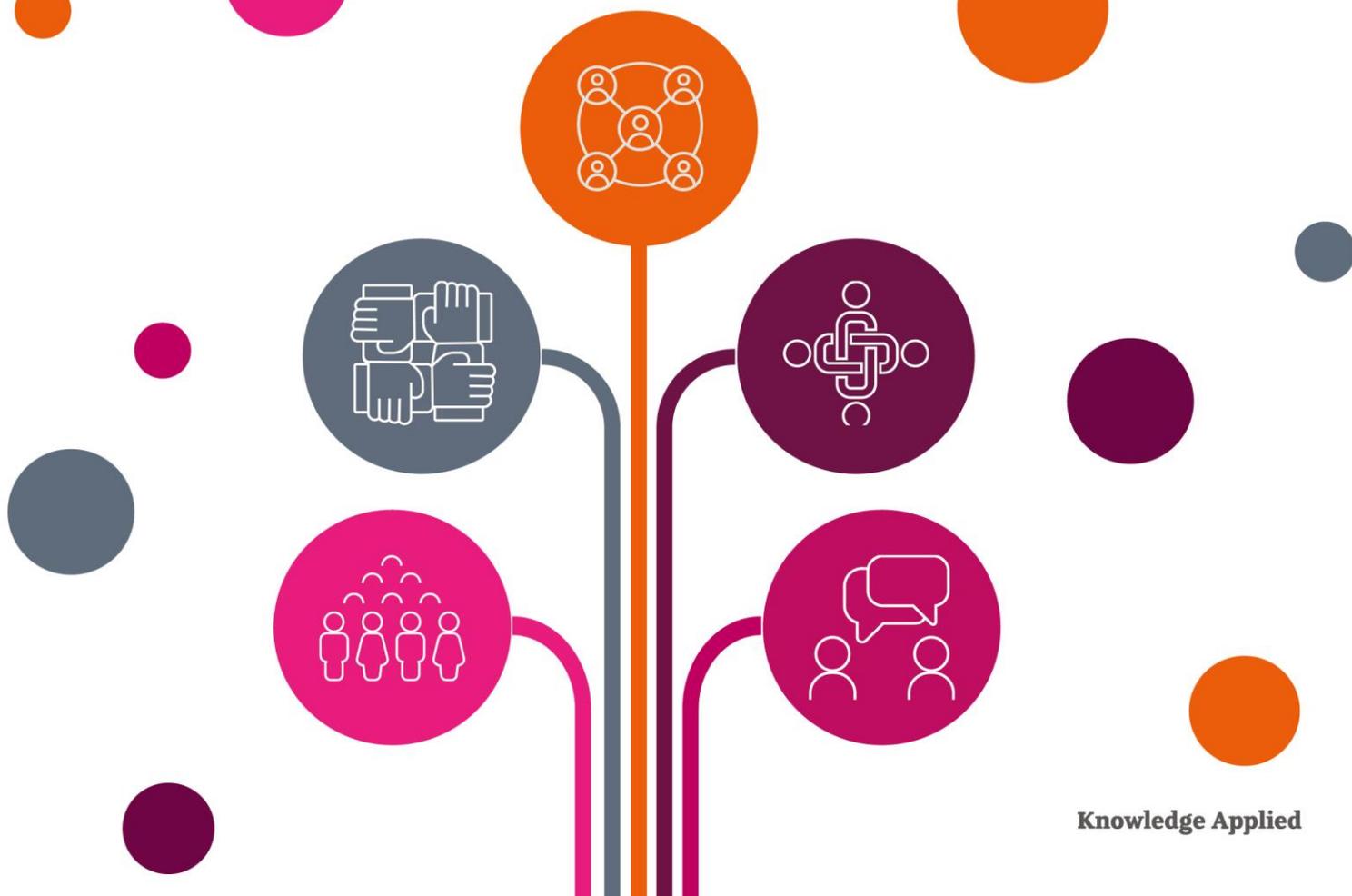




Rapid scoping review to understand the landscape of social prescribing in relation to physical activity

May 2022



Rapid scoping review to understand the landscape of social prescribing in relation to physical activity

Author(s):

Dr Marie Polley

Abigail Sabey

May 2022

About this report

Acknowledgements

This study was funded by Sheffield Hallam University.

Disclaimer

The views expressed in this report are those of the authors and do not represent those of Sheffield Hallam University.

How to cite this report

Polley M and Sabey A. (2021) Rapid scoping review to understand the landscape of social prescribing in relation to physical activity.

Main contact

Dr Marie Polley: marie@meaningfulmeasures.co.uk

Co-Director, Meaningful Measures Ltd (Company Number 12800470)

About the authors

Dr Marie Polley is Co-Founder and Co-Director of Meaningful Measures Ltd, is a biomedical scientist and has a PhD in molecular biology of how cancer develops. Marie also co-founded and co-chairs the Social Prescribing Network, which has led a social movement around the use of non-medical activities to support people's wider determinants of health and provide additional routes of support to traditional pharmaceutical prescribing. Social Prescribing has now been adopted by the NHS in England and is being taken up internationally. Marie led the team to write the first national guidance for social prescribing, the first economic overview of social prescribing on health service usage and recently mapped all outcomes associated with social prescribing to support discussion on inclusive ways of researching and evaluating this growing field.

Abigail Sabey, is a Freelance Research Associate of Meaningful Measures Ltd, and also senior lecturer in research methods at the University of the West of England where she teaches on the MSc in Public Health. She has extensive experience of teaching research and evidence-based practice to health and social care professionals at the University of the West of England, combined with a background in health services and medical education research, using both quantitative and qualitative methods. She currently leads a training programme for NIHR ARC West to promote research and evaluation skills for the workforce in health and social care.

Contents

1. Aim	1
2. Methods	2
2.1. Overview	2
2.2. Search Strategies	2
2.3. Selection criteria	3
2.4. Data Extraction and Analysis	4
3. Summary of findings	7
3.1. Description of the studies	7
3.2. Description of service users/patients being referred	7
3.3. Description of first referrers	7
3.4. Description of activities/interventions	7
3.5. Outcomes of Social Prescribing for Physical Activity	7
3.6. What are the barriers to successful social prescribing for physical activity?	9
3.7. Evidence from reviews	12
4. Discussion points	14
4.1. Principal findings	14
4.2. Challenges and limitations	15
5. Conclusions	17
6. References	18
Appendix 1: Data extraction tables	22
Appendix 2	23

Aim

1

The aim of the work is to scope the academic and 'grey' literature to 'map the territory' and inform the researchers as to how social prescribing may influence physical activity.

