# An evidence review of social prescribing and physical activity

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## Introduction

The benefits of physical activity and exercise are well established as improving physical and mental health. The aim of this review is to scope the academic and 'grey' literature to 'map the territory' and inform the researchers as to how social prescribing may influence the take-up of physical activity. This paper outlines the state of the literature on social prescribing and physical activity. Set out below is an overview of the Rapid Evidence Review methodology used for this paper, followed by a thematic overview of the results. This is followed by a summary of the reliability of this data alongside future recommendations for social prescribing referrals and pathways.

## Method

- 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. The overall approach was based on previous scoping work carried out in social prescribing and diabetes [1]. 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. Therefore, please note that this review is a rapid scoping review, rather than a systematic review.
- A Rapid Evidence Review methodology was used to provide this evidence synthesis [2]. This approach involves streamlining the steps of a more in-depth systematic review under an accelerated time frame to produce evidence in a shortened time frame, typically c.5 weeks. We searched the Cochrane Library, MEDLINE, PubMed, Google Scholar, and sources of grey literature including google, greylit.org and opengrey.eu.

  The following terms were used to identify relevant social prescribing literature: (1) social prescri* OR community refer* OR co production. To 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. To keep the review manageable, the searches were limited to the last 5 years only, when the majority of social prescribing publications have been produced.

- For searching on Google Scholar, 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.
- Studies included primary sources (i.e. not reviews), those written in English; and pertaining to social prescribing schemes related to physical activity; those that informed how social prescribing can lead to positive outcomes relating to physical activity; those that included a link worker (to differentiate from exercise on prescription).Studies including community referral and co-production were searched for, but none were identified reflecting these broader concepts/ All other studies were excluded.
- 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.

## Results of the search strategy

- In total 26 studies were identified for this review. The majority were from the UK with one from Denmark [3] and one from Spain [4]. Sixteen focused on the implementation of a social prescribing or similar scheme for linking people with physical activity, and/or included the views of stakeholders, either staff or clients/patients, about the service [3–18]). All but one of these used a qualitative design; one focused on co-design of an intervention using a realist approach [18]. Five of these focused solely on link workers [12,13,15–17].
- Ten studies measured outcomes of social prescribing for physical activity [19–28]. Of these, one was a randomised controlled trial [20] and two were before-and-after studies [21,24]. The rest included evaluations or research using mixed methods [22,23,26–28]; one core monitoring report [25] and one economic evaluation [19].
- Referrers were mostly GPs or other health professionals in a primary care setting. In seven studies [7,19,22–24,27,28] referrers included non-medical and social care professionals as well. In three studies [22,27,28], self-referral was mentioned. Physical activities in the schemes 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.

  A wide range of people were referred ranging from adults in a general primary care population as well as people with specific conditions including 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. Three studies included people with hypertension [22,23,26]. Two studies included patients with chronic obstructive pulmonary disease (COPD) ([21,22]) and one of these included outcomes for cancer patients [22]. People with multi-morbidity were mentioned in four studies [8,11,24,28] but the focus was not exclusively on this group. Nine studies included people living in deprived communities [7,8,11,12,14,20,21,23,25] although in only one of these [20] was this the explicit focus of the research. Four studies included people living in ethnic minority communities but not as the sole focus of the research [11,21,25,26]. One study included migrants as part of a case study [26]. One study was on participants in a coastal community [24].

## The impact of using social prescribing to increase uptake of physical activity.

- This next section summarises all studies that reported outcomes from physical activity, including many that go beyond biomedical outcomes. Ten studies [19–28] included outcomes that were quantified using validated

measures, via self-reported means or by using data from medical records. A broad range of outcomes were measured in addition to physical activity, which relate to the style of support received, particularly since physical activity took place within 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 membership [19], lifestyle activities including self-reported physical activity [20,23] and levels of physical activity using validated measures such as the International Physical Activity Questionnaire (IPAQ [21])and the General Practice Physical Activity Questionnaire (GPPAQ [22]). Increased physical activity was recorded in four studies [20–23] of which two studies showed statistically significant improvements [20,22]. In one study [20], significant improvements were only noted in clients who saw a link worker three or more times. In another study [24], a significant reduction in frailty and significant improvement in patient activation levels (which is a measure of a patient's skills and confidence to manage their health,) was reported. Implicit in this is the likelihood of those people being more able and motivated to be physically active.

