



Public Health
England

Protecting and improving the nation's health

Understanding and addressing inequalities in physical activity

Evidence-based guidance for
commissioners



Contents

Executive Summary.....	1
Glossary	3
Graphs and Figures.....	3
Introduction.....	4
Method	5
Findings.....	7
Realist review - specific protected characteristics considerations	11
Triangulation themes	21
Discussion	26
Research gaps and study limitations	27
Recommendations.....	28
Key recommendations for characteristics	29
Supporting Resources	32
References	33
Annexe A	42
Contents.....	42

Executive Summary

This report presents the findings of a study, conducted at the University of Derby, which aimed to further understand levels of inequalities in physical activity across and within protected characteristic groups. It is hoped that this information will be useful for commissioners, from a variety of sectors, to proactively work towards equal opportunities for all individuals in health and wellbeing.

The study used 3 data sets; a realist review, a quantitative analysis of Sport England's Active Lives Survey (2015-2019), and qualitative research with practitioners delivering physical interventions to communities with protected characteristics. We sought to identify enablers, barriers, and opportunities for increasing physical activity within and across inequality groups. The knowledge obtained has been deliberated in a series of consultations with local commissioners.

The results identified a range of inequalities in individual's physical activity levels from different protected characteristic groups and therefore changes are needed immediately to reverse these. Even before the COVID-19 restrictions, physical inactivity had been increasing and this is particularly the case for women. However, there were statistically significant positive improvements in physical activity for older adults. Other protected characteristics and showed some improvements in activity, however, these were not statistically significant.

Three major themes have been identified for commissioners to consider as actions to reduce inequalities in physical activity:

- enablers, barriers and identifying opportunity
- community consultation, engagement, and partnership
- holistic approach for protected characteristics and intersectionality

The study has highlighted urgent action which is needed to ensure the physical activity workforce is diversely represented. Solutions should be sought in partnership with communities so that individuals can take ownership of what is being delivered. Diversity training which challenges own bias should be mandatory for all workforces.

Opportunities for role models and peer to peer influencing, is important to foster autonomy and empowerment for all communities.

Interventions should be fluid to meet practical, environmental, social, and psychological individual needs. Aligned with understanding of demographic data to ensure intervention design is targeted and in direct consultation with the community to ensure interventions are needs driven. A range of accessible communication tools are needed across languages and literacy in forms such as braille and sign language to enable engagement. Different sectors should work together to enable mutual understandings of

opportunities and best practice should be shared across communities, regions, organisations, and sectors. All sectors have a responsibility to promote and encourage physical activity.

Sharing learning of how interventions have engaged with communities in the development, implementation, and evaluation stage can increase chances of being able to replicate success across different populations and make in-roads on addressing inequalities associated with physical activity.



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Glossary

JSNA - Joint Strategic Needs Assessment

LGBTQ+ - Lesbian, Gay, Bisexual, Transgender and Queer (or Questioning) and others.

PHE – Public Health England

TAPUPAS(M) - Transparency, Accuracy/Authenticity, Purposivity, Utility, Propriety,

Accessibility and Specificity (Modified objectivity)

Graphs and Figures

Graph 1. Physical activity levels by regions with England in 2015/2016 and 2018/2019

Graph 2. Inactivity levels (by percentage) for different religions in 2018/2019

Figure 1. Enablers for physical activity

Introduction

The understanding that health is influenced beyond individual lifestyle, biology or genetics and to wider determinants such as socio-economic, cultural and environmental conditions is fully established [1]. Inequalities in health exist because these wider determinants vary significantly across population groups [2]. These determinants can influence adverse health behaviours in socially specific groups which can then lead to adverse marked differences in life expectancy [3]. Physical inactivity negatively impacts both physical and mental health and it is in the top 10 greatest causes of ill health nationally [4]. An increase in physical activity can also positively impact health, social and economic status, meaning it can have a positive correlation between outcomes and structural inequalities [5].

There is a wide range of evidence-based interventions which aim to increase population based physical activity [6, 7]. However, evidence suggests that many interventions exacerbate inequalities for communities with protected characteristics [8]. Protected characteristics include age, ethnic or national origin, religious belief, sexual orientation, gender reassignment, sex, being pregnant, married, in a civil partnership or has a disability. It is against the law to discriminate against anybody because of these characteristics [9]. It also includes socioeconomic position, occupation, geographic deprivation, and membership of a vulnerable group. It is therefore a duty of public bodies to take action to understand the complexities between protected characteristics, behaviours, wider determinants of health, and positive outcomes. This study compliments the Health Equity Assessment Tool (HEAT) which aims to empower professionals across the health and the wider system landscape to improve the lives with the worst health outcomes, fastest [10].

Purpose and rationale

In the midst of a global pandemic and continued rise in obesity it is feared that the gap in inequalities are being further exacerbated [11, 12]. The intersectionality or multiple interplays of protected characteristics and determinants of health mean we must, now more than ever, do more to identify and engage with those at greatest risk.

Understanding and acting on inequalities in physical activity is a crucial part of a systemic approach to delivering effective interventions which will have multiple benefits to those with the greatest need [13]. Therefore, PHE have commissioned the University of Derby to produce this evidence-based guidance to support commissioners in understanding and acting on inequalities in physical activity in their local areas.

The key aims for this investigation were to:

- further understand levels and inequalities in physical activity across and within protected characteristics and socioeconomics
- identify enablers, barriers, and opportunities for increasing physical activity within and across inequality groups
- recognise evidence-based interventions which address inequalities in physical activity and how to mitigate the risk of interventions exacerbating inequalities
- build on this knowledge through engagement with local frontline practitioners and commissioner

Method

Study Design

This University of Derby Ethics Committee granted ethical approval for the investigation to encompass 3 data sets:

1. A secondary analysis of Sport England's Active Lives Survey (2015 to 2019).
2. A realist review of published literature.
3. A qualitative exploration obtained from practitioners delivering physical activity interventions to communities with protected characteristics.

Quantitative Secondary Analysis

The purpose was to gain a full understanding of the levels of inequalities in physical activity across and within protected characteristics and socioeconomics within England between 2015 to 2019. The Active Lives Survey has been designed and is carried out by Ipsos MORI, an independent survey agency, on behalf of the Arts Council England, Public Health England, and Sport England [14]. This survey aims to collate information as an aid to support the governing agencies decisions on how to invest in organisations and projects which promote healthier behaviours [15].

The Active Lives Survey started in November 2015 and will run for an initial period of 5 years, measuring people aged 14 years and above. The survey is predominately completed online, however it is mixed-mode as paper methods are available for those who do not have internet access or prefer to complete a paper version, additionally telephone completions can take place for those who English is not their first language. Approximately 200,000 respondents per year complete the survey. The participants are selected from England using Royal Mail's Postal Address File and 2 people from the household are invited to take part. The data is categorised into inactive, under 30 mins, fairly active 30 to 149 mins, and active, more than 150 mins. This survey collected data regarding demographic group (age, disability, ethnicity, gender, sexuality,

socioeconomic status), geography and information regarding physical activity and sport participation. It is important to note that not all demographics were recorded in each year and this was reflected in the analysis. A descriptive analysis was performed on the data to identify proportions of individuals in categories of active versus non-active and to identify if there are any interactions between protected characteristics on a national level.

Realist Literature Review

The purpose was to identify enablers, barriers, and opportunities for increasing physical activity within and across inequality groups, through a systematic search of evidence-based 'body of literature', for appraisal, analysis, and synthesis. This literature was used to identify interventions which address inequalities in physical activity and how to mitigate the risk of interventions exacerbating inequalities.

Search strategy:

Databases Medline, CENTRAL, Embase, Web of Science and Grey literature were utilised. Mesh and free text search terms were identified through a synthesise of scoping literature and group specialists. These were used in a variety of combinations and exhaustively explored with Librarian assistance. The abstracts were screened against the inclusion and exclusion criteria. Cited by' article searches, and reference lists of potential articles were also used to source other potential studies. Priority was given to UK sources for interventions delivered in the UK. However, where studies were sparse, international interventions were considered. All publications were limited to peer reviewed, English language and dating 2010 to 2019. The search was conducted between January and February 2019. Cited by' article searches, and reference lists of potential articles will also be used to source other potential studies for inclusion. The numbers excluded and reasons for this will be noted. A total of N=150 for screen for appraisal and N=140 final papers were included in the data extraction (see Annexe A for full search strategy).

Appraisal and data extraction:

The critical appraisal tool TAPUPAS, which refers to the criteria, transparency, accuracy/authenticity, purposively, utility, propriety, accessibility and specificity, was employed to assess the full selection [13]. An additional criterion, modified objectivity (TAPUPASM), for the design of critical realist research was also applied [16]. Quality assessment was checked and verified by 2 authors independently.

The data from the literature was extracted using a deductive approach in relation to the 4 following areas:

1. Target population and approach.
2. Intersectionality of inequalities (complex needs of diverse groups).
3. Measured outcomes and evidenced changes in physical activity.

4. Enablers, barriers and opportunities (see Annexe A for full appraisal and data extraction).

Qualitative Approach

The purpose of this data set was to obtain qualitative experiences and understandings of frontline practitioners engaging with specific protected characteristic communities. Practitioners were purposefully sampled for their professional roles directly supporting communities with lived experience of protected characteristics to be more physically active. Using a pre-determined schedule, a total of 8 interviews were digitally recorded and transcribed verbatim. The interviews took place between February to March 2020 and had a mean duration of 30 minutes. Despite the coronavirus restrictions, all practitioners had been delivering interventions to increase physical activity at the time of the interview. The targeted protected characteristic groups included children, older adults, LGBTQ+, learning disabilities, maternity, Black and Asian minority and/or religious groups, mental health, and communities with a low socioeconomic status. All the transcribed interviews formed a data corpus, which was then analysed using validated thematic coding [17].

Data synthesis

Methodological triangulation was applied to combine findings from all 3 data sets to compare research perspectives and increase validity through verification [18]. The extracted and transcribed data was imported into NVivo 12. All 3 researchers independently categorised and cross referenced the data sets. The researchers then conferred their findings and in agreement produced 3 major themes:

1. Enablers, barriers and identifying opportunity.
2. Community consultation, engagement, and partnership.
3. Holistic approach for protected characteristics and intersectionality.

The importance of using triangulated research methods is further enhanced by the multifaceted nature of health and wellbeing [19]. This approach ensured all crucial elements within the data could be synthesised into practical evidenced based guidance.

Findings

The findings are presented as followed to aid effective use by commissioners:

- key changes in physical activity between protected characteristics observed in the Sport England's Active Lives Survey (2015 to 2019)
- key considerations needed the specific protected characteristics which derived from the realist review

- a triangulation themes which uses the qualitative findings to compliment the literature review and quantitative evidence

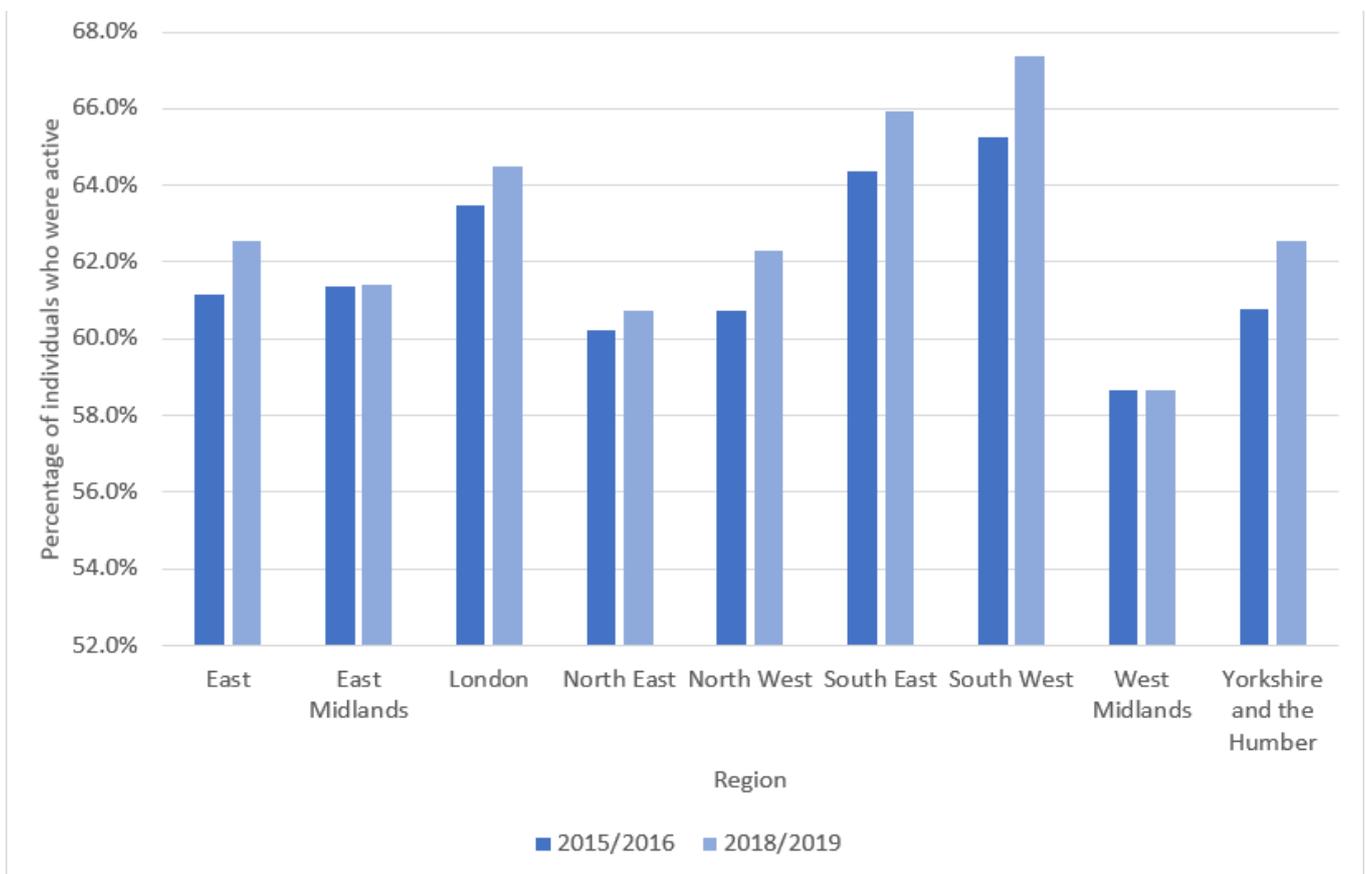
Sport England’s Active Lives Survey (2015 to 2019)

The quantitative analysis highlighted some key changes in physical activity between protected characteristics across the years of 2015/2016 to 2017/2018:

- physical inactivity in adults across different regions of England has fluctuated from 30.8% (2015/2016) to 32.1% (2017/2018)
- inactivity in women has decreased significantly and physical activity has significantly increased for both men and women
- inactivity had decreased and activity increased for both individuals with and without a disability, however, not significantly
- the percentage of adults walking for travel at least 3 days per week has increased for both disabled and not-disabled individuals.

Graph 1. Physical activity levels by regions with England in 2015/2016 and 2018/2019

This graph highlights physical activity levels by regions within England. A significant increase from baseline were seen in the East, North West, South East, South West and Yorshire and the Humber.



Of the individuals living with a disability, physical activity ranged from 15.4% (2015/16) to 16.2% (2017/18) and was always below the average for England (22.7% to 23.1%). Individuals who do not have a disability ranged from 24.9% (2015/16) to 25.3% (2017/18) which was always above the mean for England.

Adults with a disability who cycle for travel at least 3 days a week had decreased from 1.5% in 2015/16 to 1.3% in 2017/18, but stayed similar at 4% for individuals with a disability.

This highlights that cycling in England is rarely used for travel and new schemes/interventions could be designed to increase this, along with appropriate infrastructure.

Higher inactivity levels and lower activity levels were reported for individuals regardless of their sexual preference (straight, gay/lesbian, bisexual and other sexual) between 2017/2018 to 2018/2019.

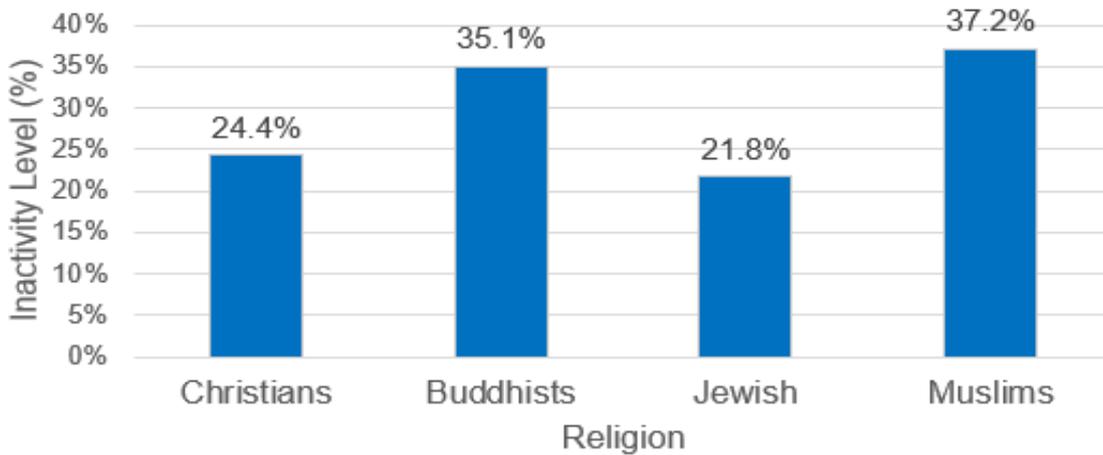
Older adults have significantly decreased their inactivity and increased their activity. There was a positive trend for older adults with 65 to 74 years, 75 to 84 years, and over 85 years of age, as all 3 of these groups significantly decreased their inactivity and increased their activity between 2015/26 and 2018/19.

The data indicated that, despite White British and Chinese individuals having decreased their inactivity, only individuals who were White British had increased their physical activity levels from 62.8% (2015/16) to 64.4.6% (2017/18). The data for inactivity in 2018/19 is 23.2% for White British, 33.3% for Asian (excluding Chinese), 29.5% for Black and 20.3% for Chinese. This highlights the necessity for programmes to be commissioned which work for ethnicities at a local level.

- White British were the only ethnicity to have increased their physical activity levels
- Asian (excluding Chinese) significantly increased their inactivity
- Buddhist individuals have had a significant increase in inactivity

Graph 2. Inactivity levels (by percentage) for different religions in 2018/2019

This graph shows the inactivity levels for different religions for 2018/2019. The most concerning change was for Buddhist individuals, who increased their inactivity levels from 22.3% (2017/18) to 35.1% (2018/19). This highlights the need to prioritise engaging with these religious groups.



Inactivity for individuals with a low socio-economic status has remained significantly low. Comparing individuals socio-economic status indicated that physical activity levels significantly increased for those of a middle (61.6% to 62.5%) and higher status (71% to 72%). However, lower class individuals had decreased their physical activity levels from 54.8% to 54% between 2015/16 and 2018/2019.

For 16 to 24 year-olds, physical inactivity significantly increased from 14.7% to 16.5%, and for 25 to 34 year-olds, 19.6% to 21%.

Physical activity decreased significantly from 76.4% to 74.1% for 16 to 25 years old, and from 68.6% to 67.7% for 25 to 34 year-olds.

This analysis highlights that there are discrepancies in individual’s physical activity levels from different protected characteristic groups and changes are needed imminently to reverse these problems. The data highlights that as a whole, individuals from specific protected groups in England are at a disadvantage in terms of their physical activity levels and inactivity levels. On the whole physical inactivity within England has increased and in particular for women. However, older adults have been shown to have made significant improvements in activity and decreased inactivity. Individuals living with disabilities have made some improvements over the years in increasing their physical activity levels. In England able bodied individuals are participating more in walking which is excellent, however, there is scope to commission interventions which promote cycling more as an activity/transportation.

The findings from Sport England's Active Lives Survey (2015 to 2018) [15] also highlight that in different regions in England, significant increases in physical activity levels have been happening (Graph 1), these increases need replicating throughout England to increase the overall physical activity levels.

Realist review - specific protected characteristics considerations

Children and Adolescents

Children and young people had several identified intersectionality's of inequalities which need to be consider holistically. Note that referral programmes were included in the search, however, interventions within schools settings were not. For the purpose of this study all the interventions assessed focused on 'out of school' settings. Example of successful interventions involved those focused on enjoyment, socialisation and consideration for unstructured, informal activities [20-25].

Technology was also utilised, for example, sharing success stories to foster autonomy [25, 26]. However, more research is needed to understand if access to technology can exacerbate inequalities [23, 27].

Adolescents should be involved in designing interventions, this will mean they can be tailored towards a time, day of the week and duration of their choice and would therefore help engagement [20, 23, 28, 29]. Importantly there was mixed feelings regarding physical activity and competition, some adolescents stated it was currently too competitive and some not competitive enough [24, 30, 31].

Interventions for younger children should also focus on encouraging a positive social environment for physical activity. This could be achieved by encouraging social interactions between parents and children [22, 24, 32].

Partnership working with families is important to develop and maintain relationships between the practitioner and child [33-35]. Families should be shown how to change behaviours and not just told, again encouraging them to help design the interventions will help with engagement [32]. Providing a taster session could help to engage families to participate in new activities and could also stimulate the change to be active [21, 36].

The intervention type should include a diverse range of activities and be as low cost as possible to appeal to a wide range of interests [29, 37]. Peer-to-peer groups could be utilised in a combination of interventions to enhance individual motivation [24]. There should also be a convenient timing of a intervention in close familiar locations for

families [28]. New ways to sustain engagement for interventions targeting girls should include enabling positive role models or peer to peer [38].