Within this broad aim, the researchers aimed to map the wider benefits of social prescribing and develop initial rough ideas about the mechanisms and required conditions to lead to positive outcomes.

Methods

2

2.1. Overview

Scoping is defined in this piece of work as exploring a range of evidence sources to populate an understanding of the concepts, boundaries, outcomes, and critical ingredients to achieve defined and emergent outcomes. Unlike a scoping review which has an agreed typology of purposes, the scoping here takes a scientific realist stance.

The overall approach was based on previous scoping work carried out in social prescribing and diabetes²⁶. The majority of social prescribing data is currently held in grey-literature, although there has been a growth in published literature in the last 3-5 years as social prescribing has emerged as a research field of its own. Our method was therefore guided by our aim to explore information available on websites about real-world projects or services as well as published literature.

2.2. Search Strategies

Because of the broad scope and variations in terminology for social prescribing, we used a range of search strategies and an iterative approach. We search Cochrane Library, MEDLINE, PubMed, Google Scholar, and sources of grey literature including google, greylit.org and opengrey.eu.

The initial search for published studies firstly established the search criteria to identify social prescribing literature. Search terms were first used as reported in Pilkington et al²⁶, but were deemed too broad as social prescribing has become a more recognised term in the published literature. The following terms were therefore deemed sufficient to identify relevant social prescribing literature: (1) social prescri* OR community refer* OR co production. To then identify the full range of physical activities that could be associated with the social prescribing schemes, the following search terms were used: (2) physical activity OR exercise OR aerobic OR physical exercise OR leisure-time OR sport OR leisure activit* OR physical fitness OR gym OR training OR physical performance or physical therapy.

The results for Searches (1) and (2) were combined to provide a manageable range of sources of information to work with for this scoping review

For searching on google, we combined social prescribing OR community referral to get an initial series of hits. Further search terms on physical activity as listed in search 2 above were individually applied to these hits to identify social prescribing related to physical activity. Where multiple pages were found, up to the first 10 pages were searched.

Further sources were located from the author's knowledge of work being undertaken within the Social Prescribing Network.

To keep the scoping review manageable, the searches were limited to the last 5 years only, where the majority of social prescribing publications have been produced.

2.3. Selection criteria

The aims of the scoping review were threefold and therefore the inclusion criteria were developed to reflect the multipurpose nature of the review. As the process of social prescribing includes multiple steps and stakeholders, the research team identified key stages of the process which included: Referring professional, link worker, client, social prescribing activity and outcomes. Studies were therefore included if they met the following criteria

- Was an evaluation of a social prescribing scheme that involved physical activity, therefore identifying outcomes of social prescribing related to physical activity and broader outcomes.
- Was a study exploring a particular aspect of the social prescribing process that identified barriers, enablers and mechanism of action related therefore identifying data that would inform how social prescribing can lead to positive outcomes relating to physical activity.
- To differentiate the studies from exercise on referral schemes, the studies had to describe a process that involved a link worker or be specifically labelled as social prescribing.
- In line with the aims of the scoping review, all study designs were included as were all forms of reports.

Studies were excluded if:

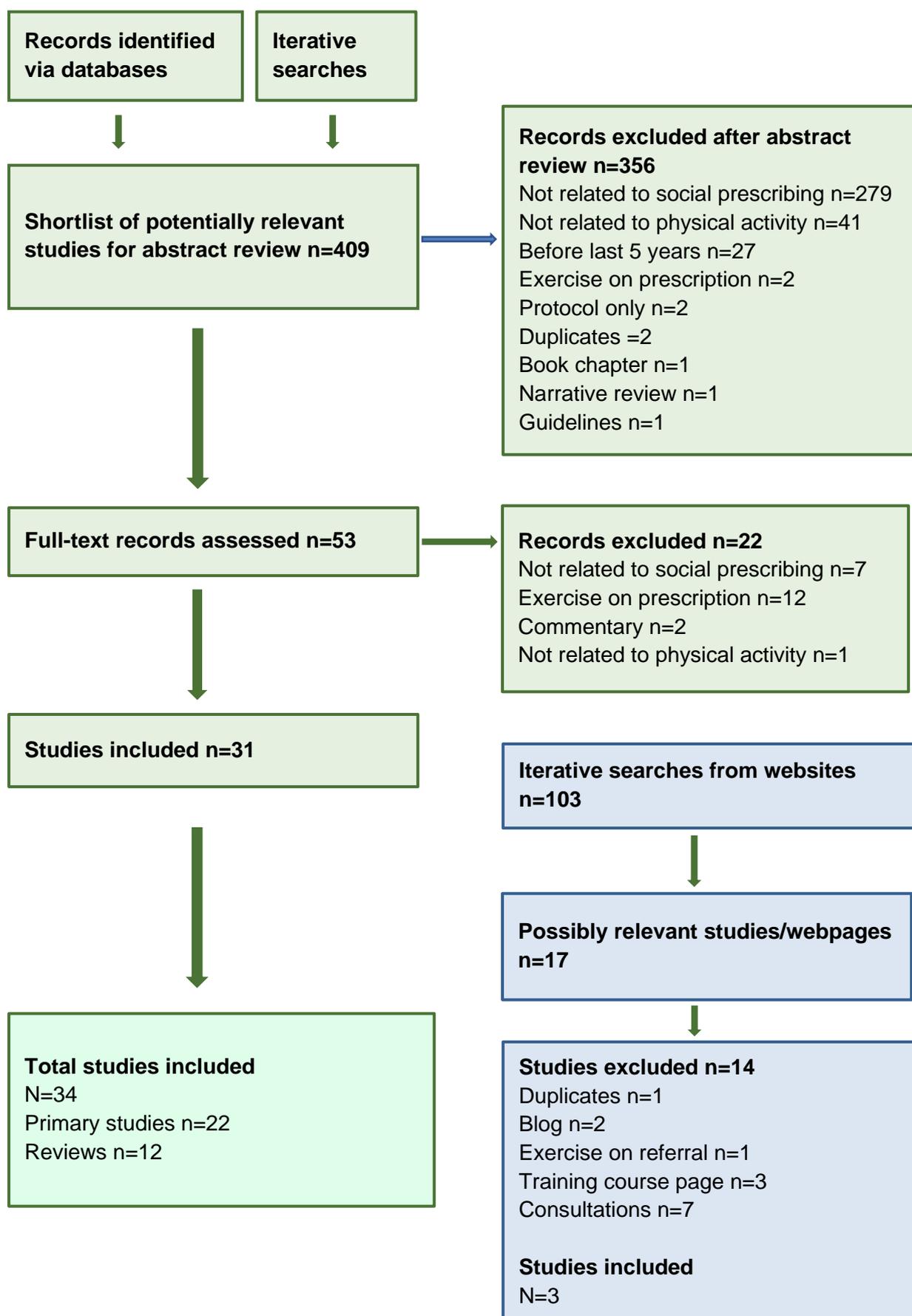
- they were not available in English, or were only available as abstracts or protocols.
- They described exercise on referral schemes, where no link worker was involved, or
- they described coproduction of activities but were not related to social prescribing.
- They were about health practitioners experiences of using a physical activity and therefore not related to social prescribing.
- They were about third sector organisations working with cohorts of people but didn't refer to social prescribing.
- They were consensus building technical processes but did not refer to outcomes, enablers or barriers in social prescribing

