, comparator, or outcome measurement. The papers had to be in English and published in a peer-reviewed journal.

Search Strategy and Screening

The databases searched were MEDLINE, Embase, PsycINFO, British Nursing Index, Cumulative Index of Nursing and Applied Health, and Cochrane registers (CENTRAL). Databases were searched from 1998 onward because this was the inception of the positive psychology movement (Seligman & Csikszentmihalyi, 2000). Web of Science and Google Scholar were used for forward citation searching of the included papers and the original PPT paper (Seligman et al., 2006). The reference lists of all included papers and any systematic reviews also were screened. Secondary hand searches were completed in the following journals: *Journal of Positive Psychotherapy*, *Journal of Happiness Studies*, *Psychology of Well-Being*, and *International Journal of Wellbeing*.

After removing duplicates, we used a two-stage screening process: first, the first author screened all titles and abstracts while a second independent researcher (MC) screened a random selection of 25% of titles and abstracts to ensure the consistency of screening. Second, full texts were accessed and both researchers independently reviewed all papers. Any disagreements were resolved through discussion. In a number of cases, the authors had to be contacted to provide clarification on whether the paper met the eligibility criteria or to provide additional detail. Some authors confirmed this (Cohn, Pietrucha, Saslow, Hult, & Moskowitz, 2014) and the information provided is included in the analysis (Asgaripoor et al., 2012).

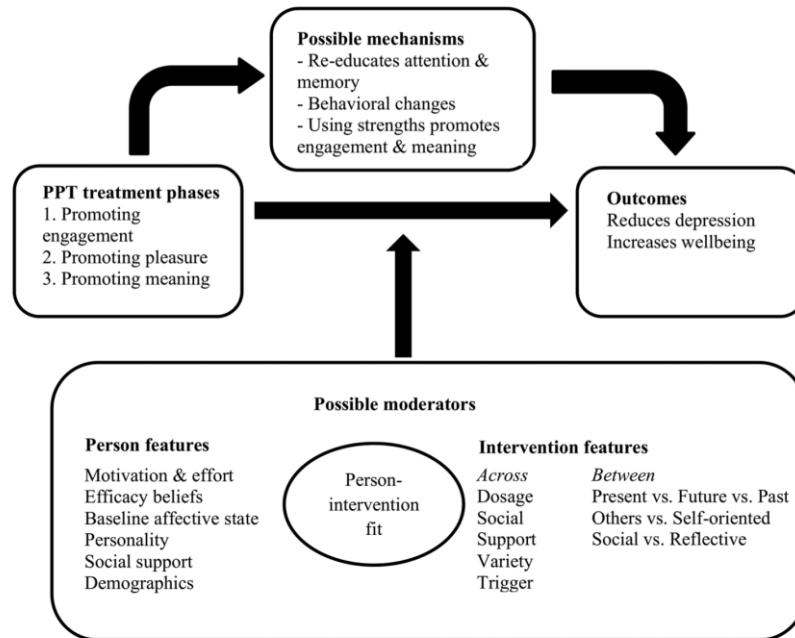


Figure 1. Theory of positive psychotherapy.

Data Extraction

Data from each study including details on study design and the intervention were extracted into a Microsoft Excel spreadsheet. Study data included design, recruitment, population, number of participants, comparators, methods, and outcomes. Intervention data were informed by the Template for Intervention Description and Replication (TIDieR) checklist (Hoffmann et al., 2014) and included name, materials, provider, delivery mode, location, duration, intensity, and modification.

Critical Appraisal

The TIDieR checklist also was used to assess the quality of the intervention reporting (Hoffmann et al., 2014). Study quality was assessed using tools recommended for qualitative evidence synthesis (Noyes et al., 2015): The Quality Assessment Tool for Quantitative Studies (Effective Public Health Practice Project, 1998) and the Qualitative Checklist (Critical Appraisal Skills Programme, 2014).

Analysis

Narrative synthesis was used to analyze the data, which involves four elements: theory development, preliminary synthesis, exploring relationships within and between studies, and assessing robustness of synthesis (Popay et al., 2006). These elements were not undertaken sequentially but in an iterative process, described below.

Some mechanisms of the intervention have been identified (Lyubomirsky & Layous, 2013; Rashid, 2015; Seligman et al., 2006) and were depicted in Figure 1. Tabulation and grouping data were used to create a preliminary synthesis of how the PPT model was used, including

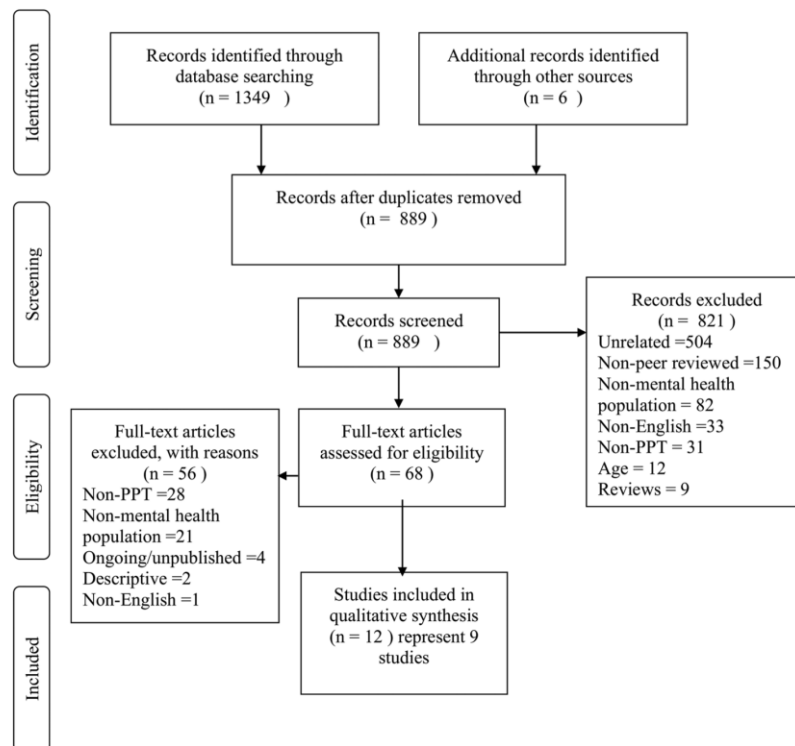


Figure 2. Study selection.

modifications and additions. This preliminary synthesis was shared among the study authors for discussion and refinement. The relationships within and between studies were then explored using the visual approach of idea webbing (spider diagram). This helped to conceptualize the application of the components and the similarities and differences between changes to the model across studies. Critical reflections were recorded throughout the synthesis and are reported along with the results, as recommended (Popay et al., 2006).

Results

A total of 889 unique references were retrieved and the inclusion process is depicted in Figure 2. After titles and abstracts were screened, 821 articles were excluded largely on the basis that they were unrelated ($n = 504$), were not peer reviewed ($n = 150$), were not a mental health population ($n = 82$), were not in English ($n = 33$), were not PPT ($n = 31$), did not meet the age criterion ($n = 12$), or were commentaries or reviews ($n = 9$). Sixty-eight full texts were examined, 12 of which were included. (A list of excluded studies and reasons for exclusion from this screening stage are available from the authors on request.) The 12 papers represent nine unique studies, as the WELLFOCUS study was evaluated in four separate papers (Schrack, Riches et al., 2014; Schrank et al., 2015; Brownell, Schrank, Jakaite, Larkin, & Slade, 2015; Riches, Schrank, Rashid & Slade, 2015).

The study characteristics, treatment protocol, and description of findings are outlined in Table 2. The following results compare the eight PPT adaptations (Asgharipoor et al., 2012;

Table 2
Study Characteristics

Study, Design	Design	N	Clinical status	Additional interventions	Delivery	Sessions, duration	Findings
Seligman (2006 Study 2)	RCT comparing 1. PPT 2. TAU 3. TAU + antidepressant	45	DSM-IV criteria for major depressive disorder	– ^a	Individual	14, over 12 weeks	Depression, functioning, and happiness significantly improved; no difference in life satisfaction
Asghariipoor (2012)	RCT comparing 1. Adapted PPT 2. Group CBT	18	DSM-IV criteria for major depressive disorder	Activity scheduling; behavioral commitment to values	Group	12, 2 hours, over 12 weeks	Happiness significantly improved in PPT; significant decrease in distress in CBT; no group differences in well-being or depression _b
Carr & Finnigan (2014)	Protocol of adapted PPT	– ^b	Major depressive disorder	CBT including cognitive restructuring, self-talk, anxiety and anger management, and assertiveness; goal setting; meditation; physical exercise	Group	20, 2 hours, unknown duration	
Meyer (2012)	Single arm pilot of adapted PPT	16	Current diagnosis of schizophrenia or schizoaffective disorder	Mindfulness minute; positive goal	Group	10, 1.5 hours, over 10 weeks. Additional booster after 6 weeks	Significant improvement in well-being, hope, savoring, self-esteem, symptoms but no effect on social functioning
Schrank (2015)	RCT comparing 1. Adapted PPT 2. TAU	94	Clinical diagnosis of psychosis	Mindful music listening	Group	11, 1.5 hours, over 11 weeks	No significant effect on primary outcome well-being; significant effect on psychiatric symptoms, depression, and another well-being measure

(Continued)

Table 2
Continued

Study, Design	Design	N	Clinical status	Additional interventions	Delivery	Sessions, duration	Findings
Roepeke (2015) RCT	RCT comparing 1. PPT exercises 2. General SuperBetter 3. Waiting list	283	Meeting criteria for clinically significant depression (≥ 16 CES-D)	CBT; activity scheduling; acceptance content	App	Daily, 10 minutes, over 4 weeks	Depression improved in conditions 1 and 2 relative to the waiting list; similar pattern in secondary outcomes life satisfaction, social support, self-efficacy
Cohn (2014)	RCT comparing 1. PPT exercises 2. Emotion reporting	49	Target group people with type 2 diabetes and depression (53% ≥ 16 CES-D)	Activity scheduling; mindful breathing; positive reappraisal; acts of kindness; character strengths journal	Online	5, over 5 weeks	Significant effect on depression; no effect on secondary outcomes perceived stress, positive and negative affect, diabetes-specific psychological measures, health behavior
Lambert D'raven (2015)	Single arm pilot of PPT exercises	318	Target group mild to moderate depressive symptoms (> 42 mental health component of SF-12)	Mindfulness; goal setting; positive writing; reducing overthinking; self-talk; optimism	Group	6, 2 hours, over 6 weeks	Significant reduction in participants at risk for depression; significant changes in secondary outcomes including physical, mental, and general health
Huffman (2014)	Single arm pilot of PPT exercises	61	Admission to inpatient psychiatric unit for passive or active suicidal ideation or suicide attempt	Activity scheduling; acts of kindness; best possible self; behavioral commitment to values	Individual	9, over 9 days	Optimism and hopelessness improved significantly for all exercises except forgiveness letter

Note. RCT = randomized clinical trial; PPT = positive psychotherapy; TAU = treatment as usual; CBT = cognitive behavioral therapy; SF-12 = Short-Form Health Survey; DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*; CES-D = Center for Epidemiologic Studies Depression Scale.

^aThis paper describes the original intervention; therefore, no amendments were made.

^bThis paper describes the intervention; therefore, no data are provided on design, sample size, or findings.

Table 3
Intervention Components From Positive Psychotherapy

Study	Therapy phase														Total											
	Engagement				Pleasure				Meaning																	
Seligman (2006)	Orientation	Positive introduction ^a	Character strengths assessment ^a	Signature strengths	Blessings journal ^a	Good vs. bad memories	Writing memories ^a	Forgiveness	Forgiveness letter ^a	Gratitude	Gratitude letter ^a	Midtherapy check	Satisficing vs. maximizing	Hope and optimism	Satisficing plan ^a	One door closes, one door opens ^a	Love & attachment	Active constructive responding strengths date ^a	Others' signature strengths	Family strengths tree ^a	Savoring	Savoring activity ^a	Gift of time	Giving the gift of time ^a	Full life	
Asgharipoor (2012)	✓	✓	✓	✓	✓					✓															✓	7
Carr (2014)	✓		✓	✓	✓			✓	✓	✓	✓										✓	✓	✓	✓		12
Meyer (2012)			✓	✓	✓						✓	✓					✓	✓	✓	✓	✓	✓	✓	✓		11
Schrank (2015)	✓	✓	✓	✓	✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		16
Roepke (2015)			✓	✓	✓																					3
Cohn (2014)			✓		✓																✓					3
Lambert D'Raven (2015)	✓				✓					✓	✓							✓			✓	✓	✓	✓		8
Huffman (2014)	✓	✓	✓	✓	✓			✓	✓	✓	✓															9
Total	5	1	6	5	4	8	0	0	3	3	6	5	0	0	0	1	1	2	3	1	0	5	4	2	2	2

^aPositive psychotherapy treatment exercise.

Carr & Finnegan, 2014; Cohn et al., 2014; Huffman et al., 2014; Lambert D'raven et al., 2015; Meyer, Johnson, Parks, Iwanski, & Penn, 2012; Roepke et al., 2015; Schrank et al., 2015) to the original model (Seligman et al., 2006).

Application of the PPT Model

Papers often used a different format than the original model, which delivered individual therapy (Seligman et al., 2006). Instead, the model was modified for use as group therapy in community mental health settings for people with a diagnosis of depression (Asgharipoor et al., 2012; Carr & Finnegan, 2014) or psychosis (Brownell et al., 2015; Riches et al., 2015; Schrank et al., 2015). Components of the model were delivered as a smartphone application (app) for those with depressive symptoms (Roepke et al., 2015). The briefer group therapy model outlined in the original paper (Seligman et al., 2006) was modified for psychosis (Meyer et al., 2012).

Table 3 shows how the original intervention components, 14 therapy sessions and 12 corresponding homework activities, were applied in the studies. It is clear that although these papers all modified PPT, they offered fewer components than the original (median 11, range 3–16) over a similar number of sessions (median 12, range 11–28).

The remaining studies did not reference the PPT model but used some of its components alongside interventions from the wider positive psychology movement. Interventions were delivered in a group setting in primary care to those with depressive symptoms (Lambert D'raven et al., 2015). They also were delivered individually with brief therapist guidance on an inpatient ward to people hospitalized due to suicidal ideation or a suicide attempt (Huffman et al., 2014), or without therapist support on a website for people with diabetes who had depressive symptoms (Cohn et al., 2014). On average, these studies offered few PPT components (median 8, range 5–6) over a small number of sessions (median 6, range 3–9).

Table 3 shows that the most often applied components of PPT were the *blessings journal*, which all studies used and the *character strengths* and *gratitude* sessions, which most studies used. Some original intervention components were not applied at all, including *good versus bad memories*, *satisficing versus maximizing* and the *family strengths tree*. It is also clear from Table 3

that studies mostly used interventions focusing on promoting engagement (median 3.5, range 2–5) rather than promoting pleasure (median 2 range 0–6) or meaning (median 2.5 range 0–6).

Modifications to the PPT Model

Of the studies applying the PPT model (Asgharipoor et al., 2012; Brownell et al., 2015; Carr & Finnegan, 2014; Meyer et al., 2012; Roepke et al., 2015) few provided a rationale for modifying the PPT model (Carr & Finnegan, 2014; Meyer et al., 2012; Schrank et al., 2015). Those that made amendments did so to make the intervention suitable for psychosis (Brownell et al., 2015; Schrank et al., 2015) and schizophrenia (Meyer et al., 2012) or incorporate it with group cognitive behavioral therapy (CBT; Carr & Finnegan, 2014). Adaptations were guided either by a literature review (Carr & Finnegan, 2014; Meyer et al., 2012) or by a review supplemented by qualitative interviews and expert consultation (Riches et al., 2015).

For those with psychosis and schizophrenia, the resulting adaptations involved omitting interventions that were challenging and possibly unsuitable for this patient group (e.g., satisficing, gift of time) and developing an order of sessions that focused on easier interventions first (e.g., *savoring* before *forgiveness*; Riches et al., 2015). Given the possible history of trauma in this patient group, the *forgiveness letter* and *optimism* exercises were modified to focus more on day-to-day disappointments, rather than more serious transgressions, with a view to minimizing potential distress (Riches et al., 2015).

Studies also accommodated more general psychosis-specific challenges such as cognitive impairments, by providing additional experiential and interactive, rather than literacy-based, exercises. For example, the *blessings journal* was changed to a *good things box* for storing mementoes or notes of positive daily events (Brownell et al., 2015), and images were used to elicit character strengths, rather than using the *character strengths assessment* (Riches et al., 2015). In-session practice also was greatly encouraged. For example, the skill of *active-constructive responding*, i.e., responding enthusiastically to others' good news, was broken into smaller steps, demonstrated, and then role-played during the session (Meyer et al., 2012) or at an end of therapy celebration (Riches et al., 2015).

Where PPT was integrated with CBT, modifications to PPT included focusing the savoring exercise on rediscovering nature and focusing the gift of time exercise on connecting with the community to increase social networks (Carr & Finnegan, 2014). Although this study incorporated these components, the paper does not report how these modifications were decided or why other components were not used. The remaining studies that altered the PPT model provided no rationale for inclusion or exclusion of components. For example, where PPT was adapted to a smartphone app for depression, only three components were offered, though no rationale was given for this selection (Roepke et al., 2015). Where PPT was offered as a group therapy for depression (Asgharipoor et al., 2012), the *full life* session was replaced by an alternative model of happiness; its origins are not referenced, nor is a rationale provided for why this component was amended or why other components were not used.

Where studies offered some components of PPT but did not reference the model, the selection of intervention was usually guided by literature reviews (Cohn et al., 2014; Huffman et al., 2014; Lambert D'raven et al., 2015), supplemented by expert consultation (Huffman et al., 2014). However, only one study (Cohn et al., 2014) provided reference to a methodology paper detailing the development of the intervention (Moskowitz et al., 2012).

Additions to the PPT Model

All studies offered additional interventions not present in the original PPT model. Most of the additional interventions could be conceptualized as promoting engagement, pleasure, or meaning, similar to components from the original model (Seligman et al., 2006)

Engagement. Participants' involvement with their lives or absorption in work, leisure, or relationships was promoted through interventions such as goal setting, i.e., setting an appropriately challenge yet feasible goal, with the aim of increasing the relevance of and active

participation in treatment (Carr & Finnegan, 2014; Cohn et al., 2014; Lambert D'raven et al., 2015; Meyer et al., 2012). To increase positive interactions with the environment, participants were encouraged to schedule important, enjoyable, or meaningful activities (Asgharipoor et al., 2012; Cohn et al., 2014; Huffman et al., 2014; Roepke et al., 2015), a technique from behavioral activation (Mazzucchelli, Kane, & Rees, 2010). To increase awareness of character strengths, some participants were encouraged to keep a daily strengths journal (Carr & Finnegan, 2014; Cohn et al., 2014). Another addition was to teach participants about the concept of flow, where time passes quickly when one is fully immersed in an engaging activity (Csikszentmihalyi, 1990), followed by practicing time control, i.e., attending to one's experience of the passing of time (Lambert D'raven et al., 2015).