For children and adolescents from a low socioeconomic background, removing the barrier of cost without sacrificing quality is important [32]. Commissioners should aim to make opportunities local and accessible with a wide choice of activities, this should be for all children regardless of ethnicity and long-term conditions [33, 39, 40]. Vouchers may enable children of low socio-economic status to access more physical activity opportunities [20].

Examples of intervention found in the literature for Children and Adolescents' include:

- free taster sessions to introduce activity and peer-to-peer support, flexible and incorporating lifestyle approaches
- using technology, social networks for incentives, promote volunteering in programmes
- family based walking, free swimming programmes, incentive vouchers for activities and sporting equipment
- co-production scheme with families and professionals to design and implement interventions

Physical Disability

Commissioners should seek to provide a diverse range of leisure activities as an accessible route to wellbeing for adults and children living with a physical disability [41, 42]. Commissioners should develop an understanding of the individuals for tailoring interventions to their need [43, 44].

Interventions should provide opportunities to experience improvements in exercise skill and overall function ability [41]. They should also allow participants to self-monitor behaviour, problem-solve and action plan [45]. Measuring physical activity in wheelchair users' needs additional consideration [46].

Interventions should have a focus on the social environment and an understanding of the importance of social and peer support [47]. They should create 1-to-1 partnerships and ensure a respectful attitude towards disabilities [43]. Commissioners should ensure interventions are providing psychological support which focus on abilities and performance [47]. There is an importance in supporting self-advocacy and promoting opportunities for free movement [42]. Individuals must have the opportunity to contribute to the design to allow personal and meaningful goals [44].

Interventions need to be welcoming, first impressions are imperative for continuity. It was stated that disabled individuals choose websites regardless of their age to access key information, therefore, online advertisements are recommended. Additionally, medical, health and sports practitioners are a good way for advertising and gaining key

information [48]. Children living with a disability want more understanding and acceptance, more choice of activities, more motivation and encouragement [42, 49, 50].

Examples of intervention found in the literature for a person living with a physical disability include:

- community based individual exercise programmes, home-based telemonitoring programmes
- local activities that can be travelled to with someone, activity-based rehabilitation
- mentors involved with individuals/groups to incentivise participants, individual activities such as joining a gym
- group activities (dance classes, tennis with a friend, football)

Learning Disability

For adults who have a learning disability it was highlighted that long-term adherence might be negatively influenced by repetition of the same tasks [51]. It is therefore important to adapt interventions to fit the individual's unique cognitive challenges. Interventions should be accessible with consideration to location [51]. Where the intervention targets supportive residents, it must ensure that the carers play an important role in facilitating and enabling behaviour change [52-54]. Commissioners must also ensure the residents care providers are educated on the importance of physical activity as this may also act as an enabler [53].

Interventions must pay attention to social determinants and a life-course model is needed [55, 56]. Interventions must be delivered in mainstream services where possible [55]. Individuals with a learning disability wanted to be involved in physical activity that is positive, values their health, mental strength, well-being and ultimately is fun [57]. This can be through intergenerational activity using a buddy system, or advocates for physical activity (older disabled people promoting it to the younger generation).

Interventions must also consider ability, age, lack of opportunities, unaware of sessions and travelling to a session as none of these should be a reason to prevent people with a learning disability from being physically active [56].

The key recommendations for children with a learning disability include considering using a peer-guided model to integrate social and instructional support within the community setting [57]. Commissioners might also want to think about incorporating technology such as computer games to encourage movements but at the same time evaluate the risk of further exclusion through this medium [58].

Examples of intervention found in the literature for a person who has a learning disability include:

- interventions targeting supported residents, carers and care provider involvement

- peer partners which provide reciprocal support during exercise sessions
- physical activity, nutrition and lifestyle combined interventions (local tailoring)
- health promotion whilst walking, using technology (computer games) to encourage activities

LGBTQ+

Commissioners need to address environmental and social factors for the LGBTQ+ community to increase inclusion. While most barriers were societal ones, peer activities might help to facilitate engagement [59-61].

Partnership working with local LGBTQ+ communities to help design interventions and foster a safe environment is key, as the fear of nonacceptance and bullying were 2 key factors that kept LGBTQ+ 'in the closet' [62]. Internal stigma may also be a factor here, with LGBTQ+ individuals potentially carrying a personal fear of acceptance with them into a physical activity setting [63].

Diversity training is crucial to understand different communities. The collective workforce must challenge their own bias and ensure an open and honest dialog [64, 65]. Social support is vital for transgender people and its current lack is a barrier to engaging with physical activity effectively [61, 66]. It has been acknowledging that trans individuals worry about changing rooms, safe spaces, social isolation and they want specific sessions that are devoted to LGBTQ+ groups [60, 67]. For example, devoted swimming sessions which can help to improve mental and physical health and community ownership.

There is and will be unique differences between the lesbian, gay, bisexual, and transgender communities when it comes to physical activity and it is therefore important that all have their voice heard and input into physical activity interventions [68].

Finally, there is little evidence of integrated policy or thinking in the context of physical activity, health, education, and social inclusion [66]. Social attitudes have meant that there has been a reluctance even to recognise that physical activity participation by LGBTQ+ can be problematic [69]. This is therefore an area for change to progress physical activity for LGBTQ+ individuals for the future.

Examples of intervention found in the literature for a person considered part of the LGBTQ+ community include:

- participants paired with a cis-gendered person and physical activity monitored
- intervention of participants engaging in moderate activity which can be incorporated into daily routine
- include facilities close to LGBTQ+ communities- integrated approach

- swimming sessions specifically for trans gender, lowers concerns of changing rooms and provides community ownership

Long Term Conditions

Commissioners should ensure individuals living with a long-term condition understand the holistic benefits of exercise along with resources to help improve knowledge of physical activity for health care professionals [70].

Interventions should offer standardised advice relating to optimal intensities, durations, and types of physical activities [71]. This should provide a baseline from which to individualise interventions. Post-intervention maintenance classes could also help to foster long-term supportive social networks for physical activity [72].

Theoretical underpinnings to interventions might consider self-determination, motivational and behaviour changing theory [73, 74]. Commissioners should aim to offer a choice of various activities, supervised gym sessions, seated aerobics, step classes, circuit training and swimming [75].

Language should be considered in resources encouraging individuals to be more active [70, 76]. Phrases like 'every moment matters', 'it is never too late', 'every step counts' and 'it's good to be active', not homing in on 'physical activity', 'exercise'. These simple messages need to be created in conjunction with individuals, organisations and practitioners and conveyed effectively to encourage individuals with long term conditions to be active. Individuals with long term conditions wanted to be active but they felt many barriers prevented them, for example internal barriers (perceived to be in greater pain (59%)), feeling tired (40%), breathlessness (36%) [19]. This said they felt psychological benefits, for example, increased self-esteem, confidence, improved mood, and motivation were crucial to them. However, the benefits do not address the barriers, consequently messages that claim to improve symptoms do not encourage changes in behaviour and commissioners must consider these in delivery of interventions.

Examples of intervention found in the literature for a person living with a long term condition include:

- community based, motivational approaches with post maintenance to foster social networks
- different intensity interventions, mobility exercises, muscle strength walking, park run
- programmes delivered by professionals in gyms and local leisure facilities
- programmes that refer to effective supportive messages throughout - 'every moment matters' as opposed to 'lets get fit'

Mental Health

Interventions with individuals who suffer mental illness need to consider basic changes to the way leisure is received to ensure actual value in movement. For mental degenerative diseases, the environment where interventions are delivered needs careful consideration [77-80]. For example, using aids for memory and communication, such as wearing of name badges, observation of facial expression and body language, and use of alternative wording to aid. Considerations should also be given to background noise and distractions. A clear demonstration of the exercise should be provided because copying a movement may be easier than following verbal instructions. Commissioners should also consider transport to attend and the key role of the carer in engagement [81].

Interventions which deliver individualised support is key. This could be through optimising engagement in web-based support, which is concise, has chat rooms and allows people to share their experiences of overcoming barriers [82, 83]. However, further evaluation is needed on understanding whether the use of technology further exacerbate inequalities

Interventions should encourage people to engage in enjoyable activities to increase intrinsic motivation [84]. It was also deemed important to have knowledge of the individual's social environment and motivation types when they are about to partake in interventions as this will provide important information on how to support the individual [85].

Social provision and peer support (volunteer buddies) were viewed as key enablers [86, 87]. Individuals wanted to feel autonomy, competence, and connectedness, by focusing on fun activities, support in facilitating learning of new skills, improvements in self-esteem and confidence, promotion of walking, group sessions and less sedentary time [84, 85, 88]. Importantly these ideas were mentioned as lowering isolation/loneliness, which these individuals felt. Finally, the dissemination of a model for good practice and ongoing education to support coach/leader recruitment and development is recommended [89].

Examples of intervention found in the literature for a person living with a mental health condition include:

- interventions include dance, aerobic, resistance training, football, walking and 'power' activities (boxing)
- online tailored individual support and 1-to-1 advice, aimed to increase participation and decrease barriers
- intervention includes a pre-exercise and wellbeing assessment and regular classes
- delivery of physical activity through local MIND groups to improve social support

Ethnic Minority Groups

It is recommended that interventions targeting ethnic minority groups go beyond individual-centred behavioural approaches and include community and ecological level approaches [90, 91]. Commissioners need to gain experience and knowledge of the ethnic minority populations within their community in order to gain a contextual approach [90, 92]. Interventions delivered need crucial consideration for culturally appropriate facilities with peer mentors who could assist those with language barriers [93]. Interventions should provide advice on integrating physical activity in everyday life and provide general social support to promote uptake and subsequent adherence [91, 93].

Undertaking group based physical activity is important and can be facilitated through religious, community, friendship or family networks [94-96]. Identifying and engaging with existing role models within the community will act as an enabler for participation [94]. Social cohesion and social mobility issues have been identified as preventing this targeted group from engaging in physical activity, therefore, individuals need to be actively involved in the design of interventions within their community [97].

Enablers for children and adolescents of an ethnic minority group included play, schooltime and an increase of extra-curricular clubs [98]. The value of activity for teenagers needs to be promoted not just among children but with their teachers, parents, and members of the community [99]. Commissioners need to consider supporting interventions which consider overcoming barriers such as restraints on time and where parents lack the capacity to provide support [98]. A social approach, encouraging the groups to undertake activities with family or friends and with bilingual community peers to facilitate engagement, motivation and support may be effective [100]. The practitioner and commissioner should consider “women only” interventions and look at offering financial assistance if possible [101].

Examples of intervention found in the literature targeting ethnic minority groups:

- combined interventions with healthy lifestyle in consideration for cross cultural needs and facilities
- social support, psychosocial elements, health and integrating physical activity within everyday activities
- health education in partnership with community leaders - promoting the value of exercise
- consideration for the social context of people's lives and the value of the activities offered

Religious Groups

There was an obvious intersectionality between the research targeting religious and ethnic minority groups. Advice includes making links with religious leaders and training them to be involved in delivery of the intervention [102, 103]. Church activity and

religious preference can be an avenue to explore in encouraging people to engage in physical activity [104]. Using these places of worship to deliver the interventions can help engage the population and save on costs [105]. If this is not possible then the intervention needs to be delivered in a setting that is culturally appropriate and considers both male and females and family needs [96, 106].

Engaging in consultation with the target group is crucial to understand enablers and barriers [103, 107]. As some stated social cohesion and social mobility issues influence their ability to engage in physical activity, this however can vary in different local areas and this needs further investigation [104].

Furthermore, a variety of activities have been stated as successful in specific areas, with girls and women participating more in physical activity in religious locations [108]. As women and girls are usually under-represented, further investigation is needed to examine the appeal of religious locations for physical activity to improve this for them [108]. Religious obligations may be a priority; therefore, any intervention design needs to closely consider this.

Examples of intervention found in the literature which targeted specific religious groups:

- weekly educational and social programmes promoted by religious leaders
- interventions contextualised in church-based setting and incorporate physical, spiritual and mental wellbeing
- healthy living centres established with local community members
- church-based and church school-based facilities used for physical activity - dance, aerobics, martial arts, yoga, table tennis

Older Adults

Effective interventions for older adults had lifestyle counselling which may be important for adapting and creating community-based health interventions around retirement years [109, 110]. Commissioners should consider interventions which understand changes in cognitive, physical, emotional, and social resources, as well as changes in design [111]. Interventions should offer variety and should be delivered at a local level [112].

Interventions should also promote behaviours and outcomes that have recreational value and should only target acceptable levels of physical activity to the individual [113, 114]. Health status and enjoyment (or not) of physical activity were deemed crucial; experiencing poor health was more of a motivator to getting physically active [115, 116]. Links with physical activity to mobility and independence was more credible than linking to disease prevention or symptom management [115, 117]. Some older adults felt that physical activity classes should be pitched at ability level, not age, with the ability to socialise and trusted support seen as key [115, 118].

Practitioners are required to gain knowledge from individuals that have gone through lifestyle changes, bereavement, retirement, deteriorating health and downsizing/moving to a new house; whilst involving employees in socialising and physical activity for those still working [119, 120].

A key focus needs to be on reducing inactivity, this could be achieved through support mechanisms (counselling, GP referral schemes, peer support), community and home-based activity, getting the messaging right (positive messages which are visual, fun and can be part of everyday life, not messages of overcoming loneliness and relating to illnesses) and not one-size-fits-all [121]. Therefore, it is important that commissioners think about messaging and how they will promote their physical activity. Further thoughts must also be turned to what older adults state as barriers to being physically active, these are things such as physical (health conditions), psychological (fear, lack of motivation), social (lack of support for physical activity) and practical (cost, time) [121, 122]. They may not feel comfortable in gyms and therefore different and exciting activities should be offered, for example, Tai chi, Nordic walking [121]. Positive instructors who do not doubt their physical capability and role models, were also vital to engaging older adults in physical activity [122].

Examples of intervention found in the literature which targeted older adults:

- creative community-based exercise/health programmes for ability (as opposed to age)
- lifestyle counselling from professionals, counselling and peer support in both community and home-based programmes
- interventions considering behaviour, cognitive, physical, emotional and social resources, nutrition and mobility
- group interventions (chair-based exercises, walking, hill walking, nordic walking, dancercise, tai chi, walking netball, digital)

Socioeconomic

Commissioners should engage with key members in a community-led approach when designing and delivering interventions [123]. Undertaking an analysis of the areas physical, social, services and psychological characteristics is important [124]. The commissioner should gain an understanding of what the population and individual requires, this is key for planning and adherence. Improving accessibility to greenspaces and facilities [125]. The need for support, confidence, and competence in order to take up physical activity was widely expressed, particularly among women [126]. Once people are active, high levels of social interaction, interest and enjoyment are associated with improved levels of retention [126]. Individuals from a lower socioeconomic background were more inactive compared to a higher socioeconomic status [127]. However, active travel (walking and cycling) for lower socioeconomic status individuals was greater than those from a higher socioeconomic status and possibly something to be investigated and promoted more [128]. Equally looking at breaking the barriers in

some activities such as golf and tennis was identified as a challenge which would be welcomed [128].

Examples of intervention found in the literature which targeted communities with a low socio-economic status:

- community level and community led social programmes (dance, walking, clubs)
- interventions which support social connection, confidence and competence
- combination approaches which are flexible, diverse and offer connectivity with people
- physical interventions in accessible urban green spaces, low/no cost, provides childcare

Woman (maternal and gender)

A social marketing model may be a useful framework to designing a community-based intervention to engage pregnant women [129, 130]. Commissioners should seek advice from midwifery care as this will aid psychological and physical benefits for women engaging in physical activities during pregnancy [131]. Commissioners should address comparisons, judgemental opinions and uncomfortable feelings which can occur in activities [132]. Working in partnership with women to design and deliver individualised behaviour change interventions [133].

Commissioners should consider key life stages, circumstances, and relationships of all women. Offer the chance for interventions to aid health and social connection [134]. Consideration should be made for the women you target, do not just talk about 'sport', because for many women, sport has baggage [135].

Making physical activity or movement the 'norm' for women relies on local women of all ages, sizes and faiths not only becoming active, but celebrating it and encouraging others to join in [135]. This can be achieved through positivity, support, and encouragement to drive action. Interventions need to be easy for women access, the physical activity must be at the right time, right place, involve the right welcome, have the right company and them to be aware of the right equipment/clothing [135]. For younger girls, commissioner should seek role models and develop young female leaders to have a significant impact on community group involvement [136].

Community champion volunteers have been cited as influential in engaging woman and girls [135]. Their involvement with recruitment to sessions and support in sessions is crucial and importantly allows the women to feel empowered.

Examples of interventions found in the literature which targets women girls and women in pregnancy:

- community lifestyle programmes and social games which are flexible and peer-led
- clubs for pregnant and post-natal women (aquatic, walking, dance, free treadmill hire)

- use community champion volunteers and girls leadership programmes - local women of all ages, sizes and backgrounds
- girls leadership programmes for sports and health promotion

General volunteering

Volunteers are influential in allowing other individuals to be active, not only do they facilitate physical activity for various individuals, they personally have a 10% higher self-esteem, emotional wellbeing and resilience, with 15% less likely to worry and 87% stating their life has meaning [137]. Importantly research has stated that the longer someone volunteers the greater their wellbeing is, these benefits last even after the individual stops volunteering [137]. Volunteers in physical activity are significantly more likely to feel good about their community and they can positively influence it. It is imperative that volunteers are approached when interventions are being designed for local communities, due to their knowledge of local areas. Economically volunteers are also vital, especially when their contribution to society is addressed in terms of the time they provide, the value of their personal wellbeing, mental and physical benefits to the volunteer and the benefits that every volunteer enables. Every volunteer in sport produces over £16,032 worth of social value to communities in the UK [137]. They are the missing link to a more active UK through their participation (community, trust, sense of purpose) and inspiration. Ideally more investment should be placed into inspiring, recruiting and retaining volunteers to ensure that individuals from protected characteristic groups.

Triangulation themes

The triangulation of the literature and qualitative data sets identified 3 prominent themes:

1. Enablers, barriers and identifying opportunity
2. Community consultation, engagement, and partnership
3. Holistic approach for protected characteristics and intersectionality

The key points for these themes will now be highlighted. Direct quotes from the qualitative findings have been used to illustrate the points made. All names have been replaced with pseudo to protect confidentiality.

Enablers, barriers and identifying opportunity

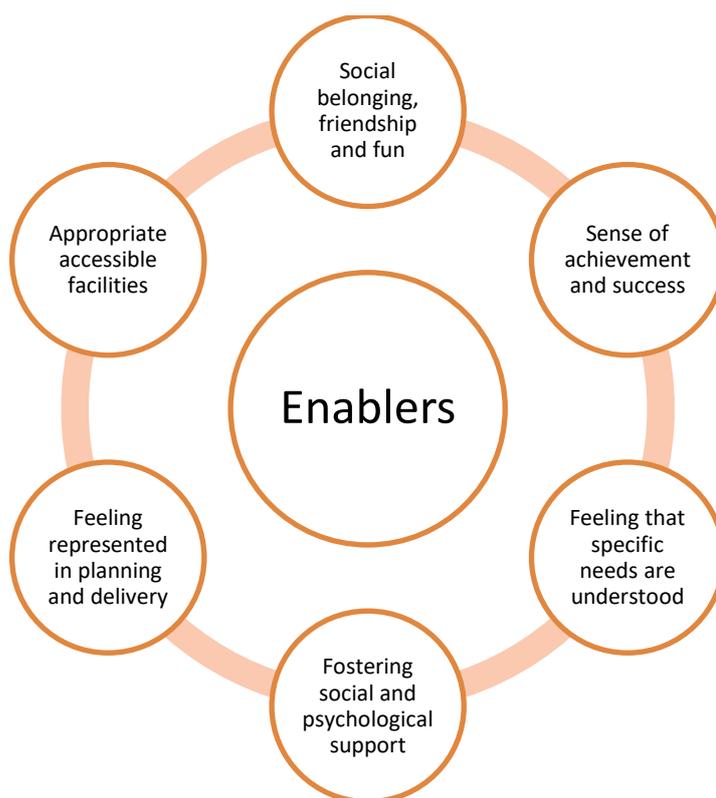
The enablers which emerged are those that have helped to persuade people to participate. Initially in physical activity and then to support sustained participation and include:

- physical activity participation gains should be associated with social belonging, friendship, fun and feeling safe
- interventions which bring a sense of achievement and success can foster sustainability of behaviour
- understanding communities and their specific needs around physical activity and being able to offer appropriate interventions and facilities that meet these
- consideration for the wider contextual issues within the population group, the social context of people's lives, their communities and peers are viewed as imperative
- successful interventions consist of practitioners which foster social and psychological support in addition to any physical activity

These enablers impact on implementation, engagement, and long-term maintenance of behaviours.

Figure 1. Enablers for physical activity

This figure details enablers emerging from the research which help to persuade and sustain participation in physical activity. These range from social outcomes and contextual understanding to psychological support and understanding audience needs.



Barriers to participation across the protected characteristics can be specific to a localised area, individuals, and community groups. Solutions should be sought in consultation with the physical activity participants. Commissioning bodies must ensure that their communities are represented. Diversity training is crucial for all workforces which challenges own bias.

"The sector as a whole has a massive under-representation of diversity. This has an impact on people engaging and that's a sector-wide issue." Amber.

Interventions need to be flexible and should adapt to location and time for accessibility. Intersectionality was evidenced in most interviews with participants identifying that further inequalities and intersectionality were seen, especially between poverty and long-term health conditions and/or disability.

Cost linked to transport or inaccessibility of marketing materials/communications was a key barrier. Solutions to these should be sought in consultation with participants to gain a greater understanding of people's lived experiences of certain protected characteristics and/or intersectionality that may be present.

Opportunities on how to mitigate the risk of interventions exacerbating inequalities include sharing best practice and learnings across communities, regions, organisations, and sectors.