The first broad search and screening of abstracts was conducted by MP to make a preliminary selection of studies for consideration. Rayyan.ai software was used to organise all sources of information, for screening and for independent review of each paper. Final selections for inclusion were then made by both authors (MP, AS) when reading the studies in full. Results of the review process between MP and AS were compared, and any discrepancies discussed and resolved. See Figure 1 for a description of the process of selection of studies.

2.4. Data Extraction and Analysis

Data were extracted by MP or AS into a Microsoft Excel spreadsheet, documenting the title of the project, citation, region, type of study, type of participants, first referrer information, location of link worker, inclusion of children and young people, types of clients referred, type of support provided by link worker, services referred to, outcomes measured, outcome scales used, and key findings. Barriers for referring professionals, link workers, clients and activity providers were recorded as were the enablers for these categories.

Figure 1 Process for the identification, screening and selection of studies



Not all categories for data extraction were relevant to each study due to the breadth of the aims of the scoping review, hence data was extracted into whichever categories were relevant. A range of studies were included and because the main aim was to rapidly scope out the literature, a full appraisal of each study was not carried out at this stage. To give an indication of quality of evidence, the type of study, study size and outcomes of study were collected (see Table 1).

A more detailed data extraction of the studies with quantifiable outcomes was also carried out and the following categories were documented to provide more transparency on the immediate outcomes, broader outcomes and quality of the studies: citation, title of study, region, n value at baseline, n value at follow-up, mean age of participants, type of study, outcomes measured, tools used, results reported (including highlighting where statistical significance was achieved) (see Table 2).

Summary of findings

3.1. Description of the studies

In total 34 studies were identified for this review. The 22 primary studies for which data were extracted, will be summarised. Of the 22 primary studies, the majority are from the UK with one from Denmark⁴ and one from Spain²⁹. Many focused on implementation of a social prescribing or similar scheme for linking people with physical activity opportunities, and/or included the views of stakeholders either as the primary focus or as part of a wider study. The majority used a qualitative design (13); the remaining included evaluations (5), one randomised controlled trial and five based on other designs. Given the focus of this review it is unsurprising that so many qualitative studies were included. Just five studies measured outcomes of social prescribing for physical activity. A summary of included primary studies is presented in Table 1.

3.2. Description of service users/patients being referred

13 studies included patients/clients in their focus. People being referred to a social prescribing scheme ranged from adults in a general primary care population as well as those in deprived communities, people with mental health conditions, patients with long-term conditions, patients at risk of cardiovascular problems or type 2 diabetes, or those at risk of social isolation. Just one study focused only on young people.

3.3. Description of first referrers

Out of 14 studies looking at an existing or new scheme, referrers were mostly GPs or other health professionals in a primary care setting. In four studies referrers included non-medical and social care professionals as well. In one study, self-referral was mentioned.

3.4. Description of activities/interventions

Physical activities included walking groups, running networks/groups, gardening, general sport and leisure centre activities such as swimming and gym classes, netball and football, and activities in outdoor green spaces. It is notable that many activities are free and outdoor.

3.5. Outcomes of Social Prescribing for Physical Activity

Only 5 studies^{18,23,25,27,28} included outcomes that were quantified using validated measures, via self reported means or by using data from medical records (See Table 2 for further details). A broad range of additional outcomes were measured additionally to physical activity, which is inline with social prescribing being a means

to understand what matters most to a person and support those concerns as a priority. The breadth of outcomes also relates to the style of support received, particularly since physical activity was via a range of clubs and groups, which provide social contact as well as physical activity.

Physical activity

Outcomes measured that related to physical activity included leisure centre membership¹⁸, lifestyle activities including self reported physical activity^{23,27}, and levels of physical activity using validated measures such as IPAQ²⁵ and GPPAQ²⁸. Increases in physical activity were recorded in four studies^{23,25,27,28} of which two studies showed statistically significant improvements^{23,28}. In one study²³, significant improvements were only noted in clients who saw a link worker three or more times.

Quality of life or wellbeing

Four studies reported quality of life^{18,23} or wellbeing^{27,28}. Quality of life was statistically significantly improved in one study, if a client saw a link worker 3 or more times²³, wellbeing was statistically significantly improved in both studies^{27,28}. Positive mental wellbeing was statistically significantly improved in one study²⁸ and capability based wellbeing recorded as not significantly changed in another²³.

Physiological parameters

Weight and BMI were measured in two studies^{27,28} showing improvements in parameters. Only one study showed statistically significant effects²⁸. Blood pressure and cholesterol levels were measured in one study²⁷ with statistically significant effects.

Lifestyle parameters

Smoking cessation was recorded in two studies^{23,27} with no significant effects noted and levels of alcohol intake was recorded in one study²³ and alcohol misuse in another²⁸, which was statistically significantly improved.

Social parameters

Loneliness levels were reported in two studies^{18,27}. One study didn't report the data specifically¹⁸, and one study showed significant improvements in emotional loneliness for the whole cohort and significant improvements in emotional and total loneliness when sub analysing people who were referred into social prescribing for loneliness issues²⁷. Work and social adjustment was reported by one study but did not show significant change²³.

Psychological parameters

Self esteem was measured but data not reported directly¹⁸. Anxiety and depression were shown to significantly improve in one study if clients saw a link worker at least three or more times²³.

Empowerment

One study²⁷ reported a significant improvement in patient activation.

Health service usage

Reduction in the number of visits to a GP was reported in three studies^{18, 27,28}. In one study approximately a third of people reduced their visits to the GP. In the other two

studies^{27,28} a significant reduction was reported, and one of these studies compared this reduction to a case-matched control group which showed no change in GP visits²⁷.

Client designated concerns

Client concerns were nominated by a client at their first link worker consultation as the thing that they most wanted support with, in two studies^{27,28}. The concern categories covered a broad range of areas, sometimes differing from the referral reason stated on the referral form. Categories included concerns relating to physical activity; losing weight; diabetes; cholesterol levels; blood pressure; smoking; pain/arthritis; cancer; emotional wellbeing; mental health, family; social contact; money; work; independent living; learning and development; carer support; covid 19.