Pleasure. Additional interventions focusing on developing positive emotions in the here and now used positive reappraisal, i.e., changing interpretations of daily stressors (Cohn et al., 2014). Another study encouraged participants to use humor in daily life (Carr & Finnegan, 2014). Positive emotions about the future were developed through the "best possible selves" exercise, in which participants wrote their vision and goals for the future and how their character strengths may help to achieve this (D'raven et al. 2014; Huffman et al. 2014) or through an undefined optimism exercise (Lambert D'raven et al., 2015). Occasionally, studies tried to promote positive feelings about things that have happened in the past, through the use of positive writing tasks (Lambert D'raven et al., 2015) or considering what they have learned from grieving following loss (Carr & Finnegan, 2014).

Meaning

Additional interventions sometimes encouraged participants to connect with something greater than themselves. Most often this was through kindness interventions, termed as "acts of kindness" (Cohn et al., 2014; Huffman et al., 2014) or "good deeds" (Lambert D'raven et al., 2015). These were prosocial tasks such as donating blood or helping a person in difficulty, sometimes recorded in a reflective journal (Cohn et al., 2014; Huffman et al., 2014). The behavioral commitment to a value-based activity also was used in which participants selected a guiding principle for their life, such as creating beauty, and documented how to achieve this (Asgharipoor et al., 2012; Huffman et al., 2014). Some studies offered alternative interventions for promoting positive relationships (Carr & Finnegan, 2014; Huffman et al., 2014). For example, identifying (Carr & Finnegan, 2014) or envisaging (Huffman et al., 2014) their best possible social and interpersonal relationships and planning how to achieve these.

Other interventions. A number of other interventions were offered that differ conceptually from the PPT model. Some of these were components of traditional CBT, such as reducing overthinking (Lambert D'raven et al., 2015), challenging negative core beliefs and self-statements, and managing catastrophizing or anger (Carr & Finnegan, 2014). Others were from different theoretical orientations such as from the field of coaching (e.g., "self-talk"; Lambert D'raven et al., 2015). Physical activity also was promoted in some studies (Carr & Finnegan, 2014; Lambert D'raven et al., 2015).

Many interventions could be conceptualized as third wave CBT approaches (Hunot et al., 2013) because they included forms of acceptance and commitment therapy (Roepke et al., 2015) and mindfulness (Bolier et al., 2013; Brownell et al., 2015; Carr & Finnegan, 2014; Cohn et al., 2014; Lambert D'raven et al., 2015; Meyer et al., 2012). Authors included mindfulness due to its usefulness for managing psychotic symptoms (Meyer et al., 2012), chronic stress (Cohn et al., 2014), and depression (Carr & Finnegan, 2014). It also was suggested that practicing mindfulness may facilitate the PPT components, allowing participants to more easily recognize and appreciate positive events (Cohn et al., 2014) and more easily participate in the savoring activity (Meyer et al., 2012).

Robustness of Synthesis

An important factor in a robust synthesis is having clear information on the complex intervention. Although we aimed to minimize bias by clearly defining the intervention, using the TIDieR checklist (Hoffman et al., 2014) identified that many of the primary studies did not provide full information on the intervention rationale or procedures. Although poor intervention reporting is generally an issue across healthcare research, which is why the checklist was recently produced (Hoffmann et al., 2014), it nevertheless limits the robustness of this synthesis. The overall strength of the evidence is moderate.

Discussion

Main Findings

This systematic review aimed to identify how PPT is applied in mental health care, including modifications to the model. The main finding is that some PPT components were widely applied (e.g., blessings journal, character strengths, gratitude), while others were not applied beyond the original study (e.g., satisficing vs. maximizing, good vs. bad memories, family strengths tree). Furthermore, PPT components targeting engagement were applied more often than those promoting pleasure or meaning. It could therefore be concluded that the components of PPT that target engagement, particularly the blessings journal and character strengths, are acceptable and feasible. A secondary finding is that PPT was integrated with a range of additional interventions, many of which were conceptually similar. These may be useful complements to the PPT model.

Strengths and Limitations

This study is the first to systematically explore how PPT is applied in clinically relevant populations. The advantages are that it is replicable and provides a critical consideration of the quality of intervention reporting. However, the synthesis is only moderately robust and was limited by the fact that few papers provided rationale for applying (or not) or modifying components of PPT.

A second limitation is that the study was not able to investigate the factors (as depicted in Figure 1) related to person and intervention features and person–intervention fit, which could inform how the PPT model is applied (Lyubomirsky & Layous, 2013; Rashid, 2015). For example, baseline affective state may influence the extent to which people can engage with and use certain PPT components. However, a scoping exercise of the data reported in the identified papers found only two moderate quality studies that specifically investigated such factors (Brownell et al., 2015; Huffman et al., 2014); therefore, there was insufficient evidence to consider this in the present study. Consequently, further research is needed to understand the application and modification of the PPT model and whether particular components are more acceptable and feasible than others.

Despite these limitations, the study adds to the literature on PPT and identifies some candidate interventions that may complement the model, which are likely to be of use for future researchers and clinicians.

Comparison With Original Model

This paper provides support for the idea that PPT is a flexible model that can be applied with various diagnoses alongside other treatment approaches as intended (Rashid & Seligman, 2014; Rashid, 2008). However, it has been acknowledged that the mechanisms by which PPT operate have not been systematically identified (Rashid, 2015). The findings support this and indicate that much work needs to be done to establish a model of processes and outcomes necessary for the evaluation of complex interventions (Craig et al., 2008). The following uncertainties need to be addressed.

First, the importance of the therapist was originally emphasized (Seligman et al., 2006), but this review identified interventions reporting adapting PPT without any therapist support

(Roepke et al., 2015). By definition, not having interpersonal contact is not psychotherapy, so the original model must be explicit about the therapist role. Second, PPT aims to attend to both negative and positive emotions (Rashid, 2015), mainly through components such as good versus bad memories, forgiveness and hope, and optimism. However, because these components were rarely, or never, applied in the included studies, their importance is unclear and the mechanism related to them is called into question.

Third, the conceptual similarity between PPT components and practices from other movements such as mindfulness, goal pursuit, values (Schueller & Parks, 2014), behavioral activation (Layous, 2014), and acceptance-based approaches (Parks & Biswas-Diener, 2013) has previously been acknowledged and is further supported by the review findings. However, if such interventions are to be substituted with the PPT model, the processes and outcomes must be mapped to ensure that any modifications or additions are appropriate. Finally, it is interesting to note that the most often applied components (e.g., blessings journal, character strengths, gratitude, savoring) mainly constitute those in the group model of PPT (Seligman et al., 2006). It may be that this model is more acceptable or feasible than the longer individual version, but this needs to be established.

Implications for Research and Practice

The main implication for research is that the PPT processes and outcomes need to be mapped. Following this, systematic research must explore how the application of PPT may be affected by person features, intervention features, and a person-intervention fit (Lyubomirsky & Layous, 2013; Rashid, 2015) and whether certain components are more feasible and acceptable for some people. This is likely to involve in-depth interviews with patients of varying clinical profiles in different settings. Only once an appropriate and acceptable PPT model is established can it be rigorously tested in effectiveness trials. This is to ensure good adherence during a clinical trial so that we can obtain rigorous, high-quality evidence on the effectiveness of PPT. The main implication for practice is that PPT can be modified for a range of patients and treatment modalities and applied alongside other interventions. However, as the evidence has not yet firmly established effectiveness, the clinical utility of PPT remains uncertain.

Conclusion

Further systematic research is needed to establish which PPT components are acceptable and feasible across diagnostic groups and modalities of delivery. Once the appropriateness of the model is established, and there is a clear model of processes or mechanisms of change, rigorous, high-quality efficacy trials can definitively establish whether or not PPT is effective and can enhance mental health care.

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Appendix 2. Systematic review supporting documents

Table 1 Search terms

Positive psychotherapy terms	Mental health terms
positive psychotherapy	affective disorder*
positive psychology intervention	depress*
positive intervention*	dysthimi*
positive psycholog*	adjustment disorder*
	mood disorder*
	anxiety
	phobi
	PTSD
	stress disorder
	panic
	OCD
	obsess*
	compulsi*
	GAD
	psychosis
	schizophrenia

Table 2 Data extracted from included studies

Category	Variable
Study information	Author
	Title of Paper
	Publication Year
	Journal
	Country
Population information	Diagnosis type : common or severe
	Diagnosis (free text)
	Severity of illness
	Diagnosis identifier
	% of population meeting criteria for mild symptoms of mental health condition
	Treatment setting
	Inclusion criteria: age
	Inclusion criteria: diagnosis
	Inclusion criteria: screening questionnaire
	Inclusion criteria: treatment history
Inclusion criteria: current treatment	

	Exercise: family strengths tree Exercise: savouring activity Exercise: gift of time
Methods	Study aim Study design Unit of allocation
Quantitative outcomes	Primary outcome defined? Primary outcome name e.g. 'subjective wellbeing' Validated tool Time points measured Primary outcome pre-treatment average Primary outcome at end-treatment average Significance tested Outcomes names (including secondary) Secondary outcomes validated measures Time points measured Results
Qualitative outcomes	Theme 1 Theme 2 Theme ...

Table 3 Studies excluded from systematic review

Reason for exclusion	Excluded studies
Not including relevant positive psychology components	(Ahmed & Boisvert, 2006) (Alvarez-Jimenez et al., 2014) (Alvarez-Jimenez et al., 2013) (Banos et al., 2014) (Chan, 2010) (Foster, 2012) (Giannopoulos & Vella-Brodick, 2011) (Guse, Wissing, & Hartman, 2006) (Howells, Ivtzan, & Eiroa-Orosa, 2014) (Levenson, Aldwin, & Yancura, 2006) (Liu et al., 2008) (Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011) (Macaskill, 2012) (McMakin, Siegle, & Shirk, 2011) (Migliorini, Tonge, & Sinclair, 2011) (Mongrain & Anselmo-Matthews, 2012) (Perlman et al., 2010) (Pietrowsky & Mikutta, 2012) (Riskind, 2006) (Seligman, Steen, Park, & Peterson, 2005)

	(Seligman et al., 2005) (Senf & Liao, 2013) (Sergeant & Mongrain, 2014) (Sergeant & Mongrain, 2011) (Silberman, 2007) (Victoria Cerezo, Ortiz-Tallo, Cardenal, & Torre-Luque, 2014) (Holttum, 2014) (Willutzki, Teismann, & Schulte, 2012) (Zahi & Meyerson, 2010)
Does not meet review definition of mental health population	(Bolier et al., 2013)* (Bolier et al., 2014)* (Braarud et al., 2013) (Dambrun & Dubuy, 2014) (Dykens, Fisher, Taylor, Lambert, & Miodrag, 2014) (Gander, Proyer, Ruch, & Wyss, 2013) (Grant, 2011) ¹ (Grondin & Cyr, 2014) (Haga, Drozd, Brendryen, & Slinning, 2013) (Hausmann, Parks, Youk, & Kwoh, 2014) (Huffman et al., 2011) (Joutsenniemi et al., 2014) (Kahler et al., 2014) (Kauffman & Silberman, 2009) (Lu et al., 2013) (Müller et al., 2014) (Olsen, 2011) (Parks, Della Porta, Pierce, Zilca, & Lyubomirsky, 2012) (Schueller & Parks, 2012)* (Schueller, 2010)
Not peer reviewed	(Alexander & Alvarez-Jimenez, 2014) (Huffman, 2013) (Tabakakis, 2013) (Ronen, 2009) (Rashid, 2013)
Non English	(Risch & Wilz, 2013)

*Refers to authors contacted

Citations for excluded studies

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Appendix 3. Qualitative study supporting documents

- Participant questionnaire
- Patient topic guide
- Clinician topic guide
- Study approvals - NRES favourable ethical opinion and R&D approval

Participant questionnaire



REC: 15/NW/0349

Focus group study to develop a Positive Psychology App for common mental health conditions in primary care

Participant questionnaire

Participant ID:

1. Age	<input type="text"/>			
2. Gender	<input type="text"/>			
3. First language	<input type="text"/>			
4. Do you personally use a smartphone?	Yes	No (if no go to qu. 5)		
a. If yes please state the manufacturer of the device (e.g. Apple / Samsung)	<input type="text"/>			
b. Do you download apps for your smartphone?	Yes	No		
c. If yes please state how regularly you <u>download</u> apps	Daily	Weekly	Monthly	Less than monthly
d. If yes please state how regularly you <u>use</u> apps	Daily	Weekly	Monthly	Less than monthly
e. Do you use apps for managing your health?	Yes	No		
5. Do you use websites for managing your health?	Yes	No		

Patient topic guide



REC: 15/NW/0349

Topic Guide: Developing a positive psychology app for common mental health conditions

Introduction (5 minutes)

- **Nature and focus of research:** the interview is about discussing their views on the approach of positive psychotherapy, i.e. interventions or treatments which focus on promoting wellbeing, happiness and satisfaction, rather than fixing problems or symptoms and general views on using technology to help support people living with depression and anxiety
- **Confidentiality:** The name of the participants will only be known by the researchers and not be revealed to anyone. The participants will be identified by an ID and all potentially identifying information will be removed
- **Participation:** don't share information you don't want to, we don't have to agree but all conversations must remain confidential
- **Recording:** the session will be audio-recorded, transcribed and analysed by researchers using NVIVO software, one of the most used widely software for qualitative analysis
- **Any questions.....**

1. General views on positive approach and therapy types (20 minutes)

[define for participants]

- Based on that initial description what would be your response if you were offered that treatment approach for your anxiety depression?
- Advantages of the positive approach if you were anxious/ depressed?
- Disadvantages of the positive if you were anxious/ depressed?
- What kind of help were you given when you were anxious/ depressed?
- What kind of help would you have liked when you were anxious / depressed?
- What was your preferred mode of delivery (e.g. self-help, computerised help, app, in person therapy) when you were anxious / depressed?
 - Why that approach preferred?
- In terms of self-help then, for example as an app, would you have wanted it when you were anxious/ depressed?
 - Is there a time when it would have been suitable?
 - Waiting list
 - During therapy
 - After therapy

2. Specific PPT approaches (20 minutes)

Outline each exercise from Positive Psychotherapy and ask

- How would you feel if you were asked to do this activity when you were feeling low in mood (depressed) or particularly worried (anxious)?
- How would you feel about completing this activity as self-help
- How would you feel about using technology, such as an app or website to do this activity?
- What might help you to benefit from such an activity?

3. Personal app use for health and in general (5 minutes)

- You've mentioned that your use of website or apps to manage health in general is [insert answer to questionnaire] can you say a bit about why that is?
 - Thought of it?
 - Recommended any?
 - Tried any?
- You've mentioned your general app use is [insert answer to questionnaire] can you say about how you use apps in a more general way?
 - How often?
 - For what purpose?
 - Why using the ones used?

4. App structure and features (15 minutes)

- How would you want to be introduced to an app like this?
 - From who?
 - What kind of information?
- How important would it be to connect with other people through an app like this?
 - With who (e.g. GP, therapist, other users)
 - Advantages / disadvantages
- How should the app link with the NHS?
 - Branding
 - Links
- How should the app information be released, should all the information be presented at once or in stages?
- How often would you think you should use the app?

5. Design and branding (10 minutes)

- *What would be important to make the content appealing? (e.g. use of colour, font size, style of language)*
- *Are there any apps that you particularly like the branding or style of?*
- *Is there any images or looks you think the app should avoid?*

6. Closing interview (2 minutes)

- Anything important I need to think of that we haven't touched on?
- Re-affirm use of findings/confidentiality and feedback arrangements. Thank participants for their contribution

Clinician topic guide



REC: 15/NW/0349

[Topic Guide: Developing a positive psychology app for common mental health conditions

1. Introduction (5 minutes)

- **Nature and focus of research:** the interview is about discussing their views on the approach of positive psychotherapy, i.e. interventions or treatments which focus on promoting wellbeing, happiness and satisfaction, rather than fixing problems or symptoms and how to develop an appealing app.
- **Confidentiality:** The name of the participants will only be known by the researchers and not be revealed to anyone. The participants will be identified by an ID and all potentially identifying information will be removed.
- **Participation:** don't share information you don't want to, we don't have to agree but all conversations must remain confidential.
- **Recording:** the session will be audio-recorded, transcribed and analysed by researchers using NVIVO software, one of the most used widely software for qualitative analysis.
- **Any questions.....**

2. Views on approach of positive psychotherapy (20 minutes) [define for participants]

- What do you think of the idea of treatments focusing on wellbeing and positive feelings, rather than symptoms and problems?
- What might be the advantages such an approach when someone is experiencing anxiety /depression?
- What might be the disadvantages such an approach when someone is experiencing anxiety /depression?
- What do you think of the idea of giving patients this kind of treatment as a self-help tool in the form of the app, compared to a more traditional approach such as medication or therapy focused on symptoms?

3. Views on approach of self-help for anxiety and depression

- What self help approaches do you currently recommend?
 - Particular benefits or disadvantages of those
 - Patient feedback
- How do you think self help approaches can be designed to support motivation?

4. Professional and personal app use (5 minutes)

- Are there any websites or apps that you currently recommend for any physical or mental health conditions?
 - If so, what are the particular features of those that mean you recommend them?
 - What is patient feedback about using them?
- Are there any websites or apps that you personally use for managing your own health? (e.g. physical exercise, dietary monitors etc.)

- o If so are there any important features which you find engaging or motivating?

5. App structure and features (15 minutes)

- How should the app introduce the exercises e.g. use of videos, text to explain?
 - o What is important for patients to know? E.g. evidence / science
- How should the app link with the NHS?
 - o Would you expect to access patients information that they put in, or at least know how often or what they are using?
 - o Would you expect to follow up on the patients use of the app in appointments?
- Should support from anyone else be included in the app?
 - o Social support – e.g. friends or other users
- Do you think patients would prefer to have all the exercises available at once, or for them to be released in stages, perhaps week-by-week?
- How often would you think you should ask patients to use the app?
- What would you as a professional want to know before prescribing the app or recommending it?
 - o Training (brief)
 - o Videos
 - o Written information
- How likely would you be to prescribe or recommend this app to your patients?