Sharing of best practice and looking at the journey of the intervention from development, implementation, and evaluation stage and not just the outcome. This ensures that the project can be replicated in other areas. Consultation with experts in the field to create resources and education of local staff and service providers can ensure a unified message.

"I think with anything where you are looking at addressing inequalities you're also looking at the journey not just the output... it's actually how did you get there... how have you been able to create X or Y?" Rita.

Additional opportunities include identifying support role models which can be empowered through a targeted intervention. Fostering autonomy and empowerment within communities for sustainable growth. Peer to peer influencing is important due to the mutual benefits. People also gain leadership and communication skills.

"Developing young champions...that's very much looking at how they are influencers and are able to connect with their peers to influence them to be more physically active... that's a sector-wide issue." Aamilah.

People need to have access to physical activity volunteering and leadership pathways, so that there are role models reflective of the diversity in the community that activities are being delivered in.

We need a constructive understanding of people so that we are in a better position to build relationships, understand needs and ultimately deliver interventions that they can own, and which represent them.

**"Unless you've got that diversity, you haven't got the voice for these communities."
Mandip.**

The issues with lack of representable role models was addressed across the data. Resonating and representative role modelling was emphasised as essential for engagement and growth of physical activity interventions within communities. It was conveyed that watching someone of a similar age/ability complete a physical activity skill makes it more manageable, less scary and people are more willing to 'give it a go'.

Community consultation, engagement, and partnership

Partnership and collaboration working were viewed as essential to ensure the running of successful and appropriate interventions for individuals from protected characteristic groups.

Asset and relationship building through training or consultation directly with communities representatives and partners will foster engagement.

Direct engagement with partners/carers/families to support development of confidence, self-esteem, and resilience, both within and outside of the programme will foster sustainability.

Local targeted interventions are deemed more successful when aligned with and considerate of demographic data of that area. A needs-driven, supply-demand approach was deemed as valuable. This was highlighted to ensure decisions are not made with unconscious bias.

Strengthening communities through appropriate settings, groups, and community input is essential. This again is strengthened through the input from volunteers/peer roles, partnership working and collaborations. If these steps are adhered to with regards to system, scale, and sustainability, then they can individually deliver change at a population level. They do require strong leadership and effective partnership building, yet they can drive measurable change bringing the impact of the individual segments together.

Systemic effective place-based planning across sectors can enhance impact by focussing on the 3 'seams' between the segments. If these are focused on to allow a joined-up process, the 'whole' approach and outcome will be greater than the sum of the parts.

All local areas have different reasons for their physical activity inequalities, they have different assets that are on offer, with different solutions readily available, therefore this model does need interpreting appropriately for each specific local area and for each protected characteristic group.

‘If you’re not consulting across sectors and with the local community then how are you going to adapt and streamline your services in order to be more reflective and of value to the local populations.’ Joe.

Holistic approach for protected characteristics and intersectionality

Linked to communications and understanding was the need for accessible advertisement and marketing utilising a range of various vehicles and methods. Most professionals alluded to the need for access to the information that is not just written or word of mouth. This could be achieved via a range of marketing which can include and target people who have numeracy or literacy needs, English as their second language, those that do not leave their homes often, or those new to a local area.

"There needs to be diversity messaging and imagery, and consideration for how those messages reach the communities." Frankie.

The socio-economic status of the local area linked to wider inequalities and people that live in a low socio-economic area will have more barriers to participation in physical activity than those who do not.

Intersectionality is associated with the number of protected characteristics present and more inequalities experienced within their life and this can have a profound effect on individuals. Further inequalities and intersectionality were seen between poverty and long-term health conditions and/or disability. With additional implications of poverty, physical activity may not be high on people’s agendas which in turn affects participation and engagement.

The misunderstanding of what physical activity is, may lead to fears around being seen to be ‘too healthy or capable’ and therefore a loss in benefit payments may result. Issues with the cost of physical activities and the cost of travel to the sessions were discussed in most interviews, with these intertwining factors playing a significant part in sustained attendance and engagement in and through physical activity. If people are accessing specific transport and support, they may not have a high income. The understanding related to impact and sustainability of funding and income for the physical activity providers and instructors is vital.

"The actual session, we try and keep it as cheap as possible, but of course there’s other factors, like, can you afford to get there?" Aamilah.

Discussion

All findings in this report referred to the importance of physical activity towards a person's overall health and the gains linked to wider physical, social, emotional, and mental health outcomes. This said, there are still low levels of physical activity engagement in the UK and stark inequalities related to access to physical activity across our communities. Knowing your audience and meaningful consultation at all levels featured most prominently across all interviews and literature, with professionals acknowledging that understanding of communities is paramount. Commissioners having awareness and involvement in this consultation process will allow for future targeted interventions to promote physical activity and provide a coordinated, whole-system response which can deliver multiple benefits for individuals health from protected characteristic groups.

Enjoyment, fun and belonging were considered valuable enabler in the implementation, engagement, and long-term maintenance of physical activity behaviours. Barriers to participation across the protected characteristic groups involved cost linked to transport or inaccessibility of marketing materials or communications. Intersectionality was evidenced in most interviews with participants identifying that further inequalities and intersectionality were seen especially between poverty and long-term health conditions and/or disability; these enablers and barriers are all factors that a commissioner needs to consider.

The significance of partnership working was viewed as essential to enable more effective outcomes related to physical activity. There was a pronounced advocacy for working in partnership with a wide range of stakeholders for greater advances in addressing inequalities and sustainable participation in physical activity across communities. The sharing of best practice and meaningful partnership working were deemed as important and linked to successful design, delivery, and scalability of physical activity interventions. Physical activity needs to be individually sustainable to become embedded into daily and weekly routines, whilst fostering a connectedness to the local community and environment, hence the importance for commissioners to understand individuals in the protected characteristic groups.

Further work is needed to increase physical activity levels in individuals of all sexual preferences, ethnicity, religion and those of a low socio-economic status, commissioning work on a local level would be advantageous to work with these protected characteristics. The ideal would be to achieve increases in physical activity levels with individuals in all protected groups, especially where inter-sectionality changes can be addressed, to replicate the increases in physical activity that have been occurring in older adults.

This study provides evidence about the ways that targeted physical activity interventions are designed and delivered to overcome inequalities linked to protected characteristic groups. It also highlights the approaches that are adopted in practice to ensure that solution focussed reflection is taken alongside meaningful consultation to ensure interventions are progressing. The findings support the need for a more meaningful validated consultation tool that can be accessed and adapted at a local level to suit a needs-driven approach to physical activity programmes and interventions.

Research gaps and study limitations

In general, there is a lack of literature with regards to targeted interventions, for the purpose of reducing inequalities.

There are also gaps in the evidence and specific areas where further research is needed:

- in relation to marital status and targeted interventions specific to them, despite this being an identified protected characteristic
- of long-term adherence to and impact of physical activity interventions for communities with specific protected characteristics at an individual, group and population level
- which measures the cost-effectiveness of physical activity interventions, targeting communities with specific protected characteristics, against wider health and social care needs, educational attainment, productivity, and sickness absence
- of large-scale population evaluations is needed which measure reasons for non-engagement or drop-out rates in communities with specific protected characteristics
- to understand the effectiveness that new technologies (for example, Virtual Interventions in response to Covid-19) have on engaging communities with protected characteristics in order to increase physical activity
- which consults with the local community and uses targeted interventions that address inter-sectionality inequalities in the local area
- which consults with experts in the field to create resources and educate local staff and service providers to increase physical activity in individuals from protected characteristic groups
- to understand how role models, emerge and can be empowered through a targeted intervention, with the aim of fostering autonomy and empowerment within communities for sustainable growth
- to understand support mechanisms (individualised support, peer support or social provision) are effective in increasing physical activity levels in individuals from protected characteristic groups

While acknowledging these gaps, this report has been able to synthesise the available evidence in order for commissioners to understand some of the key areas which need to be addressed in order to reduce the inequalities identified.

Recommendations

Recommendations for commissioners when considering designing services or creating opportunities:

Appropriate engagement

These included engaging and working in partnership with the targeted population, key community members, volunteers, peers and their wider communities in the design, delivery, and evaluation of the interventions. Community involvement is vital.

Knowledge of the local community

The social context of people's lives and careful, meaningful planning were viewed by individuals from all protected characteristic groups as essential and worthy of consideration when commissioning interventions.

Meaningful consultation

This approach is important in building understanding of true lived experiences and uncovering any hidden barriers, ultimately allowing physical activity interventions to be adapted accordingly.

Community role models

Resonating and representative role modelling was emphasised as essential for engagement and growth of physical activity interventions within communities.

Flexible client centred approach

Commissioners should be mindful that interventions need to be flexible where possible, adapted to individual needs, that staff/practitioners engage with carers, family members, key members of faith groups or community leaders to enable the successful engagement, delivery, and adherence to the intervention.

Providing a diverse choice

The ability to try and offer a diverse range of activities, programmes, and outcomes to match participants needs was considered important.

A holistic approach

Successful interventions foster social and psychological support in addition to any physical activity.

Measuring impact

Focussed on commissioners who should be considering how to evaluate services effectively with an inequalities focus.

Partnership working

Working with a wide range of stakeholders for greater gains against inequalities and enabling sustainable participation in physical activity.

Further key points for consideration are:

- include discussions of inequalities in physical activity in health and wellbeing boards' Joint Strategic Needs Assessment (JSNA) are required
- ensure the workforce reflects the diverse community
- consider the training needs of the local workforce in diversity, which challenges own bias, and will equip them to deliver high-quality physical activity advice and interventions which meet cultural needs
- encourage high-level, executive staff to act as 'equality and diversity in physical activity' leads
- work to ensure equality in physical activity is actively promoted prominently within commissioned healthcare services

Key recommendations for characteristics

Children and adolescents (CA)

Informal focus, supporting self-confidence and independence

Local opportunities, accessible and within existing familiar facilities

Whole family partnership approach or peer to peer engagement

Diverse activities demonstrating desired behaviours (LGBTQ+)

Convenient flexible schedule with variation for time of day and week (PD) (LGBTQ+)

Mastery and meaningful goal setting, autonomy and ownership (PD)

Physical Disability (PD)

Convenient flexible schedule with variation for time of day and week (CA)

Mastery and meaningful goal setting, autonomy, and ownership (CA)

Partnership focus using technology to communicate and foster social communication

Ability to focus opportunities for improvement in skill and function (LD)

Understanding of individual need to adapt a diverse range of activities (LD) (EMG)
Focus on local partnerships and peer mentorship to promote self-advocacy (LGBTQ+)
(EMG)

Learning Disability (LD)

Ability to focus opportunities for improvement in skill and function (PD)
Understanding of individual need to adapt a diverse range of activities (PD)
Carer and care provider engagement to support physical activity in daily living
Peer guided model integrates social instructional support
Interventions accessible and adaptable to individual ability (MH)
Address environmental and social factors to increase inclusion in community services
(MH) (EMG)

LGBTQ+

Diverse activities demonstrating desired behaviours (CA)
Convenient flexible schedule with variation for time of day and week (CA) (PD)
Focus on local partnerships and peer mentorship to promote self-advocacy (PD) (EMG)
Access to gender neutral and women only facilities (EMG) (SE)
Ensure a safe environment and location which is free from discrimination (RG) (SE)
Diversity training essential for leaders to challenge own bias ((RG)

Ethnic Minority Groups (EMG)

Focus on local partnerships and peer mentorship to promote self-advocacy (LGBTQ+)
(PD)
Understanding of individual need to adapt a diverse range of activities (PD) (LD)
Address environmental and social factors to increase inclusion in community services
(LD) (MH)
Development and funding for local leadership programmes (MH) (WM)
Ensure a safe environment and location which is free from discrimination (SE) (WM)
Access to gender neutral and women only facilities (LGBTQ+) (SE)
Mental Health (MH)
Address environmental and social factors to increase inclusion in community services
(LD) (EMG)
Interventions accessible and adaptable to individual ability (LD)
Facilities need improved understanding of need
Interventions are person centred to optimise engagement
Consider psychological and physical benefits for women in pregnancy (WM)
Development and funding for local leadership programmes (EMG) (WM)

Religious Groups (RG)

Engage with places of worship and ensure faith leaders involvement
Diversity training essential for leaders to challenge own bias (LGBTQ+)

Ensure a safe environment and location which is free from discrimination (LGBTQ+) (SE)

Consultation to ensure interventions lead to community sustainability (SE) (OA)

Evaluations over a longer timeframe to ensure community needs are met (OA)

Understanding cultural needs, and make considerations for these

Socioeconomic (SE)

Ensure a safe environment and location which is free from discrimination (LGBTQ+) (RG)

Access to gender neutral and women only facilities (LGBTQ+) (EMG)

Ensure a safe environment and location which is free from discrimination (EMG) (WM)

Use multiple recruitment and advertising strategies to engage and promote interventions (WM)

Accessible green spaces, transport, voucher schemes to enable cohesion (OA) (LTC)

Consultation to ensure interventions lead to community sustainability (RG) (OA)

Women and Maternal (WM)

Ensure a safe environment and location which is free from discrimination (SE) (EMG)

Development and funding for local leadership programmes (MH) (EMG)

Consider psychological and physical benefits for women in pregnancy (MH)

Opportunities that are diverse, cost free and socially supported

Adapted equipment and facilities (LTC)

Use multiple recruitment and advertising strategies to engage and promote interventions (SE) (LTC)

Older Adults (OA)

Evaluations over a longer timeframe to ensure community needs are met (RG)

Consultation to ensure interventions lead to community sustainability (RG) (SE)

Accessible green spaces, transport, voucher schemes to enable cohesion (SE) (LTC)

Resource, cognitive, physical, emotional, and social interventions to promote behaviours (LTC)

Support adherence to physical activity as adults age

Interventions should target acceptable levels of physical activity

Long Term Conditions (LTC)

Accessible green spaces, transport, voucher schemes to enable cohesion (OA) (SE)

Use multiple recruitment and advertising strategies to engage and promote interventions (SE) (WM)

Adapted equipment and facilities (WM)

Theory informed with realistic goals according to ability

Long term interventions with opportunity to understand fluctuating adherence

Resource, cognitive, physical, emotional, and social interventions to promote behaviours (OA)

Supporting Resources

Health Equity Assessment Tool (HEAT)

MIND

We Are Undefeatable campaign

Activity Alliance 10 principles within the support tools

Disability from Activity Alliance

Sport England - Demographic Knowledge

Sport England Sport - Sport for All report

Older adults spotlight insight report

Age UK

Prevention and management of long term conditions

Go Where Women Are insight pack developed as part of the This Girl Can campaign

Place-based approaches for reducing health inequalities report

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Annexe A

This annexe accompanies the report 'Understanding and addressing inequalities in physical activity: Evidence-based guidance for commissioners'.

It contains details of the **Realist Review** search terms, screening, selection criteria, of published academic evidence of relevant research which has informed the guidance. It also contains the full results of the critical appraisal and data extraction.

Contents

Realist review	43
Selection criteria	46
Critical appraisal results	49
Data extraction table.....	60
Full list of evidence	203
References	208

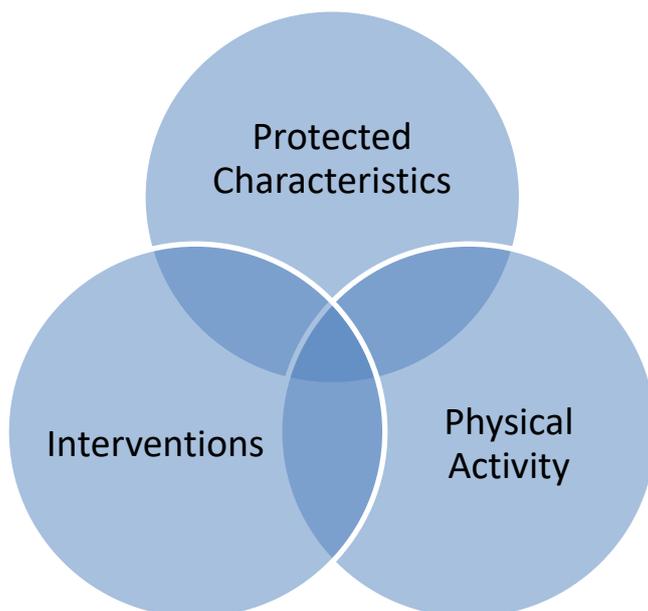
Realist review

Search terms

Free text 'keywords' search terms were identified from the synthesise of the internal reports, evidence reviews and roundtables, on inequalities in physical activity received from Public Health England. LGBTQ+ key terms were informed by [1] and disability was informed by [2]. The Physical activities were informed by the National Heart, Lung, and Blood Institute [3]. These were used in a variety of combinations and exhaustively explored. Boolean Operators will be used to connect and define the relationship between your search terms. For example, 'Protected characteristic' AND 'Physical Activity' AND 'Intervention' (see figure 1).

Figure 1. Combination of categorical search terms

This figure shows a combination of search terms used to find evidence for the realist review using Boolean Operators. This example shows Protected Characteristics **and** Interventions **and** Physical Activity. These terms were identified via previous literature provided by Public Health England and partner organisations.



Protected characteristics or high perspective priority group (full search terms)

Eth*OR 'Eth* OR minorit* OR group' OR 'racial minorit* OR group' OR 'ethnic identit*' OR Black Or Asian OR BME OR BAME OR Relig* Or belief OR faith* OR church OR worship OR spirituality OR communion OR gospel OR ideology OR holy OR orthodox OR god* OR LGB* OR sexual orientation OR lesbian OR gay OR homosexual* OR bisexual* OR queer OR (sexual minority OR orientation) OR trans* OR non-binary OR

sexuality OR Non-cis OR Non-Cisgender OR 'gender fluid OR reassignment' OR dysphoria OR non-binary OR affirming OR pansexual

OR socioeconomic OR 'socioeconomic status OR low' OR deprivation OR income OR 'net income' OR occupation OR wealth OR financ* OR education OR 'place of residence' OR hous* OR disparities OR 'output area' OR poverty OR debt OR hardship OR poor OR impoverished OR 'complex needs' OR Age* OR matur* OR 'old* OR people OR adults' OR elder* OR senior OR 'senior citizen' child* OR infancy OR youth OR young* OR teenagers OR juvenile* OR kid OR minor OR infant OR bab* OR Preg* OR Expect* OR postnatal OR prenatal OR antenatal OR Mother OR childbearing OR 'new mother*' OR matern* OR gender OR wom* OR female OR sex OR marriage OR civil partnership OR wedlock OR partnership OR couple OR matrimony OR 'marital state' OR 'single parent' OR 'teenage mother*' OR Disab* OR amput* OR 'wheelchair user' OR 'learning disab*' OR 'mental health' OR depression, bipolar, anxiety, schizophrenia OR ADHD OR 'Attention deficit hyperactivity disorder' OR ADD OR 'attention deficit disorder' OR 'visual* impaired' OR deaf OR 'hearing impairment' OR 'blind' OR 'partially sighted people' OR epilep* OR 'cerebral palsy' OR 'down OR rett OR asperg* OR angelman OR prader-willi OR turner OR fragile-X syndrome' OR 'fetal alcohol spectrum disorder' OR 'autism' OR tourette* OR 'auditory processing disorder' OR 'profound and multiple learning disability' 'visual perceptual' OR 'visual motor deficit' OR dyspraxia OR memory OR dementia OR dyspraxia OR dyslexia OR arthritis OR asthma

Physical activity (full search terms)

'Physical activity' OR exercise OR fitness OR 'physical exercise' OR sport OR cardiovascular OR Aerobics OR Running OR Strengthening OR Exercise OR 'sedentary time OR behaviour' OR football OR sport OR dance OR walking OR 'water based activity' OR swimming OR tennis OR cycling

Interventions (full search terms)

Intervention OR inequal*OR 'community led OR groups OR engagement' OR clubs OR gyms OR peer support OR role models OR 'partnership OR local OR regional OR business working) OR training OR education OR leadership OR inclusion OR engag* OR public OR 'green spaces' OR 'social return on investments' OR 'time spent' OR language OR 'person AND OR centred health' OR 'social prescribe* OR capital OR resilience' OR 'building resilience' OR 'weight management' OR health* OR health* 'behaviour' OR self- management OR 'behav* change'.

Screening

Inclusion criteria

Setting: National, regional, community, urban or rural, sport centres, public / green spaces, community centres, social prescribing.

Population: Targeting at least 1 or more of the identified protective characteristics or high perspective priority group identified.

Intervention: All which target reducing inequalities in physical activities.

Outcome measures: Increased physical activity, Reduced sedentary behaviour, Health and wellbeing, Increased cardiovascular fitness, Participant experience.

Study design: All types of study design, secondary reviews, systematic reviews, qualitative and quantitative.

Exclusion criteria

Setting: International, inpatient e.g physiotherapy centres, institutions such as school or higher education, university, classroom, prison, workplace, primary care, care home.

Population: The general population, inpatients or in treatment, physiotherapy, students, rehabilitation, recovery, competitor, athletes.