- *Quality of life or wellbeing*: Six studies reported quality of life (QoL) [19,20,26,27] or general wellbeing [22–25]. Quality of life was improved in three studies [19,26,27]. QoL was statistically significantly improved in one study [27] and in one other study if a client saw a link worker 3 or more times [20] and general wellbeing was statistically significantly improved in four studies [22–24,28]. Positive mental wellbeing was improved in three studies [22,24,26], reaching statistical significance in two of them [22,24] and capability-based wellbeing recorded as not significantly changed in another [20].

- *Physiological parameters*: Weight and BMI were measured in two studies [22,23] showing improvements in parameters. Only one study showed statistically significant effects [22]. Blood pressure and cholesterol levels were measured in one study [23] with statistically significant effects. Energy expenditure was measured in one study [21] and showed significant increases.

- *Lifestyle parameters*: Smoking cessation was recorded in two studies [20,23] with no significant effects noted and levels of alcohol intake was recorded in one study [20] and alcohol misuse in another [22], which was statistically significantly improved. Frailty was significantly improved in one study [24].

- *Social parameters*: Loneliness levels were reported in three studies [19,23,27]. One study did not report the data specifically [19] and one study showed significant improvements in emotional loneliness for the whole cohort and significant improvements in emotional and total loneliness when analysing a group of people who were referred into social prescribing for loneliness issues [23]. One study reported significant improvements in relationships and social networks [27]. Work and social adjustment was reported by one study but did not show significant change [20].

- *Psychological parameters*: Self-esteem was measured but data not reported directly in one study [19]. Anxiety and depression improved in three studies [20,24,27]. Significant improvements were seen in one study [27] and in another if clients saw a link worker at least three or more times [20].
- *Empowerment*: Two studies ([23,24]) reported significant improvements in patient activation and three other schemes referred to the support from the link worker and continuity of time invested, as being key to helping clients feel able to make positive health behaviour changes [8,14,21,22].
- *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 three studies [22,23,25]. 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.
- *Health service usage and economic analyses*: Reduction in the number of visits to a GP was reported in three studies [19,22,23]. In one study approximately a third of people reduced their visits to the GP [(19)]; in the other two studies [22,23] 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 visits [23]. One study reported changes to health and social care usage [24]. Overall, there was a significant increase in usage and associated costs, due to a very small proportion of the cohort. 73.5% of service users reduced or maintained levels of social care usage levels and 37.2% in healthcare. This equated to 17.4% and 26% reduction in social care and health costs for those people respectively [(24)]. One study reported Social Return on Investment (SROI) analysis [19] which showed a £5.07 return of social value for every £1 invested. This was split between the health of participants and the health of a family member. A reduction in emergency hospital activity was reported in one study [(28)].
- Interestingly, in six social prescribing schemes with populations who had low social economic status, similar findings were reported [8,21–24,26] e.g. improved levels of physical activity and improved health behaviours, due to support and encouragement of link workers or facilitators. The link worker approach also led to weight loss, reduction in hypertension, reduction in BMI, and in some cases improved mental health or reduced frailty. Additionally, the need to maintain support for these types of clients for a long period of time e.g., up to 2 years, was reported in three studies [(8,12,20)]. Two studies included people with severe mental illness but did not report outcomes [13,15] but sought to understand the view of link workers. More training to work successfully with clients with severe mental illness was identified as needed by link workers, and it was noted it was not an essential category in the link worker job description.

## Social prescribing pathways: barriers

It is helpful to understand the barriers and enablers to connecting with social prescribing of physical activity. These exist along the client pathway from referrer, to link worker, to client.

- *Barriers for referrers:* Four studies highlighted a lack of time in the consultation as a barrier for referrers [3,5,6,18]. This makes it difficult to introduce a discussion about physical activity and patient preferences about taking an alternative approach to health management, or build a relationship with the patient. Other barriers included referrers' own beliefs and knowledge (or lack of) about the benefits of physical activity [5,6]; the lack of a supportive practice culture about social prescribing and physical activity [6,18]; lack of knowledge of social prescribing and/or of physical activity opportunities in the local community [3,5,18]; a lack of training in how to engage with local opportunities [6] and a lack of understanding of the link worker role [13,15]. Two studies mentioned concerns around safety and the competence of the physical activity provider to work with people with particular health conditions [3,9]. In addition, social prescribing programmes being perceived as short-term can be off-putting to referrers [7].