6. Design and branding (10 minutes)

- *What would be important to make the content appealing? (e.g. use of colour, font size, style of language)*
- *Are there any apps that you particularly like the branding or style of?*
- *Is there any images or looks you think the app should avoid?*

7. Closing interview (2 minutes)

- Re-affirm use of findings/confidentiality and feedback arrangements
- Opportunity for any additional comments
- Thank participants for their contribution



NRES Committee North West - Preston

Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0161 825 7818
Fax: 0161 825 7299

08 May 2015

Miss Sophie Walsh
Newham Centre for Mental Health
London
E13 8SP

Dear Miss Walsh

Study title: Focus group study to develop a positive psychological app for common mental health conditions in primary care
REC reference: 15/NW/0349
IRAS project ID: 174555

Thank you for responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the REC Manager, Mrs Carol Ebenezer, nrescommittee.northwest-preston@nhs.net. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from NRES. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Copies of advertisement materials for research participants [Patient advert]	1.0	03 February 2015
Copies of advertisement materials for research participants [Clinician advert]	1.0	04 February 2015
Covering letter on headed paper [Cover letter]	1.0	10 April 2015
Covering letter on headed paper [Cover letter]	1.0	01 May 2015

Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [VERIFICATION OF INSURANCE]		29 July 2014
GP/consultant information sheets or letters [Focus group study to develop a Positive Psychology App for common mental health conditions in primary care Clinician Information Sheet]	1.2	01 May 2015
Interview schedules or topic guides for participants [Topic Guide: Developing a positive psychology app for common mental health conditions]	1.1	24 March 2015
Letter from funder [ELF FUNDING LETTER]		23 July 2014
Letter from sponsor [Declaration of Queen Mary, University of London Provisional Sponsorship]	1.0	10 April 2015
Letters of invitation to participant [Focus group patient invitation]	1.2	01 May 2015
Non-validated questionnaire [Patient screening questionnaire (for researcher to complete)]	1.0	03 February 2015
Non-validated questionnaire [Clinician screening questionnaire (for researcher to complete)]	1.0	04 February 2015
Non-validated questionnaire [Participant demographic questionnaire]	1.1	01 May 2015
Other [Apps demo information for focus groups]	1.0	24 March 2015
Other [Patient contact details slip]	1.0	03 March 2015
Other [Confirmation of focus group]	1.0	04 February 2015
Other [NHS Rec / R&D Form reference list]	1.0	24 March 2015
Other [2015_05_01 Patient out of hours crisis numbers]	1.0	01 May 2015
Participant consent form [Patient focus group consent form]	1.1	01 May 2015
Participant consent form [Patient interview consent form]	1.1	01 May 2015
Participant consent form [Clinician focus group consent form]	1.1	02 May 2015
Participant consent form [Clinician interview consent form]	1.1	01 May 2015
Participant information sheet (PIS) [Focus group study to develop a Positive Psychology App for common mental health conditions in primary care Participant Information Sheet]	1.3	01 May 2015
REC Application Form [REC_Form_10042015]		10 April 2015
Referee's report or other scientific critique report [BARTS HEALTH NHS TRUST PEER REVIEW FORM]		16 February 2015
Research protocol or project proposal [2015_03_24 Protocol focus group study to develop PP app Walsh_S]	1.4	24 March 2015
Summary CV for Chief Investigator (CI) [STEFAN PRIEBE CURRICULUM VITAE]	1.1	10 April 2015
Summary CV for student [CURRICULUM VITAE- PhD student]	1.1	10 April 2015
Summary CV for supervisor (student research) [STEFAN PRIEBE CURRICULUM VITAE]	1.0	24 March 2015

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "*After ethical review – guidance for researchers*" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments

- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: <http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/>

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

15/NW/0349	Please quote this number on all correspondence
------------	--

With the Committee's best wishes for the success of this project.

Yours sincerely



Dr Patricia Wilkinson
Chair

Email: nrescommittee.northwest-preston@nhs.net

Enclosures: "After ethical review – guidance for researchers"

Copy to: Sally Burtles, Director of Research Services and Business Development

R&D approval



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www.noclor.nhs.uk
02 July 2015

Miss Sophie Walsh
Queen Mary University of London
Newham Centre for Mental Health
London
E13 8SP

Dear Sophie,

This NHS Research Governance Approval is based on the REC favourable opinion issued on **08 May 2015**

I am pleased to confirm that the following study has now received R&D approval, and you may now start your research in **the trust(s) identified below**:

Study Title: Focus group study to develop a positive psychological app for common mental health conditions in primary care R&D reference: 174555 REC reference: 15/NW/0349		
Name of the trust	Name of current PI/LC	Date of permission issue(d)
East London NHS Foundation Trust	Professor Stefan Priebe	3 July 2015
If any information on this document is altered after the date of issue, this document will be deemed INVALID		

Specific Conditions of Permission (if applicable)
If any information on this document is altered after the date of issue, this document will be deemed INVALID

Yours sincerely,

Mabel Salli
Research & Development Manager

Cc: Principle Investigator(s)/Local Collaborator(s), Sponsor Contact

May I take this opportunity to remind you that during the course of your research you will be expected to ensure the following:

- **Patient contact:** only trained or supervised researchers who hold the appropriate Trust/NHS contract (honorary or full) with each Trust are allowed contact with that Trust's patients. If any researcher on the study does not hold a contract please contact the R&D office as soon as possible.
- **Informed consent:** original signed consent forms must be kept on file. A copy of the consent form must also be placed in the patient's notes. Research projects are subject to random audit by a member of the R&D office who will ask to see all original signed consent forms.
- **Data protection:** measures must be taken to ensure that patient data is kept confidential in accordance with the Data Protection Act 1998.
- **Health & safety:** all local health & safety regulations where the research is being conducted must be adhered to.
- **Serious Adverse events:** adverse events or suspected misconduct should be reported to the R&D office and the Research Ethics Committee.
- **Project update:** you will be sent a project update form at regular intervals. Please complete the form and return it to the R&D office.
- **Publications:** it is essential that you inform the R&D office about any publications which result from your research.
- **Ethics:** R&D approval is based on the conditions set out in the favourable opinion letter from the Research Ethics Committee. If during the lifetime of your research project, you wish to make a revision or amendment to your original submission, please contact both the Research Ethics Committee and R&D Office as soon as possible.
- **Monthly / Annually Progress report:** you are required to provide us and the Research Ethics Committee with a progress report and end of project report as part of the research governance guidance.
- **Recruitment data:** if your study is a portfolio study, you are required to upload the recruitment data on a monthly basis in the website: <http://www.crn.nihr.ac.uk/can-help/funders-academics/nihr-crn-portfolio/recruitment-data/>
- **Amendments:** if your study requires an amendment, you will need to contact the Research Ethics Committee. Once they have responded, and confirmed what kind of amendment it will be defined as, please contact the R&D office and we will arrange R&D approval for the amendment. If your study is Portfolio Adopted, amendments must be submitted for R&D review via the NIHR CRN (CSP), please refer to the Amendments Guidance for Researchers: <http://www.crn.nihr.ac.uk/can-help/funders-academics/gaining-nhs-permissions/amendments/>
- **Audits:** each year, noclor select 10% of the studies from each service we have approved to be audited. You will be contacted by the R&D office if your study is selected for audit. A member of the governance team will request you complete an audit monitoring form before arranging a meeting to discuss your study.

Appendix 4. Qualitative study analysis supporting documents

Table 1 Example of coding data items from transcript

Codes	Data extract (UPID)
Encouragement to view self positively	That's a really good idea, I think that's something though because I think you do need affirmation as you say of the positives of your personality (0503)
Mental practice of blessings journal	So I think that's great and I think even if it's not like a physical written thing, maybe just to have before you go to sleep at night you say a mental diary of these are a few things I've done today, I think is a fantastic idea. (0503)
Writing is not always practical	I think that would be a good idea you're right because I think the whole writing stuff down you know is, is a good idea but as you say in today's world it's not always practical because you know, I might be sitting on the train and something might suddenly you know come to me and I feel really proud about it and, you know, my first thought wouldn't automatically be right write that down (0503)
Resistance to someone suggesting positive approach	But when you're as you say in the kind of throngs of depression and you can't get out of bed if someone was to say to me think about all the good things in your life I'd be liable to punch them in the face, whereas I think if someone just said just stop, that would have been far more helpful than trying to think of all the good things. (0503)
Can feel feelings are put to one side	I think the biggest kick in the teeth when you're feeling particularly depressed is when it almost feels like people are putting your feelings to one side and saying oh, <u>shh</u> , you know just stop it, whatever, feel good. (0503)
Can be self-involved when depressed	I think that's another very good idea, 'cos I think when you are depressed you don't recognise other people's part to play in your recovery, or other people's pain I think. Certainly when I was kind of really depressed I'd...my mum as I say initially wasn't necessarily the best, but that was purely because she just didn't understand, and I think since she's understood she's been absolutely fantastic. And because I think I've been really sort of, I've been very self-involved, trying to kind of get better, I've maybe ignored her a bit, (0503)
	That's a really good idea because, as you say when you... and as I said when you get sort of in the throngs of depression you have this almost like this barrier between you and the people that you care about or the people you work with and it's an unintentional thing, but you find yourself listening to someone and you're not really interested in that person and then you, 10 minutes later you'll ask them a question they've already answered in the previous, you know, things they were saying – and it's an awful feeling, you know it's almost like a daze where you don't really take in what someone's saying (0503)

Table 2 Example of theme and sub-theme generation

Sub-themes of main theme 'Feelings about positivity'	Codes (UPID)
People are refusing to understand you	Approach annoying (0503,0504,0901) Feel depression is not understood (1404,0501,0503,0901) Pressure to be happy (0502) Conscious approach uncomfortable (0901) Phrase positive thinking seems like people are refusing to understand you (1403, 1404, 0901) Resistance to someone suggesting approach (1404,0501,0503)
It might not be enough but it can do no harm	Approach can do no harm (1501, 0902) More suitable than bringing up difficult feelings (1403) Suitable for people in need of little help (0902) Positive approach not as damaging as negative labels (1404) Surface approach does not fix the issue (1401) Helps you deal but doesn't take away depression (0505) Focus on how you get around feelings sounds good (0201) Takes away the sting until you get to the root of the problem (0505)
Pursuit of happiness is not in the British constitution	American terminology over the top (1403) American terminology may lead to cynicism (0504,0506) Religious connotations of forgiveness (0504,0703,0901,0505,0903) Blessing journal name is American and self-help-y (0506, 0903) Blessings journal religious connotations (0505, 0903) Emphasis on positivity will not work in UK (1401)
Seeing the positives is the road to recovery	Being kind to self (0504, 0503, 0704, 0902) Faking it till you make it (0502,0504,0903) Positivity is important (0504) Belief that looking at positive does not mean pretending (0503, 0701, 0201, 0903) Belief that doing activities improves depression (0504,0902)

Appendix 5. Intervention development method documents

Patient advisory panel meeting agendas

Developing a Positive Psychology Technology for Common Mental Health Conditions (DEPPTH) Advisory Panel :
Meeting one

Tuesday 30th June 2015
10.00- 11.00 am

Agenda

10.00 - 10.10 Welcome, introductions and purpose of advisory group meetings

10.10 - 10.30 Introduction to Positive Psychotherapy and the positive psychology exercises

10.30-10.40 *Refreshments break*

10.40 - 10.55 Group discussion about positive psychology exercises

10.55 - 11.00 Summary of meeting and moving forward (including setting dates for next meetings)

Developing a Positive Psychology Technology for Common Mental Health Conditions (DEPPTH) Advisory Panel :
Meeting two

Tuesday 14th July 2015
10.00- 11.00 am

Agenda

10.00 - 10.05 Welcome and refreshments

10.05 - 10.20 Discuss remaining exercises not covered in meeting one (page 9 onwards)

10.20-10.40 Discuss views on trying out/ looking into the exercises

10.40 - 10.55 Discuss how to adapt exercises for the smartphone app

10.55 - 11.00 Summary of meeting and plan for next meeting (Tuesday 8th September 10-11am)

Developing a Positive Psychology Technology for Common Mental Health Conditions (DEPPTH) Advisory Panel :
Meeting three

Tuesday 8th September 2015
10.00am – 12.00 pm

Agenda

10.00 - 10.05 Welcome and refreshments

10.05 - 10.45 Discuss example ideas for interactive exercises

10.45 - 11.00 Discuss how to make remaining activities interactive

11.00 - 11.10 Refreshments break

11.10 - 11.55 Discuss overall structure of the app

11.55 - 12.00 Payment and reminder of next meeting Tuesday 20th October

Developing a Positive Psychology Technology for Common Mental Health Conditions (DEPPTH) Advisory Panel :
Meeting four

Tuesday 20th October 2015
10.00am –11am

Agenda

10.00 - 10.05 Welcome and refreshments

10.05 - 10.15 Recap on project and meeting aims
Overview of progress

10.15 - 10.35 Objective 1: Naming activities

10.35 - 10.55 Objective 2: Selecting preferred activities

10.55 - 11.00 Payment and reminder of final (?) meeting Tuesday 1st December

Developing a Positive Psychology Technology for Common Mental Health Conditions (DEPPTH) Advisory Panel :
Meeting five

Tuesday 1st December 2015
10.00am –11am

Agenda

10.00 - 10.05 Welcome and refreshments

10.05 - 10.25 Objective 1: Names, wording, metaphors

10.25 - 10.55 Objective 2: Activity instructions

10.55 - 11.00 Payment and reminder of final meeting Tuesday 2nd February 12.30 – 2pm (lunch provided)

Developing a Positive Psychology Technology for Common Mental Health Conditions (DEPPTH) Advisory Panel :
Meeting six

Tuesday 2nd February 2016

12pm – 2.30pm

Agenda

12.00 - 12.05 Welcome and refreshments

12.05 - 1.05 Objective 1: Review description of activities

1.05 – 1.15 Refreshment break

1.15- 2.00 Objective 1: Review description of activities

2.00 – 2.15 Objective 2: Review name for app

2.15-2.30 Objective 3: Feedback on advisory panel meetings

2.25 - 2.30 Payment and decide on project update/ findings

Usability testing protocol

Overview

The aim of the usability testing is to measure the extent to which intended users of the site, people experiencing symptoms of depression, can successfully use the Uplift website.

Resources needed

- Computer connected to the website
- Room
- Script of tasks and scenarios for the users
- Moderator to ask questions and request tasks
- 3-5 people colleagues to provide feedback
- A note taker
- Resources to audio record responses, reaction and analyse navigation

Note taker role:

Look for indicators of problems and make notes on:

- Hesitation
- Going down the wrong path toward a solution
- Failure to complete a task
- Asking for assistance
- Not understanding what words in the interface mean
- Expressions of frustration

Moderator role

- Give the same feedback for positive / negative comments = 'that is helpful feedback'
- You do not have to answer every question
- React the same to 'mistakes' and 'successes'
- Encourage participant to verbalise frustrations and to persist
- Do not jump in too soon if participant in difficulty
- On task

After testing: Points of reflection for moderator & note taker to discuss

- What worked well? What didn't?
- Did the users consistently misunderstand anything? If so, what?
- Were they any consistent mistakes? If so, what?
- Did users do as expected? If not, what?
- Did they do things in the order you expected? If not, how?
- What did they find interesting?

INSTRUCTIONS FOR MODERATOR

Introductory script to participant

- You have been invited to help us understand which parts of the website work for you and which are confusing
- Even though we're calling this a usability test you are not being tested. The website is. There's nothing you can do wrong. It's not your fault if you can't get something to work and you won't hurt anyone's feelings if you say something bad about the site
- Rather than me showing you the demo I would like you to test-drive the design by describing how you are completing the tasks. It's really important to speak all of your thoughts aloud – think of it like describing what you're doing and why you're doing it, what you notice, what you like and dislike.
- I will ask you to do a task whilst I stay here and quietly take notes but please ignore me. Just focus on describing what you're doing. When you are finished with the task please let me know. I will then ask you questions about what you think of what you have seen, before moving on to the next task.
- We can have a break at any time, then at end we can go through any overall comments or questions
- In total it will take up to 30 minutes
- Please read the user scenario aloud
- Then ask participant to read the first task aloud
- Ask the participant 'Do you have any questions about what the task is asking you to do?'
- Then 'you may go ahead and start the task, please remember to think aloud'
-

Overall questions (at end of tasks)

- What did you think of the website overall?
- Can you tell me your top likes and dislikes of the designs you saw today?
- Is there anything we missed today that you want to talk about what you saw today?
- Is there anything we missed today about the overall product?

Free task instructions

- Depending which task they choose use the appropriate prompts but ensure that the user completes
- 1) strengths questionnaire
- 2) plan making
- 3) plan editing
- 4) adding a good thing/enjoyment / connection
- 5) using support instructions

Tasks

Functions to test	Task wording	Moderator follow up questions
1. Log in	Describe how you would log in to this website (please use your email address and the password: uplift)	What is the first thing you would do on this page?
2. Free selection of activity	Please choose an activity to try and describe how you are making this selection do this	Did you have all of the information you needed to choose an activity? If not what else would you have needed
3. Take the strengths questionnaire	Please take the strengths quiz and describe how are you filling it in as you go.	What is the primary task to complete on this page? What is the first thing you would do on this page?
4. Make one strengths plan	Explore your strengths and describe out loud how you are doing this.	What is the primary task to complete on this page? What is the first thing you would do on this page?
5. Edit one strengths plan	Imagine that you have completed your strengths plan and want to update how it went. Please describe how you are going to do this	If you were to edit your strengths plan, where would you go?
6. Add something enjoyable/good thing/connection/ thanks	Visit either the 'Enjoy/ Good things / connect' section and describe out loud how you are using this page	What is the primary task to complete on this page? What is the first thing you would do on this page?
7. Check how to use the website	Find out more about how to use the website and describe out loud how you would do this	Would you have all of the information you need to use the website? If not what else would you need?

Overall questions (at end of tasks)

- What did you think of the website overall?
- Can you tell me your top likes and dislikes of the designs you saw today?
- Is there anything we missed today that you want to talk about what you saw today?
- Is there anything we missed today about the overall product?

INSTRUCTIONS FOR PARTICIPANTS

User scenario

You are Jane and you have experienced depression on and off for the last few years. You have decided to take part in a research study to try out the Uplift website. You know it's for people with depression to practise ways to enjoy moments in their day-to-day life, find their strengths and lift up their mood. You have been given access to the website for the next six weeks and told that you can choose the activities that feel right for you. You have navigated to the website from your welcome email.