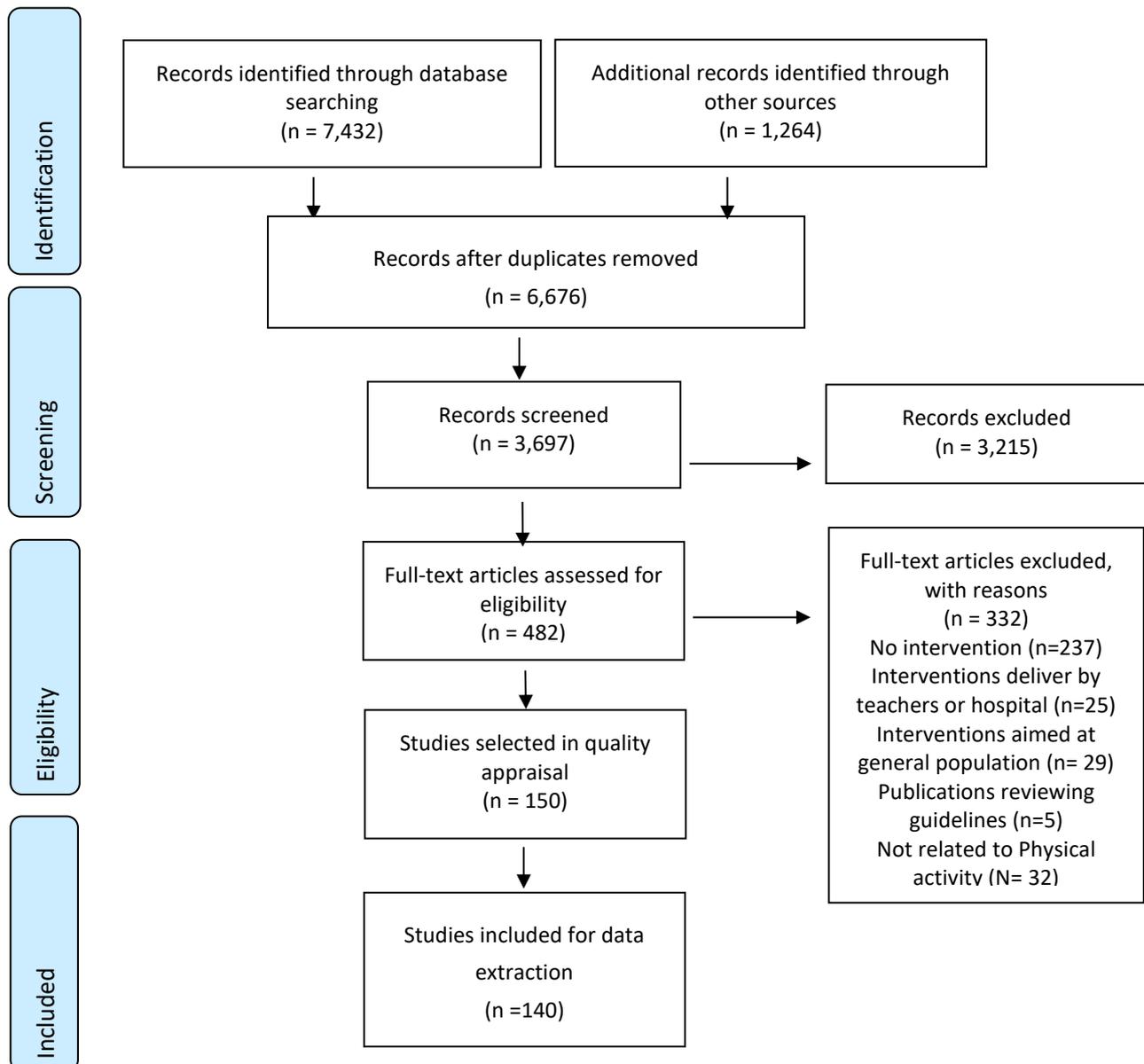
Intervention: Not designed to reduce inequalities (beyond the scope of this review), surgery, post-operative, sports injury.

Outcome measures: Cost of intervention or medical care or setting
Study Design: Descriptive reports, discussion or anecdotal articles.

Selection criteria

Prisma flow diagram

This diagram shows the total number of documents filtered through the selection criteria process for the realist review. Records were identified, screened for duplicates, assessed for eligibility and then included in the final document based on their quality.



TAPUPASM appraisal assessment

Table 1. Selected papers, protected characteristic of population, total screened and final selection after TAPASM applied

This table shows selected papers, protected characteristic of population, total screened and final selection after TAPASM applied.

Characteristic of population selection	Total screened	TAPUPASM applied
Children and adolescents	31	29
Physical Disability	8	7
Learning Disability	8	8
LGBTQ+	12	11
Long Term Conditions	10	10
Mental Health	16	15
Ethnic Minority Groups	13	12
Religious Groups	12	9
Older Adults	15	14
Socioeconomic	13	12
Woman (maternal and gender)	11	12
Total	149	139

Table 2. TAPUPASM criteria

This table outlines the TAPUPASM criteria used for critical appraisal [4].

TAPUPASM	Post-Positivist 'Realism'
Transferability	Is the process of generating knowledge explicit and clear?
Accessibility	Does it meet the needs of those seeking knowledge?
Propriety	Is the research legal and ethical?
Utility	Is the research appropriate to the decision-making setting? Does it provide answers to the practical question?
Purposivity	Does the methods achieve what they claim to achieve? Are they appropriate to achieve the aims and objectives?
Accuracy	Are the claims made based on relevant information?
Specificity	Does the research generated consider and apply to source specific standards?
Modified objectivity	Does the research review a range of evidence and draw the most likely conclusion based on this?

Critical appraisal results

TAPUPAS Results Yes: 1, No: 0 (score 5 or below are not be included in findings)

***ERP (Exercise Referral Programme)**

This table shows how each piece of evidence or literature was critically appraised via the TAPUPASM Appraisal Assessment. A score has been assigned based on their Transferability, Accessibility, Propriety, Utility, Puspositivity, Accuracy, Specificity and Modified Objectivity. A total score of 5 or below means the documents were not included in the final piece of research.

Author (date)		Group	T	A	P	U	P	A	S	M	Total
1a	Christian et al. (2016)	Adolescents - both sexes - economic status	N	Y	Y	Y	Y	Y	Y	Y	7
2a	James et al. (2020)	Adolescents - both sexes - economic status	Y	Y	Y	Y	Y	Y	Y	Y	8
3a	(Powell et al., 2011)	Adolescent Girls	Y	Y	Y	Y	Y	Y	Y	N	7
4a	(Jago et al., 2015)	Adolescent Girls	Y	Y	Y	Y	Y	Y	Y	Y	8
5a	(Jago et al., 2012)	Adolescent Girls	Y	N	Y	Y	Y	Y	N	Y	6
6a	(Edwards et al., 2014)	Adolescents – both sexes	Y	Y	Y	Y	Y	Y	Y	Y	8
7a	(McIntosh et al., 2017)	Adolescents – both sexes	Y	Y	Y	Y	Y	Y	Y	Y	8
8a	(Upton et al., 2013)	Families – ERP	Y	Y	Y	Y	N	Y	Y	Y	7
9a	(Upton et al., 2014)	Families – ERP	Y	Y	Y	Y	Y	Y	Y	Y	8

Author (date)		Group	T	A	P	U	P	A	S	M	Total
10a	(Milton et al., 2011)	Families – ERP	Y	N	Y	Y	Y	N	Y	Y	6
11a	(Audrey et al., 2012)	Child and adolescent – both sexes	Y	N	Y	Y	Y	Y	N	Y	5
12a	(Atkin et al., 2016b)	Child and adolescent – both sexes	Y	Y	Y	Y	N	N	Y	N	5
13a	(Bullough et al., 2015)	Child and adolescent – both sexes	Y	Y	Y	Y	Y	Y	Y	Y	8
14a	(Pringle et al., 2014)	Child and adolescent – both sexes	Y	Y	Y	Y	Y	Y	Y	Y	8
15a	(Garnett et al., 2017)	Child and adolescent – both sexes	N	N	Y	N	Y	N	Y	Y	4
16a	(Khanom et al., 2020)	Families – socioeconomic	Y	Y	Y	Y	Y	Y	N	Y	7
17a	(Bentley et al., 2012)	Children - both sexes – socioeconomic	Y	Y	Y	Y	Y	Y	Y	Y	8
18a	(Bruce et al., 2019)	Child and adolescent (Looked after)	Y	Y	Y	Y	Y	Y	N	Y	7
19a	(Thompson et al., 2010)	Families	Y	Y	Y	Y	Y	Y	Y	Y	8
20a	(Brooke et al., 2014)	Child and adolescent – Both sexes	Y	Y	Y	Y	Y	Y	Y	Y	8
21a	(Brown et al., 2013)	Children - both sexes	Y	Y	Y	Y	Y	Y	Y	Y	8
22a	(Michaela et al., 2018)	Adolescents - both sexes	Y	Y	Y	Y	Y	Y	Y	Y	8
23a	(Frostick et al., 2017)	Adolescents - both sexes – Socioeconomic	Y	Y	Y	Y	Y	Y	Y	Y	8
24a	(Wetton et al., 2013)	Adolescents - Girls	Y	Y	Y	N	N	N	Y	Y	5

Author (date)		Group	T	A	P	U	P	A	S	M	Total
25a	(Sacher et al., 2019)	Families – Referral programme	Y	Y	Y	N	N	N	Y	Y	5
26a	(Sacher et al., 2010)	Families – Referral programme	N	N	Y	Y	Y	N	Y	Y	5
27a	(Fagg et al., 2014)	Families – Referral programme	Y	Y	Y	Y	Y	Y	Y	Y	8
28a	(Miranda et al., 2019b)	Families – Referral programme - Minority group	Y	Y	Y	Y	Y	Y	N	N	6
29a	(Coppins et al., 2011)	Families – Referral programme	Y	Y	Y	Y	Y	Y	Y	Y	8
30a	(Burchett et al., 2017)	Families – Referral programme	Y	Y	Y	Y	Y	Y	Y	Y	8
31a	(Ramdhun, 2011)	Child and Adolescent – Both sexes	N	N	Y	Y	Y	Y	N	N	4
1b	(Coulter et al., 2011)	Adults with a physical disability	Y	Y	Y	Y	Y	Y	N	N	5
2b	(Deans et al., 2012)	Adults with a physical disability	Y	N	Y	Y	N	Y	Y	N	5
3b	(Jaarsma and Smith, 2018)	Adults with a physical disability	Y	Y	Y	Y	Y	Y	Y	Y	8
4b	(Jackson et al., 2019)	Adults with a physical disability	Y	Y	Y	Y	Y	Y	Y	Y	8
5b	(Pekmezaris et al., 2019)	Adults with a physical disability	Y	Y	Y	Y	Y	Y	Y	Y	8
6b	(Powrie et al., 2020)	Children with physical disability	Y	Y	Y	Y	Y	Y	Y	Y	8
7b	(Williams, 2018)	Adults with a physical disability	N	N	Y	N	N	N	N	N	1
8b	(Shirazipour et al., 2018)	Adults with a physical disability	Y	Y	Y	Y	Y	Y	Y	Y	8

Author (date)		Group	T	A	P	U	P	A	S	M	Total
1c	(Bartlo and Klein, 2011)	Adults with a learning disability	Y	Y	Y	Y	N	Y	N	Y	6
2c	(Bergström et al., 2013)	Adults with a learning disability	Y	Y	Y	Y	Y	Y	Y	Y	8
3c	(Stanish et al., 2012)	Adolescents with a learning disability	Y	N	Y	Y	N	Y	Y	Y	6
4c	(Dickinson and Place, 2014)	Children with a learning disability	Y	Y	Y	Y	Y	Y	Y	Y	8
5c	(Heller et al., 2011)	Adults with a learning disability	Y	Y	Y	Y	Y	Y	Y	Y	8
6c	(Krahn and Fox, 2014)	Adults with a learning disability	Y	Y	Y	Y	Y	Y	Y	Y	8
7c	(Lin et al., 2010)	Adolescents with a learning disability	Y	Y	Y	Y	N	Y	Y	N	6
8c	(Mitchell et al., 2018)	Adults with a learning disability	Y	Y	Y	Y	Y	Y	Y	Y	8
1d	(Jones et al., 2017a)	LGBTQ+ –Young people	Y	Y	Y	N	Y	Y	Y	Y	7
2d	(Brittain et al., 2006)	LGBTQ+ - Adults	N	Y	Y	Y	Y	Y	Y	N	5
3d	(Cary et al., 2016)	LGBTQ+ - Adults	Y	Y	Y	N	Y	Y	Y	Y	7
4d	(Brittain and Dinger, 2014)	LGBTQ+ - Adults	Y	N	Y	Y	Y	Y	Y	N	6
5d	(Gorczyński and Brittain, 2016)	LGBTQ+ - Adults	Y	Y	Y	N	Y	Y	Y	Y	7
6d	(Barber and Krane, 2007)	LGBTQ+ Young people	Y	N	Y	Y	Y	N	N	Y	5
7d	(McElroy et al., 2016)	LGBTQ+ - Adults	Y	Y	Y	Y	Y	Y	Y	Y	8

Author (date)		Group	T	A	P	U	P	A	S	M	Total
8d	(Jones et al., 2018)	LGBTQ+ – Adults	N	Y	Y	Y	Y	Y	Y	Y	7
9d	(White et al., 2010)	LGBTQ+ - Young people	Y	Y	Y	Y	Y	Y	N	Y	7
10d	(Muchicko et al., 2014)	LGBTQ+ – Adults	Y	Y	Y	N	Y	Y	Y	Y	7
11d	(Brittain et al., 2008)	LGBTQ+ – Adults	Y	Y	Y	Y	Y	Y	Y	N	7
12d	(Jones et al., 2017b)	LGBTQ+ – Adults	Y	N	Y	N	Y	Y	Y	Y	6
1e	(Pavey et al., 2011)	Adults with a long term condition - ERP	Y	Y	Y	Y	Y	Y	Y	Y	8
2e	(Tobi et al., 2012)	Adults with a long term condition - ERP	Y	Y	Y	Y	Y	Y	Y	Y	8
3e	(Wade et al., 2018)	Adults with a long term condition - ERP	Y	Y	Y	Y	Y	N	Y	Y	7
4e	(Evans et al., 2016a)	Adults with a long term condition	Y	Y	Y	Y	Y	Y	Y	Y	8
5e	(Moore et al., 2011)	Adults with a long term condition - ERP	Y	Y	Y	Y	Y	Y	Y	Y	8
6e	(Quirk and Haake, 2019)	Adults with a long term condition	Y	Y	Y	Y	Y	Y	Y	Y	8
7e	(Nordgren et al., 2015)	Adults with a long term condition ERP	Y	Y	Y	Y	Y	Y	N	N	6
8e	(Denford et al., 2020)	Adolescents with a long term condition - ERP	Y	Y	Y	N	Y	Y	Y	Y	7
9e	(Littlecott et al., 2014)	Adults with a long term condition - ERP	Y	Y	Y	Y	Y	Y	Y	Y	8

Author (date)		Group	T	A	P	U	P	A	S	M	Total
10e	(McGeechan et al., 2018)	Adults with a long term condition - ERP	Y	Y	Y	Y	Y	Y	Y	Y	8
1f	(Innes et al., 2016)	Mental Health – older adults	Y	Y	Y	N	N	Y	Y	Y	6
2f	(Lambert et al., 2017)	Mental Health – adults	Y	Y	Y	Y	Y	Y	Y	Y	8
3f	(Lambert et al., 2018)	Mental Health – adults	Y	Y	Y	Y	Y	Y	Y	Y	8
4f	(Brown et al., 2015)	Mental Health – older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
5f	(Hislop et al., 2015)	Mental Health – older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
6f	(Malthouse and Fox, 2014)	Mental Health – older adults	Y	Y	Y	Y	N	Y	Y	Y	7
7f	(Hargreaves and Pringle, 2019)	Mental Health – adults	Y	N	Y	N	N	Y	Y	Y	5
8f	(Pickett et al., 2017)	Mental Health – adults	Y	Y	Y	Y	Y	Y	Y	N	7
9f	(Rouse et al., 2011)	Mental Health – adults - ERP	Y	Y	Y	N	N	Y	Y	Y	6
10f	(Houston and McGill, 2013)	Mental Health – older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
11f	(Gonçalves et al., 2019)	Mental Health – older adults	Y	N	Y	Y	Y	Y	N	N	5
12f	(Sandra Elaine et al., 2019)	Mental Health –adults	Y	Y	Y	N	Y	Y	Y	Y	7
13f	(Haase et al., 2010)	Mental Health –adults	Y	Y	Y	Y	Y	Y	Y	Y	8

Author (date)		Group	T	A	P	U	P	A	S	M	Total
14f	(Holt et al., 2018)	Mental Health –adults	Y	Y	Y	Y	Y	Y	Y	Y	8
15f	(Benkwitz and Healy, 2019)	Mental Health –adults	Y	Y	Y	Y	Y	Y	N	N	6
16f	(Williams et al., 2019)	Mental Health –adults	Y	Y	Y	N	Y	Y	Y	N	6
1g	(Jing Jing et al., 2016)	Ethnic minority group	Y	Y	Y	Y	Y	Y	Y	Y	8
2g	(Liu et al., 2012)	Ethnic minority group	Y	Y	Y	Y	Y	Y	Y	Y	8
3g	(Horne et al., 2012)	Ethnic minority group – older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
4g	(Ige-Elegbede et al., 2019)	Ethnic minority group – older adults	Y	Y	Y	Y	Y	Y	N	Y	7
5g	(Lee et al., 2018)	Ethnic minority group – Children	Y	Y	Y	Y	Y	N	N	Y	6
6g	(Patel et al., 2016)	Ethnic minority group	Y	Y	Y	Y	Y	N	N	N	5
7g	(Davidson et al., 2013)	Ethnic minority group	Y	Y	Y	Y	Y	Y	Y	Y	8
8g	(Horne et al., 2013)	Ethnic minority group – older adults	Y	Y	Y	Y	Y	Y	N	N	6
9g	(Cross-Bardell et al., 2015)	Ethnic minority group	Y	Y	Y	Y	Y	Y	Y	Y	8
10g	(Siddiqui et al., 2018)	Ethnic minority group	Y	Y	Y	Y	Y	Y	Y	Y	8
11g	(Jepson et al., 2012)	Ethnic minority group	Y	Y	Y	Y	Y	Y	Y	N	7
12g	(Brophy et al., 2011)	Ethnic minority group – adolescents	Y	Y	Y	Y	Y	Y	Y	Y	8

Author (date)		Group	T	A	P	U	P	A	S	M	Total
13g	(Koshoedo et al., 2015)	Ethnic minority group	Y	Y	Y	Y	Y	Y	Y	Y	8
1h	(Bopp et al., 2009)	Religion – ethnic minority group	Y	Y	Y	Y	Y	N	Y	Y	7
2h	(Campbell et al., 2007)	Religion	Y	Y	Y	Y	Y	N	Y	Y	7
3h	(Bopp et al., 2012)	Religion	Y	N	Y	N	Y	Y	Y	Y	6
4h	(Abdulwasi et al., 2018)	Religion – ethnic minority group	Y	N	Y	Y	Y	Y	Y	Y	7
5h	(Resnicow et al., 2002)	Religion – ethnic minority group	Y	Y	Y	N	Y	N	N	Y	5
6h	(Baruth et al., 2008)	Religion – ethnic minority group	N	N	Y	Y	Y	Y	Y	N	5
7h	(Wilcox et al., 2007)	Religion	Y	N	Y	Y	N	Y	Y	Y	6
8h	(Tristão Parra et al., 2018)	Religion	Y	Y	Y	N	Y	Y	Y	Y	7
9h	(Anderson and Pullen, 2013)	Religion – ethnic minority group	Y	N	Y	N	N	Y	Y	Y	5
10h	(Agergaard, 2016)	Religion – adolescents	Y	Y	Y	Y	Y	Y	Y	Y	8
11h	(Merrill and Thygeson, 2001)	Religion	N	N	Y	N	Y	N	Y	Y	4
12h	(Snape and Binks, 2008)	Religion – ethnic minority group	Y	Y	Y	Y	Y	Y	Y	Y	8
1i	(Farrance et al., 2016)	Older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
2i	(Hobbs et al., 2013)	Older adults	Y	Y	Y	Y	Y	Y	Y	Y	8

Author (date)		Group	T	A	P	U	P	A	S	M	Total
3i	(Senkowski et al., 2019)	Older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
4i	(Stockwell et al., 2019)	Older adults	N	N	Y	Y	Y	Y	Y	Y	6
5i	(Gandy et al., 2017)	Older adults	Y	Y	Y	N	Y	Y	N	Y	6
6i	(Evans et al., 2016b)	Older adults - women	Y	Y	Y	Y	N	Y	Y	N	6
7i	(Stefanacci, 2010)	Older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
8i	(Jinks et al., 2016)	Older adults – long term condition	N	Y	Y	Y	N	Y	N	N	4
9i	(Boulton et al., 2019)	Older adults	Y	Y	Y	Y	Y	N	N	Y	6
10i	(Kendrick et al., 2018)	Older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
11i	(Morgan et al., 2019)	Older adults	Y	Y	Y	N	Y	Y	N	N	5
12i	(Killingback et al., 2017)	Older adults	Y	Y	Y	N	Y	Y	N	Y	6
13i	(Olanrewaju et al., 2016)	Older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
14i	(Finnegan et al., 2015)	Older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
15i	(Kidd et al., 2019)	Older adults	N	Y	Y	Y	Y	Y	N	Y	6
16i	(Victor et al., 2016)	Older adults	Y	Y	Y	Y	Y	Y	Y	Y	8
1j	(Walters et al., 2011)	Socioeconomic - adults	Y	N	Y	N	N	Y	Y	Y	5