Economic outcomes

One study reported SROI analysis¹⁸, which showed a £5.07 of social value for every £1 invested, this was split between the health of participants and the health of a family member.

3.6. What are the barriers to successful social prescribing for physical activity?

Barriers for referrers

Four studies highlighted a lack of time in the consultation as a barrier for referrers^{1,4,6,20}. Short appointment times in primary care make it difficult to introduce a discussion about physical activity and patient preferences about taking an alternative approach to health management. One of these studies¹ also highlighted the related issue of needing time over the longer term to build a relationship with patients such that there is a trusting relationship between professional and patient that allows a conversation about social prescribing. Interpersonal skills as well as staffing in primary care are implied here, such as the use of locum doctors in primary care which adds to the difficulty of building relationships. Another barrier for referrers can be their own beliefs and knowledge about the benefits of physical activity^{1,6,31}. A lack of knowledge and confidence to talk about physical activity implies a need for training in this area. Two studies highlighted how the lack of a supportive practice culture about social prescribing and physical activity adds to this barrier^{1,20}.

Linked to this, four studies referred to a lack of knowledge of social prescribing and/or of physical activity opportunities in the local community, as a further barrier for referrers^{4,6,20,31}. A lack of training in how to engage with local opportunities was highlighted in one¹ and in two other studies a lack of understanding of the link worker role was cited which undermined the contribution this person can make in the social prescribing process.^{14,30}

Two studies mentioned concerns around safety and the competence of the physical activity provider to work with people with particular health conditions, as potential barriers to referral^{4,9}. In addition, social prescribing programmes being perceived as short-term can be off-putting¹¹.

Barriers for Link workers

There were two interlinked themes evident across eight of the primary studies. The first concerns the complexity of the link worker role and having to deal with multiple issues for each client. Individuals who are referred can have complex health needs which as well as physical needs can include moderate to severe mental health problems^{12,14,30}, and alongside a range of social and financial problems for which link

workers lack expertise as well as capacity³². Working in areas of high deprivation adds to the challenge of motivating people to engage in social prescribing and onward activities¹¹.

The second theme closely linked to the first, is a lack of adequate training. A lack of adequate initial training for such a highly complex role supporting people who are experiencing multiple needs was found in two studies^{29,32}, with training being felt to be too theoretical and lacking a focus on wider determinants of health such as poverty. More training in practical skills such as motivational interviewing was mentioned in one²⁹ and for coping with mental health needs such as depression and even suicide ideation, was mentioned in three^{14,29,30}. One of these studies had a specific focus on link workers perspectives and also cited high referral targets as a barrier, which are not achievable given the level of client needs; and link workers also perceive the clients' lack of readiness to engage at the point of referral as a significant barrier³². This and one further study cited a lack of information about what is available in the community to prescribe^{31,32} as well as lengthy waits for services which places additional burden on link workers.

Other barriers for link workers included the emotional burden of the role and feeling isolated³⁰, and unable to switch off²; in particular staff with managerial responsibilities can feel less supported², compounded by a lack of comprehensive and well-embedded support for the workforce in general¹⁴. This latter study also highlighted a practical lack of support from the host practice such as not having a suitable consultation space¹⁴. A lack of process around managing caseloads was a barrier for link workers in one study, such as the need for an administrator².

Barriers for Clients

One study found that for some clients, being dictated to and having a formal prescription could be barriers⁶, echoed in the perceptions of green health stakeholders in another study²². This study also highlighted low levels of 'health literacy' and not feeling safe in green spaces as potential barriers for some people. For clients with a long-term condition or serious disease, their physical function as well as attitudes to physical activity can be barriers^{19,20}; as well as amongst young people, a lack of understanding about the benefits of sport³¹.

At a practical level, in one study time of day of activities for working age adults was a potential barrier⁹ and in another, caring responsibilities, life/work balance and finances were cited²⁹. Lack of money to pay for transport was similarly perceived by link workers to be a barrier to clients meeting them in one study¹⁴ and in another focused on older clients with complex physical needs, the lack of a support worker for disabled or housebound clients to take them to services was cited³⁰. Transport was also a barrier in a study focused on patients with severe mental health needs¹⁶.

What are the enablers for successful social prescribing for physical activity?

As expected, themes about enablers pick up many of the barriers seen above.

Enablers for referrers

Having resources in the form of tools to support GPs with talking to patients about physical activity⁴ and training to improve staff capability, confidence and knowledge about physical activity²⁰ would help referrers. Similarly, having up-to-date resources on what physical activity options are available in the local community and ways to signpost would be helpful^{4,6,22}; an example was given in one of these studies of a digital platform or app with simple access to information⁴. Related to this, taking a partnership approach to help join up the health and sport/physical activity sectors was highlighted

in two studies^{1,31}, with one of these advocating direct links between referrer and community activity representatives, to reinforce the service on offer and build trust between them¹ e.g. meetings between GPs and community groups. Building connections with activity providers such that referrers feel confident in the quality of instructors and their ability to manage patients safely is important^{9,22}, especially for referring older patients with multiple morbidities⁹. Sustainability in the wider system, i.e., having a thriving community sector providing appropriate services is a key enabler which may be particularly relevant for prescribing in rural areas¹¹.

The importance of a link worker or similar 'practice champion' to connect patients to opportunities and facilitate the process of social prescribing for both referrers and patients was evident in five studies^{1,4,6,11,31}. At a practical level, a further study suggested having a social prescribing referral pad on the GPs desk (designed by a link worker) to encourage more GP referrals¹⁴. Related to this is multi-agency referral such as via adult social care and community care coordinators, which would further widen access to social prescribing especially for those with 'low agency'¹¹.

Having a practice culture that is supportive of and promotes physical activity in usual care is an enabler²⁰; similarly taking a 'whole practice approach' to social prescribing with joint training for all staff¹. Broadening out to other practice staff, such as upskilling GP receptionists to have initial conversations about social prescribing and signposting to link workers was suggested in one study focused on green social prescribing²². Being involved in the development of the scheme can help referrers see the value and understand their role, helping secure the 'buy in' of stakeholders¹¹. Linking to this, regular feedback to GPs on patients' progress was mentioned in two studies to encourage referrers^{1,11}.

Enablers for Link workers

Similar themes as for referrers were found. Echoing a finding above, being part of the GP practice and one that is receptive to social prescribing such as having GP champions and a community centred practice approach, was enabling for link workers^{1,14}. Practical set-up could help too such as link workers being employed in one team in one organisation and sharing an office¹⁴. As with referrers, the 'buy in' of link workers through being involved in developing the social prescribing scheme was equally valued by them in a study that consulted both types of professionals as part of an evaluation¹¹.