- *Barriers for Link workers*: Support needs of clients can be complex including physical health issues, moderate to severe mental health problems [13,15,17] and in more deprived communities a range of social and financial problems. Link workers often lacked expertise as well as capacity [12] to manage this level of complexity, experiencing emotional burdens and isolation [15]. These experiences can be compounded by a lack of comprehensive and well-embedded support for the workforce in general [13] and a practical lack of support from the host practice such as not having a suitable consultation and debriefing space, especially important for working with people with severe mental illness [13)]. Working in areas of high deprivation also added to the challenge of motivating people to engage in social prescribing and onward activities [7,12]. The role was made harder by a lack of adequate initial training for such a highly complex role supporting people who are experiencing multiple needs [4,12] including those with severe mental health needs [13,15]. More training in practical skills such as motivational interviewing was mentioned in one study [4] and for coping with mental health needs such as depression and even suicide ideation, was mentioned in three [4,13,15].
- Other barriers included high referral targets which are not achievable given the level of client needs among those referred to social prescribing [12]. A later study from this same social prescribing scheme set in a deprived community, found a lack of suitable and accessible community services for onward referral by link workers – this was a barrier often for those with multi-morbidity [11].
- *Barriers for Clients:* One study in a deprived area of England [14] suggested a belief in the medical model of care hinders uptake of social prescribing, with clients expecting a drug or investigation. There may be a stigma about psychosocial problems and being referred for non-medical help within such

communities [14]. This and one other study also highlighted how the perceived short-term nature of the programme can be a barrier to uptake by clients, as it is for referrers [7,14]. Another study found that for some clients, being dictated to and having a formal prescription could be barriers [5], echoed in the perceptions of green health stakeholders in another study [10]. This study also highlighted low levels of 'health literacy' and not feeling safe in green spaces as potential barriers for some people, perceived by stakeholders. For clients with a long-term condition or serious disease, their physical function as well as attitudes to physical activity can be barriers [(18)].

- At a practical level, in one study time of day of activities for working age adults was a potential barrier [9] and in another, caring responsibilities, life/work balance and finances were cited [4]. Lack of money to pay for transport was similarly perceived by link workers to be a barrier to clients meeting them in one study [13] 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 cited [15].

### Social prescribing pathways: enablers

As expected, themes about enablers across referrers, link workers and clients 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 activity [3] and training to improve staff capability, confidence and knowledge about physical activity 18] 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 [3,5,10]; an example was given in one of these studies of a digital platform or app with simple access to information [3]. Related to this, taking a partnership approach to help join up the health and sport/physical activity sectors was highlighted in one study [6], which advocated direct links between referrer and community activity representatives, to reinforce the service on offer and build trust between them 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 [9,10], especially for referring older patients with multiple morbidities [9]. 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 and deprived areas [7,27].
- 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 four studies [3,5–7]. 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 referrals [13]. 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 in deprived areas with 'low agency' ([7].

- Having a practice culture that was supportive of and promoted physical activity in usual care was an enabler [18]; similarly taking a 'whole practice approach' to social prescribing with joint training for all staff [6]. 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 prescribing [10]. Being involved in the development of the scheme can help referrers see the value and understand their role, helping secure the 'buy in' of stakeholders [7]. Linking to this, regular feedback to GPs on patients' progress was mentioned in two studies to encourage referrers [6,7].
- *Enablers for Link workers:* Echoing a finding above, being part of the GP practice and one that was receptive to social prescribing such as having GP champions and a community centred practice approach, was enabling for link workers [6,13]. This may help them act as co-ordinators which is critical to successful outcomes from social prescribing [27]. Practical set-up could help too such as link workers being employed in one team in one organisation and sharing an office [13]. 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 evaluation [7]. The importance of clear eligibility criteria for any social prescribing scheme was highlighted in two studies [9,17] and as for referrers, knowledge of local physical activity opportunities is important for link workers.
- 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 approach [12,27] that empowers the client [4]. As this study pointed out, this requires a longer consultation time. In this 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 useful [4].
- Being able to provide intensive support to clients and not just refer onwards can be a key part of the role, reflecting the complex caseload that link workers may have that may include clients with complex physical and mental health needs [12]. This makes support for link workers in the form of one-to-one supervision and peer support important [15], and simply being part of a team [15–17]. Alongside this, training was a hugely important enabler, increasing confidence and specific areas that are core to the role such as behaviour change [12] and motivational interviewing [12,17], as well as confidentiality and safeguarding [12]. 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 [7,12,13,15,17]. Training in practical knowledge such as community resources is also needed [12] and in