- Ask participant to read the first task aloud
- Ask the participant 'Do you have any questions about what the task is asking you to do?'
- Then 'you may go ahead and start the task, please remember to think aloud'

Task 1

Describe how you would log in to this website

(please use your email address and the password: uplift)

Task 2

Please choose an activity to try and describe how you are making this selection do this

Task 3

Please take the strengths quiz and describe how are you filling it in as you go.

Task 4

Explore your strengths and describe out loud how you are doing this.

Task 5

Imagine that you have completed your strengths plan and want to update how it went. Please describe how you are going to do this

Task 6

Visit either the 'Enjoy/ Good things / connect' section and describe out loud how you are using this page

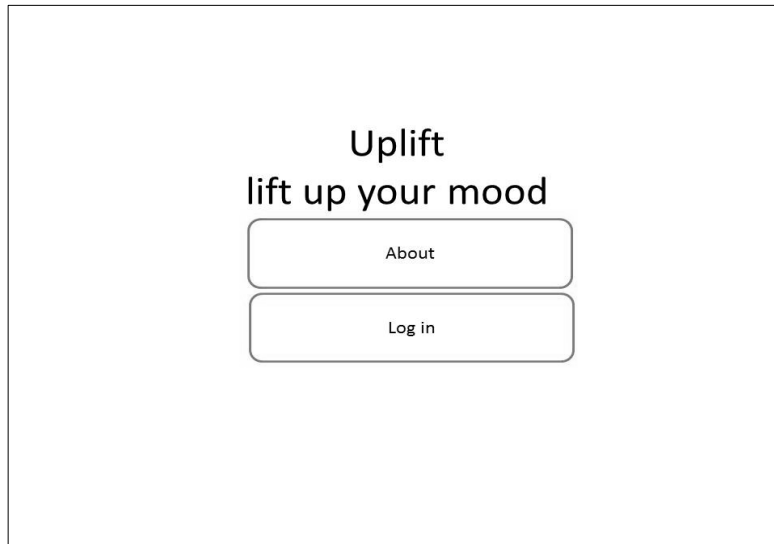
Task 7

Find out more about how to use the website and describe out loud how you would do this

Appendix 6. Intervention development supporting documents

- Paper based prototype mock up intervention screens
- Intervention specification
- Strengths database
- Permission from Fiona Trembath and worksheet
- Audio script enjoy

Paper based prototype mock up intervention screens



About

- Welcome to Uplift. This site is designed to give people with depression some activities that may improve wellbeing. Uplift is different from other treatments as the focus is not on working through symptoms and problems. Instead Uplift gives you a chance to find your strengths and lift up your mood by enjoying moments in day-to-day life.
- The Uplift website is designed for people with depression to use independently, that means that you will not be supported to use the activities. However, support will be available for any practical or technical issues. The Uplift website is also designed to be used alongside other treatments for depression. It is not a substitute for other treatments for depression; it does not replace medical advice or treatment.
- Uplift is available as part of a research study. The research aims to find out how acceptable the website is to people with symptoms of depression.
- To find out more click here to download the information leaflet.
- You can contact the researcher running the study, Sophie Walsh, using the form or details below
- Tel.: 07706 678 176 or 020 7540 4380 (ext. 2309)
- Email: sophie.walsh@qmul.ac.uk
- Contact form
- Your name []
- Your contact number []
- Your email address [.....]
- Your message [.....]..

Log in

Email address

Password

Forgotten password

Uplift Lift up your mood

Strengths *find your top five strengths and plan ways to use them day-to-day*

Good things *list good things that happen*

Enjoy *try new ways to enjoy daily sensations sights, sounds, smells*

Connect *with someone you know and find ways to share your strengths*

Information *links to places that can support you and FAQs*

Even though its **natural to think about problems** when you're depressed, it may **help to think about your strengths** and what is **going well**.

Look at the activities. See what feels right for you. You can use these as a support **when you feel you need them**. You might find it helpful to try one activity each week, for the next six weeks.

This tool can be used **alongside other treatments** for depression. It is not a substitute for other treatments for depression; it does not replace medical advice or treatment. If you **would like to find out more** about depression and mental health visit the **information section**.

[Homepage](#)

Uplift

Strengths

Everyone is good at something. We all have strengths. But we don't always find it easy to think about how our strengths can help us.

Strengths
quiz

What are your strengths? You might like to try doing this questionnaire to find out.

Strengths
plan

See your top five strengths here and **plan ways to use** these in your day-to-day life.

Uplift

Strengths quiz

Here are 24 statements. **Click on five** that you think describe you best.

1. I notice and enjoy good or beautiful things
2. I am an open and honest person
3. I do the right thing, even when I feel scared
4. I like coming up with new ways to do things
5. I want to find out new things
6. I treat everyone equally

INSERT IMAGE

Uplift

Strengths Results

Your top 5 strengths are

- 1.
- 2.
- 3.
- 4.
- 5.

- Click on your strengths to see a description
- Now that you know your strengths you can **use them in your day-to-day life.**
- Visit the **plan** to find out more.

INSERT IMAGE

Uplift

Strengths plan

Your top 5 strengths are

- 1.
- 2.
- 3.
- 4.
- 5.

- Click on your strengths to see some examples of how to use them in your day-to-day life
- You might like to make a plan about using your strengths

INSERT IMAGE

This is an example of what user sees when clicks on strengths

Strengths plan

Strength: Appreciation of beauty and excellence

- This strength allows you to appreciate the beauty in every moment.
- Suggestion: Go for a walk and notice at least one naturally beautiful thing (e.g. trees, birds). You can think of this when you are feeling low or worried
- Suggestion: Take pictures of natural scenes or someone close to you and make them your phone or computer background.

INSERT IMAGE

Uplift

Strengths plan

?	Strength
?	Way to use it
?	When to use it
?	How did it go?



Uplift

Good things list

- If you are depressed it is natural to think about things that may be going badly, rather than things that are going well. It might feel like **no good things happen**. But by listing even one good thing once a day you may start to feel better.
- You may also find it helpful to think about **why** these good things happen. For example, 'I noticed the blue sky. This happened because I went out to get some milk'.
- You might like to try and come back to this page each day to add at least one good thing and why it happened.
- You can also come back at any time to look at your good things list. You might find that this boosts your mood when you're feeling stressed or depressed.

Add a good thing



Good things_1

Uplift

Good things list

Good thing

Why this happened



IMAGE

Good things_2

Uplift

Enjoy

When you are feeling depressed it might seem there is **nothing to enjoy**. But you might still find that there are moments in the day when you can enjoy **sensations and physical comforts**.

You might like to try and appreciate and take pleasure in everyday things you usually rush through. Try to slow things down and use all of your five senses. Think about what you

- Smell • Taste • See • Feel • Hear

- Click here for some examples
- Enjoying things in this way may seem unnatural at first but give it a go. You might find it helpful to give yourself breaks for enjoying these things each day.

Examples

Add something you enjoyed



Uplift

Enjoy

Here are some examples of everyday experiences you could enjoy the physical sensations of

- In the shower
- Eating a meal
- Being outside

INSERT IMAGE

Uplift

Enjoy

In the shower

When taking a shower take a moment to think about what you:

- Smell – your shampoo or soap scent
- Taste – the water on your tongue
- See – the water spray
- Feel – a warm towel on your skin
- Hear – the sound of the water dripping

INSERT IMAGE

Uplift

Enjoy

I enjoyed the sensation of...

I found this.....

+
?

IMAGE

Enjoy_2

Uplift

Connect

Connecting with someone you know

When you are depressed its easy to lose touch with others. You might find it helpful to try some of these activities that may help to connect you.

What is their news? You might like to try these conversation starters.

Saying thanks

If you would like to you can **thank someone you know** who has helped you.

Sharing strengths

See your top five strengths here and **plan ways to share** these with others.

Uplift

Connecting with someone you know

- You might find it helpful to **connect with others and catch up with their news.**
- Try and arrange to meet up with someone you know. You might like to use these conversation starters to **find out about their good news**
 - Has something interesting happened this week?
 - What has been the best part of your week?
 - What are you most looking forward to next week?

You might find this activity gets easier with a bit of practice. You can make a note of how it felt to connect.

Add how it felt to connect +

INSERT IMAGE

Uplift

Connect

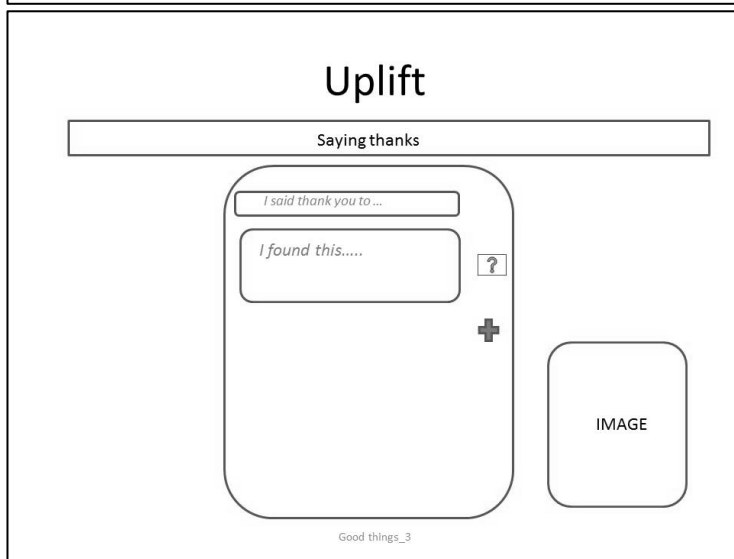
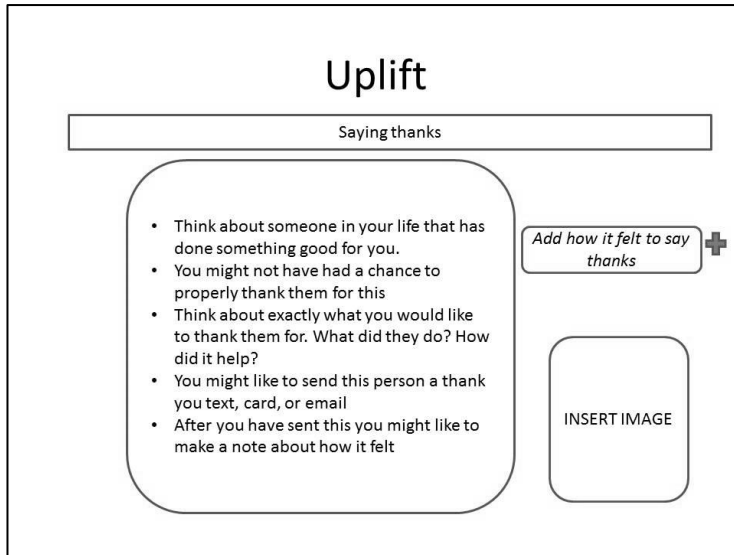
I connected with...

I found this....

+
?

IMAGE

Good things_3



Uplift

Sharing strengths

- You might like to **share your strengths** with others through giving some time to a good cause.
- Helping others can take your mind off things and help you to **feel better**.
- There are lots of different activities you can be involved in and some take **very little time**.
- Click on your strengths for some ideas about how to use them.
 - 1.
 - 2.
 - 3.
 - 4.
 - 5.

There are lots of opportunities to choose from, you might like to click here for more details.

Add to a plan about sharing strengths

Uplift

Sharing strengths plan

I plan to share my strength....



Way to use it



When to use it



How did it go?



Uplift

Information

Links

FAQs

Uplift

Links

- The **first place** to go for help with your mental health is your **GP**
- They will provide some **information and advice** and may suggest things that can **help**, such as counselling, therapy, exercise and medication
- You might like to visit these websites for information about mental health
<http://www.nhs.uk/Livewell/mentalhealth/Pages/Mentalhealthhome.aspx>
- You might also like to **speak to someone** for advice via a **helpline** – click here to see a list
<http://www.nhs.uk/conditions/stress-anxiety-depression/pages/mental-health-helplines.aspx>

Links

If you had thoughts of self-harming or are feeling suicidal contact someone immediately. You can:

- See your GP or the out-of-hours GP service. If you have already taken an overdose or cut yourself badly, dial 999.
- Call a helpline with specially trained volunteers who'll listen to you, understand what you're going through, and help you through the immediate crisis.
- Contact a friend, family or someone you trust.

The Samaritans operate a service 24 hours a day, 365 days a year, for people who want to talk in confidence. Call 08457 909090

Uplift

FAQs

General questions

- What is this tool?
- What will I get from this tool?

Technical questions

- Problems logging in
- Tablets and smartphones
- How do I use and save?

Emails

- Why am I receiving emails?
- Why am I not receiving emails?

Non technical questions

- I have forgotten to use the website for a while, does this matter?
- How much time do I have to use this for?

FAQs_1

Intervention specification

Uplift – specification for website

1. Introduction

As part of a doctoral project at the Unit for Social & Community Psychiatry at Queen Mary University of London/East London NHS Foundation Trust, we have designed an intervention called 'Uplift' to be delivered by a website. Uplift is for people with symptoms of depression to practice a number of 'positive psychology' exercises. These are things that can improve people's mood and wellbeing.

Briefly, the website will give people access to six interactive exercises, grouped in four sections of the website. The exercises include one short quiz (the answers need to be stored by the website, and appear in other sections), and simple forms for people to record actions – text descriptions of plans or reflection on plans. The website will also include a fifth section for links to external websites and additional information (e.g. FAQs). The website will also have an external page, where people who do not have a log in can view information about the project (e.g. a PDF) 'contact us' and request a call back.

People who have signed up to the study will be allocated access via a personal log in, and will return to the website both to review what they have done before and to repeat the activities. For the purposes of the research project, we need to collect data on the time each user spends per page, per log in. However, we do not need access to what they are putting onto the webpage.

The website needs to be completed by 31st July.

2. Details of the project

The following features will be required:

Membership creator

- Administrator allocated access to the website through using email address / password
- Able to restrict length of access (can use for six weeks)

Security

- Personal data (email address, contact details entered into 'contact us' form) must be transferred securely
- Personal data (email address, contact details, data submitted to the website) must be stored securely
- Auto creation of passwords / forgotten passwords (so that the administrator is not able to access user' accounts)

Adding PDF for download

Storing data

- Participants will answer a quiz. This is a series of 24 statements (in the diagram below they are split over 4 pages but this can be altered) which participants would select 5 of by

clicking a response box. At the end of this quiz their results will be shown. These responses need to be saved in two additional pages of the website and in each will be linked to different information. For example, in one section of the site clicking on the saved answer will bring up different data from that in another section. When participants return to the site their results will be saved in these sections. If participants choose they can repeat this quiz and their results will then change in the different areas of the site. They will no longer have access to the old results.

- Participants will complete basic forms using free text. When they return to this website this free text will be stored and they will have the ability to add further information. They may make multiple entries per visit to the site.

Auto collect usage data

Collect individual data (linked to participant via email or unique ID) on

- number of log ins
- number of times data entered (i.e. completing the quiz, submitting short form)
- time spent per page per log in¹

Pop ups

- Extra information is available by clicking on certain icons - if possible these can be pop ups / open in new pages
- External links are included in an information section of the website – if possible these can be pop ups to ensure users are not directed away from the main site

The following features are optional

Mobile responsive

Sending reminders

Website users will be prompted once per week to return to and use the site. If its possible for reminders to be sent using the site this would be an advantage. These emails would need to be programmable via the admin interface to be sent during the 6 weeks of access. Also, the emails would need a feature to unsubscribe.

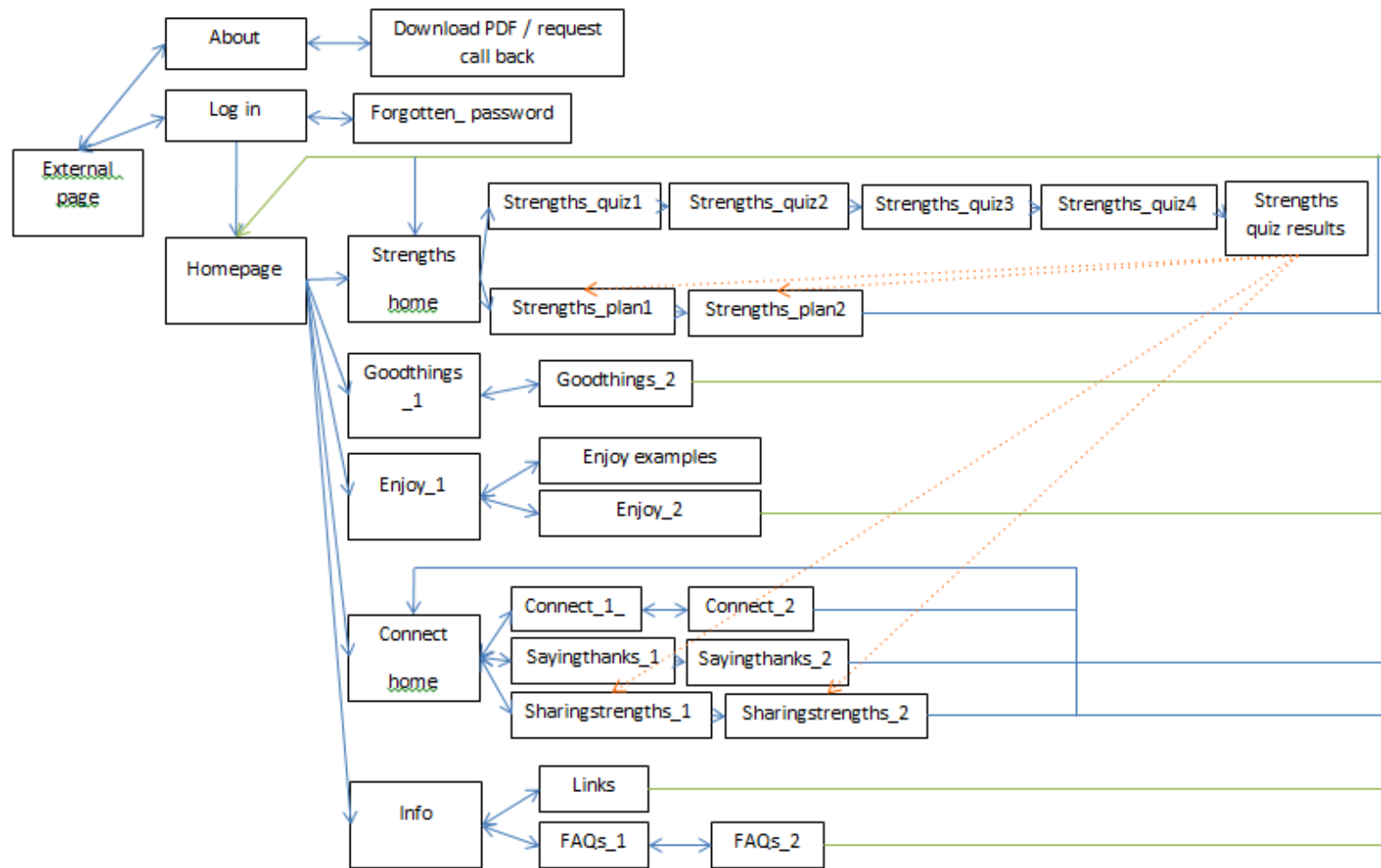
Printing pages

Some users may wish to print webpages (e.g. quiz results)

3. Overview of pages

The diagram below gives an overview of the number of pages and connections between them. The blue arrows indicate where a user can go forward and back between pages. The green arrows indicate where the user can return to the home page. The red arrow indicates where data is populated between pages.