The importance of clear eligibility criteria for any social prescribing scheme was highlighted in two studies^{9,12}; and as for referrers, knowledge of local physical activity opportunities is important for link workers, especially those suitable for young people³¹.

In terms of working with clients, taking a non-directive approach was seen by link workers to be a key enabler of successful behaviour change, facilitated by strong interpersonal and communication skills allowing a non-judgemental and active listening approach³² that empowers the client²⁹. As this study pointed out, this requires a longer consultation time. In a study where health professionals carried out social prescribing in a similar role to that of link worker, an algorithm for prioritising behaviours to change was useful²⁹.

Being able to provide intensive support to clients and not just refer onwards can be a key part of the role, reflecting the complex case load that link workers may have³². This makes support for link workers in the form of one-to-one supervision and peer support important³⁰, and simply being part of a team^{2,12,30}. Alongside this, training was a hugely important enabler, increasing confidence and specific areas that are core to the role such as behaviour change³² and motivational interviewing^{12, 32}, as well as confidentiality and safeguarding³². In addition, training around specific health needs of

patients such as long-term conditions and mental health issues such as anxiety, depression and suicide, abuse and addiction is a particularly important focus for training^{11,12,14,30, 32}. Training in practical knowledge such as community resources is also needed³² and in coping with the demands of the role in general where shadowing other link workers as part of training may be helpful³⁰.

Enablers for Clients

A person-centred approach to the discussion about physical activity can be enabling for both adults^{6,11,24} and young people³¹, again necessitating a longer consultation. This initial discussion can be motivating for clients, possibly adding legitimacy to starting a new activity⁶ and makes the referrer's skills in approaching the discussion, listening, being persistent and linking to tangible options especially important^{6,11,27}. In general, building rapport and trust with the client over time that encourages and supports them and gives them a degree of control over their onward referral, i.e., a plan is co-produced, was seen to be beneficial with a range of adult clients^{24,27,29}, and with young people³¹. A buddy system may have potential for some clients according to a study in a general primary care population⁶.

Other important enablers for clients included speaking to a link worker in person and at the GP surgery²⁷, and having multiple and regular appointments with a link worker^{23,24,28}. In two of those studies which were based in deprived communities, an 'open door' approach to the service where engagement might be over as much as 2 years, was beneficial²⁴, as well as follow-up calls²⁷.

In terms of enablers to the onward activities, transport to activities was a theme here, especially for young people (and presumably others) in rural areas^{1,20,31}. Sharing experiences and social interaction at group-based activities can encourage retention and help with loneliness^{9,19,29} and exclusive use of facilities for referral may facilitate participation of older clients⁹.

3.7. Evidence from reviews

Brief points from the most relevant reviews are highlighted here to give the above findings a wider context. There was not scope within this study to directly include the 12 reviews of social prescribing in the data extraction; it should also be acknowledged that there was some overlap between primary sources of data we have included and those included in some reviews (noted below):

- A recent and extensive realist review which had much broader inclusion criteria for social prescribing than the present study⁵, mirrors many of our themes about barriers and enablers along the pathway. Acknowledging some overlap with our studies, their dimensions of good practice in social prescribing similarly highlighted the importance of stakeholder's buy in and knowledge; building trusting interpersonal relations that are informed and supportive, and allow for person-centred interactions, as well as trusting relationships across the pathway such as between the health and physical activity sectors; and the potential value of peer support in enhancing motivation only glimpsed in our review. They also concluded that a predisposed practice culture, with training, supervision and resources for prescribers is key to good practice.
- A review focused on individuals with mental health problems¹³ which did not overlap with our studies, showed similar themes around the barriers and enablers for referrers including the lack of time in the consultation, concerns over safety, the importance of referrer's beliefs about physical activity and the need for training in how to promote physical activity to clients and in behaviour change techniques.

Access to information about physical activity programmes was similarly enabling, alongside a commitment to a holistic approach.

- A realist review showed some similar themes around referrer enablers and client enablers including a patient-centred discussion and transport¹⁷.
- A review of systematic reviews of physical activity promotion for older adults³⁴, supports our findings about physical activity interventions that start with client-centred, professional and tailored guidance and the importance of ongoing support.

Overall, the common mechanisms of 'time, training and trust'³⁵ have emerged in this review.

Discussion points

4.1. Principal findings

This scoping review has revealed that the landscape of evidence associated with social prescribing and physical activity is currently more related to implementation of social prescribing schemes and the associated barriers and enablers, compared to directly attributing increased levels of physical activity to social prescribing schemes.

The majority of the primary studies were qualitative or mixed methods studies looking at different aspects of the social prescribing pathway from initial referrer through to community based activity. Only 5/22 primary studies quantified outcomes, as such, this review can not make firm conclusions as to the effectiveness of social prescribing for increasing physical activity. The results do provide a clearer picture of potential effects, possible outcomes and can therefore be used to inform future research in this area. This finding alone is in keeping with the young status of social prescribing as a defined field of research, given that social prescribing was only adopted as national policy in England in 2018.

This review highlights that there are barriers and enablers associated with every part of the social prescribing process from initial referral to a client accessing the community activities. Not all of the barriers identified are possible to circumvent in future research without wider system and policy change. For example, the current lack of education in the medical curriculum on the benefits of physical activity, nutrition and social prescribing mean that new medical professionals are not appropriately equipped to talk to their patients about physical activity. Furthermore, the structure in primary care makes it almost impossible to talk about social prescribing or build a rapport within such a short consultation time. Therefore much work will need to be done in local PCNs to educate healthcare professionals who are referring to social prescribing schemes on the benefits of physical activities for their patients and the nature of the discussion about this approach to managing health.

There are already exercise on referral schemes that are active in many areas in the UK. These schemes do not include a link worker, so there is an assumption that if a person is referred for an exercise intervention programme that they will then turn up and adhere to it. Data from social prescribing schemes, however, shows that when a person talks to a link worker, the personalised approach enables the patient to reveal concerns that are of greater priority than physical activity. A proportion of people attending social prescribing, therefore, are known to need other issues sorting out before they are likely to adhere to increasing physical activity (see ref 27,28 for examples). This becomes an important point to note when aiming to quantify changes to physical activity levels in larger future studies - as physical activity may not be the primary outcome that is relevant for every participant.