Author (date)		Group	T	A	P	U	P	A	S	M	Total
2j	(Stickley et al., 2015)	Socioeconomic - adults	Y	Y	Y	Y	Y	Y	Y	N	7
3j	(Solomon et al., 2014)	Socioeconomic - adults	N	Y	Y	Y	Y	Y	N	Y	6
4j	(Cleland et al., 2014)	Socioeconomic - adults	Y	Y	Y	Y	Y	Y	Y	Y	8
5j	(Davey et al., 2011)	Socioeconomic - adults	Y	Y	Y	Y	Y	Y	Y	Y	8
6j	(Seaman et al., 2010)	Socioeconomic - adults	Y	Y	Y	Y	Y	Y	N	Y	7
7j	(Mason et al., 2011)	Socioeconomic - adults	Y	Y	Y	Y	Y	Y	Y	N	7
8j	(Ryan et al., 2010)	Socioeconomic - adults	Y	Y	Y	N	Y	N	Y	Y	6
9j	(Hind et al., 2010)	Socioeconomic - adults	Y	Y	Y	Y	N	Y	Y	Y	7
10j	(Sawyer et al., 2018)	Socioeconomic - adults	Y	Y	Y	Y	Y	Y	N	Y	7
11j	(Hayden et al., 2016)	Socioeconomic – adults – ERP	Y	Y	Y	Y	Y	Y	Y	N	7
12j	(Withall et al., 2011)	Socioeconomic – adults and adolescents	Y	Y	Y	Y	Y	Y	N	N	6
13j	(Fox et al., 2011)	Socioeconomic - adults	Y	Y	Y	Y	Y	Y	Y	Y	8
1k	(Currie et al., 2016)	Pregnant women	Y	Y	Y	Y	Y	Y	Y	Y	8
2k	(Campbell et al., 2011)	Pregnant women	Y	Y	Y	N	Y	Y	N	N	5
3k	(Smith et al., 2010)	Pregnant women	Y	N	Y	Y	N	Y	Y	Y	6

Author (date)		Group	T	A	P	U	P	A	S	M	Total
4k	(Smith et al., 2016)	Pregnant women	Y	Y	Y	Y	Y	Y	Y	Y	8
5k	(Findley et al., 2020)	Pregnant women	Y	Y	Y	Y	Y	Y	Y	Y	8
6k	(Teychenne et al., 2018)	New mothers	Y	Y	Y	Y	Y	Y	Y	N	7
7k	(Evans and Allen-Collinson, 2016)	New mothers	Y	Y	Y	Y	Y	Y	N	N	6
8k	(Morris et al., 2019)	Women	Y	Y	Y	N	Y	Y	Y	N	6
9k	(Taylor et al., 2013)	Women	Y	Y	Y	Y	Y	Y	N	N	6
10k	(Taylor, 2016)	Women - adolescents	Y	Y	Y	Y	Y	Y	Y	Y	8
11k	(West et al., 2019)	Women – older adults	Y	Y	Y	Y	Y	Y	Y	N	7

Data extraction table

Full results summary: data extraction

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
Children and adolescents (31)							
1a	Christian et al. (2016) Active children through incentive vouchers - evaluation (ACTIVE): a mixed-method feasibility study. BMC Public Health	Wales (UK)	Adolescents – both sexes – economic status	Qualitative and process evaluation approach (RE-AIM framework)	Implementation of an activity-promoting voucher scheme in deprived areas - participants received £25 of activity vouchers every month for 6 months for physical activity or sporting equipment	Vouchers encourages friends to socialise through activity, provided opportunities to access local activities. Improvements in weekend moderate-to-vigorous physical activity and reduction in sedentary time – observed in both sexes	Vouchers may enable adolescents of low socio-economic status to access more physical activity opportunities.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2a	James et al. (2020) Active Children Through Individual Vouchers Evaluation: A Mixed-Method RCT. American Journal of Preventive Medicine	Wales (UK)	Adolescents – both sexes – economic status	Mixed method RCT	The Active Children Through Individual Vouchers Evaluation included a provision of activity vouchers (£20 per month), a peer mentoring scheme, and support worker engagement for 12 months.	Improved distance ran (primary outcome). Cardiovascular fitness, cardiovascular health (blood pressure and pulse wave analysis), motivation. Reduction in blood pressure in intervention group.	Adolescents wanted to access more unstructured, informal and social activities in their local area.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3a	Powell et al. (2011) Adolescent girls' and parents' views on recruiting and retaining girls into an after-school dance intervention: implications for extra-curricular physical activity provision. International Journal of Behavioral Nutrition and Physical Activity	UK	Adolescent Girls	Focus Groups	Dance session were delivered afterschool	The girls reported that a taster session would encourage them to participate in an after school programme. Parents reported that encouraging groups of friends to join the programme would increase participation.	Recruitment and retention campaigns that focus on enjoyment, socialisation, mastery, goal setting and relating to other girls may be effective. Dance sessions delivered afterschool could prove to be an effective means of engaging adolescent girls in physical activity.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
4a	Jago et al. (2015) Effect and cost of an after-school dance programme on the physical activity of 11-12 year old girls: The Bristol Girls Dance Project, a school-based cluster randomised controlled trial. International Journal of Behavioral Nutrition & Physical Activity	Bristol, UK	Adolescent Girls	Randomised controlled Trial	Afterschool dance sessions were delivered.	The trial did not show evidence that the programme increased physical activity of the target group.	Attendance was difficult to maintain for the girls. New ways to sustain engagement were said to be needed.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
5a	Jago et al. (2012) Bristol Girls Dance Project Feasibility Trial: outcome and process evaluation results. International Journal of Behavioral Nutrition & Physical Activity	Bristol, UK	Adolescent Girls	Feasibility Cluster Randomised Controlled Trial	Two, 90-minute after school dance classes per week.	The study showed that this intervention can increase physical activity in the target group. Creativity was an important factor to engagement.	Providing incentives facilitates activity and inclusion in the dance classes. Creative tasks could promote autonomy and ownership.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
6a	Edwards et al. (2014) Design requirements for persuasive technologies to motivate physical activity in adolescents: a field study. Behaviour & Information Technology	London, UK	Adolescents – Both sexes	Seven Week Field Study	Using portable technology to monitor activity and allow the users to see the data recorded and to gain rewards.	A social network encouraged friendly competition through technology use, increasing steps through incentives.	Incentives were shown to be effective motivation. Sharing of success would improve feeling of autonomy. Appearance of devices mattered. Barriers to the use of technology (safeguarding and lack of autonomy in children)

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7a	McIntosh et al. (2017) Do E-health interventions improve physical activity in young people: a systematic review. Public Health	Manchester, UK	Adolescents – Both sexes	Systematic Review of Interventions	Using electronic methods such as applications, websites, webinars and e-communications.	Moderate to vigorous physical activity was increased through the use of electronic means to create goals.	Theoretical underpinnings need to be considered for the success of a programme. Length of programme needs consideration. Social support is linked to increases in PA.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8a	Upton et al. (2013) The effectiveness of local child weight management programmes: an audit study. Child: Care, Health & Development	Jersey, UK	Families – Referral Programme	Two Randomised Controlled Trial	A exercise referral scheme for parents and their children age 6-14 years. Two Saturday mornings workshops, 2 physical activity sessions (1hr a week) during term time for a year.	The study a improvements in Primary outcome: a reduction in in BMI SDS. Secondary outcome: Reduction in waist circumference, body fat, lifestyle outcomes Cost of project was calculated (£403 per child)	Children did not participate in the twice-weekly leisure centre-based sessions as much as expected. The taster session may have been sufficient to stimulate the change to be active.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
9a	(Upton et al., 2014) Family-based childhood obesity interventions in the UK: a systematic review of published studies. Community Practitioner	Jersey, UK	Families – Referral Programme	Systematic Review	Evaluate family-based child obesity programmes implemented in community settings in the UK to document the extent of family involvement, with short and long term effectiveness	Significant differences were found with weight related outcomes, there is insufficient evidence to suggest how the inclusion of parents and wider family may impact on the effectiveness of community-based weight management programmes.	Variations in parental involvement were found in these programmes and there was a lack of evidence which links parental involvement and improved weight related outcomes. Programmes need to include longer follow-up periods for long term outcomes

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
10a	Milton et al. (2011) A formative evaluation of a family-based walking intervention- Furness Families Walk4Life. Public Health	Leicestershire, UK	Families – Referral Programme	Qualitative interview based	A family-based walking programme over 4 weeks with families with children age 2 to 11 years.	Awareness of the amount of walking undertaken was increased including positive attitude change.	Partnership working with families and maintain relationships was important. Encourage social interactions between parents and children.
11a	Audrey et al. (2012) Health promotion and the social gradient: The free swimming initiative for children and young people in Bristol. Public Health	Bristol, UK	Child and Adolescent – Both sexes	Secondary analysis of statistical data	A free swimming programme designed to target obesity in young people.	Girls were more likely to access the programme than boys, addressing concerns regarding overall lower activity amongst girls.	Younger people from higher socio-economic background are more likely to access swimming.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
12a	Atkin et al. (2016a) Identifying correlates and determinants of physical activity in youth: How can we advance the field?	Cambridge, UK	Child and Adolescent – Both sexes	Commentary on research methods	Behavioural science used to analyse interventions.	The commentary explored how technology can be used to gain a better understanding of benefits to activity.	Behavioural science can provide effective results. Technology can aid in reporting success.
13a	Bullough et al. (2015) The impact of a community free swimming programme for young people (under 19) in England. Sport Management Review	Sheffield, UK	Child and Adolescent – Both sexes	Data evaluation	A free swimming programme - under 16	The programme saw cardiovascular and mental wellbeing benefits from swimmers initially, however had retention issues as time went on.	Price could remove a barrier to entry for to participate more frequently. Retention barrier

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
14a	Pringle et al. (2014) Initial effects of a free swimming pilot programme on the physical activity levels of young people. Public Health	Plymouth, UK	Child and Adolescent – Both sexes	Study of group participants	A free swimming programme	The trial showed that those leading a more sedentary lifestyle were more likely to remain active and increase physical activity levels.	A free programme could be used to attract people with sedentary lifestyles.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
15a	Garnett et al. (2017) A mixed-methods evaluation of the Move it Move it! before-school incentive-based physical activity programme. Health Education Journal	Burlington, USA	Child and Adolescent -Both sexes	Mixed methods pilot study (surveys and interviews)	A before school incentive-based programme encouraging young people to walk/run laps around the school yard 3 days a week.	The young people that participated focussed better when classes started and felt better for moving in the mornings.	Boys are significantly more likely to take up a walking/running scheme.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
16a	Khanom et al. (2020) Parent recommendations to support physical activity for families with young children: Results of interviews in deprived and affluent communities in South Wales (United Kingdom). Health Expectations	Swansea, UK	Families – socioeconomic	Qualitative Interview based study	Interview of parents in deprived and affluent communities to understand community, societal and environmental factors affecting physical activity.	The study found that people with better access to green spaces and facilities take part in more physical activity. For families of low socioeconomic backgrounds this may require societal changes.	Communication with parents regarding the importance of physical activity is important from the children’s young age. Safe spaces are important for activity to take place. Both parents need to be engaged in designing interventions.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
17a	Bentley et al. (2012) Parents' views on child physical activity and their implications for physical activity parenting interventions: a qualitative study. BMC Pediatrics	Bristol, UK	Children - both sexes – socioeconomic	Qualitative Framework analysis approach from interviews	Investigation to understand the barriers to physical activity with the parents.	Parents reported that understood what good levels of physical activity looked like for a child had greater outcomes in keeping their children physically active.	Support parents to understand levels of physical activity, capacity to support behaviour change, child motivation, self-confidence and independence. Cost is a large barrier to activities for children.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
18a	Bruce et al. (2019) Physical activity engagement among young people living in the care system: A narrative review of the literature. Children and Youth Services Review	Victoria, AUS	Child and Adolescent (Looked after)	Narrative literature review	Physical activity engagement in young people in the care system. No specific intervention mentioned.	Facilitators and barriers to engaging in physical activity include physical, psychological, familial, interpersonal, societal and environmental factors.	Professionals working with people in the care system could attain more engagement by being aware and working with psychological traumas the children may be experiencing.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
19a	Thompson et al. (2010) Physical activity engagement among young people living in the care system: A narrative review of the literature. Children and Youth Services Review	Southampton, UK	Families	A qualitative interview-based study	Telephone interviews with family members to ascertain barriers to physical activity.	Good communication within families can foster a greater involvement in physical activity and reduce sedentary behaviour.	Whole family engagement could increase levels of physical activity. Diverse, low cost activities needed to appeal to wide range of interests. Needs of 2-parent, single-parent families need to be considered.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
20a	Brooke et al. (2014) A Systematic Literature Review with Meta-Analyses of Within- and Between-Day Differences in Objectively Measured Physical Activity in School-Aged Children. Sports Medicine	Cambridge, UK	Child and Adolescent – Both sexes	A systematic literature review with meta-analyses	Accelerometer data from children was reviewed to assess when they were most likely to be active.	Children undertake more vigorous exercise on weekdays, suggesting interventions should be tailored towards this.	Interventions could be tailored towards the time of the day and week to get the most benefit for children.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
21a	Brown et al. (2013) A systematic review of intervention effects on potential mediators of children's physical activity. BMC Public Health	Melbourne , AUS	Children - both sexes	A systematic literature review of randomised control trials	Efficacy of physical activity interventions targeting 5-12 year old children on potential mediators	Social support was determined to be a large factor in the review.	A focus could be made on encouraging a positive social environment for young people to promote physical activity.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
22a	Michaela et al. (2018) Teenage recommendations to improve physical activity for their age group: a qualitative study. BMC Public Health	Swansea, UK	Adolescents - both sexes	Qualitative - Focus groups of people involved in a mixed method randomised control trial	A voucher scheme promoting physical activity	Key themes were identified	Young people need to be involved in designing interventions Removing the barrier of cost without sacrificing quality, make opportunities local and accessible, improve standard of existing facilities, give choose of activities, increase variety. For girls, fun sociable and not competitive.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
23a	Frostick et al. (2017) Well London: Results of a Community Engagement Approach to Improving Health Among Adolescents from Areas of Deprivation in London. Journal of Community Practice	London, UK	Adolescents - both sexes – Socioeconomic	A review of survey data from participants of the Well London programme	A coproduction scheme with service users and professionals to design an intervention focusing on sedentary individuals including undescribed physical activity.	Mental health, Physical activity and unhealthy eating.	Socio-economic status may be less likely to impact involvement from adolescents.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
24a	Wetton et al. (2013) What are the barriers which discourage 15-16 year-old girls from participating in team sports and how can we overcome them? BioMed Research International	Newcastle , UK	Adolescents - Girls	A mixed methods study – Qualitative interview and questionnaire	A survey of girls that looked at the barriers towards participation in physical activity at school.	Prominent themes were identified – Internal factors, existing stereotypes, other hobbies and teachers.	Change attitudes and shifting media focus away from male sport – more opportunities and for girls to have role models

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
25a	Sacher et al. (2010) Randomized controlled trial of the MEND program: a family-based community intervention for childhood obesity. Obesity	US	Families – Referral programme	Evaluation – uncontrolled, repeated measures design	Programme referral scheme – Mind, Exercise, Nutrition, Do it Program (MEND) for low-income, ethnically diverse families	Changes in anthropometric, cardiovascular fitness and psychological outcomes were evaluated for short term improvements. Programme attendance were 73.9% and 88.5% respectively.	A peer effect analysis showed benefits for an individual child were enhanced if peers in the same group enhanced.

26a	<p>Sacher et al. (2019) Addressing childhood obesity in low-income, ethnically diverse families: outcomes and peer effects of MEND 7–13 when delivered at scale in US communities. International Journal of Obesity: Official journal of the International Association for the Study of Obesity</p>	London, UK	Families – Referral programme	Randomised Control Trial	Programme referral scheme – Mind, Exercise, Nutrition, Do it Program (MEND)	<p>Significant improvements measured in BMI, cardiovascular fitness, physical activity, sedentary behaviours and self-esteem at follow up (12 months). Attendance to program (86 %)</p>	<p>A combination of interventions e.g. nutrition, behaviour change sessions and exercise is shown to be effective for weight management.</p>
27a	<p>Fagg et al. (2014) From trial to</p>	London, UK	Families – Referral programme	Evaluation – using prospective	Programme referral scheme – Mind,	<p>Programme referral scheme – Mind, Exercise, Nutrition, Do it</p>	<p>This intervention may widen inequalities.</p>

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
	population: a study of a family-based community intervention for childhood overweight implemented at scale. International Journal of Obesity			service level data	Exercise, Nutrition, Do it Program (MEND)	Program (MEND) but change in outcomes varied by participant, family, neighbourhood and programme factors. Generally, outcomes improved less among children from less advantaged backgrounds and in Asian when compared to White children.	Targeting the family in an intervention can lead to greater success.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
28a	Miranda et al. (2019a) Cultural adaptation of a children's weight management programme: Child Weight management for Ethnically diverse communities (CHANGE) study. BMC Public Health	Birmingham, UK	Families – Referral programme - Ethnic minority group	Qualitative interviews or focus groups	This theoretical programme was informed but participants from the South Asian communities or did not engage or partially engaged in First Steps an evidence informed programme in Birmingham.	Theoretical programme does not measure intervention. Themes came from qualitative interviews/focus groups with South Asian Community. Families discussed barriers such as time spent attending religious classes	Convenient timing of a programme in close familiar location, support for those who do not speak English, the need to focus on health rather than weight, nutritional content that focuses on traditional behaviour change wheel framework and typology of cultural adaption to develop an intervention programme outline.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
29a	Coppins et al. (2011) Effectiveness of a multi-disciplinary family-based programme for treating childhood obesity (the Family Project). European Journal of Clinical Nutrition	Channel Islands, UK	Families – Referral programme	RCT of referral programme for childhood obesity	Obese children age 6-14 years were allocated active family based intervention – 2 half days of family activity, followed by weekly activity during term time followed by a period of body composition monitoring.	Reduction in BMI for children given active intervention followed by body composition monitoring. There were no significant differences between groups for mean percentage attendance at physical activity sessions and attendance to the weekly activity during term time was poor	Intervention effective but attendance was poor. Performing regular body composition monitoring alone was a motivator for some children.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
30a	Burchett et al. (2017) Lifestyle weight management programmes for children: A systematic review using Qualitative Comparative Analysis to identify critical pathways to effectiveness. Preventive Medicine	London, UK	Families – Referral programme	A systematic review using qualitative comparative analysis	Lifestyle weight management programme for children age 0-11 years	Critical pathways to effectiveness 1) showing families how to change board 2) delivering discussion/education sessions 3) delivering child-friendly sessions 4) aiming to change behaviours across the whole family 5) enabling social support for both parents.	Enabler - whole family approach. Ensure the whole family is on board; intervention needs to be engaging and demonstrates behaviour. Families should be shown how to change behaviours and not just told how to.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
31a	Ramdhun (2011) Sport in the park: a school health team use a summer park event to promote physical activity in the community. Community Practitioner	London, UK	Children and young people	Summary of promotional event	A 4-day event in local park to engage children in physical activity and healthy diet choices and to increase visibility of service	Baseline knowledge – healthy choices quiz (small data collection) showed improvements over the 4-day event. No measurement outcome for increase physical activity	Event in park made improve visibility of service. Giving out free smoothies with wellbeing educational device prompted interest in the topic from children and parents.
Physical Disability (8)							

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1b	Coulter et al. (2011) Development and validation of a physical activity monitor for use on a wheelchair. Spinal Cord	Glasgow, UK	Adults with physical disability	Validity was assessed in comparison with video analysis in 14 people with spinal cord injury using their wheelchair on an indoor track and outdoor wheelchair course	Development and validation of physical activity monitor. The system developed consisted of a tri-axial accelerometer placed on the wheel of a wheelchair and an analysis algorithm to interpret the acceleration signals.	This approach can objectively measure wheelchair locomotion position. This could be used to provide information on community accessibility and reintegration.	Measuring physical activity in wheelchairs user's needs additional consideration.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2b	Deans et al. (2012) Motivations and barriers to prosthesis users participation in physical activity, exercise and sport: a review of the literature. Prosthetics & Orthotics International	Glasgow, UK	Adults with physical disability	Literature review	Determine whether post-amputation activity levels match pre-amputation levels	More likely to participate in sport if previously participated in sport. Physical activity may be influenced by psychological function through an increased perception of mastery and body image, lack of confidence	Practitioners should understand the importance of social support and facilitate ways of providing psychological support.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3b	Jaarsma and Smith (2018) Promoting physical activity for disabled people who are ready to become physically active: A systematic review. Psychology of Sport & Exercise	Birmingham, UK	Adults with physical disability	Systematic review	Factors related to physical activity participation for disabled people who intend to be active to determine which interventions effectively improved physical activity	Self-efficacy, intention and weighing pros and cons were positively associated with physical activity, whereas experiencing barriers and severity of impairment were negatively associated.	Self-monitoring of behaviour, barrier identification/problem-solving and action planning might be effective elements of interventions

4b	<p>Jackson et al. (2019) Fostering quality experiences: Qualitative perspectives from program members and providers in a community-based exercise program for adults with physical disabilities. Disability and Health Journal</p>	Leeds, UK	Adults with physical disability	Qualitative semi-structure (focus groups) with participants of the program and program providers	Community-based exercise program (Revved Up) for adults with physical disabilities (Spinal cord injury and multiple sclerosis). Program members attend 2 60min exercise sessions per week at a gym with adapted equipment.	Six interrelated themes autonomy, belongingness, challenge, engagement, mastery, meaning.	Encourage members to contribute to design of plan and allow personally-meaningful goals. Give opportunities to experience improvements in exercise skill and overall function ability. Create 1-to-1 partnership, ensure a respectful attitude, foster peer support and social environment, participants monitor own progress, focus on abilities
5b	<p>Pekmezaris et al. (2019) Participant-</p>	New York, USA	Adults with physical disability	Qualitative semi-structured	Home-based physical activity telemonitoring program	Themes identified – changes in physical disability, gain in	Variations in schedule, diverse activities,

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
	<p>reported priorities and preferences for developing a home-based physical activity telemonitoring program for persons with tetraplegia: a qualitative analysis. Spinal Cord Series and Cases</p>			<p>interviews – purposive sample of adults with tetraplegia</p>		<p>function, identification of psychosocial support systems that facilitate community reintegration after injury.</p>	<p>or exercise included in each class, and optional 2-way video to enable social interactions.</p>