¹ If it is not possible to have time spent per page at an individual level, it is acceptable to have time spent per page at an average level.



4. **Further information**

- The website is intended to be used for free. The copyright of the website will be with East London NHS Foundation Trust. The developer must be willing to make their code freely available as and when required.
- The website is part of a research project involving NHS patients and storage of their personal data. The developer must agree (in writing) to storing this data in accordance with the Data Protection Act, 1998. The developer must also be using industry standard technologies for ensuring safe, encrypted transfer / download of data.

Strengths permission to use worksheet

RE: What are your top strengths - Message (HTML)

File Message

From: Sophie Marie Walsh
To: 'Fiona Trembath'
Cc:
Subject: RE: What are your top strengths
Sent: Tue 05/04/2016 10:03

Subject: RE: What are your top strengths

Hi Sophie,

Thank you for your email. I'm pleased you found the worksheet useful. I'd be more than happy for you to use the worksheet in your research study.

I'm curious about your research... Can you elaborate? I'd love to find out more!

If I can help further, please don't hesitate to contact me.

Kind regards,
Fiona

Fiona Trembath

From Strength to Strength
Strengths education for schools
info@fromstrengthtostrength.com
www.fromstrengthtostrength.com
Ph +614 38 29 03 59
+61 (3) 9438 3639

From: Sophie Marie Walsh [<mailto:sophie.walsh@qmul.ac.uk>]
Sent: Monday, 4 April 2016 9:01 PM
To: Fiona Trembath <Fiona@fromstrengthtostrength.com>
Subject: What are your top strengths

Dear Fiona,

I just came across the attached worksheet 'What are your top strengths' from your website which I think is a very useful adaptation of the VIA.

I am hoping to use something similar in my PhD, in which I am asking people to identify their strengths. It's a nice short assessment of strengths that I think will work very well. Would it be possible for me to have permission to use this worksheet in my research study?







With best wishes
Sophie

What are your top strengths?

From Strength to Strength

Strengths education for schools

www.fromstrengthtostrength.com

WISDOM	COURAGE	HUMANITY	JUSTICE	TRANSCENDENCE	TEMPERANCE
CREATIVITY "I like coming up with new ways to do things." • Original • Inventive <input type="checkbox"/>	BRAVERY/COURAGE "I do the right thing, even when I feel scared." • Daring • Resolute <input type="checkbox"/>	LOVE "I care deeply about things, and show that I care." • Loving • Close to others <input type="checkbox"/>	LEADERSHIP "I help and guide people to do something good." • Encouraging • Directive <input type="checkbox"/>	APPRECIATION OF BEAUTY AND EXCELLENCE "I notice and enjoy good or beautiful things." • Full of wonder • Admiring of quality <input type="checkbox"/>	FORGIVENESS "I can let go of hurt and anger and wish others well again." • Accepting • Merciful <input type="checkbox"/>
CURIOSITY "I want to find out new things." • Inquisitive • Interested <input type="checkbox"/>	PERSEVERANCE/PERSISTENCE "I stick at things and don't give up." • Tenacious • Determined <input type="checkbox"/>			GRATITUDE "I am thankful for good things, and give thanks often." • Thankful • Blessed <input type="checkbox"/>	HUMILITY/MODESTY "I know and understand my own strengths and weaknesses." • Unassuming • Humble <input type="checkbox"/>
JUDGMENT/OPEN MINDEDNESS "I think things through and am open to different people or ideas." • Open-minded • Clear thinking <input type="checkbox"/>		SOCIAL INTELLIGENCE/FRIENDSHIP "I am loyal and kind to others and gentle with myself." • Emotionally intelligent • Aware of others <input type="checkbox"/>	TEAMWORK "I get people to work well together and enjoy being part of a team." • Loyal • Socially responsible <input type="checkbox"/>	HOPE "I look on the bright side, and believe good things will happen." • Optimistic • Hopeful <input type="checkbox"/>	
LOVE OF LEARNING "I enjoy learning new things." • Eager to understand • Keen to know <input type="checkbox"/>	ZEST/ENTHUSIASM "I am full of energy and raring to go." • Energetic • Motivated <input type="checkbox"/>	KINDNESS "I do and say things to make others happy." • Compassionate • Generous <input type="checkbox"/>		HUMOR "I see the funny side; I like making others smile or laugh." • Playful • Light-hearted <input type="checkbox"/>	SELF-REGULATION/SELF-CONTROL "I can control my emotions, thoughts and actions to live well." • Disciplined • Unimpulsive <input type="checkbox"/>
PERSPECTIVE/WISDOM "I understand what is important in life." • Insightful • Perceptive <input type="checkbox"/>	HONESTY "I am an open and honest person." • Authentic • Trustworthy <input type="checkbox"/>		FAIRNESS "I treat everyone equally." • Just • Unbiased <input type="checkbox"/>	SPIRITUALITY "I think deeply about God (spirit), love, or the meaning of life." • Spiritual • Purposeful <input type="checkbox"/>	PRUDENCE "I make good choices that affect my future." • Careful • Cautious <input type="checkbox"/>

Adapted from the VIA Classification of Character Strengths www.viacharacter.org

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Strengths database

Strengths quiz statement	Strengths quiz			Strengths plan	Sharing strengths
	Group	Result	Detail	Example	Example
I treat everyone equally	Caring	Fairness	This strength means you respect and have compassion for others.	Find out about projects which deal with human rights. See if there are any opportunities to get involved.	Use your compassion and have a look at a human rights website such as Amnesty International. Click on "get involved" to write emails or letters to support people in need.
I can let go of hurt and anger and wish others well again	Caring	Forgiveness	This strength means you accept other's faults and give people a second chance.	Think about someone who has upset you. Just speaking to them may make you feel better.	Use your forgiveness for small actions that could make a big difference. See if there are online petitions to sign and letters to write about causes you care about.
I am thankful for good things and give thanks often	Caring	Gratitude	This strength means you appreciate the good things that happen in life.	You might like to visit the Good things section of this website and try the activity there.	You might like to help raise awareness about a good cause that you are grateful for. You can do this face to face, or through social media accounts such as Facebook or Twitter.
I do and say things to make others happy	Caring	Kindness	This strength means you enjoy giving to and helping others.	Visit someone you know – a friend or a relative and spend some time with them. You might like to share thoughts, ideas or doing something to help.	You could do some small acts of kindness like check if a local supermarket has a foodbank donation box and buy something to put in it. Or perhaps take any nice clothes that you don't wear to a charity shop - it will cheer someone else up to find them.
I help and guide people to do something good	Caring	Leadership	This strength means you listen to the feelings of others and help people to reach their goals.	Think about an activity you would like to do with others. It might be going out for a short time with some friends or family members. Plan how to organise this. You might like to visit the connect section of this website to try some of the activities there	Ask a friend about a plan that hasn't worked out so far. See if you can help them to work out how to succeed.

I care deeply about things and show that I care	Caring	Love	This strength means you put your trust in others and put them first.	<p>Don't forget to be kind to yourself. Spend some quality 'me' time doing something you enjoy. Perhaps its socialising, relaxation or exercise.</p> <p>Visit someone you know – a friend or a relative and spend some time with them. You might like to share thoughts, ideas or doing something to help.</p>	Use your love of learning to support others learning a new skill. You could help a relative to download a useful app on their smartphone. Or you might like to help a young person to learn a life skill, such as cooking a simple meal.
I think deeply about spirituality or the meaning of life	Caring	Spirituality	This strength means you are aware of the sacred things in every daily life.	<p>Take time to try the 'Good things' activity in this website.</p> <p>Noticing simple, small things that bring you cheer may help to improve your mind-set.</p>	Connect with the organisations that are important for your spirituality. You may be able to help with their fundraising, administration or marketing.
I get people to work well together and enjoy being part of a team	Caring	Teamwork	This strength means you work as a member of a group for the better of everyone.	Think about an activity you would like to do with others. It might be going out for a short time with a couple of friends or family members. Plan how to organise this.	Use your teamwork to help a colleague, neighbour or friend and see if they need a hand with a task they are stuck with.
I notice and enjoy good or beautiful things	Experiencing	Appreciation of beauty and excellence	This strength allows you to appreciate the beauty in every moment.	<p>Go for a walk and notice at least one naturally beautiful thing (clouds, sunshine, trees, birds etc.). You can think of this when you are feeling low or worried.</p> <p>Take pictures of natural scenes or your loved ones and make them your phone or computer background.</p>	Use your camera to take pictures of friends, family, their kids and pets. You can use photo-editing software to add a professional touch. Share the best ones with them.

I like coming up with new ways to do things	Experiencing	Creativity	This strength means you can use your own ideas and imagination to solve problems.	Think about a creative solution to a problem someone you know is having. Contact them and arrange to meet up and discuss your idea.	Use your creativity to think of new ways to fundraise for a cause you care about and share these, or help to put them into action.
I want to find out new things	Experiencing	Curiosity	This strength means you take an interest in all experiences and opportunities.	Try and find something new to enjoy. For example, reading a new book or magazine. Eat food from a different culture. You might like to share this with someone.	Learn a new cooking or baking skill. Invite friends or neighbours over to try the food, or bring it to work to share with colleagues.
I look on the bright side and believe good things will happen	Experiencing	Hope	This strength means you expect good things to happen and you expect the best from yourself and others.	Be kind to yourself. Spend some quality 'me' time doing something you enjoy. Perhaps its socialising, relaxation or exercise. Set yourself a new goal that suits you. This can help to build your confidence.	Use your hope to help someone you know see their way out of a problem they are stuck with.
I see the funny side; I like making others smile or laugh	Experiencing	Humour	This strength means you are playful and can usually find things to be cheerful about.	You might like to visit the Good things section of this website and try the activity there.	Use your humour to cheer up someone you know, or spend time with those who may be isolated such as an elderly neighbour.
I enjoy learning new things	Experiencing	Love of learning	This strength means you like to learn new skills and find our new things.	Try and find something new to enjoy. For example, reading a new book or magazine.	Use your love of learning to support others learning a new skill, such as helping people with their literacy or computer skills. For example, you could help a family member download a useful app onto their phone.

I am loyal and kind to others and gentle to myself	Experiencing	Social skills	This strength means you are aware of your own and others emotions.	Visit a loved one – a friend or a relative and spend some time connecting with them. When you ask others how they are listen for their responses.	Ask a friend who seems stressed out if they want to meet for a coffee and a chat. It feels good to help others, even if you are feeling down yourself.
I am full of energy and raring to go	Experiencing	Zest	This means you appreciate energy, excitement and liveliness.	Try and build some activity into your daily routine. Taking exercise, such as a short walk, can help make you feel more energetic.	Offer to volunteer at a local fundraising event; Offer to babysit for a family member or friend and create fun games for the kids to enjoy
I do the right thing, even when I feel scared	Self-control	Bravery	This strength allows you to face challenges, even when there are risks or dangers.	Try to keep doing things even if you find them difficult. Face things that seem challenging will help with day-to-day activities. Set yourself a new goal that suits you. This can help to build your confidence.	_ Use your bravery for a cause such as international aid or human and civil rights. _ You could fundraise or help with administration. _ You may be able to raise awareness by discussing the cause with others.
I make good choices that affect my future	Self-control	Carefulness	This strength means you are careful about your choices and keep your goals in mind.	Get active – you might find that taking some exercise helps to clear your head. This can be just taking a walk.	Help a friend or relative who struggles with planning things. Share your tips with them.
I stick at things and don't give up	Self-control	Determination	This strength means you keep trying to achieve goals even when things get in the way.	Set yourself a new goal or challenge that suits you. It can help you build confidence and take charge of your feelings.	_ Use your determination to help a friend with a DIY job that they're stuck with; _ Find out if there are any local sports team you can join _ Use your determination to help a young person in a mentoring scheme.
I am an open and honest person	Self-control	Honesty	This strength means you are open or honest about your thoughts, feelings and responsibilities	Be honest about how you are feeling. Speak someone you know or visit the 'Support' section of the website to contact someone for support.	Use your honesty to advise others. _ You can give suggestions to a friend who is stuck with something. _ You could find out how to become an advisor at a drop in centre or support line.

			ties.		
I know and understand my own strengths and weaknesses	Self-control	Modesty	This strength means you don't like to think of yourself as better than others.	Don't forget to be kind to yourself. Spend some quality 'me' time doing something you enjoy. Perhaps its socialising, relaxation or exercise.	Small actions can make a big difference. See if there are online petitions to sign and letters to write about causes you care about.
I think things through and am open to different people or ideas	Self-control	Open mindedness	This strength means you think about things from all sides.	Visit a loved one – a friend or a relative and spend some time connecting with them	You could help a friend with a creative project, maybe they are writing something they are stuck with. Or you might like to go with a friend to the local theatre or to see a film that isn't usually your kind of thing. Many places have special offers on Mondays and Tuesdays.
I understand what is important in life	Self-control	Perspective	This strength means you can provide advice to others and think widely.	Get active – you might find that taking some exercise helps to clear your head. This can be just taking a walk.	See if there are any local community groups that need help setting up projects. For example, you could go to residents' meetings and see if people mention things they would like improved in the area. Maybe you can make suggestions, or volunteer your time to help.
I can control my own emotions, thoughts and actions to live well	Self-control	Self-control	This strength means that you can resist temptations and stick to routines.	You might like to try and build some activity into your daily routine. Perhaps going for a walk once a day.	You might like to set up an "exercise buddy" agreement with a friend. Set goals together, such as doing stretches every morning after waking up. You can check in with each other to make sure you are reaching your goals.

Savouring audio instructions

Taking a shower

3:40

This audio invites you to think about how you might try to enjoy the everyday experience of having a shower, using all of your senses. This is an experience you might normally rush through, but the idea here is to take a few extra moments to focus on each of your five senses and to enjoy the experience. This isn't about taking more time, it's about slowing down in each moment to experience and to enjoy.

As you step in to the shower notice how the warm water feels on your skin. Spend a moment thinking about how this temperature feels for you. How the water droplets feel as they roll onto and off your skin. How it feels as the water pools around your feet. Take a moment to clear your mind and focus only on the sensation of touch and your enjoyment of how this feels.

You might like to taste the water – let some droplets splash onto your tongue. You can focus on how this tastes. The freshness of the water. The pureness of the water. Take a moment to enjoy this. To appreciate it. And to linger in your shower.

Now, as you start to wash yourself take a moment to notice the scent of your shampoo or soap. Take a deep breath and inhale the scent. Really take it in. Where does it take you? Take a moment to linger with this scent and enjoy how it makes you feel.

Now, you might like to take a moment to think about what you can see. How the water looks as it sprays from the shower onto your skin. How the foam and suds from your soap bubble up. How the water washes over your skin. Take a moment to really see this. Notice the patterns. Notice the movement. Enjoy this.

You might like to spend a moment or two focusing on the sounds. The sound of the spraying water. Can you hear how it sounds as it showers your skin? Can you hear how it sounds as it hits the shower floor? The pitter-patter of the water. The pace of the water. Hear how the direction of sounds change as you move in and out of the stream of water. Take a moment to really listen. And enjoy the sounds of your shower.

As your shower comes to an end take a moment to appreciate the joint experience of all of your senses. Take a moment to feel the warmth, feel comforted and feel cocooned in your shower. It is a simple thing which usually, you may not take the time to appreciate. But it is a simple pleasure that you may be able to enjoy.

Remember, that trying to enjoy every day experiences in this way can feel strange at first. But as you take the time to practice and spend a few moments thinking about the experience of each your senses, it will become easier. It will feel more natural. And you may start to enjoy experiences that you otherwise would not have noticed as much.

You might like to use Uplift make a note of how the experience feels each time you practice focusing on enjoying using your senses. Remember, you can come back and replay this audio at any time to help you enjoy your showers, using all of your senses.

Eating a meal

Time: 3:15

This audio invites you to think about how you might try to enjoy the everyday experience of having something to eat, using all of your senses. This is an experience you might normally rush through, but the idea here is to take a few extra moments to focus on each of your five senses and to enjoy the experience. This isn't about taking more time, it about slowing down in each moment to experience and to enjoy.

Don't take a bite just yet. Before you start to eat, you might like to take a moment to really look at what you are about to have. Notice the colour of the food. Notice its texture. Take a moment to really look at your food. What do you notice? Which part do you like the look of the best? Think about what you hope to enjoy in this experience.

Now as you start to eat, take a moment to notice how your food feels as you bring it to your mouth. How does it feel on your lips? Think about the temperature. Think about the texture. Notice how the food feels on your tongue and in your mouth. And take a moment to enjoy these sensations.

The thing you may enjoy the most is the taste of your food. But take a moment to expand how you experience the taste. Think about each of the flavours. Try and identify each one. See if you can focus on enjoying each taste separately. And then focus the overall taste. Let the taste of your food be your only focus. And enjoy this.

Now, as you start to really experience your food. Take a moment to listen. Notice the sounds. Appreciate how the different textures of what you are eating might each make slightly different noises. Listen to these. Feel them.

As you enjoy what you are eating take a moment to appreciate the joint experience of all of your senses. You might like to think about how the food feels and how this is linked to the sounds you hear. For instance, if your food is crunchy, experience the texture as you bite into it and take a moment to really listen for that crunch. As much as you can try to make what you are eating your only focus. Take a moment to enjoy this focus. To feel comforted, cocooned and centred. Eating is a simple thing which usually, you may not take the time to appreciate. But it is a simple pleasure that you may be able to enjoy.

Remember, that trying to enjoy every day experiences in this way can feel strange at first. But as you take the time to practice and spend a few moments thinking about the experience of each your senses, it will become easier. It will feel more natural. And you may start to enjoy experiences that you otherwise would not have noticed as much. You might like to use Uplift to make a note of how the experience feels each time you practice focusing on enjoying using your senses. Remember, you can come back and replay this audio at any time to help you enjoy your food, using all of your senses.