In the studies that did measure physical activity outcomes and broader outcomes of social prescribing (see Table 2 for details), there were a range of outcomes captured, from physiological, psychological, social, and empowerment based outcomes as well as impact on GP consultations. This broad range of outcomes is in keeping with social prescribing schemes in general (see Howarth et al review¹⁵ for comparison outcomes and Polley et al for mapping of outcomes³⁶). This is due to social prescribing prioritising what matters to a person, which could be health or determinants of health based. It is therefore common to see wellbeing and loneliness to also be improved as the activities in social prescribing are often group based and provide social connections as well as physical activity.

Whilst all of the quantitative studies capture physical activity outcomes, these were sometimes self-reported bespoke questions, as opposed to validated measures. Furthermore, there was a large range in n values for people completing evaluations. Lack of follow up data ranged from 38% to 86% of participants at baseline. This throws up a myriad of questions on the level of confidence that can be placed in the findings of studies with low follow up rates, how representative these findings are of the local population using social prescribing and also wider issues related to collecting data within social prescribing schemes. Ensuring success of future social prescribing studies will therefore require much thought on which outcomes to measure and how to measure them to ensure that the full range of benefits of the social prescribing schemes are being captured. Moreover, understanding why people do not attend a referral to social prescribing or do not complete evaluation measures at follow-up will be an important aspect of information to discern through public, patient involvement at the research design stage.

4.2. Challenges and limitations

The challenges encountered when designing and implementing this scoping study have led to a number of limitations. Whilst social prescribing as a term is now embedded in policy, it is not recognised as a MESH term in pubmed or MEDLINE, therefore there is still uncertainty that all relevant papers are captured through search criteria. Moreover many evaluations that are in the grey literature may not call their social prescribing schemes by that name, hence it is likely that some evaluations have not been found. For this project, social prescribing, community referral and co production were, therefore, all used to cast a wide net. Previous scoping reviews (e.g Pilkington et al²⁶) used a range of terms around primary care, however we found this now yielded far too many studies than was practical for this scoping review. Similarly physical activity can be referred to via many terms, so an extensive list of terms was used. Conversely we included studies from grey literature sources as well as peer reviewed publications to be more inclusive of local knowledge.

The selection of studies also relied on a clear description of the schemes so that we could identify if a link worker was included as a key distinction between exercise on referral and social prescribing. In some cases this was very hard to discern and we can not guarantee that some relevant studies were excluded due to the descriptions associated.

We did not directly include reviews of social prescribing in with the data extraction as there was overlap between primary sources of data we had and that were also included in some reviews. Brief points from the most relevant reviews were however presented in the findings section. Future work will need to cross references primary sources in all social prescribing reviews for potential additional primary papers. Whilst this was beyond the time allocated for this scoping review, we did identify some pertinent points that related to this scoping study.

A further potential limitation is that we have selected studies that are predominantly UK based. The heterogeneity of health systems and varied language used to describe social prescribing internationally means we may have missed more international papers, or papers that are not in English but could still provide useful information. On the other hand, we did notice that the majority of international papers were more likely to describe exercise on prescription or physical activity on prescription as a direct referral process without a link worker professional. Whilst exercise on referral is a maturer scheme within the NHS there hasn't been any comparison or investigation into how direct referral by a GP compares with referral via a link worker

Conclusions

The aim of this project was to scope the academic and 'grey' literature to 'map the territory' and inform the researchers as to how social prescribing may influence physical activity. We further aimed to map the wider benefits of social prescribing and develop initial rough ideas about the mechanisms and required conditions to lead to positive outcomes. As the literature on social prescribing begins to build there is a consensus of findings of barriers and enablers that need considering in future research and design of social prescribing schemes. Much more research needs to be undertaken to understand the benefits and outcomes of social prescribing in relation to physical activity, to improve the external validity of such data and provide a stronger argument for association or attribution of effect.

References

Note: References 1-34 are the included studies.

1. Aughterson, H., Baxter, L. and Fancourt, D. (2020) Social prescribing for individuals with mental health problems: a qualitative study of barriers and enablers experienced by GPs. *BMC Family Practice*, 21, pp. 194. Doi: 10.1186/s12875-020-01264-0.
2. Beardmore, A. (2019) Working in social prescribing services: a qualitative study. *J Health Organ Manag*, 34 (1), pp. 40-52. doi: 10.1108/JHOM-02-2019-0050.
3. Bickerdike, L., Booth, A., Wilson, P.M. and Farley, K., Wright, K. (2017) Social prescribing: less rhetoric and more reality. A systematic review of the evidence. *BMJ Open*, 7 (4), e013384.
4. Brandborg, C.E., Skjerning, H.T. and Nielsen, R.O. (2021) Physical activity through social prescribing: An interview-based study of Danish general practitioners' opinions. *Health Soc Care Community*, Sep 29. doi: 10.1111/hsc.13577.
5. Calderón-Larrañaga, S., Milner, Y., Clinch, M., Greenhalgh, T. and Finer, S. (2021) Tensions and opportunities in social prescribing. Developing a framework to facilitate its implementation and evaluation in primary care: a realist review. *BJGP Open*, 5 (3). Doi: 10.3399/BJGPO.2021.0017.
6. Carstairs, S.A., Rogowsky, R.H., Cunningham, K.B., Sullivan, F. and Ozakinci, G. (2020) Connecting primary care patients to community based physical activity: a qualitative study of health professional and patient views. *BJGP Open*, DOI:10.3399/bjgpopen20X101100.
7. Chatterjee, H.J., Camic, P.M., Lockyer, B. and Thomson, L.J.M. (2018) Non-clinical community interventions: a systematised review of social prescribing schemes. *Arts and Health*, 10 (2), pp. 97-123 Doi: 10.1080/17533015.2017.1334002.
8. Crisford, P., Winzenberg, T., Venn, A. and Schultz, M., Aitken, D. and Cleland, V. (2018) Factors associated with physical activity promotion by allied and other non-medical health professionals: A systematic review. *Patient Education and Counselling*, 101 (10), pp.1775-1785. Doi:10.1016/j.pec.2018.05.011.
9. Crozier, A., Porcellato, L., Buckley, B.J.R. and Watson, PM. (2020) Facilitators and challenges in delivering a peer-support physical activity intervention for older adults: a qualitative study with multiple stakeholders. *BMC Public Health*, 20, 1904. Available at: <https://doi.org/10.1186/s12889-020-09990-x>