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6b	Powrie et al. (2020) The meaning of leisure to children and young people with significant physical disabilities: Implications for optimising participation. British Journal of Occupational Therapy	Leeds, UK	Children with physical disability	Hermeneutic phenomenological research design.	Meaning of leisure (for implications for optimising participation).	Leisure experience meanings were uniquely constructed for each person, based on preferences, personality and circumstances. Meaningful outcomes include (restoration, protection, construction, reflection and connection).	Providing diverse leisure experiences may provide a powerful and accessible route to wellbeing. – understanding the individual, focusing on the social environment, supporting self-advocacy and promoting opportunities for free movement.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7b	Williams (2018) Exploring narratives of physical activity and disability over time: A novel integrated qualitative methods approach. Psychology of Sport & Exercise	Leeds, UK	Adults with physical disability	Qualitative methods approach – Interviews, timelining and participant observation	Activity-based rehabilitation – community physical activity program for people with neurological conditions. The aim is improving physiological, functional and neurological outcomes and promote independence.	Two example case studies are presented which claim insights in the understand individual experience of programme	Recommends evaluation approach

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8b	Shirazipour et al. (2018) Exploring strategies used to deliver physical activity experiences to Veterans with a physical disability. Disability & Rehabilitation	Halifax, Canada	Adults with physical disability	Qualitative semi structured interviews with programme staff and programme documentation was collected	Physical activity programme for veterans	For themes were identified representing strategies used for delivering physical activity programmes	Foster social connections, challenge participants, tailor programmes and outcomes to match participants needs and include knowledgeable instructors.
Learning Disability (8)							

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1c	Bartlo and Klein (2011) Physical activity benefits and needs in adults with intellectual disabilities: Systematic review of the literature. American journal on intellectual and developmental disabilities	New York, USA	Adults with a learning disability	Systematic Review	Varied physical activity programmes for adults with a learning disability	Critical review revealed moderate to strong evidence that physical activity positively affected balance, muscle strength, and quality of life in individuals with intellectual disability.	Long-term adherence might be influenced by repetition of the same tasks. It is important to adapt interventions to fit the unique physical or cognitive challenges. Programmes need to be accessible or adaptable for people with various types and levels of learning disability Location is important.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2c	Bergström et al. (2013) A multi-component universal intervention to improve diet and physical activity among adults with intellectual disabilities in community residences: a cluster randomised controlled trial. Research in developmental disabilities	Stockholm, Sweden	Adults with a learning disability	Randomised controlled trial	A 3 component intervention based on Social Cognitive Theory. The intervention lasted for 12–16 months and allowed for some local tailoring.	A positive effect was found on physical activity, however, no significant effects were found on BMI, waist circumference, dietary quality, or satisfaction with life	This intervention targeted residential supportive residents and were supported to attend the intervention. This may have acted as an enabler.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3c	Stanish et al. (2012) Efficacy of a peer-guided exercise programme for adolescents with intellectual disability. Journal of Applied Research in Intellectual Disabilities	Boston, USA	Adolescents with a learning disability	Programme Evaluation of a YMCA-based, peer-guided exercise training programme for increasing health-related physical fitness	Peer partners provided reciprocal support during 1-h exercise sessions that included aerobic exercise, weight training and stretching activities. The programme was conducted 2 days /week for 15 weeks and pre- and post-test fitness testing was conducted.	Participants demonstrated significant improvements in physical activity and BMI. Exercise session attendance was high, and participants typically completed all of the prescribed aerobic and stretching exercises, whereas weight training exercises were completed less consistently	This peer-guided model integrates social and instructional support and may encourage exercise participation in community settings

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
4c	Dickinson and Place (2014) A randomised control trial of the impact of a computer-based activity programme upon the fitness of children with autism. Autism Research and Treatment	Newcastle, UK	Children with a learning disability	Randomised control trial	The intervention encouraged participants to use the Nintendo Wii and the software package “Mario and Sonics at the Olympics” in addition to their routine physical education classes	A Eurofit fitness tests showed that the intervention group had made statistically significant improvement on BMI and cardiopulmonary function	Using technology (interactive games) appears to be an effective addition to standard fitness training in order to help children with autism

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5c	Heller et al. (2011) Physical activity and nutrition health promotion interventions: what is working for people with intellectual disabilities? Intellectual and developmental disabilities	Chicago, USA	Adults with a learning disability	Scoping review	Physical Activity and Nutrition Health Promotion Interventions	When combined with a more comprehensive health behaviour education programme incorporating exercise and nutrition information a reduction in weight is seen	Develop programmes that consider learning disability. Lack of carer motivation to promote physical activity is a barrier

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
6c	Krahn and Fox (2014) Health disparities of adults with intellectual disabilities: what do we know? What do we do? Journal of Applied Research in Intellectual Disabilities	Clifton, USA	Adults with a learning disability	Literature review	To determine what is currently known about health disparities of adults with learning disabilities	Themes include strategies to improve data, expanding health service research and improving health indicators, aging and transition, chronic conditions.	Use available data to educate decision makers, attention to social determinants and a life-course model and emphasis on leveraging inclusion in mainstream services where possible.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7c	Lin et al. (2010) Physical activity and its determinants among adolescents with intellectual disabilities. Research in developmental disabilities	Taipei, Taiwan	Adolescents with a learning disability	Programme evaluation	Taiwan Health Promotion Program in Special Education Schools (THPPSES)	Participants main physical activities were walking, sports, and jogging. There were only 8% individuals with ID met the national physical activity recommendation in Taiwan	Caregiver's educational level and preference toward physical activity influence physical activity habit in their daily living.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8c	Mitchell et al. (2018) A qualitative exploration of participants' experiences of taking part in a walking programme: Perceived benefits, barriers, choices and use of intervention resources. Journal of Applied Research in Intellectual Disabilities	Glasgow, UK	Adults with a learning disability	Qualitative thematic analysis	A walking programme (Walk Well)	No significant increase in walking, the participants reported positive experiences of taking part in the programme. Self- monitoring proved difficult for some, particularly reading the daily step count recorded on the pedometer and writing it in the diary.	Carers play an important role in facilitating and preventing behaviour change in adults with intellectual disabilities.
LGBTQ+ (12)							

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1d	(Jones et al., 2017a) Barriers and facilitators of physical activity and sport participation among young transgender adults who are medically transitioning	Nottingham, UK	LGBTQ+ – Transgender – Young people (18-36)	Qualitative interviews analysed with thematic analysis	No direct intervention mentioned, the study explored the barriers involved for young transgender people.	Physical and emotional barriers were explored with participants.	Interventions designed for transgender people should be prepared to address environmental and social factors to increase inclusion.
2d	(Brittain et al., 2006) Barriers to moderate physical activity in adult lesbians	Oklahoma, US	LGBTQ+ - Adult Women	Qualitative focus group methodology	Participants who performed moderate activity (30 mins a week) were interviewed. No specific intervention mentioned.	Social and time responsibilities were considered the main barriers to adult lesbians' involvement in physical activity.	While most barriers were societal ones, peer activities would facilitate engagement.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3d	(Cary et al., 2016) Barriers to physical activity among gay men	Saskatchewan, CA	LGBTQ+ – Adult	From a survey of sufficiently and insufficiently active groups of men	A study looking for factors to inform interventions.	Gay men participate in physical activity on average a third less than heterosexual men	Barriers to physical activity were mostly time based such as travel time, providing an opportunity for intervention.
4d	(Brittain and Dinger, 2014) BE-PALS: An innovative theory-based intervention to promote moderate physical activity among adult lesbians	Colorado, US	LGBTQ+ – Adult Women	Algorithm analyses of quantitative data	Social cognitive theory and group dynamic work.	No measurable benefit was observed from the intervention.	Suggestions are made to focus future interventions on behavioural factors.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
5d	(Gorczynski and Brittain, 2016) Call to action: the need for an LGBT-focused physical activity research strategy	Hampshire , UK	LGBTQ+ – Adult	A literature review	No specific intervention was mentioned.	The mental health benefits of general physical activity were discussed as a supportive tool for lesbian and gay cancer survivors and their caregivers.	The study discussed discrimination being a barrier to physical activity, mainly among women. Diversity training is recommended.
6d	(Barber and Krane, 2007) Creating a positive climate for lesbian, gay, bisexual, and transgender youths	New Hampshire , US	LGBTQ+ – Young people	A literature review	Changing language to create a feeling of safety in physical activity.	Participation is increased when a feeling of safety is fostered.	Ensuring a feeling of safety, having an open dialog and challenging own bias are significant factors in LGBTQ+ young people participating in physical activity.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7d	(McElroy et al., 2016) Healthy weight in lesbian and bisexual women aged 40 and older: an effective intervention in 10 cities using tailored approaches	Missouri, US	LGBTQ+ – Adult Women	Paired comparison method	Tailored interventions weekly meetings of 12- or 16-weeks duration. Focussing on education and physical activity (pedometer use and gym membership).	Participants improved diet, specifically almost cutting sugary drinks out, decreased alcohol consumption by half and over half of the participants increasing physical activity.	Partnering with local LGBT communities was seen as an essential part of a successful program, in order to create a safe environment.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8d	(Jones et al., 2018) The levels and predictors of physical activity engagement within the treatment-seeking transgender population: a matched control study	Nottingham, UK	LGBTQ+ – Transgender people	A qualitative review of survey data from 674 people	Participants were paired with a cis-gendered person and physical activity monitored	Being on hormone treatment was found to be a significant factor in engagement in physical activity. Transgender women were less likely to engage in physical activity.	Access to appropriate hormone treatment contributes to self-esteem leading to greater engagement with physical activity.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
9d	(White et al., 2010) Out on the playing field: Providing quality physical education and recreational opportunities for lesbian, gay, and bisexual youth	San Francisco, US	LGBTQ+ –Young people	Quantitative and qualitative review of data from 442 kinesiology students	A review of the attitudes towards lesbian, gay and bisexual young people by kinesiology students.	Attitudes towards lesbian, gay and bisexual people were mostly negative with little knowledge of sexual health issues, it is suggested this is due to a lack of specific training.	Education towards inclusion for those running physical activity interventions is important to address inequality and attract participants.
10d	(Muchicko et al., 2014) Peer victimization, social support and leisure-time physical activity in transgender and cisgender individuals	Ohio, US	LGBTQ+ – Transgender people	Qualitative review of multiple questionnaires from 7-day period to 6 months	A quantitative questionnaire assessing physical activity and sedentary time behaviours.	Transgender people had significantly lower scores in self-attributes, self-efficacy, social support, and social behaviours. This resulted in a greater BMI and peer victimisation.	Social support is vital for transgender people and its current lack a barrier to engaging with physical activity effectively.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
11d	(Brittain et al., 2008) Perceived barriers to physical activity among adult lesbians	Oklahoma, US	LGBTQ+ – Adult Women	A review of qualitative data from a 15-minute web-based survey	Participants engaging in no more or less than moderate activity of at least 10 minutes a day.	A survey of the individuals found that the top three barriers to engaging in physical activity were: time, existing health issue and needing to change clothes. Additionally, perceptions of being 'out' when in public were specific to lesbians.	Advised is to be aware of 'outness' when engaging lesbians in physical activity programmes.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
12d	(Jones et al., 2017b) Sport and transgender people: a systematic review of the literature relating to sport participation and competitive sport policies	Nottingham, UK	LGBTQ+ – Transgender people	A systematic literature review	A review of how competitive sport is affected if participants are transgender during competition.	The review pointed out themes such as how transgender competitors felt fear of being 'outed' so often did not mix with others. A review of policies found confusion in the area of transitioning athletes, with the potential to cause inequalities.	Recommendations were made for policy makers to have clear and consistent guidelines based on up to date evidence, to aid in the reduction of inequalities for transitioning and transgender athletes.

Long Term Conditions (10)

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1e	Pavey et al. (2011) The clinical effectiveness and cost-effectiveness of exercise referral schemes: a systematic review and economic evaluation. Health Technology Assessment	Exeter, UK	Adults with a long term condition - Exercise referral programme	A systematic review and economic evaluation	Exercise referral programme	Outcomes highlighted uncertainty as to the effectiveness of exercise referral schemes for increasing activity, fitness, or health indicators.	Limited evidence on effectiveness of exercise referral schemes

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2e	Tobi et al. (2012) Who stays, who drops out? Biosocial predictors of longer-term adherence in participants attending an exercise referral scheme in the UK. BMC Public Health	London, UK	Adults with a long term condition - Exercise referral programme	Secondary analysis of programme evaluation	Social, physiological and anthropometric data were extracted from a exercise referral programme	Significant adjusted odds ratios predicting longer-term adherence were found for age and medical condition. For every 10 year increase in age, the odds of people continuing exercise increased.	Longer-term schemes offer the opportunity to understand participants' likelihood of maintaining adherence to exercise. Different types of conditions need to be considered for design.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3e	Wade et al. (2018) Effectiveness of a community based physical activity intervention grounded in motivational interviewing. The Lancet	Essex, UK	Adults with a long term condition - Exercise referral programme	Programme evaluation	Community-based PA programme (Let's Get Moving), which uses motivational interviewing technique.	Increases in vigorous and moderate intensity physical activity, walking, and total at 12 weeks, 6 months, and 12 months. Increases in mental wellbeing at 12 weeks, 6 months, and 12 months, above the English average.	Motivational interviewing could improve intervention outcomes

4e	<p>Evans et al. (2016a) An exploration of the facilitators and barriers for people with osteoarthritis to engage in exercise. International Journal of Therapy & Rehabilitation</p>	Southampton, UK	Adults with a long term condition	Thematic qualitative analysis.	Exploration of the perceptions of representatives with osteoarthritis on the facilitators and barriers for their engagement with exercise	<p>Themes identified: type of exercise; benefits of exercise; drawbacks of exercise; effects of exercise; public information; psychological impact; and social support.</p>	<p>When a person knows and understands the health benefits of exercise, then they are more likely to engage in exercise.</p> <p>For those with osteoarthritis, greater emphasis on physical activity may be more useful to encourage engagement.</p> <p>Simple, clear consistent messages related to exercise for people with osteoarthritis are required from public health bodies</p>
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	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
5e	Moore et al. (2011) Facilitating adherence to physical activity: exercise professionals' experiences of the National Exercise Referral Scheme in Wales. a qualitative study. BMC Public Health	Cardiff, UK	Adults with a long term condition - Exercise referral programme	Qualitative analysis	Thirty-eight exercise professionals involved in the delivery of the National Exercise Referral Scheme took part in a semi-structured telephone interview. Thematic analysis was conducted	Effectively fostering social support networks was identified as a key mechanism for reducing dependence and maintaining changes in the longer term. Support internalisation of motivation amongst less motivated patients deserves attention	Post-scheme maintenance classes, in fostering long-term social networks supportive of physical activity deserve attention.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
6e	Quirk and Haake (2019) How can we get more people with long-term health conditions involved in parkrun? A qualitative study evaluating parkrun's PROVE project. BMC Sports Science, Medicine and Rehabilitation	Sheffield, UK	Adults with a long term condition	Qualitative analysis	PROVE - parkrun appointed volunteer Outreach Ambassadors with a specialist interest in the health condition to ensure parkrun was welcoming, supportive, and inclusive. To engage people living with long-term health conditions in England	Themes identified: PROVE project enabled structured support across health conditions and locations. To create a welcoming, safe space for people with long-term health conditions to participate as walkers, runners, or volunteers.	Be realistic about the potential to bring about change, challenging people's perceptions of parkrun. Barriers were believed to be around communication, demonstrating impact on delivery.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7e	Nordgren et al. (2015) An outsourced health-enhancing physical activity programme for people with rheumatoid arthritis: Exploration of adherence and response. Rheumatology	Stockholm, Sweden	Adults with a long term condition - Exercise referral programme	Observational cohort study	Moderate-intensity physical activity for at least 30 min on most days of the week; (ii) at least 2-weekly 45 min circuit training sessions, including both muscle strength training (and (iii) biweekly support group meetings.	General health perception and several other self-reported disease related, and psychosocial factors improved, while exercise self-efficacy declined. Aerobic capacity, timed standing and grip strength improved, and waist circumference decreased.	The relationships between adherence to a programme components and response were not clear-cut and need attention when delivering.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8e	Denford et al. (2020) Promotion of physical activity for adolescents with cystic fibrosis: a qualitative study of UK multi-disciplinary cystic fibrosis teams. Physiotherapy	Exeter, UK	Adolescents with a long term condition - Exercise referral programme	Qualitative thematic analysis of semi-structure interviews.	Interviews using a semi-structured topic guide, participants were questioned about their practices relating to physical activity (PA) promotion and exercise testing for adolescents.	Participants consistently lacked confidence in their own or others' knowledge to provide basic recommendations to patients and highlighted that PA promotion and support was often overlooked during busy periods.	Standardised advice and training relating to optimal intensities, durations and types of physical activity would provide a baseline from which to individualise advice to each patient and could increase confidence in physical activity.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
9e	Littlecott et al. (2014) Psychosocial mediators of change in physical activity in the Welsh national exercise referral scheme: secondary analysis of a randomised controlled trial. The International Journal of Behavioral Nutrition and Physical Activity	Cardiff, Wales, UK	Adults with a long term condition - Exercise referral programme	Pragmatic randomised controlled trial	National Exercise Referral Scheme (NERS).	Significant intervention effects were found for autonomous motivation and social support for exercise. Self-efficacy proved no significant results found by intervention effect.	Self-determination theory could be used as a framework. Highlights the significance of socio-ecological approaches to developing and analysing behaviour changing interventions.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
10e	McGeechan et al. (2018) Service Evaluation of an Exercise on Referral Scheme for Adults with Existing Health Conditions in the United Kingdom. International Journal of Behavioral Medicine	Durham, UK	Adults with a long term condition - Exercise referral programme	Retrospective analysis of self-reported data.	Structured 12-week exercise intervention, delivered by trained exercise professionals in gyms and local leisure centres.	Significant increases in levels of physical activity were reported. There were significant records of decreases in waist circumference.	Offered choice of various activities, supervised gym sessions, seated aerobics, step classes, circuit training and swimming.
Mental Health (16)							

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1f	Innes et al. (2016) Barriers to leisure participation for people with dementia and their carers: An exploratory analysis of carer and people with dementia's experiences. Dementia	Hertfordshire, UK	Mental Health – Older adults	Exploratory study, thematic analysis – qualitative data from focus groups	Audio taped focus group conversations.	The results highlight that further research is required of how the positive advantages of leisure will affect well-being in periods of active out of home leisure and through self-reflection – how these might be brought back to the home.	Remains a hidden/unseen problem (dementia). Needs an improved understanding of not only the barriers but the actual value that individuals receive where dementia enhancing environments are developed and work to improve/maintain well-being in individuals.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2f	Lambert et al. (2017) Development of a web-based intervention (eMotion) based on behavioural activation to promote physical activity in people with depression. Mental Health and Physical Activity	Devon, UK	Mental Health – adults	Report on the development of an online intervention for adults with depression	The Centre for eHealth Research and Disease Management (CeHReS) roadmap was used to guide the process of adapting an existing face to face intervention based on behavioural activation and physical activity to be used in an online context (eMotion).	Details about the background of the intervention are provided, including the theoretical framework. A detailed description of how eMotion was operationalised is provided.	The interventions offer person-centred support through optimising engagement in web-based support.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3f	Lambert et al. (2018) Web-Based Intervention Using Behavioral Activation and Physical Activity for Adults With Depression (The eMotion Study): Pilot Randomized Controlled Trial. Journal of Medical Internet Research	Devon, UK	Mental Health – adults	Pilot randomized controlled trial of an online intervention for adults with depression	The Centre for eHealth Research and Disease Management (CeHReS) roadmap was used to guide the process of adapting an existing face to face intervention based on behavioural activation and physical activity to be used in an online context (eMotion).	8-item Patient Health Questionnaire depression scale levels were lower for the intervention group than for the control group at 2 months post randomisation.	It was feasible to deliver eMotion in UK communities to inactive populations. eMotion has the potential to be effective and is ready for testing in a full-scale trial. Further work is needed to improve engagement with both the intervention and data collection procedures.

4f	<p>Brown et al. (2015) Development of an exercise intervention to improve cognition in people with mild to moderate dementia: Dementia and Physical Activity (DAPA) Trial, registration ISRCTN32612072. Physiotherapy (United Kingdom)</p>	Oxford, UK	Mental Health – Older adults	Intervention development which targets cognition in people with dementia	<p>Two part intervention 1. supervised which includes a pre-exercise assessment, twice-weekly exercise classes of approximately 1 h duration for 4 months with a target of at least 50 min of unsupervised activity at moderate intensity, to achieve a grand total of 150 min per week. The exercises classes are a combined aerobic and resistance training schedule, delivered in groups of up to 8 participants. 2. Supported (unsupervised) 8 months. Aids to behaviour modification have been incorporated into the intervention.</p>	Not evaluated but informed by theory and literature.	<p>Using aids to memory and communication, such as the wearing of name badges, observation of facial expression and body language, and use of alternative wording to aid understanding will be part of the conduct of the exercise classes. Background noise and distractions will be minimised by having a separate room (not a public gym) for the classes. Demonstration and instruction on how to perform the</p>
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	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
							<p>exercises should be provided. For participants with dyspraxia, copying a movement (mirroring) may be easier than following verbal instructions, and hands-on guidance may be appropriate for some individuals</p>

5f	Hislop et al. (2015) An exploration of physical activity experiences in people with Parkinson's disease. Physiotherapy	Edinburgh, UK	Mental Health – Older adults	Thematic analysis of focus group interviews along with qualitative analysis of questionnaires .	Focus groups of established community groups.	Physical barriers were the main limitation of decreased physical activity in people with Parkinson's. Psychological and environmental issues were also highlighted from the questionnaires. The focus group also highlighted these barriers and after analysis, 4 key themes rose about benefits, mutual encouragement and factors of long-term success.	The results of an exercise group in the community can increase long-term involvement of physical activity in people with Parkinson's disease. Different barriers including transport to attend, need to be highlighted if groups are to be beneficial and sustainable. This project will serve to help the making of further successful exercise groups when barriers are highlighted and resolved.
6f	Malthouse and Fox (2014)	South West	Mental Health – Older adults	Qualitative data –	Group interviews exploring physical	Found that themes of 'self', 'couple' and	An individual couple approach

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
	Exploring experiences of physical activity among people with Alzheimer's disease and their spouse carers: A qualitative study. Physiotherapy.	England, UK		thematic analysis of semi structured interviews	activity levels in Alzheimer patients and their carers.	'others' all link to that affect physical activity for people with Alzheimer's disease but also their carers, and which are related to the increase of dementia.	that highlights the key role of the carer should be used in order for a successful intervention design.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7f	Hargreaves and Pringle (2019) 'Football is pure enjoyment': An exploration of the behaviour change processes which facilitate engagement in football for people with mental health problems. Mental Health and Physical Activity	Leeds, UK	Mental Health – adults	Template analysis of qualitative data from semi-structured interviews.	A professional football club-led mental health intervention	Affective and reflective processes were significant in encouraging individuals to play football.	Individual engagement in football due to the application of Affective Reflective Theory (ART).