coping with the demands of the role in general where shadowing other link workers as part of training may be helpful [15].

- *Enablers for Clients:* A person-centred approach to the initial discussion about physical activity by both referrers and link workers, can be motivating for clients and may add legitimacy to starting a new activity [5,7,8,11,14]. As well as trust in the person, good communication and listening skills, being persistent, and linking to tangible options are all important [4,5,7,14,23,27]. Clients value link workers being able to take a gradual and holistic approach to change [11]. This study was in the context of a deprived community where scope for a longer and more gradual process may be particularly needed by clients. This and other studies have also highlighted the importance of a strong and supportive relationship with the link worker. Building rapport and trust with the client over time which encourages and supports them and gives them a degree of control over their onward referral, i.e., with individual goal-setting and a co-produced plan, was seen to be enabling with a range of adult clients including patients with multi-morbidity [4,11,12,23,27]. This helps to promote sustained behaviour change and highlights the importance of link worker continuity [11].
- Other important enablers for clients including those with multi-morbidity, included speaking to a link worker in person and at the GP surgery [23]), and having multiple and regular appointments with a link worker [8,20,22]. In one of these studies which was based in a deprived community, an 'open door' approach to the service where engagement might be over as much as 2 years, was beneficial for clients with long-term conditions including COPD and hypertension who reported improvement in the management of their conditions [8]. Another study that included patients with hypertension in a similar setting, found benefit from follow-up calls [23]. Patients with long-term health needs required a longer-term and flexible service due to the complex nature of health conditions which can fluctuate and make it difficult to engage with services in a predictable way [8].
- In another study a key enabler for clients in a deprived area was being able to recognise the need for non-medical help with problems [14]. More help with understanding social prescribing and breaking down stigma may be needed in this type of community [14]. A buddy system may have potential for some clients according to a study in a general primary care population [5]. In terms of enablers to the onward activities, transport to activities was discussed in two studies [6,18]. Sharing experiences and social interaction at group-based activities can encourage retention and help with loneliness [4,9] and exclusive use of facilities for referral may facilitate participation of older clients [9].

### What routes are used to connect people to physical activities

- Alongside social prescribing of physical activity, the other route for connecting people with physical activity is Exercise on Referral schemes (ERS), sometimes called exercise on prescription. ERS is already 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, they are sufficiently motivated to turn up and adhere to it and that there are no other concerns they need addressing. 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 addressing? before they are likely to adhere to increasing physical activity (see Polley et al [22,23] for examples).

- ERS have been in place for much longer than social prescribing and are implemented more widely around the world providing a larger evidence base than exists for social prescribing for physical activity. A recent working paper [29] has drawn together two rapid scoping exercises [30,31] relating to these two routes and usefully extracts the lessons from ERS which can enhance the successful connection of patients with physical activity through social prescribing. These are: person-centredness; partnerships; standards of practice and management of services. A person-centred environment along the service pathway will help patients access individualised care, choice, and counselling along their journey; trusted partnerships between referrers and ERS practitioners with shared commitment will facilitate appropriate referrals and better-quality care. Alongside this, formal standards of practice of exercise professionals that consider regulation of staff and CPD are needed to improve the quality and safety of the service offered. Lastly, multi-stakeholder involvement in the design and management of services with robust leadership is needed to improve efficacy and uptake.
- As seen from the discussion of barriers and enablers, there are factors relating to the effective functioning of the pathway and the wider healthcare system on which the success of social prescribing hinges. In particular, factors such as time to build relationships and trust and the importance of training for professionals involved see Figure 1 below.