10. Essery, R., Geraghty, A.W.A., Kirby, S. and Yardley, L. (2016) Predictors of adherence to home-based physical therapies: a systematic review. *Disability and Rehabilitation*, 39 (6), pp. 519-534. Doi: [10.3109/09638288.2016.1153160](https://doi.org/10.3109/09638288.2016.1153160)
11. Fixsen, A., Seers, H., Polley, M., Robins, J. (2020) Applying critical systems thinking to social prescribing: a relational model of stakeholder "buy-in". *BMC Health Services Research*, 20, pp. 580. Available at: <https://doi.org/10.1186/s12913-020-05443-8>
12. Frostick, C. and Bertotti, M. (2021) The frontline of social prescribing - How do we ensure Link Workers can work safely and effectively within primary care? *Chronic Illn*, 17 (4), pp. 404-415. doi: 10.1177/1742395319882068.
13. Glowacki, K., Weatherson, K. and Faulkner, G. (2019) Barriers and facilitators to health care providers' promotion of physical activity for individuals with mental illness: A scoping review. *Mental Health and Physical Activity*, 16, pp.152-168.
14. Hazeldine, E., Gowan, G., Wigglesworth, R., Pollard, J., Asthana, S. and Husk, K. (2021) Link worker perspectives of early implementation of social prescribing: A 'Researcher-in-Residence' study. *Health Soc Care Community*, 29 (6), pp. 1844-1851. doi: 10.1111/hsc.13295.
15. Howarth, M. and Brettle, A., Hardman, M. and Maden, M. (2020) What is the evidence for the impact of gardens and gardening on health and well-being: a scoping review and evidence-based logic model to guide healthcare strategy decision making on the use of gardening approaches as a social prescription. *BMJ Open*, 10 (7), e036923.
16. Hubbard, G., Thompson, C.W., Locke, R., Jenkins, D., Munoz, S.A., Van Woerden, H., Maxwell, M., Yang, Y. and Gorely, T. (2020) Co-production of "nature walks for wellbeing" public health intervention for people with severe mental illness: use of theory and practical know-how. *BMC Public Health*, 20 (1), pp.428. doi: 10.1186/s12889-020-08518-7.
17. Husk, K., Blockley, K., Lovell, R., Bethel, A., Lang, I., Byng, R. and Garside, R. (2020) What approaches to social prescribing work, for whom, and in what circumstances? A realist review. *Health and Social Care in the Community*, 28 (2), pp.309-324.
18. Jones, C., Hartfiel, N., Brocklehurst, P., Lynch, M. and Edwards, R.T. (2020) Social Return on Investment Analysis of the Health Precinct Community Hub for Chronic Conditions. *International Journal of Environmental Research and Public Health*, 17 (14), 5249. Available at: <https://doi.org/10.3390/ijerph17145249>
19. Jones, U., Hamana, K., Vougioukalou, S., Jones, M. and Busse, M. (2019) Exploration of a Co-Production Approach to Developing a Walking Group with People with Huntington's Disease. *Med One*, 4 (5), e190022. doi: 10.20900/mo.20190022.
20. Law, R., Langley, J., Hall, B., Burton, C., Hiscock, J., Williams, L., Morrison, V., Lemmey, A., Lovell-Smith, C., Gallanders, J., Cooney, J.K. and Williams, N. (2021) 'Function First': how to promote physical activity and physical function in people with long-term conditions managed in primary care? A study combining realist and co-design methods. *BMJ Open*, 11, e046751. doi: 10.1136/bmjopen-2020-046751.
21. Leavell, M.A., Leiferman, J.A., Gascon, M., Braddick, F., Gonzalez, J.C. and Litt, J.S. (2019) Nature-Based Social Prescribing in Urban Settings to Improve Social

Connectedness and Mental Well-being: a Review. *Curr Envir Health Rpt*, 6, pp. 297–308. Available at: <https://doi.org/10.1007/s40572-019-00251-7>

22. McHale, S., Pearsons, A., Neubeck, L. and Hanson, C.L. (2020) Green Health Partnerships in Scotland; Pathways for Social Prescribing and Physical Activity Referral. *Int J Environ Res Public Health*, 17 (18), 6832. doi: 10.3390/ijerph17186832.
23. Mercer, S.W., Fitzpatrick, B., Grant, L., Chng, N.R., McConnachie, A., Bakhshi, A., James-Rae, G., O'Donnell, C.A. and Wyke, S. (2019) Effectiveness of Community-Links Practitioners in Areas of High Socioeconomic Deprivation. *Annals of Family Medicine*, 17 (6), pp. 518-525.
24. Moffatt, S., Steer, M., Lawson, S., Penn, L. and O'Brien, N. (2017) Link Worker social prescribing to improve health and well-being for people with long-term conditions: qualitative study of service user perceptions. *BMJ Open*, 7, e015203. doi:10.1136/bmjopen-2016-015203.
25. Pescheny, J.V., Gunn, L.H., Randhawa, G. and Pappas, Y. (2019) The impact of the Luton social prescribing programme on energy expenditure: a quantitative before-and-after study. *BMJ Open*, 9, e026862. doi:10.1136/bmjopen-2018-026862
26. Pilkington, K., Loef, M. and Polley, M. (2017) Searching for Real-World Effectiveness of Health Care Innovations: Scoping Study of Social Prescribing for Diabetes. *J Med Internet Res*, 19 (2), e20. doi: 10.2196/jmir.6431.
27. Polley, M., Seers, H. and Fixsen, A. (2019) *Evaluation Report of the Social Prescribing Demonstrator Site in Shropshire–Final Report. External Report.*
28. Polley, M., Seers, H. and Johnson, R. (2021) *Tandridge District Council Wellbeing Prescription Service. External Report.*
29. Pons-Vigués, M., Berenguera, A., Coma-Auli, N., March, S., Pombo, H., Masluk, B., Pulido-Fuentes, M., Rodriguez, C., Bellón, J.A. and Pujol-Ribera, E. (2019) Qualitative evaluation of a complex intervention to implement health promotion activities according to healthcare attendees and health professionals: EIRA study (phase II). *BMJ Open*, 9 (3), e023872. doi: 10.1136/bmjopen-2018-023872.
30. Rhodes, J. and Bell, S. (2020) "It sounded a lot simpler on the job description": A qualitative study exploring the role of social prescribing link workers and their training and support needs. *Health Soc Care Community*, 29 (6), e338-e347. doi: 10.1111/hsc.13358. Epub 2021 Mar 24. PMID: 33761145.
31. Street Games, Wales Youth Social Prescribing, Sport and Physical Activity - A Rapid Review. Sport Wales and Social Prescribing Youth Network. External Report.
32. Wildman, J.M., Moffatt, S., Penn, L., O'Brien, N., Steer, M. and Hill, C. (2019) Link workers' perspectives on factors enabling and preventing client engagement with social prescribing. *Health Soc Care Community*, 27 (4), pp. 991-998. doi: 10.1111/hsc.12716.
33. Williams, T.L., Ma, J.K. and Martin Ginis, KA. (2017) Participant experiences and perceptions of physical activity-enhancing interventions for people with physical impairments and mobility limitations: a meta-synthesis of qualitative research evidence. *Health Psychology Review*, 11 (2), pp. 179-196, DOI: [10.1080/17437199.2017.1299027](https://doi.org/10.1080/17437199.2017.1299027)