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8f	Pickett et al. (2017) 'A forward movement into life': A qualitative study of how, why and when physical activity may benefit depression. Mental Health and Physical Activity	Southampton, UK	Mental Health – adults	Theoretical analysis of qualitative data from semi structured interviews. Participants from a general practice suffering with depression or depressive experiences.	Semi structured interviews (no intervention).	Highlighted that PA helps towards depression however the activity must be enjoyable for it to be beneficial. Self-reinforcing moments with knowing positive physical activity is beneficial.	Physical activities aid depression by people being active and pleasantly engaged in life. Practitioners encourage people to engage in enjoyable activities to increase intrinsic motivation.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
9f	Rouse et al. (2011) In the beginning: Role of autonomy support on the motivation, mental health and intentions of participants entering an exercise referral scheme. Psychology & Health	Birmingham, UK	Mental Health – adults - exercise referral scheme	Regression analysis Structural model to support.	Exercise referral scheme	Effects of autonomy support on mental health and physical activity differed when different support was provided by people (offspring, partner, physician) – offspring weakest effects. Autonomy support and having more autonomous guidelines helped towards better positive mental health and more intentions to participate in physical activity.	Having more knowledge of the individual’s social environment and motivation types when they are about to partake in an exercise programme will provide important information for professions and how to support the individual.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
10f	Houston and McGill (2013) A mixed-methods study into ballet for people living with Parkinson's. Arts & Health: International Journal for Research, Policy & Practice	London, UK	Mental Health – older adults	Semi structured interviews, self-reported diaries and measurements of balance/posture. Mix of qualitative/quantitative data. 24 participants suffering with Parkinson's.	12-week dance project led by English national ballet	100% adherence, highly motivated, valued the classes an integral part of their lives. Improvement in balance and stability.	Research methods should be used to capture the importance of activities for individuals with Parkinson's.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
11f	Gonçalves et al. (2019) Outcomes of physical activity for people living with dementia: qualitative study to inform a Core Outcome Set. Physiotherapy	UK	Mental Health – older adults	Semi structured interviews, thematic analysis of qualitative data. People living with dementia, family carers and professionals.	Development of a Core Outcome Set to evaluate physical activity intervention	10 new outcomes derived from this qualitative study. Explains perceived physical activity outcomes as important for people with dementia.	Important positive impact on health outcomes got the patients living with dementia but also the carers too.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
12f	Sandra Elaine et al. (2019) Promoting the mental and physical wellbeing of people with mental health difficulties through social enterprise. Mental Health Review Journal	Manchester, UK	Mental Health – adults	Exploratory survey, qualitative data – descriptive statistics and thematic analysis on both closed and open-ended questions. Individuals who had attended the wellbeing service	No intervention, survey to those who had been to the service.	Wellbeing service – appeared to be a supportive environment, access to social networks through participation in services/activities. All helped to facilitate positive impact on health and wellbeing due to participation.	Potential role of social enterprise in benefiting promoting of health and wellbeing in individuals with mental health issues.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
13f	Friedrich and Mason (2018) Qualitative evaluation of a football intervention for people with mental health problems in the north east of London. Mental Health and Physical Activity	London, UK	Mental Health – adults	Qualitative data from interviews	Intervention (CTF) however the study looked at experience of intervention through interviews. Participants and stakeholders involved in football intervention Coping Through Football (CTF).	Strong impact of relation experiences – led to increased confidence and social skills. Benefited mostly in individual ways. Highlighted problems with inclusion of females, conflicts and different levels of fitness and play.	Football interventions can act as a treatment and lead to increased physical activity and wellbeing, benefiting mental health issues and social skills. Addresses issues in planning and implementation of interventions.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
14f	Holt et al. (2018) Structured lifestyle education to support weight loss for people with schizophrenia, schizoaffective disorder and first episode psychosis: the STEPWISE RCT. Health Technology Assessment	Southampton, UK	Mental Health – adults	Randomised controlled trial, Participants with first episode psychosis, schizophrenia or schizoaffective disorder.	Intervention groups – 4 2.5-hour group-based lifestyle self-management education sessions 1 week apart, fortnightly support, 3 2.5-hour group booster sessions at 3-monthly intervals. Control – longitudinal survey.	Weight, physical activity, diet intake and biochemical measures – unchanged after 12 months. QoL, psychiatric symptoms and illness perception – not change during trial. Intervention deemed acceptable with 87.2% participants agreed met needs.	Successfully recruited and retained participant adherence. Neither clinically nor cost effective. Further research in how schizophrenia obesity should be managed – programmes need greater resources for schizophrenia, programmes shown more effective in other populations.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
15f	Benkwitz and Healy (2019) 'Think Football': Exploring a football for mental health initiative delivered in the community through the lens of personal and social recovery. Mental Health and Physical Activity	Nottingham, UK	Mental Health – adults	Semi-structured interviews, theoretical approach to the analysis. From football sessions, aged 18-55	'Think Football' – football for mental health initiative. The design of the sessions incorporated a non-football-related workshop style delivery towards the end that would provide information, advice or practical skills that might benefit the participants.	Positive views towards the sessions. Adherence and active, to increase social capital and social identities.	Future research – explore impact of poverty and employment and the role of sport can play on mental health issues

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
16f	Williams et al. (2019) 'Walk this way': Results from a pilot randomised controlled trial of a health coaching intervention to reduce sedentary behaviour and increase physical activity in people with serious mental illness. BMC Psychiatry	London, UK	Mental Health – adults	Randomised control trial. Participants with serious mental illnesses from 3 community mental health teams	17-week Walk This Way (WTW) intervention	Sedentary behaviour decreased; physical activity increased in intervention group. No change to sedentary behaviour and physical activity in control group. Interviewed suggested the participants found the intervention helpful and necessary.	Larger study needed to analyse effectiveness of the intervention to address any changes needed to the programme.
Ethnic Minority Groups (13)							

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1g	Jing Jing et al. (2016) Adapting health promotion interventions for ethnic minority groups: a qualitative study. Health Promotion International	USA, UK Australia, New Zealand and Norway	Ethnic minority group	Qualitative study. Semi structured interviews – coding, thematic analysis, transcripts	smoking cessation, increasing physical activity and healthy eating	Found how ethnicity and demographic variables (age, gender suggest different ways in which individuals interact, interpret and participate in interventions.	Experience and knowledge of ethnic minority populations will help increase the success and adaptations of interventions. Ethnicity helps shape durability and maintenance of interventions.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2g	Liu et al. (2012) Adapting health promotion interventions to meet the needs of ethnic minority groups: mixed-methods evidence synthesis. Health Technology Assessment	UK	Ethnic minority group	Realist Literature Review	Interventions approaches employed to maximise the cross-cultural appropriateness and effectiveness of health promotion interventions for smoking cessation, increasing physical activity and improving healthy eating for African-, Chinese- and South Asian-origin populations	Most effective intervention – pharmacological ones for decreasing smoking however, not much evidence for ethnic minorities. 173 reports of adapted health interventions targeted at US-based African Americans. No studies reported cost-effectiveness.	Extend interventions beyond individual-centred behavioural approaches – include community and ecological level interventions. More contextual considerations are needed.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3g	Horne et al. (2012) Attitudes and beliefs to the uptake and maintenance of physical activity among community-dwelling South Asians aged 60-70 years: A qualitative study. Public Health	Manchester, UK	Ethnic minority group – older adults	Qualitative ethnographic approach – focus groups and interviews.	Physical activity among community-dwelling South Asians aged 60e70 years	Social support, psychosocial elements of activity, health and integrating physical activity within everyday activities were important for adherence to physical activity.	Culturally appropriate facilities, peer mentors who could assist those with language barriers, specific tailored advice, advice on integrating physical activity in everyday life and general social support could promote uptake and subsequent adherence.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
4g	Ige-Elegbede et al. (2019) Barriers and facilitators of physical activity among adults and older adults from Black and Minority Ethnic groups in the UK: A systematic review of qualitative studies. Preventive Medicine Reports	Bristol, UK	Ethnic minority group – older adults	Literature Review - meta-ethnographic approach	Physical activity among adults and older adults from BME communities in the UK	Six key themes emerged from the data: awareness of the links between physical activity and health, interaction and engagement, cultural expectations and social responsibilities, suitable environment for physical activity, religious fatalism and practical challenges.	Importance of engaging local BME residents in the design of physical activity facilities within the community. This will ensure that cultural and social concerns are recognised and properly addressed.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
5g	Lee et al. (2018) Barriers and Facilitators of Physical Activity in Children of a South Asian Ethnicity. Sustainability	Cambridge, UK	Ethnic minority group – children	Qualitative study – interviews with parents from South Asian Community	Exploring physical activity barriers and facilitators and their children’s participation.	Key themes (i) restraints on parents’ and children’s time (ii) the role of the family (iii) situational barriers (iv) physical activity not a priority (v) opportunities to be active and (vi) perception of activity level and health.	Facilitators included play, school-time and extra-curricular clubs Barriers included restraints on time, parents providing limited support and physical activity having a low priority.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
6g	Patel et al. (2016) Barriers and Facilitators to Healthy Lifestyle Changes in Minority Ethnic Populations in the UK: a Narrative Review. Journal of Racial and Ethnic Health Disparities	UK	Ethnic minority group	Narrative Review	The narrative review focused on (i) knowledge and attitudes about diabetes risk; (ii) current behaviours and knowledge about physical activity and diet; and (iii) barriers and facilitators to living a healthier lifestyle.	Knowledge about the levels of physical activity required to gain health benefits was relatively poor and eating patterns varied	Exercise classes held in 'safe' environments such as places of worship.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7g	Davidson et al. (2013) Behavior Change Interventions to Improve the Health of Racial and Ethnic Minority Populations: A Tool Kit of Adaptation Approaches. The Milbank Quarterly	Edinburgh, UK	Ethnic minority group	A mixed-method program - systematic review, qualitative interviews, and a realist synthesis of data	Interventions for smoking cessation, increasing physical activity, and promoting healthy eating	A informative data set of 161 publications and 26 interviews detailing the adaptation of behaviour change interventions.	The study presents a RESET tool used to construct adapted behaviour change interventions. Practitioners answer questions which consider relevance, evidence base, stage of the intervention and what elements of ethnicity are most important. The fluid nature of ethnicity, identity and communities.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8g	Horne et al. (2013) Perceived barriers to initiating and maintaining physical activity among South Asian and White British adults in their 60s living in the United Kingdom: A qualitative study. Ethnicity and Health	Glasgow, UK	Ethnic minority group – older adults	An exploratory qualitative approach was utilised using 15 focus groups and 40 in-depth interviews.	Barriers to initiating and maintaining regular physical activity among UK Indian, Pakistani and White British adults in their 60s	Misunderstandings about the value of exercise in later life. Both groups and genders said that physical activity could exacerbate pre-existing health problems and result in physical harm.	Work with older people from these groups to develop culturally appropriate programmes and address the misunderstandings and misconceptions about the value of exercise in later-life, particularly in those with ongoing health problems.

<p>9g</p>	<p>Cross-Bardell et al. (2015) Perspectives on enhancing physical activity and diet for health promotion among at-risk urban UK South Asian communities: a qualitative study. BMJ open</p>	<p>Nottingham, UK</p>	<p>Ethnic minority group</p>	<p>Qualitative study using semi structured 1-to-1 and family group interviews with thematic analysis of data.</p>	<p>Health promotion interventions (health eating and exercise).</p>	<p>Barriers to increasing physical activity included cost, personal safety and lack of time outside of long working hours and carer commitments. However, increasing walking activity was regarded as feasible by both community and health professional participants.</p>	<p>A social approach-undertaking activity with family or friends and with bilingual community peers to facilitate engagement, motivation and support. Spoken content and delivery of interventions was favoured, including personal stories and multilingual audio-visual information; within local informal rather than provider settings, including the home; and aided by pedometers for self-monitoring.</p>
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10g	Siddiqui et al. (2018) Physical Activity in a Randomized Culturally Adapted Lifestyle Intervention. American Journal of Preventive Medicine	Sweden	Ethnic minority group	RCT conducted over 4 months in 2015.	A culturally adapted lifestyle intervention programme, comprising 7 group sessions including a cooking class, for Iraqi immigrants residing in Malmö, Sweden, exhibiting 1 or more risk factors for Type 2 diabetes.	here was a significant increase in the number of hours/day spent in light intensity physical activity in the intervention group compared with the control group.	Consider self-empowerment, cultural and social barriers to habits. Encourage participants to actively participate in the discussions. Gender differences and cultural barriers were discussed. Participants received information on available centres, including a “women only” swimming hall, and gyms in the area. The participants were offered financial assistance. Language
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	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
							barriers were addressed by the presence of a professional translator.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
11g	Jepson et al. (2012) Physical Activity in South Asians: An In-Depth Qualitative Study to Explore Motivations and Facilitators. PLoS ONE	Edinburgh, UK	Ethnic minority group	Qualitative Study to Explore Motivations and Facilitators	Physical activity – Exploring the motivating and facilitating factors likely to increase physical activity	Physical activity provided a social activity and enjoyment. Role models were important to inspire and motivate to undertake activities that they may otherwise lack confidence in. Few people undertook physical activity for its own sake (intrinsic motivation).	The social context of people’s lives and the external motivators that encourage them to engage in physical activity. Undertaking group based physical activity is important and can be facilitated through religious, community, friendship or family networks. Role models may also prove particularly helpful.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
12g	Brophy et al. (2011) Recommendations to improve physical activity among teenagers- A qualitative study with ethnic minority and European teenagers. BMC Public Health	Wales, UK	Ethnic minority group – adolescents	Qualitative study - 74 participants (18 Somali, 24 Bangladeshi and 32 Welsh children) divided into 12 focus groups	Physical activity - understand the key challenges and explore recommendations from teenagers to promote physical activity.	The boys more positive about exercise than the girls. The girls felt there was a lack of support to exercise from their family. All the children felt more family and community support for girls to be active and for boys to have freedom to do activities they wanted without formal supervision.	Interventions need to improve access to facilities but also counteract attitudes that teenagers should be studying or working and not 'hanging about' playing with friends. Thus, the value of activity for teenagers needs to be promoted not just among the teenagers but with their teachers, parents and members of the community.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
13g	Koshoedo et al. (2015) Understanding the complex interplay of barriers to physical activity amongst black and minority ethnic groups in the United Kingdom: A qualitative synthesis using meta-ethnography Health behavior, health promotion and society. BMC Public Health	UK	Ethnic minority group	a meta-ethnographic analysis of qualitative studies	Physical activity - to identify barriers to Black and Minority Ethnic (BME) individuals engaging in physical activity in the UK context	Four main concepts: perceptions; cultural expectations; personal barriers; and factors limiting access to facilities. BME individuals had different understandings of physical activity were influenced by migration history, experiences, cultural and health beliefs.	Interventions to promote engagement with physical activity need to address perceptions of this behaviour. The elicited concepts and contexts could be used to enhance the development of tailored effective health promotion interventions for BME individuals.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
Religious Groups (12)							
1h	Bopp et al. (2009) 8 steps to fitness: a faith-based, behaviour change physical activity intervention for African Americans	North Carolina, US	Religion – ethnic minority group	A quasi experimental design	The '8 steps to fitness' weekly programme was mainly education based with additional activity sessions, promoted by religious leaders.	Intervention showed a reduction in BMI, hip circumference and blood pressure. Additionally, there was a reported increase in social support for the participants and a reduction in depressive symptoms.	Making links with religious leaders and training them to be involved in delivery of the intervention proved successful.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2h	Campbell et al. (2007) Church-based health promotion interventions: evidence and lessons learned	North Carolina, US	Religion	A literature review	Multiple interventions are reviewed and contextualised into a church-based setting such as behaviour practices, cooking habits, exercise and therapeutic such as counselling.	Integrating with an existing community can show greater results with the target demographic.	Working with community leaders to use places of worship to facilitate interventions can reduce the need for additional set up costs as these buildings are usually suitable already.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3h	Bopp et al. (2012) A comprehensive review of faith-based physical activity interventions	Pennsylvania, US	Religion	A literature review	The interventions reviewed included physical activity programmes, educational activities and social cognitive theory.	Interventions that included faith as part of the programme saw greater increase in physical activity from participants than programmes that were just using the religious facilities.	Initiate greater faith leader involvement in all phases of the design and implementation of health programs. Consider larger scale, social ecological approaches to interventions to target faith-based organization environment and policy

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
4h	Abdulwasi et al. (2018) An ecological exploration of facilitators to participation in a mosque-based physical activity program for South Asian Muslim women	Ontario, CA	Religion – ethnic minority group	Qualitative semi-structured interviews based	A physical activity-based programme designed to target South Asian women with diabetes risk.	An increase of physical activity by up to 42%, including greater understanding of the need for physical activity.	Barriers include lack of access to culturally appropriate facilities, cost and family obligations. Health professionals should be integrated into mosque work.
5h	Resnicow et al. (2002) Healthy Body/Healthy Spirit: a church-based nutrition and physical activity intervention	Georgia, US	Religion – ethnic minority group	A 3 group, cluster-randomised design	Physical activity and education materials given to group 1, additional culturally adapted to materials to group 2 and additional to the previous, motivational counselling given to group 3.	Expected outcomes were increase success due to cultural adaptation and the inclusion of psychological intervention alongside the educational aspect.	Culturally tailored interventions might provide a greater uptake along with professional involvement at each step.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
6h	Baruth et al. (2008) Implementation of a faith-based physical activity intervention: insights from church health directors	Columbia, US	Religion – ethnic minority group	A literature review of implementations of the Health-e-AME programme	A programme to increase spiritual, physical and mental wellbeing through change in daily routines and practices.	Increase of physical activity, recommendations through walking activities was recorded.	Engaging with the Pastors in church-based setting is valuable due to their status within the community and role as gate-keepers.
7h	Wilcox et al. (2007) Increasing physical activity among church members: community-based participatory research	Columbia, US	Religion	A randomised control trial consisting of 20 churches	An intervention designed to improve physical, spiritual and mental wellbeing through routine changes.	No effects on physical activity behaviours were found. Initial research suggests this may be due to the intervention being volunteer led with insufficient training.	While the project did not achieve the desired outcomes, the partnership working between faith and academic institutions was seen as a positive step.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8h	Tristão Parra et al. (2018) Physical activity interventions in faith-based organizations: A systematic review	Sau Paulo, BR	Religion	A Literature review of randomised and on randomised trials	Social cognitive theory being integrated alongside faith-based messages to engage people in physical activity.	Improved BMI, body weight and blood pressure were outcomes. Additionally, cardiovascular fitness was improved in aerobic based interventions.	Faith based settings allow an opportunity to access an otherwise hard to reach community.
9h	Anderson and Pullen (2013) Physical activity with spiritual strategies intervention: a cluster randomized trial with older African American women	Nebraska, US	Religion – ethnic minority group	A cluster randomised trial using social cognitive theory	Multiple interventions focusing on sedentary lifestyle contributions to disease amongst a faith-based community.	Introducing faith-based components such as prayer related to goal setting appeared to be an effective component for some participants.	The study recommended community nurses using faith based psychological social theory to influence physical activity participation.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
10h	<p>Agergaard (2016) Religious culture as a barrier? A counter-narrative of Danish Muslim girls' participation in sports</p>	<p>Aarhus, DK</p>	<p>Religion – adolescents</p>	<p>Interview based study</p>	<p>Football and the understanding of Muslim girls' barriers to participation was looked at. All participants had been involved with a football club for over a year.</p>	<p>If the girls participated over a longer time, they may overcome cultural barriers, there was improvement to self-image and a reduction in perceived social inequality as a result.</p>	<p>Cultural barriers are an aspect needing to be taken into consideration with Muslim girls. The authors recommend taking into consideration cultural needs such as single-sex PE in schools.</p>

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
11h	Merrill and Thygerson (2001) Religious preference, church activity, and physical exercise	Utah, US	Religion	A review of a cross-sectional random survey	A review looking at the correlation between religious preference and greater physical activity.	People with a stronger religious believe have a higher physical activity level. This may be related to religious values against barriers such as smoking and drinking.	Church activity and religious preference can be an avenue to explore in encouraging people to engage in physical exercise.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
12h	Snape and Binks (2008) Re-thinking sport: physical activity and healthy living in British South Asian Muslim communities	Bolton, UK	Religion – ethnic minority group	A review of a previous study of semi structured interviews	The establishing of a Healthy Living Centre within the community.	Creating new connotations towards health benefits rather than as a leisure activity created an acceptance to gym activity, which increased female participation.	Consultation with the local community, along with training local workers, was vital to the success of integrating an intervention. Barriers to participation was family responsibilities.
Older Adults (16)							

