Physical activity promotion in primary care: Health professional and patient views on connecting primary care patients with community-based physical activity opportunities

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Abstract

Background Inconclusive evidence in support of referrals from health professionals to gym-based exercise programmes has raised a concern for the roll-out of such schemes and highlights the importance of developing and maintaining links between primary care settings and community-based opportunities to improve physical activity levels. This study aimed to identify methods of connecting primary care patients to community-based physical activity opportunities, using the example of jog scotland , and to explore what factors can facilitate this connection.

Methods We conducted a qualitative exploratory study utilising semi-structured interviews with primary care patients (n=14) and health professionals (HP) (n=14) from one UK National Health Service (NHS) board. We analysed the transcripts separately for patients and HPs using thematic analysis and synthesised them for potential methods of connection. Sub-themes for patients and HPs were mapped onto relevant components of the capability, opportunity, motivation behavioural (COM-B) model and theoretical domains framework (TDF) to identify barriers and facilitators for connecting primary care to community jog scotland groups.

Results Three potential methods of connecting patients to community-based jog scotland groups were identified: informal passive signposting, informal active signposting, and formal referral or prescribing. Barriers and facilitators to connecting patients to jog scotland groups fell into five TDF domains for HPs and two COM-B model components for patients.

Conclusions Our findings suggest that for patients, the acknowledgement and raising of the topic of physical activity improvement by their HP can help to justify as well as facilitate and motivate action to change. The workload associated with connecting patients to community-based opportunities is central to the implementation by HPs. Resource solutions (e.g. intermediary person or community information hub) and social support opportunities for patients (e.g. meet and greet) can provide patients with a greater variety of physical activity options and the vital information and support for connecting with local community-based opportunities, such as jog scotland .

Background

The role of physical activity promotion as a ‘best buy’ in health behaviour interventions has long been advocated by global public health strategic plans (1, 2). In 2006, the National Institute of Health and Care Excellence (NICE) public health guidance (3) endorsed four common methods of promoting physical activity to increase the physical activity levels of the population in the United Kingdom (UK): brief interventions in primary care, exercise referral schemes, use of pedometers, and community-based programmes. These preventative public health strategies and guidance emphasise the role of healthcare settings, such as primary care, which provides opportunistic contact with a wide range and number of patients (4).

Since the 1990s, health professionals have been prescribing/referring patients to physical activity schemes (5) (often referred as 'Exercise referral schemes' and 'Physical Activity on Prescription'), yet evidence in support of their effectiveness for increasing physical activity and improving health outcomes is weak (6, 7). A recent systematic review (8) concluded that the main barriers to patient adherence to referral schemes were the inconvenience of the sessions with regard to timing, cost, location, and an intimidating gym atmosphere, dislike of music and TV in the gym environment, and lack of confidence in operating gym equipment. The format and activity at the heart of these gym-based referral schemes has also been noted in the NICE guideline indicating that schemes and programmes 'offering alternatives to gym-based activities, that are less expensive and give a degree of personal choice, seem to improve adherence' (9). In line with this finding and with concern for the roll-out of referrals from primary care health professionals (10), more recent Government action plans (11, 12) highlight the importance of developing and maintaining links between primary care settings and community-based physical activity opportunities, broadening from the use of traditional gym-based programmes to include a range of outdoor activities. These examples from physical activity action plans support the implementation of social prescribing initiatives which connect primary care patients from the National Health Service (NHS) in the UK to community-based opportunities.

Social prescriptions (sometimes known as community referral) can connect patients to a wide variety of existing activities in the community, consisting of non-profit organisations, charities, local sport clubs and independent groups, offering physical activities such as walking, walking football, cycling and jogging. One such community-based group is jogscotland, a recreational jogging network launched in 2002 through the support of the Health Education Board for Scotland, Scottish Athletics and sportscotland. jogscotland was designed to encourage people to gradually increase their activity levels to help improve their health and well-being. Currently, over 500 groups exist across Scotland. By providing training to individuals to become jog leaders and set-up their own local jogging group, these volunteer-led local groups have emerged and grown to support thousands of people to get more active and stay more active, often embedding the NHS 'Couch to 5K' programme (13). The continued growth of these jogscotland groups may be attributed to the inclusive and supportive nature described by members of these groups, together with their community-centred locality and low-cost structure (14).