Being outside

Time: 3:20

This audio invites you to think about how you might try to enjoy the everyday experience of stepping outside, using all of your senses. This is an experience you might normally rush through, but the idea here is to take a few extra moments to focus on each of your five senses and to enjoy the experience. This isn't about taking more time, it's about slowing down in each moment to experience and to enjoy.

This is something you can practise on your doorstep. Or it's something you can practise on your way out of the house. Whichever you prefer.

As you open your door take a moment to focus on what you see. Pause and allow yourself to really see your surroundings. What catches your eye? Find something to pleasantly focus on. It could be a particular cloud in the sky or a leaf on a nearby plant. Take a moment to just look. Really look. What shapes do you see? What colours do you notice? Give your attention to these shapes and colours and enjoy them.

Now, you might like to take a moment to notice what you feel. How does the fresh air feel against your skin? Notice this sensation. Notice whether it is different from where you were a moment ago. Notice the change in temperature now that you are outside. Try and think about whether you are feeling refreshed or energised by this sensation. Take a deep breath and really experience this.

You might like to spend a moment or two focusing on the sounds. What sounds can you hear? And in what direction are they coming from? Are there sounds that you can pick out that you can enjoy? Move your head slightly to the left, and slightly to the right and hear how the sounds change as you do this. Take a moment to really listen. And enjoy the sounds of this moment outside.

Now, you might like to think about what you can smell. Take a deep breath in and focus your mind. Is there freshness in the air? What does this smell like? Where does this take you? Take a moment to breathe deeply and enjoy this sensation and smell of fresh air filling your nostrils.

And as you focus on the smell you may also become aware of the taste. Is there a taste in the air? Does your mouth notice the difference between here and where you were a moment ago? Take the time to just think about this. Move your tongue gently around your mouth and really experience this moment.

Now that you are more aware of how each of your five senses responds to and enjoys this moment of being outside, take a pause and think about your senses together. Take a moment to enjoy this focus. To feel comforted, cocooned and centred. When we step outside we are usually on our way to somewhere. We can rush. We can forget to take time to notice every day simple pleasures.

Remember, that trying to enjoy every day experiences in this way can feel strange at first. But as you take the time to practice and spend a few moments thinking about the experience of each of your senses, it will become easier. It will feel more natural. And you may start to enjoy experiences that you otherwise would not have noticed as much. You might like to use Uplift to make a note of how the experience feels each time you practice focusing on enjoying using your senses. Remember, you can come back and replay this audio at any time to help you enjoy stepping outside, using all of your senses.

Appendix 7. Uplift intervention

External homepage screen 1 of 3

Uplift - Home

Secure https://uplift.elft.nhs.uk

Get self-help for depression Contact us Log in

uplift
lift up your mood

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NHS Foundation Trust

Lift up your mood with Uplift

Feeling sad, low or stressed is a common problem, and sometimes we struggle to find ways to feel better. Uplift can help you practise ways to enjoy moments in your day-to-day life, find your strengths and lift up your mood. It may help you cope with stress, depression or anxiety.

Get self-help for depression
With Uplift you can practise ways to enjoy moments in your day-to-day life, find your strengths and lift up your mood.

Take part in Uplift
You can access Uplift by taking part in a research study. Read more about the study.

Contact us
If you have a general enquiry or are interested in taking part, please contact us.

Log in
If you have an account with us, please log in.

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External homepage screen 2 of 3

Uplift - Home

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Get self-help for depression

Self-help is a big part of positive mental health. If you are feeling down, depressed or hopeless, you can try Uplift as part of your self-care. It is designed to help you to improve your mood. Uplift is not a substitute for existing depression treatment or medical advice.

Get self-help for depression
With Uplift you can practise ways to enjoy moments in your day-to-day life, find your strengths and lift up your mood.

Take part in Uplift
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Contact us
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Log in
If you have an account with us, please log in.

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External homepage screen 3 of 3

Uplift - Home

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East London
NHS Foundation Trust

How to use Uplift

You can use Uplift by taking part in a research study. Read more about the study or contact us to get started.

Get self-help for depression

With Uplift you can practise ways to enjoy moments in your day-to-day life, find your strengths and lift up your mood.

Take part in Uplift

You can access Uplift by taking part in a research study. Read more about the study.

Contact us

If you have a general enquiry or are interested in taking part, please contact us.

Log in

If you have an account with us, please log in.

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External about page

Uplift - Get self-help for depression

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Self-help for depression

Lift up your mood with Uplift

Feeling sad, low or stressed is a common problem, and sometimes we struggle to find ways to feel better. Uplift can help you practise ways to enjoy moments in your day-to-day life, find your strengths and lift up your mood. It may help you cope with stress, depression or anxiety.

Coping with stress, depression or anxiety

Self-help is a big part of positive mental health. If you are feeling down, depressed or hopeless, you can try Uplift as part of your self-care. It is designed to help you to improve your mood. Uplift is not a substitute for existing depression treatment or medical advice.

Improve your mood and find your strengths

It is natural to think about problems and what is not going well but it may be helpful to think about building your strengths, enjoying day-to-day experiences and connecting with your friends, family and community. This might help to improve your mood.

Taking part in the research

You are invited to use Uplift as part of a research study. All of the information we collect is confidential. The study is being done as part of an educational qualification for a PhD. [Read more about the study](#) or contact the researcher, Sophie Walsh, on 07706 678 176 or 020 7540 4380 (ext. 2309) or using the [contact us form](#).

External contact page

Uplift
lift up your mood

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Home / Contact us

Contact us

If you have a general enquiry or would like to use the Uplift site please complete this form and we will get back to you soon.

Name*

Contact number*

Email address*

Message*

I'm not a robot

RECAPTCHA
Privacy Terms

Submit * required field(s)

External login page

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Home / Login

Login or contact us to create an account

Registered users

If you have an account with us, please log in.

Email Address: *

Password: *

Login [Forgot Your Password?](#) * Required Field

New users

Contact us

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Internal homepage screen 1 of 3

Uplift - Home

Secure https://uplift.ehft.nhs.uk

Home Dashboard Content Structure Appearance People Modules Reports Page Log out

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uplift
lift up your mood

HOME | STRENGTHS | GOOD THINGS | ENJOY | CONNECT | SUPPORT

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Welcome to Uplift

Even though it is natural to think about problems, it may help to use the below sections of this website to think about your strengths, the good things, what you enjoy and who you can connect with.

Strengths

Find your top five strengths and find ways to use them day-to-day.

Good things

List good things that happen.

Enjoy

Try new ways to enjoy daily sensations.

Connect

Find ways to connect with others and share your strengths.

Internal homepage screen 2 of 3

Uplift - Home

Secure https://uplift.ehft.nhs.uk

Home Dashboard Content Structure Appearance People Modules Reports Page Log out

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How to use Uplift

Choose the activities that feel right for you. You might like to try one per week over the 6 weeks. Or, pick and choose activities and use the site flexibly. For more details on using Uplift visit website support.

Strengths

Find your top five strengths and find ways to use them day-to-day.

Good things

List good things that happen.

Enjoy

Try new ways to enjoy daily sensations.

Connect

Find ways to connect with others and share your strengths.

Internal homepage screen 3 of 3

The screenshot shows the Uplift homepage. At the top, there is a navigation bar with links: Home, Dashboard, Content, Structure, Appearance, People, Modules, Reports, Page, and Log out. Below this is a green header with the text "Get self-help for depression" and a user profile for "Hi Sophie" with a "Log out" button. The main content area features the Uplift logo on the left and the NHS East London NHS Foundation Trust logo on the right. A central banner titled "When to use Uplift" contains the following text: "Uplift is designed to be used alongside support you may already be receiving. It is not a substitute for other treatments and medical advice. For more details on treating depression visit the support section." Below the banner are four green boxes with icons and text: "Strengths" (Find your top five strengths and find ways to use them day-to-day), "Good things" (List good things that happen), "Enjoy" (Try new ways to enjoy daily sensations), and "Connect" (Find ways to connect with others and share your strengths).

Strengths quiz

The screenshot shows the Uplift Strengths quiz page. The navigation bar and header are identical to the previous page. The main content area features a large image of hands stacked together. Overlaid on this image is a text box with the following text: "Everyone is good at something. We all have strengths. But we don't always find it easy to think about how our strengths can help us. What are your strengths? You might like to try doing this quiz to find out. See your top five strengths and plan ways to use these in your day-to-day life. If you have previously taken the quiz your answers are saved in your account." To the right of the text box is a green button with a person icon and the text "Take the quiz!". At the bottom of the page, there is a green footer with links for "Cookie Policy" and "Terms of Use", and a copyright notice: "© COPYRIGHT 2016 EAST LONDON NHS FOUNDATION TRUST".

Strengths quiz with statements selected

<p>♥ Caring</p> <ul style="list-style-type: none"> → I treat everyone equally → I can let go of hurt and anger and wish others well again → I am thankful for good things and give thanks often → I do and say things to make others happy → I help and guide people to do something good → I care deeply about things and show that I care → I think deeply about spirituality or the meaning of life → I get people to work well together and enjoy being part of a team 	<p>⚙️ Experiencing</p> <ul style="list-style-type: none"> → I notice and enjoy good or beautiful things → I like coming up with new ways to do things → I want to find out new things → I look on the bright side and believe good things will happen → I see the funny side; I like making others smile or laugh → I enjoy learning new things → I am loyal and kind to others and gentle to myself → I am full of energy and raring to go 	<p>⚖️ Self-control</p> <ul style="list-style-type: none"> → I am an open and honest person → I do the right thing, even when I feel scared → I know and understand my own strengths and weaknesses → I think things through and am open to different people or ideas → I stick at things and don't give up → I understand what is important in life → I make good choices that affect my future → I can control my own emotions, thoughts and actions to live well
---	--	---



Strengths quiz results

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HOME | STRENGTHS | GOOD THINGS | ENJOY | CONNECT | SUPPORT



⚡ Your top 5 strengths

Find out more about your strengths and ways to take action.

- I am an open and honest person Q
- I am thankful for good things and give thanks often Q
- I look on the bright side and believe good things will happen Q
- I think things through and am open to different people or ideas Q
- I am loyal and kind to others and gentle to myself Q

My strength plans

- I am going to te...
📅 8 Aug 2016
- Speak to my do...
📅 7 Aug 2016
- I am going to fa...
📅 2 Aug 2016

↺ Retake questionnaire

Strengths quiz example

The screenshot shows a web browser window with the URL https://uplift.elft.nhs.uk/Strengths?action=result&uniquekey=c805e9cd-456f-491b-bace-99eb7fc3f51a#RL?r_playlist=playlistStrengthsList&r_id=4. The page features a dark green header with the Uplift logo and navigation links. A central modal window displays the strength: "I am loyal and kind to others and gentle to myself". Below the strength name, it explains: "This strength means you are aware of your own and others emotions." An "Example Strength Action:" section includes a bullet point: "Visit a loved one – a friend or a relative and spend some time connecting with them. When you ask others how they are listen for their responses." A green "Make a plan" button is positioned at the bottom of the modal.

Strengths plan screen

The screenshot shows the same web browser window as above, but the modal window is now in a planning phase. It displays the same strength name and definition. Below this, there are three text input fields with labels: "Way to use it*", "When to use it", and "How did it go". Each field has a small icon of a person and a text area. The "Way to use it*" field has a placeholder: "You can use one of the examples or add your own." The "When to use it" field has a placeholder: "You might find it helpful to set up a time to use this strength. There are lots of ways you can set reminders (e.g. print this page and stick it somewhere you will see it, add a reminder to your calendar)". The "How did it go" field has a placeholder: "Once you've tried to use your strength it may be helpful to briefly write down how it went – how did it feel? Did you face any challenges and how did you overcome this? Did you experience positive emotions when sharing your strengths?". A red asterisk indicates that the "Way to use it*" field is required. A green "Save this plan" button is located at the bottom right of the modal.

Good things

Good things

If you are depressed it is natural to think about things that may be going badly, rather than things that are going well. It might feel like no good things happen. But by listing even one good thing once a day you may start to feel better.

You may also find it helpful to think about why these good things happen. For example, 'I noticed the blue sky. This happened because I went out to get some milk'.

You might like to try and come back to this page each day to add a good thing.

You can visit Uplift to look at your list of good things. You might find that this boosts your mood when you're feeling stressed or depressed.

Here are some ways you can remember to list your good things

- Set a time each day to make your list
- Set a reminder on your phone or calendar
- When you notice a good thing take a picture or make a voice recording

My good things

- I went outside ... 9 Aug 2016
- I managed to w... 8 Aug 2016
- I got to speak t... 8 Aug 2016
- I had a lovely C... 8 Aug 2016
- THE SUN WAS ... 7 Aug 2016
- I managed to g... 7 Aug 2016
- My mum phon... 7 Aug 2016

Adding a good thing

Add a good thing

Good thing*

Why this happened

* required fields

Save this good thing

Enjoy



Enjoy

When you are feeling depressed it might seem there is nothing to enjoy. But you might still find that there are moments in the day when you can enjoy sensations and physical comforts.

You might like to try and appreciate and take pleasure in everyday things you usually rush through. Try to slow things down and use all of your five senses.

Think about what you: Smell • Taste • See • Feel • Hear

Even a few seconds focusing on physical sensations can bring about enjoyment. You might find that you prefer to use some of your senses more than others. Everyone is different so find out what you like. It might be helpful to set aside a time in the day when you are planning to enjoy some physical sensations.

Enjoying things in this way may seem unnatural at first but give it a go. Below there are examples with audio instructions that can help you to imagine how to enjoy physical sensations. Try whatever works for you.

[Add something you enjoyed](#)

Things I enjoy
having a shower
2 Aug 2016

Here are some examples with audio instructions of how you might enjoy the physical sensations of everyday experiences.



→ In the shower



→ Eating a meal



→ Being outside

Audio instructions for shower

In the shower

When taking a shower take a moment to think about:

- Smell** – your shampoo or soap scent
- Taste** – the water on your tongue
- See** – the water spray
- Feel** – a warm towel on your skin
- Hear** – the sound of the water dripping

[Uplift - enjoy shower](#)

[Add something you enjoyed](#)

Audio for eating a meal

Think about what you: Smell • Taste • See • Feel • Hear

Even a few seconds focusing on physical sensations can bring about enjoyment. You might find that you prefer to use some of your senses more than others. Everyone is different so find out what you like. It might be helpful to set aside a time in the day when you a

Enjoying th
are exampl
physical se

Here are some exa

→ In the shower → Eating a meal → Being outside

Eating a meal

When having something to eat take a moment to think about what you:

- Smell** – the main scent of your food
- Taste** – of each thing on the plate
- See** – the colours of your food
- Feel** – the texture of your food
- Hear** – the sound of the textures

Upit - enjoy eating a meal

Audio instruction for being outside

Think about what you: Smell • Taste • See • Feel • Hear

Even a few seconds focusing on physical sensations can bring about enjoyment. You might find that you prefer to use some of your senses more than others. Everyone is different so find out what you like. It might be helpful to set aside a time in the day when you a

Enjoying th
are exampl
physical se

Here are some exa

→ In the shower → Eating a meal → Being outside

Being outside

Next time you step outside take a moment to think about what you:

- Smell** – is there a particular smell?
- Taste** – or taste?
- See** – does something catch your eye?
- Feel** – how does the change in temperature feel?
- Hear** – can you hear any particular sounds?

Upit - enjoy being outside

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Connect homepage

Uplift - Connect

Secure https://uplift.elft.nhs.uk/Connect

Home Dashboard Content Structure Appearance People Modules Reports Page Log out

Get self-help for depression Hi Sophie Log out

uplift
lift up your mood

HOME | STRENGTHS | GOOD THINGS | ENJOY | CONNECT | SUPPORT

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Connect

Here you will find three different ways to connect with others. These activities may help as it is easy to lose touch with others when you are depressed.

Clicking on any of the boxes will take you to the activity.

- Connecting with someone you know
- Saying thanks
- Sharing strengths

Connecting with someone you know

You might find it helpful to connect with others and catch up with their news.

Try and arrange to meet up with someone you know. You might like to use these conversation starters to find out about their good news

- Has something interesting happened this week?
- What has been the best part of your week?
- What are you most looking forward to next week?

You might find this activity gets easier with a bit of practice. You can make a note of how it felt to connect.

My connections

- Ayse
17 Aug 2016
- My sister
16 Aug 2016

Add how it felt to connect

Add a connection

The screenshot shows a modal window titled "Add how it felt to connect" with a close button in the top right corner. The form contains two text input fields: "I connected with...*" and "I found this...". Below the fields is a small asterisk and the text "* required fields". A green "Submit" button is located at the bottom right of the form. In the background, a dark overlay shows a button labeled "Add how it felt to connect" and some text about conversations.

Saying thanks

The screenshot shows the "Saying thanks" page with a background image of an elderly woman and a man. The page has a green header with a speech bubble icon and the text "Saying thanks". Below the header is a list of bullet points: "Think about someone in your life that has done something good for you.", "You might not have had a chance to properly thank them for this.", "Think about exactly what you would like to thank them for. What did they do? How did it help?", "You might like to send this person a thank you text, card, or email.", and "After you have sent this you might like to add how it felt to say thanks.". At the bottom of the page is a green button with a pencil icon and the text "Add how it felt to say thanks". On the right side, there is a "My thanks" section with a list of entries: "Mum" (8 Mar 2017), "Paulina" (17 Aug 2016), "My Dad" (16 Aug 2016), and "My mum".

The screenshot shows a modal window titled "Add your thanks" with a close button in the top right corner. The form contains two text input fields: "I said thanks to...*" and "I found this...". Below the fields is a small asterisk and the text "* required fields". A green "Save your thanks" button is located at the bottom right of the form. In the background, a dark overlay shows the "Saying thanks" page and a button labeled "Add your thanks".

Sharing strengths

Sharing strengths

You can share your strengths with others by helping people you know or by giving a little of your time to a good cause. This may take your mind off things and help you to feel better.

Below you can click on your strengths for some ideas about how to share them.

For more ideas, visit the pages of [Team London](#), [Do it](#), or the [National Council for Voluntary organisations](#).

- > I can let go of hurt and anger and wish others well again
- > I look on the bright side and believe good things will happen
- > I understand what is important in life
- > I think deeply about spirituality or the meaning of life
- > I am loyal and kind to others and gentle to myself

My shared strengths

- I am goin got hs...
17 Aug 2016
- sigpjjwporwy
16 Aug 2016
- I am going to he...
15 Aug 2016

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Sharing strength example

Sharing strengths

You can share your strengths with others by helping people you know or by giving a little of your time to a good cause. This may take your mind off things and help you to feel better.