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1i	Farrance et al. (2016) Adherence to community based group exercise interventions for older people: A mixed-methods systematic review. Preventive Medicine	Bournemouth, UK	Older adults	Mixed methods systematic review. Qualitative findings compared against quantitative studies.	Community based exercise interventions – review	Ten studies out of 2958 met inclusion criteria. Six key themes identified for adherence to group exercise.	Some indication that community-based exercise programmes have long-term adherence. Views of older adults into the interventions may lead to sustainability.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2i	Hobbs et al. (2013) Are behavioral interventions effective in increasing physical activity at 12 to 36 months in adults aged 55 to 70 years? a systematic review and meta-analysis. BMC Medicine	Newcastle UK	Older adults	Systematic review	Interventions which promote physical activity behaviour	To promote physical activity effective at 12 months. More effective with individuality (personal goals) may be more effective. Maintenance after 12 months is unclear.	Maintenance beyond 12 months is unclear. Effective interventions had lifestyle counselling from professional. Important for adapting and creating community-based health interventions around retirement years.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3i	Senkowski et al. (2019) Behavior Change Techniques Used in Theory of Planned Behavior Physical Activity Interventions Among Older Adults: A Systematic Review. Journal of Aging & Physical Activity	USA	Older adults	Systematic review	Interventions based on the theory of planned behaviour	Researchers independently coded BCTs using a hierarchical taxonomy of 93 BCTs. The most frequently coded BCTs included Goal Setting(n=5studies), Action Planning(n=5studies), and Credible Source(n=5studies).	Practitioners should consider changes in cognitive, physical, emotional, and social resources, as well as changes in intervention design. More effective to identify and promote behaviours and outcomes that have recreational value.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
4i	Stockwell et al. (2019) Digital behavior change interventions to promote physical activity and/or reduce sedentary behavior in older adults: A systematic review and meta-analysis. Experimental Gerontology	UK	Older adults	Systematic review and meta-analysis	Digital Behaviour Change Interventions (DBCI	DBCI increased total physical activity, increased moderate-vigorous physical activity, decreased inactive time, reduced systolic blood pressure and improved physical functioning.	More high quality studies are required to observe meaningful improvements and findings

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
5i	Gandy et al. (2017) Evaluating the delivery, impact, costs and benefits of an active lives programme for older people living in the community. Primary Health Care Research & Development	Liverpool, UK	Older adults	Mixed methods approach – qualitative from focus groups, quantitative from surveys.	Active Lives programme	Lots of activities, with beneficial health and wellbeing traits and social traits.	Should be made more widely available, especially at a local level.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
6i	Evans et al. (2016b) A feasibility study of a physical activity intervention designed by and for women aged >55 years in a bingo club. Journal of Epidemiology and Community Health	Scotland, UK	Older women	Questionnaires and interviews, and intervention. Mixed methods (qualitative and quantitative).	Group exercise intervention (chair-based exercises, dancercise and line dancing). 12 weeks, 3 days a week, 20-35 minutes. Accelerometers to measure daily time spent in physical activity. questionnaires and interviews.	At least 60% attendance, importance of social element from qualitative analysis. Improvements from physical activity for wellbeing and self-efficacy. No clear differences in physical activity levels in short-term.	Feasible to deliver a physical activity intervention to a bingo club. Improved wellbeing and self-efficacy elements from high deprived areas.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7i	Jinks et al. (2016) Identifying barriers and facilitators to exercise and physical activity in older adults with knee pain: Findings from the BEEP trial longitudinal qualitative study. Osteoarthritis and Cartilage	Netherlands	Older adults – long term condition	Semi structured interview (qualitative analysis) after intervention	BEEP intervention then interviews	Regardless of intervention, positive experiences lead to therapeutic relationships. Wide range of barriers to BEEP intervention existed (adherence to 12-18 months).	Regular reviews over a longer time frame suggested to improve BEEP interventions.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8i	Boulton et al. (2019) Implementing behaviour change theory and techniques to increase physical activity and prevent functional decline among adults aged 61--70: The Prevent IT project. Progress in Cardiovascular Diseases	Manchester, UK	Older adults	Development of intervention	The Prevent IT project includes the development and feasibility study of (i) a younger age (61–70 years) adapted intervention (aLiFE) and (ii) an Information and Communication Technology (ICT)-enabled version of aLiFE, named eLiFE,	The identification and application of behaviour change theory and techniques within the PreventIT project has provided a rational and coherent basis for understanding how the aLiFE and eLiFE interventions work.	Developing the theory and mapping the interventions to specific BCTs enabled the practitioners to develop, test, improve and implement technologies to operationalise the behaviour change strategy within eLiFE.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
9i	Kendrick et al. (2018) Keeping active: maintenance of physical activity after exercise programmes for older adults. Public Health	England	Older adults	Cohort study randomised control trial – self reported	Group home-based exercise programmes	Older people less likely to reach moderate-vigorous exercise. Those active before recruitment were more likely to do more. Negative associations with physical activity aided increase of moderate to vigorous.	Many factors towards maintenance 6-24 months after exercise programme. Should consider targeting maintenance interventions to those who will likely be carrying on physical activity in older adults and sustain it.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
10i	Morgan et al. (2019) A life fulfilled: positively influencing physical activity in older adults – a systematic review and meta-ethnography. BMC Public Health	University of Bristol, UK	Older adults	Qualitative meta-ethnology for study design – systematic analysis of qualitative research.	No intervention	Older age comes with challenges (sense of self and their role in life). Physical activity will feelings of purpose, being included in groups and routine.	Wider set of goals and aspirations with personal and individuality of older adults – sustain future interventions.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
11i	Killingback et al. (2017) Older people's adherence to community-based group exercise programmes: a multiple-case study. BMC Public Health	Bournemouth, UK	Older adults	Multiple case study research design – qualitative (focus groups, observation, documents and interviews). Quantitative (descriptive stats).	Community based group exercise programme	5 insights – to help maintain adherence. Helped explain older adults carrying on community-based group exercise programmes.	Factors must consider supporting older adults maintaining adherence to physical activity as they get older.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
12i	Olanrewaju et al. (2016) Physical Activity in Community Dwelling Older People: A Systematic Review of Reviews of Interventions and Context. PLoS ONE	Cambridge, UK	Older adults	Review of comprehensive synthesis	Review of several interventions; physical activity efficacy for preventing cognitive decline), increasing physical activity uptake and maintenance, barriers to physical activity in older adults.	Supports effective interventions (group-based, centre-based and short-term uptake cognitive approach).	Effective short-term upkeep of physical activity in older adults included behavioural and cognitive interventions. Public health promotion should target acceptable levels of physical activity.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
13i	Finnegan et al. (2015) Predictors of attendance to group exercise: a cohort study of older adults in long-term care facilities. BMC Geriatrics	Coventry, UK	Older adults	Cluster randomised controlled trial. Attendance data used for regressions analysis.	Older People's Exercise in Residential and nursing Accommodation (OPERA). Physiotherapy-led group exercise sessions	Depression, social engagement and socio-economic characteristics were significantly related with individuals attending exercise groups in residential homes.	Living long-term in care older individuals are receptive to participating in exercise programmes. Individual barriers should be targeted for attendance being better.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
14i	Kidd et al. (2019) What are the most effective interventions to improve physical performance in pre-frail and frail adults? A systematic review of randomised control trials. BMC Geriatrics	University of Surrey, UK	Older adults	Systematic review	Interventions reviewed	Ten randomised controlled trials made it to the selection criteria and quality approval. One of more physical activity components in interventions improved physical fitness in prefrail/frail older adults.	Physical activity interventions – key to maintain independence of older adults. Lack of what frail is interpreted as – core measures

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
15i	Victor et al. (2016) What factors support older people to increase their physical activity levels? An exploratory analysis of the experiences of PACE-Lift trial participants. Archives of Gerontology & Geriatrics	London, UK	Older adults	Semi-structured interviews	PACE-Lift Walking intervention – interviews.	Walking appropriate physical activity for older age. Coupled walking – positive views on individual goal setting, strategies for maintaining walking and someone to walk with. People who didn't improve – lack of support, less positive about walking intervention behaviour change relation.	Mutual social support facilitated increased walking. Walking deemed as appropriate for this age group. Goal-setting/strategies for maintaining = important an increased physical activity. More research on how to develop increased physical activity in those with less mutual support.
Socioeconomic (13)							

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1j	Walters et al. (2011) "Booster" interventions to sustain increases in physical activity in middle-aged adults in deprived urban neighbourhoods: internal pilot and feasibility study. BMC Public Health	Sheffield, UK	Socioeconomic - adults	Randomised control trial	Intervention – motivational interviewing boosters (face to face or over the phone).	44% increased PA, eligible for feasibility study. 57% of these were recruited and randomised into feasibility study.	600 sample size deemed appropriate from the start however results show that still significant differences between groups were detected. Needs to be adaptations in recruitment and retaining strategies so that correct numbers are randomised and kept.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2j	Stickley et al. (2015) Dancing for life: an evaluation of a UK rural dance programme. International Journal of Health Promotion & Education	Lincolnshire, UK	Socioeconomic - adults	Mixed methods – questionnaire, interviews, focus groups	Dance programme	34 new dance classes arose, 13 new dance leaders were trained. Participants had positive views and developments towards physical, individual and social outcomes.	Community-based dance activities effective when advertising wellbeing in rural communities. Programme with evidence was successful with meeting its aims.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3j	Solomon et al. (2014) The Devon Active Villages Evaluation (DAVE) trial of a community-level physical activity intervention in rural south-west England: a stepped wedge cluster randomised controlled trial. The International Journal of Behavioral Nutrition and Physical Activity	Southwest England	Socioeconomic - adults	Stepped wedge cluster randomised control trial	Community-level physical activity intervention – survey	Intervention did not increase adults meeting physical activity guidelines. Weak evidence of increases in minutes of mod-vig intensity.	Did not improve in rural villages (community level physical activity interventions). More infiltration of interventions similar should happen to achieve increased physical activity at community level.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
4j	Cleland et al. (2014) Identifying solutions to increase participation in physical activity interventions within a socio-economically disadvantaged community: a qualitative study. International Journal of Behavioral Nutrition & Physical Activity	Belfast, Ireland	Socioeconomic - adults	Qualitative data form interviews and focus groups – thematic analysis.	No intervention – perceptions of physical activity interventions for future programmes	Three themes arose; awareness of physical activity interventions, factors for effectiveness of interventions, barriers affecting participation.	Importance of support social-ecological approach to promoting physical activity. understanding pf what the population and individual requires is key for physical activity behaviour change and intervention planning/adherence.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
5j	Davey et al. (2011) The impact and process of a community-led intervention on reducing environmental inequalities related to physical activity and healthy eating - a pilot study. BMC Public Health	Stoke on Trent, UK	Socioeconomic - adults	Qualitative data from postal surveys	Community led intervention – My Health Matters	Baseline findings will help form an intervention and help design a randomised control trial to determine effectiveness of the intervention in planning.	Community led approach – important for impact on local deprived areas.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
6j	Seaman et al. (2010) It's not just about the park, it's about integration too: why people choose to use or not use urban greenspaces. The International Journal of Behavioral Nutrition and Physical Activity	Glasgow, UK	Socioeconomic - adults	In depth interviews and visual analysis of photographs of the areas.	No Intervention	Access to urban greenspaces is more about physical features of areas, greenspace available or measurability of walking and connectivity with people. Feelings of social integration and inclusion will decrease to PA.	Improving accessibility to greenspaces in neighbourhoods will require more than high quality resources such as parks, paths, activities etc. a level of social cohesion is required for increased physical activity.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7j	Mason et al. (2011) Neighbourhood walking and regeneration in deprived communities. Health & Place	Glasgow, UK	Socioeconomic - adults	Bivariate and multilevel, multivariate logistic regression analysis	Interview responses of physical activity frequency (local walking).	People living in low-rise flats reported more local walking than those in an apartment block. The neighbourhoods physical and social characteristic were linked with more walking. Use of parks, play area and shops in the area were associated with increased walking.	Walking is an appropriate form of physical activity for all. Analysis of areas physical, social, services and psychological characteristics is important in deprived communities to boost walking.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8j	Ryan et al. (2010) Promoting physical activity in a low socio-economic area: results from an intervention targeting stair climbing. Physiotherapy Research International	Glasgow, Scotland	Socioeconomic - adults	Observations before and after intervention (qualitative and quantitative).	4-week intervention and observations	People from the higher SE area were twice as more likely to climb the stairs as those from the low area station. Stair climbing was higher during intervention than baseline and this remained to increase post intervention. Increases at both stations suggesting posters has an influencing effect.	People at high SE area more likely to climb the stairs than a low SE area. Intervention equally effective. posters had effective effects.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
9j	Hind et al. (2010) A randomised controlled trial and cost-effectiveness evaluation of 'booster' interventions to sustain increases in physical activity in middle-aged adults in deprived urban neighbourhoods. BMC Public Health	Sheffield, UK	Socioeconomic - adults	Randomised controlled trial	Booster intervention for a feasibility evaluation	Measures – choice of population, study interventions, brief intervention starting the study, feasibility measure.	Use of multiple recruitment strategies for future interventions across larger cities. Backup plan for failed recruitments.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
10j	Sawyer et al. (2018) Supportive environments for physical activity in deprived communities in the United Kingdom: A qualitative study using photo elicitation. Social Science & Medicine	Glasgow, UK	Socioeconomic - adults	Thematic analysis – qualitative data from interviews	No intervention	Five themes identified and these themes linked closely to the unsupportive environments the neighbourhood had on physical activity.	Supporting evidence for interviews addressing issues of social, physical and economic environments supporting physical activity in deprived areas.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
11j	Hayden et al. (2016) Tackling obesity in areas of high social deprivation: clinical effectiveness and cost-effectiveness of a task-based weight management group programme – a randomised controlled trial and economic evaluation. Health Technology Assessment	London, UK	Socioeconomic – adults – exercise referral scheme	Randomised controlled trial – cost-effectiveness analysis.	WAP (weight action programme) intervention, dietary and physical activity, group oriented over 8 weeks with 10 monthly maintenance sessions. Practice nurse intervention consisted of 4 1-to-1 sessions over 8 weeks (based on NHS change4life).	Weight loss at 12 months greater in WAP than the nurse intervention. WAO was more cost-effective.	WAP delivered better weight loss promotions over 12 months and deemed more cost effective. This programme engaged more women than men.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
12j	Withall et al. (2011) Who attends physical activity programmes in deprived neighbourhoods? Health Education Journal	Bristol, UK	Socioeconomic – adults and adolescents	Questionnaires covering demographics, attendance, communication channels	Examined physical activity programmes on offer in a deprived area and the characteristics of those who participated.	45.4% of attendees were from residents in the study area. Locals more likely to attend community sessions and ones provided by local authority. Word of mouth most common communication form for building awareness of sessions.	Community related activities are most effective for encouraging adherence, especially from men. Word of mouth best communication tool but due to lack of investment to advertise the activities.

13j	<p>Fox et al. (2011) Why some do but most don't. Barriers and enablers to engaging low-income groups in physical activity programmes: a mixed methods study. BMC Public Health</p>	Bristol UK	Socioeconomic – adults	Mixed methods approach – surveys and semi structured interviews.	Examined the perceptions of participants, non-participants, and exercise leaders in a low-income area regarding barriers, motives, and enabling factors for organised physical activity with a view to improving recruitment and retention	Participants highlighted numerous barriers to joining exercise classes. Social connections are linked with improved levels of maintenance and increased physical activity.	Participants reported cost, childcare, lack of time and low awareness as barriers to joining activity classes. The need for support, confidence and competence in order to take up activity was widely expressed, particularly among women. Once people are active, high levels of social interaction, interest and enjoyment are associated with improved levels of retention, with different types of physical activity scoring
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Understanding and addressing inequalities in physical activity

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
							differently on these factors.
Woman (pregnancy and gender) (11)							

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
1k	Currie et al. (2016) Antenatal physical activity: a qualitative study exploring women's experiences and the acceptability of antenatal walking groups. BMC Pregnancy and Childbirth		Pregnant women	Focus groups – transcribed using grounded theory approach	No intervention	Opinions/experiences categorised into physical, psychological and social issues. Identified barriers and improvements for attendance in walking groups. Personality of walk leader extremely important.	Women's views should be evaluated in order for interventions to work. Relate closely to the Health Action Process Model along with BCTs (behaviour change techniques). Suggests the importance of the population's involvement for adherence and maintenance of physical activity through pregnancy.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
2k	Campbell et al. (2011) Behavioural interventions for weight management in pregnancy: A systematic review of quantitative and qualitative data. BMC Public Health	UK	Pregnant women	Systematic review of quantitative and qualitative evidence – meta-analysis of controlled trials and thematic analysis of qualitative studies	Interventions and qualitative studies.	No significant differences in gestational weight intervention group compared to control group. There major themes relating to views of weight management during pregnancy from qualitative studies.	No statistical evidence on weight gain during pregnancy. Community interventions needed to address management of weight and health problems in pregnancy.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
3k	Smith et al. (2010) The design of a community lifestyle programme to improve the physical and psychological well-being of pregnant women with a BMI of 30 kg/m. ² or more. BMC Public Health	Greater Manchester, England	Pregnant women	Prospective study – used qualitative and quantitative methods (mixed).	Community lifestyle programme review and qualitative methods to design a suitable intervention	Findings added information to future interventions and NHS services	This feasible study gathered information to help design a randomised control trial to improve pregnancy.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
4k	Smith et al. (2016) Engaging pregnant women in a dance-based exercise class : A focus group study of women's views and experiences. Journal of Epidemiology and Community Health	Oxford, UK	Pregnant women	Qualitative deign – focus groups	Club Bump – pregnancy intervention	Provided information about the class relating to social marketing for services – 7 Ps. Main aspects of the class – felt fun, achievable and safe (reduced anxiety about potential risks from exercise and pregnancy).	Social marketing model – useful framework to highlight key things that are important when designing a community-based intervention to engage pregnant women into physical activity.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
5k	Findley et al. (2020) Exploring women's experiences and decision making about physical activity during pregnancy and following birth: a qualitative study. BMC Pregnancy and Childbirth	North of England	Pregnant women	Thematic analysis of semi-structured interviews	No intervention	Resulted in 2 over-arching themes which consisted of sub themes. Pregnant women's physical activity levels and decisions were influenced by many factors. Midwifery advice lacked and felt pregnancy was an unknown territory when related to exercise.	Developing advice and interventions from midwifery care will aid psychological and physical benefits for women engaging in physical activity during pregnancy and will help support decisions about maintenance.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
6k	Teychenne et al. (2018) Feasibility and acceptability of a home-based physical activity program for postnatal women with depressive symptoms: A pilot study. Mental Health and Physical Activity	London, UK	New mothers	ANOVA thematic analysis of quantitative data	12-week physical activity support program (free treadmill hire) – Mums on the run	Depressive symptoms analysed in week 4 and 8. Significant change over time from weeks 0-4 and overall, from weeks 0-8. The program was flexible, convenient and necessary. Increased physical activity and psychological health.	Cost-free exercise program and was accepted by these postpartum women. Was an effective physical activity but should be further tested.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
7k	Evans and Allen-Collinson (2016) From 'just a swimmer' to a 'swimming mother': women's embodied experiences of recreational aquatic activity with pre-school children. Leisure Studies	North-East of England	New mothers	Semi structured interviews in pairs/groups.	recreational aquatic activity with pre-school children	Participants found swimming to be a viable way of maintaining physical activity. Fitness considers aesthetic and comparisons against other bodies were made.	Comparisons, judgemental opinions and uncomfortable feelings occurred during aquatic leisure activities. Individual adherence should be monitored/researched and the importance of aquatic activities in order to find key information about mothers.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
8k	Morris et al. (2019) Group walking as a "lifeline": Understanding the place of outdoor walking groups in women's lives. Social Science & Medicine	North-East England	Women	Observations and semi-structured interviews thematically analysed	No intervention – interviews	Moving and socialising together in outdoor places was key for women. Walking groups became sharing, healing and enjoyment – resourceful lifeline.	Walking groups for women help physically but also with problems about life circumstances and relationships. Life offers the chance for interventions to aid health when they are successful.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
9k	Taylor et al. (2013) The impact of community-based physical activity projects on girls' and young women's engagement in physical activity: findings from an evaluation of the 'Girls on the Move' programme. Managing Leisure	Scotland, UK	Women	Self-reporting and objective measures.	Girls on the move programme – community projects.	Short-term impact of community-based projects. Girls activity increased from pre to post however remained below average.	Short term community-based projects can impact towards daily physical activity levels. If girls are to reach the recommended physical activity per day, organised group session should be used with other forms of physical activity to be successful.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
10k	Taylor (2016) Investing in the development of young female sport leaders: an evaluation of the 'girls on the move' leadership programme. Managing Sport & Leisure	Scotland, UK	Women - adolescents	Multi method – quantitative data gathered from surveys and qualitative research methods (interviews, groups discussions, observation).	Girls on the Move leadership programme	The programme attracted young women that may not have been encouraged themselves to become a leader. The programme increased the number of young girls with leadership roles and increased physical activity and sports for girls to take up.	Suggests that devoting in the development of young female leaders can have a significant impact on girls, community groups and address issue. Future research and funding in youth leadership in community sport suggested to be effective to progress community sport and physical activity for girls – addresses inequality problems.

	Author, Year, Title, Publisher	Location	Population / Intersectionality of inequalities	Study approach	Intervention	Measured outcome(s) summary of findings	Drivers, barriers and opportunities for practitioners
11k	West et al. (2019) Promoting Team Sport Participation among Older Women. Journal of Park and Recreation Administration		Women – older adults	Focus groups interviews – transcribed and analysed thematically.	Softball – the Senior Games Program	Themes emerged to help professional facilitate physical activity and sports participation in older women. Community and social aspects were key for increased adherence and partake in sports for older women.	Parks and recreation companies are recommended to provide more opportunities for equality and balance. Opportunities that are supported and are advertised for older adults to be physically active in local communities helps promote leisure-time physical activity benefits for seniors.

Full list of evidence

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