Current research evidence suggests that barriers for physical activity referral by primary care health professionals includes: a lack of time and incentive (15), a lack of expertise, medico-legal concerns and responsibility (16). However, investigation into options for connecting patients to community-based opportunities and the views of primary care patients on physical activity promotion to community-based physical activity opportunities, is currently lacking. Thus, using the example of jogscotland, the aim of this study was to explore primary care health professional and patient views regarding: 1) potential methods of connecting primary care patients to community-based physical activity opportunities; 2) barriers and facilitators to employing the identified methods of connection.

Methods

This study was part of a larger project aiming to design and test the acceptability and effectiveness of implementing a process of connecting primary care patients to local jogscotland groups as a community-based approach to increase physical activity (local jog leaders and a member of jogscotland were our advisers on the larger project). In combination with a realist scoping review of the literature on the existing methods employed to connect primary care patients to physical activity opportunities, we conducted an exploratory qualitative study using semi-structured interviews with primary care patients and health professionals in Scotland. The findings from both the review and the qualitative study were utilised to inform the design of a feasibility study.

Health professionals (HP) with a patient-facing role working within NHS primary care general practices in the Fife area (East Scotland) were invited to take part in the study through email invitation disseminated by the NHS Research Scotland Primary Care Network. Patient participants were identified as being registered at a general practice in Fife and recruited utilising SHARE, the Scottish Health Research Register (17). Opportunistic recruitment of patients was additionally conducted via face-to-face advertisement at a local practice by a member of the research team. A target sample of 15 patient and 15 health professional interviews was identified as an appropriate sample size to provide the opportunity for the saturation of themes during data analysis (18, 19). Maximum variation sampling was used for patient recruitment to include male and female patients, different age groups (18–30; 31–40; 41–50; 51–60; 61–70; 70 + years old), and patients from different geographical locations across Fife. Patients were excluded from participation if they had been medically advised to refrain from taking part in physical activity.

Semi-structured interviews were conducted either face-to-face at a suitable location or via telephone, depending on participant preference. In line with ethical guidelines, the participant's written informed consent was obtained prior to commencing the interview. The interview guides were developed by the research team and reviewed by our jogscotland advisors. The guide included demographic questions (age and gender) and self-reported of physical activity levels and were informed by the capability, opportunity and motivation model of behaviour (COM-B), the central component of the Behaviour Change Wheel (20). The COM-B model has previously assisted exploration and understanding of health-related behaviour and healthcare professional practice (21–23). The interview guides also included specific open-ended questions about the acceptability and implementation of methods of connecting patients to jogscotland groups, as a working example of connecting primary care patients to community-based physical activity opportunities.

Interviews were digitally recorded and conducted by two researchers (SAC, RHR) experienced in qualitative methods, and guided by interview guides. Coded audio files were transferred to a third-party transcription service and transcribed verbatim. Coded transcripts were analysed utilising NVivo 11.0 software (24) which aided in the management, coding and collation of the data.

Data analysis was conducted separately for the HP and patient transcripts, analysing for views regarding potential methods of connecting primary care patients to the community-based physical activity

opportunities such as jogscotland. To establish an understanding of the barriers and facilitators to physical activity promotion to community-based opportunities for HPs, the data was analysed by coding instances within the transcripts in line with the COM-B model components and mapping onto relevant Theoretical Domains Framework (TDF) domains (25) using reflexive thematic analysis (26). The fourteen-domain TDF was deemed suitable as it prompts an analysis of social, environmental, cognitive and affective influences on health professional practice (27). It links directly to the components of the COM-B model and provides an integrative theoretical framework incorporating individual and organisational determinants of behaviour previously proven useful for understanding the implementation of evidence-based practice and research (27, 28). The data was analysed utilising a deductive thematic analysis approach guided by the TDF domains for the emergence of themes. The data was then analysed utilising an inductive approach to thematically generate explanatory sub-themes within the identified domains. Patient transcripts were analysed in a similar approach utilising deductive coding for instances within the transcripts in line with the COM-B model components and then utilising an inductive approach to generate sub-themes.

One member of the research team (SAC) conducted the coding of all transcripts, mapping of sub-themes, and data synthesis. A second team member (GO) independently analysed a sample of the interviews (20% randomly selected transcripts from each HPs and patients) to ensure appropriateness of coding and mapping.