Below you can click on your strengths for some ideas about how to share them.

For more ideas, visit the pages of [Team London](#), [Do it](#), or the [National Council for Voluntary organisations](#).

I look on the bright side and believe good things will happen

This strength means you expect good things to happen and you expect the best from yourself and others.

Sharing example:

- Use your hope to help someone you know see their way out of a problem they are stuck with.

Share a strength

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Help homepage

Uplift - Support

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Home Dashboard Content Structure Appearance People Modules Reports Page Log out

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uplift lift up your mood

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NHS East London NHS Foundation Trust

Support

Depression Support

Website Support

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Depression support page

Uplift - Depression Support

Secure <https://uplift.elft.nhs.uk/Support/Depression-Support>

Dashboard Content Structure Appearance People Modules Reports Page Log out

Get self-help for depression Hi Sophie Log out

uplift lift up your mood

HOME | STRENGTHS | GOOD THINGS | ENJOY | CONNECT | SUPPORT

NHS East London NHS Foundation Trust

Home / Support / Depression Support

Depression Support

Depression Support

Website Support

The first place to go for help with your mental health is your GP.

They will provide some information and advice and may suggest things that can help, such as counselling, therapy, exercise and medication. The [NHS website](#) also has lots of useful information about mental health.

You might also like to speak to someone for advice [via a helpline](#).

If you had thoughts of self-harming or are feeling suicidal contact someone [immediately](#). You can:

- See your GP or the out-of-hours GP service. If you have already taken an overdose or cut yourself badly, dial 999.
- Call a helpline with specially trained volunteers who'll listen to you, understand what you're going through, and help you through the immediate crisis. [The Samaritans](#) operate a service 24 hours a day, 365 days a year, for people who want to talk in confidence. Call 116 123
- Contact a friend, family or someone you trust.

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Website support page

The screenshot shows a web browser window with the URL <https://uplift.elft.nhs.uk/Support/Website-Support>. The page features a green header with the Uplift logo and navigation links. Below the header, there is a breadcrumb trail: Home / Support / Website Support. The main content area is titled "Website Support" and contains three sections: "General questions", "Emails", and "Technical issues". Each section lists common user queries with a dropdown arrow indicating further information is available.

Website Support

Depression Support
Website Support

General questions

- What is Uplift?
- How can I use Uplift?
- When can I use Uplift?
- How much time do I have to use this for?
- I have forgotten to use the website for a while, does this matter?

Emails

- Why am I receiving emails?
- Why am I not receiving emails?

Technical issues

- Problems logging in
- Tablets and smartphones

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Appendix 8. Feasibility study supporting documents

Study measures

Demographics

1. Age	[three digits]
2. Gender	Male/ Female
3. First language	[free text]
4. Highest educational qualification	Please select your highest educational qualification 1= left education prior to GCSE 2=GCSE or equivalent 3=A level or equivalent 4=NVQ or equivalent 5= Diploma 6=Degree 7= Postgraduate degree
5. Region (first four postcode letters)	[four letters]
6. Employment status	Please select your main employment status 1 = Studying full-time 2 = In full-time paid employment 3 = In part-time paid employment 4 = Self-employed 5 = Unemployed 6 = Retired 7 =In full or part-time voluntary employment

Treatment history and use

1) When did you first experience symptoms of depression	[year]
2) Have you ever received treatment for your depression?	[Yes / No]
a) (If yes) Are you currently receiving treatment for your depression?	[Yes / No]
i) (If yes) Please indicate whether you are	
(1) Currently taking antidepressant medication	[Yes/ No]
(2) Currently having talking therapy or counselling for depression	[Yes/ No]
(3) Currently seeing a psychiatrist for depression	[Yes/ No]
(4) Currently seeing a care co-ordinator for depression	[Yes/ No]
(5) Currently in hospital or attending the day hospital for depression	[Yes/ No]
(6) Other treatment for depression	[free text box]
3) Have you ever received treatment for another mental health concern?	[Yes/No]
a) (If yes) Are you currently having treatment for another mental health concern?	[Yes/ No]
i) (if yes) Please indicate whether you are	

(1) Currently taking psychiatric medication for another mental health concern	[Yes/ No]
(2) Currently having talking therapy or counselling for another mental health concern	[Yes/ No]
(3) Currently seeing a psychiatrist for another mental health concern	[Yes/ No]
(4) Currently seeing a care co-ordinator for another mental health concern	[Yes/ No]
(5) Currently in hospital or attending the day hospital for another mental health concern	[Yes/ No]
(6) Other treatment for another mental health concern	[free text box]

PHQ-9 (Kroenke et al., 2001)

Over the past 2 weeks how often have you been bothered by any of the following problems?	Not at all	Several Days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things?	0	1	2	3
2. Feeling down, depressed, or hopeless?	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much?	0	1	2	3
4. Feeling tired or having little energy?	0	1	2	3
5. Poor appetite or overeating?	0	1	2	3
6. Feeling bad about yourself - or that you are a failure or have let yourself or your family down?	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television?	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual?	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way?	0	1	2	3

DIALOG (Priebe et al., 2007)

	Totally dissatisfied	Very dissatisfied	Fairly dissatisfied	In the middle	Fairly satisfied	Very satisfied	Totally satisfied
How satisfied are you with	1	2	3	4	5	6	7
1. your mental health?	1	2	3	4	5	6	7
2. your physical health?	1	2	3	4	5	6	7
3. your job situation?	1	2	3	4	5	6	7
4. your accommodation?	1	2	3	4	5	6	7
5. your leisure	1	2	3	4	5	6	7

activities?							
6. your friendships?	1	2	3	4	5	6	7
7. your relationships with family/partner?	1	2	3	4	5	6	7
8. your personal safety?	1	2	3	4	5	6	7

Intervention benefits and satisfaction

Please rate your agreement with the following statements

	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
1. The exercises on the Uplift website felt natural							
2. The exercises on the Uplift website were enjoyable							
3. The exercises on the Uplift website were difficult							

4. How helpful was the Uplift website?	Not at all helpful	A little helpful	Somewhat helpful	Moderately helpful	Quite a bit helpful	Mostly helpful	Extremely helpful
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Please provide some brief comments on the helpfulness of the Uplift website (e.g. things that got better after trying the Uplift website)

5. How much did you experience negative effects from the Uplift website?	Extreme negative effects	Mostly negative effects	Quite a few negative effects	Moderate negative effects	Some negative effects	Minimal negative effects	No negative effects
--	--------------------------	-------------------------	------------------------------	---------------------------	-----------------------	--------------------------	---------------------

Please provide some brief comments on the negative effects of the Uplift website (e.g. things that got worse after trying the Uplift website).

	Totally dissatisfied	Very dissatisfied	Fairly dissatisfied	In the middle	Fairly satisfied	Very satisfies	Totally satisfied
6. Overall, how satisfied were you with the Uplift website?	1	2	3	4	5	6	7

Please provide some comments on your overall satisfaction

Study approvals - NRES favourable ethical opinion and HRA approval



Health Research Authority

North West - Greater Manchester West Research Ethics Committee

Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0207 104 8021

09 June 2016

Miss Sophie Walsh
Doctoral Researcher
Queen Mary University of London/ East London NHS Foundation Trust
Unit for Social and Community Psychiatry
Newham Centre for Mental Health
London
E13 8SP

Dear Miss Walsh

Study title:	Self-help 'Uplift' website for depression: a feasibility study of a website using principles of positive psychology for people with symptoms of depression
REC reference:	16/NW/0447
Protocol number:	n/a
IRAS project ID:	205690

The Research Ethics Committee reviewed the above application at the meeting held on 03 June 2016. Thank you for attending to discuss the application.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the REC Manager Ms Anna Bannister, nrescommittee.northwest-gmwest@nhs.net. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA Approval (England)/ NHS permission for research is available in the Integrated Research Application System, at www.hra.nhs.uk or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

NHS Sites

The favourable opinion applies to all NHS sites taking part in the study taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non NHS sites

The Committee has not yet completed any site-specific assessment(s) (SSA) for the non-NHS research site(s) taking part in this study. The favourable opinion does not therefore apply to any non-NHS site at present. I will write to you again as soon as an SSA application(s) has been reviewed. In the meantime no study procedures should be initiated at non-NHS sites.

Summary of discussion at the meeting

Ethical issues raised by the Committee in private discussion, together with responses given by the researcher when invited into the meeting

The Chair welcomed you and thanked you for attending to discuss the study.

Recruitment arrangements and access to health information, and fair participant selection

The Committee noted the study had a very open inclusion criteria but queried whether a good level of English would be needed. You explained that that should be an inclusion criteria. The Committee queried if there were any others. You explained that you tried to keep it open as possible to get a broad diversity of people with different ranges of depression. The Committee had no further issues.

Favourable risk benefit ratio: anticipated benefit/risks for research participants (present and future)

The Committee noted there was potential risk of distress but this had been recognised and information provided for support with the questionnaires and interview. The Committee had no ethical issues.

The Committee noted a lone worker policy was in place.

The Committee noted that participants would not have access to the website after the six weeks as the researcher explained without evidence of efficacy it was not appropriate to continue to provide the intervention. However the Committee noted the information sheets states it believes the intervention to be safe and previous studies in other countries have shown good results. The Committee queried therefore if it was ethical to not allow them access to the website or at least signpost them to other resources online. You explained that there are some apps online which are similar but these are not specifically design for depression and not NHS endorsed. You explained that you would not feel comfortable to signpost participants to commercial apps which were not shown to be useful or effective. The Committee asked if the website would be shut down after the study. You explained that it would depend on funding. If the study shows the website to be useful then they may receive more funding to keep it open. You explained that a lot of the experiences can be printed off and done on paper so once the study had finished participants could continue with the exercises. The Committee had no further issues.

Suitability of supporting information

The Committee queried if the strength questionnaire had been through PPI groups and whether participants fed back if they were in a depressed mode this questionnaire made them feel worst. You explained that PPI groups were generally positive about the questionnaire and it was good to have a list to identify from rather than think up strengths which if you are in a depressed mood by be difficult. The Committee had no further issues.

Approved documents

The documents reviewed and approved at the meeting were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Copies of advertisement materials for research participants [Study advert]	1.0	18 May 2016
Covering letter on headed paper [Cover letter]	1.0	19 May 2016
GP/consultant information sheets or letters [GP letter]	1.0	18 May 2016
Interview schedules or topic guides for participants [Interview topic guide]	1.0	18 May 2016
IRAS Application Form [IRAS_Form_20052016]		20 May 2016

IRAS Application Form XML file [IRAS_Form_20052016]		20 May 2016
IRAS Checklist XML [Checklist_20052016]		20 May 2016
Letter from funder [Confirmation of funding]		23 July 2014
Non-validated questionnaire [Baseline Questionnaire]	1.0	18 May 2016
Non-validated questionnaire [End of Study Questionnaire]	1.0	18 May 2016
Other [Intervention content]	1.0	18 May 2016
Other [Participant documents for added information]		18 May 2016
Participant consent form [Consent form main study]	1.0	18 May 2016
Participant consent form [Interview consent form]	1.0	18 May 2016
Participant information sheet (PIS) [Participant information sheet]	1.0	18 May 2016
Participant information sheet (PIS) [Interview information sheet]	1.0	18 May 2016
Referee's report or other scientific critique report [Peer review]		22 April 2016
Referee's report or other scientific critique report [Statistician comments]		23 April 2016
Research protocol or project proposal [Uplift study protocol]	1.0	18 May 2016
Summary CV for Chief Investigator (CI) [Sophie Walsh CV]	1.0	17 May 2016
Summary CV for student [Sophie Walsh CV]	1.0	17 May 2016
Summary CV for supervisor (student research) [Stefan Priebe CV]	1.0	17 May 2016
Summary CV for supervisor (student research) [Steph Taylor CV]		25 April 2016
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Overview of participant documents]	1.0	18 May 2016

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: <http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/>

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

16/NW/0447

Please quote this number on all correspondence

With the Committee's best wishes for the success of this project.

Yours sincerely



Dr Lorraine Lighton (Chair)
Chair

E-mail: nrescommittee.northwest-gmwest@nhs.net

Enclosures: List of names and professions of members who were present at the meeting and those who submitted written comments

"After ethical review – guidance for researchers"

Copy to: Ms Keji Dalemo, Noclor

Miss Sophie Walsh
Doctoral Researcher
Queen Mary University of London/ East London NHS
Foundation Trust
Unit for Social and Community Psychiatry
Newham Centre for Mental Health
London
E13 8SP

Email: hra.approval@nhs.net

04 August 2016

Dear Sophie Walsh

Letter of HRA Approval

Study title:	Self-help 'Uplift' website for depression: a feasibility study of a website using principles of positive psychology for people with symptoms of depression
IRAS project ID:	205690
Protocol number:	n/a
REC reference:	16/NW/0447
Sponsor	East London NHS Foundation Trust

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. Please read *Appendix B* carefully, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

IRAS project ID	205690
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Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

After HRA Approval

The document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

In addition to the guidance in the above, please note the following:

- HRA Approval applies for the duration of your REC favourable opinion, unless otherwise notified in writing by the HRA.
- Substantial amendments should be submitted directly to the Research Ethics Committee, as detailed in the *After Ethical Review* document. Non-substantial amendments should be submitted for review by the HRA using the form provided on the [HRA website](#), and emailed to hra.amendments@nhs.net.
- The HRA will categorise amendments (substantial and non-substantial) and issue confirmation of continued HRA Approval. Further details can be found on the [HRA website](#).

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at <http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/>.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

IRAS project ID	205690
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User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please email the HRA at hra.approval@nhs.net. Additionally, one of our staff would be happy to call and discuss your experience of HRA Approval.

HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

Your IRAS project ID is 205690. Please quote this on all correspondence.

Yours sincerely

Nicola Gilzeane
Assessor

Email: hra.approval@nhs.net

Copy to: *Ms Keji Dalemo, Noclor, East London NHS Foundation Trust, Sponsor Contact
and Lead NHS R&D Contact*
sponsor.noclor@nhs.net

Appendix A - List of Documents

The final document set assessed and approved by HRA Approval is listed below.

<i>Document</i>	<i>Version</i>	<i>Date</i>
Copies of advertisement materials for research participants [Study advert]	1.0	18 May 2016
Covering letter on headed paper [Cover letter]	1.0	19 May 2016
GP/consultant information sheets or letters [GP letter]	1.0	18 May 2016
Interview schedules or topic guides for participants [Interview topic guide]	1.0	18 May 2016
IRAS Application Form [IRAS_Form_20052016]		20 May 2016
Letter from funder [Confirmation of funding]		23 July 2014
Non-validated questionnaire [Baseline Questionnaire]	1.0	18 May 2016
Non-validated questionnaire [End of Study Questionnaire]	1.0	18 May 2016
Other [Schedule of Events]		04 August 2016
Other [Statement of Activities]		04 August 2016
Other [Intervention content]	1.0	18 May 2016
Other [Participant documents for added information]		18 May 2016
Other [Sponsor Study Wide]		16 June 2016
Participant consent form [Consent form main study]	1.0	18 May 2016
Participant consent form [Interview consent form]	1.0	18 May 2016
Participant information sheet (PIS) [Participant information sheet]	1.0	18 May 2016
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Referee's report or other scientific critique report [Peer review]		22 April 2016
Referee's report or other scientific critique report [Statistician comments]		23 April 2016
Research protocol or project proposal [Uplift study protocol]	1.0	18 May 2016
Summary CV for Chief Investigator (CI) [Sophie Walsh CV]	1.0	17 May 2016
Summary CV for student [Sophie Walsh CV]	1.0	17 May 2016
Summary CV for supervisor (student research) [Stefan Priebe CV]	1.0	17 May 2016
Summary CV for supervisor (student research) [Steph Taylor CV]		25 April 2016
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Overview of participant documents]	1.0	18 May 2016

IRAS project ID	205690
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Appendix B - Summary of HRA Assessment

This appendix provides assurance to you, the sponsor and the NHS in England that the study, as reviewed for HRA Approval, is compliant with relevant standards. It also provides information and clarification, where appropriate, to participating NHS organisations in England to assist in assessing and arranging capacity and capability.

For information on how the sponsor should be working with participating NHS organisations in England, please refer to the, *participating NHS organisations, capacity and capability and Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* sections in this appendix.

The following person is the sponsor contact for the purpose of addressing participating organisation questions relating to the study:

Keji Dalemo (020 3317 3535, sponsor.noclor@nhs.net)

HRA assessment criteria

Section	HRA Assessment Criteria	Compliant with Standards	Comments
1.1	IRAS application completed correctly	Yes	No comments
2.1	Participant information/consent documents and consent process	Yes	No comments
3.1	Protocol assessment	Yes	No comments
4.1	Allocation of responsibilities and rights are agreed and documented	Yes	<p>This is a non-commercial single recruiting site study taking place in the NHS where that single NHS organisation is also the study sponsor. Therefore no study agreements are required for the recruiting site.</p> <p>The Sponsor has confirmed that no agreements will be used with PIC sites as it is felt that a verbal agreement will be proportionate because the only</p>

Section	HRA Assessment Criteria	Compliant with Standards	Comments
			responsibility of the PIC sites is to display posters and provide leaflets to potential participants. There will be no expectation for the PIC sites to promote or discuss the study.
4.2	Insurance/indemnity arrangements assessed	Yes	Where applicable, independent contractors (e.g. General Practitioners) should ensure that the professional indemnity provided by their medical defence organisation covers the activities expected of them for this research study
4.3	Financial arrangements assessed	Yes	The sponsor has confirmed that no funding will be provided to the recruiting site or PIC sites
5.1	Compliance with the Data Protection Act and data security issues assessed	Yes	No comments
5.2	CTIMPS – Arrangements for compliance with the Clinical Trials Regulations assessed	Not Applicable	No comments
5.3	Compliance with any applicable laws or regulations	Yes	No comments
6.1	NHS Research Ethics Committee favourable opinion received for applicable studies	Yes	No comments
6.2	CTIMPS – Clinical Trials Authorisation (CTA) letter received	Not Applicable	No comments
6.3	Devices – MHRA notice of no objection received	Not Applicable	No comments
6.4	Other regulatory approvals	Not Applicable	No comments

Section	HRA Assessment Criteria	Compliant with Standards	Comments
	and authorisations received		

Participating NHS Organisations in England

This provides detail on the types of participating NHS organisations in the study and a statement as to whether the activities at all organisations are the same or different.