*Figure 1: Factors associated with a successful social prescribing referral [Adapted from 29]*

| | Referrers | Linkers | Individuals |
|---|---|---|---|
| **System/ Practice level** | **Training** (to improve knowledge, confidence and understanding); To include all staff to signpost; | **Training** (including to develop ability to support people with multiple and complex needs) | **Feeling supported,** not dictated to, through person-centred approaches |
| | **Practice culture** (to champion physical activity and social prescribing) | **Embedded in the practice** (including support for link workers such as peer support and one to one supervision) | **Accessibility and transport** |
| | | **Workload and emotional burden** | **Regular and frequent** contact with a link worker |
| | | **Being involved in all stages** of developing social prescribing schemes, including development of clear eligibility criteria for the scheme | **Longer term, flexible service** |
| | | **Longer consultation time** to enable non-directive and non-judgemental approaches | |

| | | | |
|---|---|---|---|
| **Community level** | **Feedback loops** about progress of those referred | | **Peer support** and social connection |
| | **Thriving community sector** as providers of services | | |
| **Individual level** | **Awareness of and relationships with** activity providers | **Awareness of and relationships with** activity providers | |
| | **Time** (to build partnerships, connections, and trust) | **Time** (to build partnerships, connections, and trust) | **Time** (to build relationships and trust) |

## How reliable is this data?

- Grey literature was reviewed for quality using the AACODS tool which considers six areas: Authority, Accuracy, Coverage, Objectivity, Date, Significance [32]. Two of the five grey literature sources were rated highly for all six domains; the other four were considered of only moderate or low quality. Given that the majority of the peer-reviewed studies were of uncontrolled or qualitative designs, these were not suitable for quality appraisal using a standardised method such as the Maxwell tool [33]. It should be noted that the bulk of the evidence in this field is early-phase research and further evidence is needed to confirm the generalisability of findings. In particular for outcome studies, physical activity outcomes were sometimes self-reported bespoke questions, as opposed to validated measures with a range in the amount of follow up data collected. This highlights that many of the findings are tentative and demonstrate only preliminary trends.

- Whilst social prescribing as a term is now embedded in policy, it is not recognised as a MESH term in pubmed or MEDLINE, neither is the term recognised internationally so well. Sometimes it was unclear if the study was describing a social prescribing link worker scheme. Therefore, there is still uncertainty that all relevant papers are captured through search criteria.

## Recommendations

- This evidence summary has outlined the current knowledge of social prescribing in increasing levels of physical activity and associated broader outcomes. This is in keeping with social prescribing schemes in general

[34]. The pattern of findings was very similar in many studies and below are some key recommendations.

- It is crucial to identify the appropriate populations who will most benefit from a social prescribing approach and who will most benefit from an exercise on referral approach and develop more knowledge and promotion of the difference between the two routes to increasing physical activity. People using exercise on referral are expected to have higher levels of self-efficacy (belief in their capability to meet goals,) and activation, to be able to adopt a health behaviour change with minimal support. Being more specific about the differences will maximise benefit from both approaches.
- The conversation with a referring professional is crucial in opening up the subject about physical activity and being able to encourage a person to talk to a link worker. This requires all referring professionals to understand the benefits of physical activity themselves, as well as understand the role that social prescribing plays in supporting people to become more physically active.
- Data from this review suggests that populations with low socioeconomic status and multimorbidity are likely to need up to two years in a social prescribing scheme to achieve beneficial physical activity outcomes. The numbers of visits to a link worker, the caseload of a link worker and the duration for which a scheme is commissioned therefore needs to take this into account.
- Comprehensive and well-embedded support and appropriate training is recommended for link workers to enable them to manage the complexity, emotional burdens and isolation experienced in their role. This is particularly necessary for link workers who are working with clients from deprived communities. Specifically, more training in practical skills such as motivational interviewing as well as supporting clients with mental health needs such as depression and even suicide ideation were identified in this review.
- When collating data on the impact of the social prescribing schemes to increase physical activity levels, the wider outcomes around general wellbeing and determinants of health should also be considered to establish the full impact of the scheme. This is due to social prescribing prioritising what matters to a person, which could be health or based.

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