34. Zubala, A., MacGillivray, S., Frost, H., Kroll, T., Skelton, D.A., Gavine, A., Gray, N.M., Toma, M. and Morris, J. (2017) Promotion of physical activity interventions for community dwelling older adults: A systematic review of reviews. *PLoS ONE*, 12 (7), e0180902. <https://doi.org/10.1371/journal.pone.0180902>
35. Thornton, J. (2021) *Time, Training and Trust – making movement prescription an easier choice*. Available at: <https://www.ispah.org/time-training-trust-together-making-movement-an-easy-choice/>. [Accessed: 28/11/21]
36. Polley, M., Whiteside, J., Elnaschie, S. and Fixsen, A. (2020) *What does successful social prescribing look like? Mapping meaningful outcomes*. London: University of Westminster.

Appendix 1: Data extraction tables

A1

Needs inserting?

Appendix 2

Table 2 Comparison of outcomes reported. *Results in bold show where data was statistically significant.

Citation	Title	Region	n at Pre	n at Post	Type of evaluation	Outcomes measured	Tools used	Results
Jones C, Hartfield N, Brocklehurst P, Lynch M, Edwards RT. International Journal of Environmental Research and Public Health. 2020; 17(14):5249. https://doi.org/10.3390/ijerph17145249	Effectiveness of Community-Links Practitioners in Areas of High Socioeconomic Deprivation	Wales	n= 159	n= 66 and n=38 family members	Pre post quantitative study	self esteem	Rosenberg self-esteem scale	not reported directly
						loneliness	CTEL scale	not reported directly
						quality of life participants	EQ-5D-5L	not reported directly
						quality of life family members	EQ-5D-5L	not reported directly
						increase in leisure centre membership		28 people
						people reduced attendance at GP		19/66 people
						economic (SROI)	HACT social value calculator; Health and social care resource use in last 16 weeks	In total, £281,010 of social value was generated by the Health Precinct in a one year period. The outcome that generated the most social value was an improvement in participant health (£98,187), followed by improvement of family member health (£45,317). Translated to £5.07 of social value generated for every £1 spent.

Mercer SW, Fitzpatrick B, Grant L, Chng NR, McConnachie A, et al Annals of Family Medicine, VOL. 17(6), NOVEMBER/DECEMBER 2019518	Effectiveness of Community-Links Practitioners in Areas of High Socioeconomic Deprivation	Scotland	n=288 intervention; n=612 control	n=214 intervention; 561 follow up control	RCT	Health related QOL	EQ-5D-5L	whole group 0.008 (-0.028 to 0.045) p = 0.648; significantly improved if see link worker 3 or more times (0.071 p=0.011)
						capability based wellbeing	ICECAP-A	-0.011 p=0.411 not significant
						anxiety	HADS-A	whole group 0.09 p=0.753; significantly improved if see link worker 3 or more times (-1.380 p=0.005)
						depression	HADS-D	whole group -0.41 p=0.173; significantly improved if see link worker 3 or more times (-1.280 p=0.007)
						work and social adjustment	Work and Social Adjustment scale	0.05 p=0.940 not significant
						Lifestyle activities	self reported Exercise	whole group 0.12 p=0.183 significantly improved if see link worker 3 or more times (0.339 p=0.013)
	smoking rates	no significant effect						
	self reported alcohol intake	no significant effect						
Pescheny JV, Gunn LH, Randhawa G, et al. BMJ Open2019;9:e026862. doi:10.1136/bmjopen-2018-026862	The impact of the Luton social prescribing programme on energy expenditure: a quantitative before-and-after study.	East England	n=146	n=56	Pre-post quantitative study	Physical activity expressed as metabolic equivalent energy expenditure (MET)	IPAQ	increase in mean MET minutes per week for walking, moderate and vigorous activity.
								Employment, increased age and being male have a predicted negative effect on MET minutes per week.

Polley M; Seers H; Fixsen A External Report	Evaluation Report of the Social Prescribing Demonstrator Site in Shropshire–Final Report	Shropshire, England	n=134	n=115	pre-post mixed methods evaluation with case matched control group	Client concerns and wellbeing	MYCaW	significant improvements in concern 1 (p=0.001), concern 2 (p=0.003); significant improvement in wellbeing (p=0.000)
						loneliness	De Jong Giervald Loneliness measure	whole group - significant improvement in emotional loneliness; significant improvement in total loneliness (p=0.05) and emotional loneliness (p=0.02) for participants specifically referred for loneliness.
						Patient activation	Patient activation measure	significant improvement mean change =5.13 (p=0.000)
						physical activity	self reported	60% of participants report being more active
						weight	medical records	non-significant improvement in 56% of participants who had weight loss
						BMI	medical records	non-significant improvement in 56% of participants who had weight loss
						Blood pressure	medical records	significant improvement in diastolic BP (p=0.007)
						cholesterol	medical records	significant reduction in LDL (p=0.04)
						smoking	self reported	3/13 stopped smoking, 1 started.
						Health service usage	medical records	significant reduction in visits to GP in social prescribing group (p=0.00) compared to no-significant reduction in GP visits in control group.

						service satisfaction	4.8/5 for service times and suitable venue 4.9/5 for ability of people to talk to link worker	
Polley M; Seers H; Johnson R. (2021) External Report	Tandridge District Council Wellbeing Prescription Service	South East England	data collected from Elemental digital platform for 2363 to 3429 people. Individual n values provided for outcome measures		Pre-post mixed methods	Client concerns and wellbeing (n=296)	MYCaW	Significant improvement in concerns and wellbeing; concern 1, -2.1 (p<0.001); concern 2, -1.6 (p<0.001); wellbeing -1.3 (p<0.001)
						positive mental wellbeing (n=250)	WEMWBS	significant improvement mean change= 5.9 (p<0.001)
						Alcohol misuse (n=66)	AUDIT-C	significant improvement mean change= -1.6 (p<0.001)
						weight (n=955)	medical records	significant improvement mean change= -2.1Kg (p<0.001)
						BMI (n=934)	medical records	significant improvement mean change -0.8 (p<0.001)
						physical activity (n=228)	GPPAQ	significant improvement mean change=0.5 (p<0.001)
						GP visits (n=104)	medical records	significant improvement mean change= -0.7 (p<0.001)