There are two site types for this study –

- PIC sites - these sites will display study posters and hand out leaflets to potential participants
- Recruiting site – at the recruiting site the researcher will discuss the study with potential participants, take consent for and conduct face to face interviews with participants. Consent for and completion of questionnaires and the intervention will be completed by the participant online.

Some participants will be recruited outside of the NHS; HRA Approval does not cover this activity.

If this study is subsequently extended to other recruiting NHS organisation(s) in England, an amendment should be submitted to the HRA, with a Statement of Activities and Schedule of Events for the newly participating recruiting NHS organisation(s) in England.

The Chief Investigator or sponsor should share relevant study documents with participating NHS organisations in England in order to put arrangements in place to deliver the study. The documents should be sent to both the local study team, where applicable, and the office providing the research management function at the participating organisation. For NIHR CRN Portfolio studies, the Local LCRN contact should also be copied into this correspondence. For further guidance on working with participating NHS organisations please see the HRA website.

If chief investigators, sponsors or principal investigators are asked to complete site level forms for participating NHS organisations in England which are not provided in IRAS or on the HRA website, the chief investigator, sponsor or principal investigator should notify the HRA immediately at hra.approval@nhs.net. The HRA will work with these organisations to achieve a consistent approach to information provision.

Confirmation of Capacity and Capability

This describes whether formal confirmation of capacity and capability is expected from participating NHS organisations in England.

The HRA has determined that East London NHS Foundation Trust **are not expected to formally confirm their capacity and capability to host this research**, because this is a non-commercial single recruiting site study taking place in the NHS where that single NHS organisation is also the study sponsor. The HRA has also determined that PIC sites **are not expected to formally confirm their capacity and capability to host this research**, because they will only be required to display posters and hand out leaflets to potential participants

- The HRA has informed the relevant research management offices that you intend to undertake the research at their organisation. However, you should still support and liaise with these organisations as necessary.
- Following issue of the Letter of HRA Approval the sponsor may commence the study at these organisations when it is ready to do so.
- The document "[Collaborative working between sponsors and NHS organisations in England for HRA Approval studies, where no formal confirmation of capacity and capability is expected](#)" provides further information for the sponsor and NHS organisations on working with NHS organisations in England where no formal confirmation of capacity and capability is expected, and the processes involved in adding new organisations. Further study specific details are provided in this *Appendix B (Participating NHS Organisations and Agreement sections)*.

If this study is subsequently extended to other NHS organisation(s) in England to act as recruiting sites a further assessment of the need for assessment of capacity and capability at those additional sites will be made.

Principal Investigator Suitability

This confirms whether the sponsor position on whether a PI, LC or neither should be in place is correct for each type of participating NHS organisation in England and the minimum expectations for education, training and experience that PIs should meet (where applicable).

There is no expectation for principal investigators or local collaborators at PIC sites.

This is a single recruiting site study and the study Chief Investigator has indicated to the HRA that they will, in addition, act as Principal Investigator.

GCP training is not a generic training expectation, in line with the [HRA statement on training expectations](#).

HR Good Practice Resource Pack Expectations

This confirms the HR Good Practice Resource Pack expectations for the study and the pre-engagement checks that should and should not be undertaken

No external staff will access PIC sites to review data or have contact with patients and so no honorary research contracts or letters of access are expected for PIC sites.

If external staff without an existing contractual relationship with the site access recruiting sites to recruit and interview participants letters of access will be expected. Sites to confirm the necessary DBS and Occupational Health checks are in place.

Other Information to Aid Study Set-up

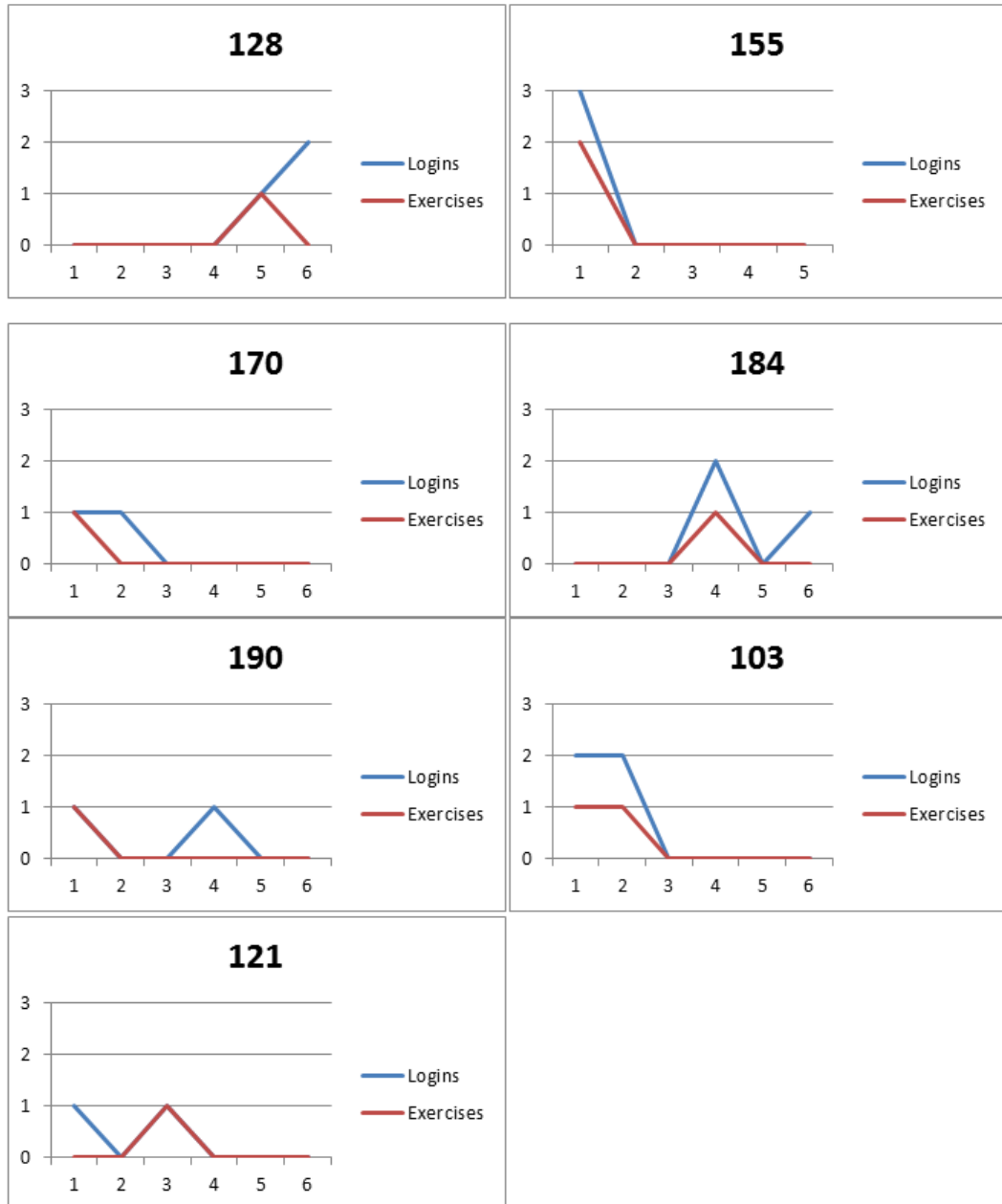
This details any other information that may be helpful to sponsors and participating NHS organisations in England to aid study set-up.

The applicant has indicated that they do not intend to apply for inclusion on the NIHR CRN Portfolio.

Appendix 9. Feasibility study quantitative analysis supporting documents

Graphs of patterns of engagement for participants with intervention logins higher than exercise completion

Disengagement following exercise completion



Repeated engagement with occasional exercise completion

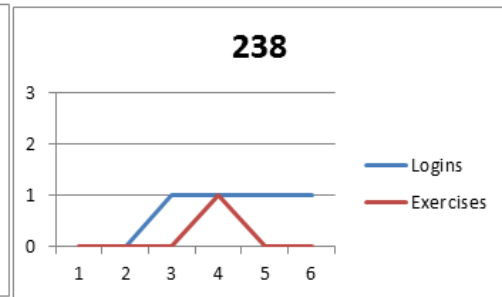
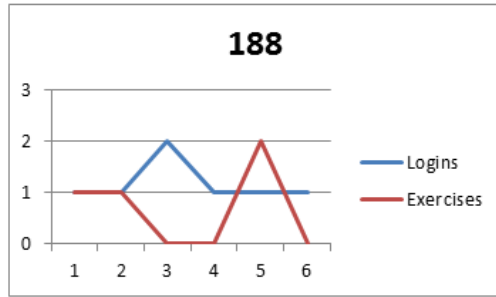
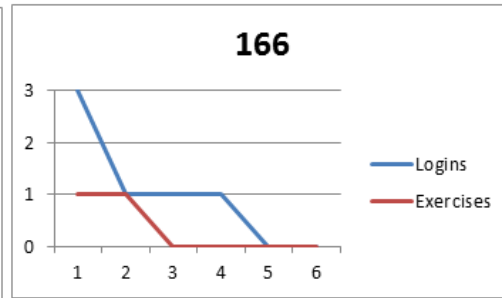
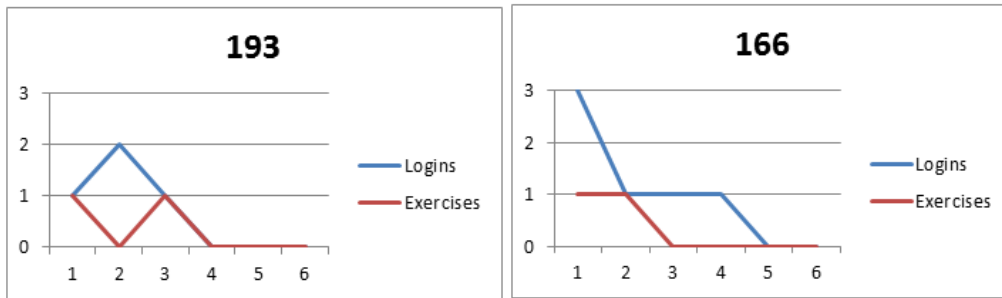
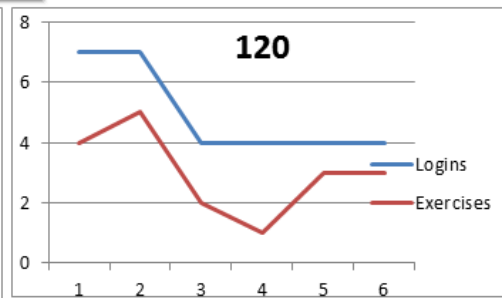
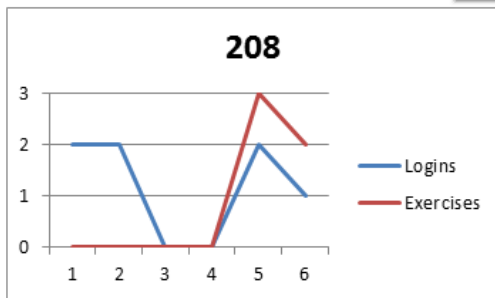
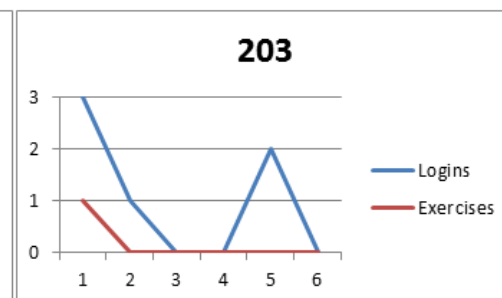
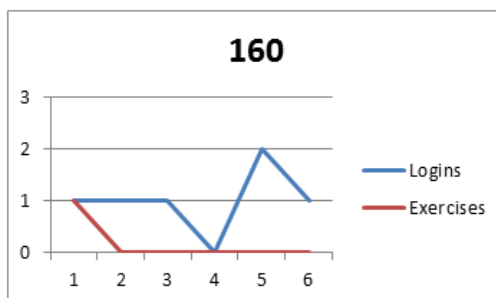
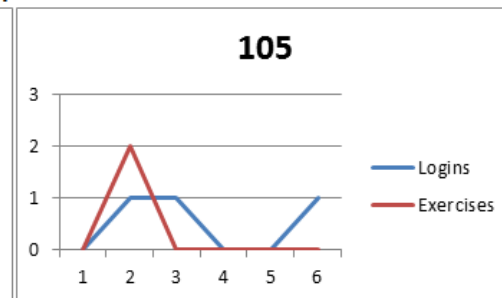
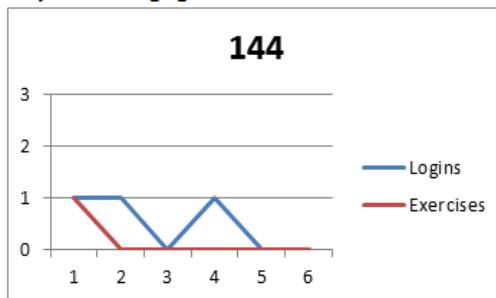


Chart Area



Repeated engagement without exercise completion



Regression (negative binomial) results of predictor variables and exercise logins

Predictor variable	Exponential Beta ¹	95% Confidence Interval	p value
Age	1.00	0.99-1.02	0.71
Gender	1.04	0.65-1.7	0.85
English first language	1.09	0.60-1.97	0.77
Educational qualification	0.86	0.55-1.36	0.52
Employment status	0.83	0.53-1.32	0.43
Current depression treatment	1.03	0.63-1.71	0.88
Years of depression	1.00	0.99-1.02	0.50
Baseline PHQ-9	1.01	0.98-1.05	0.49
Baseline DIALOG	0.89	0.71-1.10	0.28

¹ Exponential Beta is reported as it represents the expected mean difference

Appendix 10. Feasibility study qualitative analysis supporting documents

Topic guide

Opening questions (to be used as a warm up)

- Before taking part in the Uplift study had you used other websites or apps for mental health?
 - What kinds of things did those do?
 - How did you use those?
 - How did you hear about those?
- And how did you come across the Uplift website?
 - How did you hear about it?

1. Barriers / facilitators

- When and how did you use the Uplift website?
 - Probe about location used, time spent, activities practiced offline, what helped
 - Probe about how this fitted in with other things for depression including whether discussed with healthcare professional
- Were there difficulties, or problems with using the Uplift website?
 - Probe about what affected this

2. Helpfulness / unhelpfulness

- What did you find helpful, if anything, about the Uplift website?
 - Probe about positive impact
 - Probe about what would like to use again
 - Probe about recommend to a friend
- What did you find unhelpful, if anything, about the Uplift website?
 - Probe about negative impact
 - What would have liked to see less of

3. Suggestions for improvement

- Was there anything that wasn't in the Uplift website that you would have liked to see?
 - Probe about expectations of what might have been in there (activities)
 - Probe about previously mentioned helpful / unhelpful features
 - Probe about helpful features of other websites/ apps used

Closing questions

So as we come to end of the interview, I'd like to check

- Is there something that we haven't touched upon yet that you would like to share?

N.B. This interview intended to cover the three main areas and probes and follow up questions will be used as appropriate throughout.

Application of theme one of framework to several transcripts

	A : 1.1 Effects of intervention - Managing thoughts and feelings	B : 1.2 Effects of intervention - Behaviour changes	C : 1.3 Effects of intervention - Seeing progression	D : 1.4 Effects of intervention - Rewards for intervention use
1 : UPID 105 (36, F, Sev dep, 3) Uplift logins = Low	<p>Easy to forget achievements that seem small but are major 'sometimes getting out of bed is a big thing for the day' and helpful to be prompted to remember these</p> <p>Good prompts of basic behaviour e.g. eating, walking, talking to someone</p> <p>Rather than trying to do everything remembering to recognise 'mini-achievements' like getting to work every day</p> <p>Useful 'fuel for thinking' about connecting or strengths</p>		Nice to see how long have been 'taking care of mind' based on a daily check-in similar to Drink Aware logging.	
2 : UPID 170 (25, F, Mod dep, 2) Uplift logins = Low	In depression 'headspace' 'another thing not managing to do', felt worse as time went on.		'Wouldn't be against' having regular mood monitoring but thought this was more for research/therapist to monitor impact	Message to recognise activity completion.
3 : UPID 177 (49, F, Mod dep 2) Uplift logins = Low	'Felt really good for that day' after trying Enjoy activity.Uplift Puts you 'in a better frame of mind for life'Enjoy activity 'grounds'. It stops 'downward spiral' and brings you 'into today into the here and now'.Did not understand initial reaction of hating the site 'why I was rejecting it so badly'.Initial negative reaction 'felt like it lasted for days but realistically it didn't.' Response to week 2 email 'go away' .Usually think 'there's nothing good about myself' so was hard to think the	Ongoing use of of 'enjoy' activity.	Could include depression measure used in research survey to measure progress.Make progress visible at top of page.	

	opposite.No self-harm during Uplift six weeks. Unsure if related to intervention.			
4 : UPID 179 (18, F, Mod dep, 1) Uplift logins = Low	If it was something that made feel better or was helpful would have used it more.Rather than getting away from feelings, flagged up how was feeling and made to feel like 'something is wrong me'Doing the good things activity made question why everyone else thinks positively but not me.Felt more upset for a day or two after first use. Then got used to the idea and tried activities 'in head' without visiting website.Doing Good Things changed mindset and felt less upset after doing it.Short-term solution that in the moment makes you feel better but in the long-run will not always help.	Might practice Good Things activity in future if really low and cannot think of anything else.	Easier to complete the good things activity the second time around as was used to it (completed offline).If available to anyone should first include a survey about depression.	Wanted something engaging so would return to website. Not necessarily someone physically replying but website offering suggestions based on how feeling that day.Get nothing from completing the activity, 'no 'well done" or that kind of element. You do the activity and can then do another or close the website and that's it.Getting a point for thinking differently and points add up to make you feel like activity is helping and you want to repeat it.Started activity and did not finish but wanted to be told what you would achieve by finishing activity or finishing the levels. Or 10p donation to charity. Something to make you continue.
5 : UPID 217 (37, M, Mod dep, 2) Uplift logins = Low	Helped to remember the daily pleasant experiences such as morning coffee on balcony.Connecting or meaningfully saying thanks to others brought new feelings and 'making me feel soft inside'Helped bring attention to Good things and good qualities but did not outshine and wasn't enough to change perception of the world.Helped change a bit the focus of thinking and to see more positives 'the world is not just black its many colours'Focusing on little things, coffee, cigarette, walking the dog can help to feel comfortable and get by.Its not easy to 'fight invisible enemy' and change state of mind based on years of collective		Would like some graphs to see what have completed in each section so you can see what else need to work on more, what can improve, what have done in excess.Progress does not have to be on homepage but could be under your account but better displayed.	