Results

A total of 28 individuals (n=14 HPs and n=14 patients) participated in the qualitive interviews therefore nearly reaching our target sample size of 30 and achieving saturation of themes. Participant demographics are presented in Table 1. Participants were represented across genders for both HPs and patients. A diverse age range was achieved for patients (33-72yrs) and smaller range for HPs (38-56yrs). HP participants included both general practitioners (GP) (64.3%) and practice nurses (35.7%). Self-reported physical activity levels identified the majority of HPs (92.9%) and patients (57.1%) describing being active at least 3 days per week.

Table 1: Participant Demographics

Healthcare Professionals (n=14)		Patients (n=14)	
Variable	**n (%)**	**Variable**	**n (%)**
Gender		Gender	
Female	7 (50.0)	Female	8 (57.1)
Male	7 (50.0)	Male	6 (42.9)
Age		Age	
25-34	0 (0.0)	25-34	2 (14.3)
35-44	4 (28.6)	35-44	1 (7.1)
45-54	8 (57.1)	45-54	5 (35.7)
55-64	2 (14.3)	55-64	2 (14.3)
>65	0 (0.0)	>65	4 (28.6)
Role			
General Practitioner	9 (64.3)		
Practice Nurse	5 (35.7)		
Physical Activity Level (Days per week)		Physical Activity Level (Days per week)	
0	0 (0.0)	0	3 (21.4)
1-2	1 (7.1)	1-2	3 (21.4)
3-4	5 (35.7)	3-4	1 (7.1)
5-6	4 (28.6)	5-6	4 (28.6)
7	4 (28.6)	7	3 (21.4)

Both patients and HPs were asked about whether they had previously or regularly had discussions about physical activity with their HP/patients. HPs mainly stated this occurring ‘often’, ‘all the time’ or even daily, however, for the majority of the patients they answered that the HP had not mentioned improving physical activity that they could remember but did frequently describe conversations about body weight that often linked to physical activity.

Connecting primary care patients to jogscotland: Professional and patient views regarding potential methods

Interviews with both HPs and patients revealed various potential methods of connecting patients to community-based jog**scotland** groups. We have categorised these into three: *informal passive signposting, informal active signposting*, and *formal referral/prescribing*, based on the type and level of workload associated with the processes of connection for the HP. Each of these methods can be implemented in multiple ways (Figure 1) and for the patient, can involve varying levels of associated workload, that is, low level; - following referral they are contacted by an intermediary person/third party with more details, or a higher workload level; - that is, patient self-refers to seek further information following signposting or prescribing.

Figure 1: Three potential methods of connecting patients to community-based groups from primary care with examples of how these can be implemented

Both patients and HPs acknowledged that advertising local physical activity opportunities such as jog**scotland** could easily be achieved at the GP practice as well as throughout the wider community. The use of posters and leaflets as well as the television monitors in the practice waiting areas could provide a passive means of sharing knowledge of what is available locally and what the group involves:

*"Like a short video, you know how you can run a rotational thing in practices? If people are just sitting in a waiting room, instead of them just sitting there, they're watching a 30 second, 'welcome to jog**scotland**, this is what we do'. I don't know."* [Health Professional, 52yrs, Male]

Patients and HPs additionally discussed the formal prescribing of physical activity:

"Actually, being able to say, 'I'm going to prescribe you, x, y and z, and you need to be at this place, at this time, or here's the contact details'. I think that would be useful. I think it would be a bit more of a formal structured way of being able to hand that advice on. People might also feel like… People like to have something in their hand to go out the door with, and so, often, from our point of view, that means a prescription for a drug. If we can give them a prescription for something that isn't a drug, that would be a good thing, I think." [Health Professional, 42yr, male]

"Would they be more open to it, or would being prescribed a course of physical activity, to somebody who had never done it, be actually more advantageous to them? … It's an interesting question, because in actual fact, when you look at it, it may be that somebody has never, ever thought about it. They've maybe

thought, 'I can't do that at all', so it just is totally discounted. You might be opening up a new possibility for some people." [Patient, 67yr, male]

For HPs, referring patients on to an intermediary (e.g. link worker or exercise co-ordinator) to discuss their physical activity options in more detail and in a personalised manner was also an attractive method:

"From a GP's perspective, if we were able to refer somebody [to] a physical exercise coordinator, who was then able to go through with a patient the types of problems they have, the types of things they like doing, how they would like to change, what sort of exercise they'd like to do, and then give them a structured bit of advice. I think that would be a good way forward." [Health Professional, 42yr, male]

It is noteworthy that, when discussing being 'referred' by a HP, patients often included and described examples of *informal active signposting*, where the HP speaks to them about increasing their physical activity levels and prompts them towards different types of activities or resources. Within the method of active signposting, HPs and patients often discussed '*just having the conversation'* and the use of leaflets and contact cards as a means of emphasising the conversation about improving physical activity. This was seen to allow people to consider their options and remind them that they can self-refer:

"I think contact you know a leaflet and contact card or something like that would be preferable to just verbally told about it because it jogs, you know jogs the memory when you get home you take it out your pocket and go right, I'll do something about that." [Patient, 34yrs, Male]

"I could give something, hand something over to the patient a bit like we hand over our prescriptions. That interaction of handing something over I think is more powerful than me telling them I think. So, again there are other things that I could be doing I think more actively that might... then that then sits on their table and they might then say, 'oh, I'll go and do that,' so, rather than it being in their brain and then disappearing after a few hours of leaving." [Health Professional, 38yrs, Male]

Professional and patient views regarding barriers and facilitators to the identified methods of connection

For both HPs and patients, the barriers and facilitators to connecting patients can be described to arise in two contexts: a) within the raising of the topic of physical activity and b) in connecting patients to the physical activity opportunity. Views from HPs and patients are presented separately in accordance to their analysis approach.

Health Professional Views

For HPs, the barriers and facilitators for connecting patients to physical activity opportunities, such as jog**scotland**, fell within five domains of the TDF: knowledge; memory, attention & decision processes; environmental context and resources; social/professional role and identity; beliefs about consequences (Figure 2). These domains mapped across all three components of the COM-B model highlighting that the HPs capability (knowledge and decision-making process), opportunity (environmental context & resources), and motivation (social/professional role & identify and beliefs of consequences) were important determinants within their behaviour.

Figure 2: HP barriers and facilitators to connecting patients to community-based physical activity opportunities.

Memory, attention and decision processes

For the HPs, their real-time decision-making on whether to raise the issue of physical activity with their patients was guided by how the interaction unfolded and their rapport with the patient during the consultation. Many HPs describe that their decision on whether to raise the topic of physical activity improvement involved waiting for an opening or opportunity when the patient establishes for themselves that physical activity and lifestyle factors could help improve health complaints. This patient-led raising of the topic then acts as the opening opportunity for the HP:

"So, when somebody's decided their condition requires them to go to a doctor and they're in front of a doctor then I can certainly raise it. But I don't usually push it at people until they come to me and say, 'well, listen, you know', and then that gives me the ideal opportunity." [Health Professional, 50yr, male]

However, HPs acknowledged that this patient-driven approach does not always work:

"One of the problems that we have is that often, if we try to empower patients to identify contributing factors, so if we try to say to people who've got… Let's say somebody's got a back pain, and we think they should be more active, and we say, 'is there anything that you think might be contributing to this?' or 'is there anything that you could do differently or change in the way you live your life that might help?'. Often, people say 'no, there's not'. So, they identify the fact that what we're trying to get at is, you should lose some weight and be more active, but rather than saying it in that way, we're trying to do it in a more empowering, more patient-centred way. But often it doesn't work, that's the problem." [Health Professional, 42yr, male]

Thus, HPs are the main instigators of discussions concerning physical activity, and whether or not they decide to do so is often determined by their perception of the patients' receptivity and openness to the topic.

Beliefs about consequences

Many of the HPs expressed that their decision regarding whether or not to discuss physical activity with their patients depended on their beliefs about the patients' engagement and confidence in improving their physical activity levels. In particular, many HPs discussed that their perception that patients would action their suggestion to improve their own health through increased physical activity was a significant consideration when deciding whether or not to raise the issue during a consultation:

"it's getting the time, from what I understand, it's getting the patient at the right time, when they're motivated, when they're ready to take some change." [Health Professional, 45yr, female]

"You are trying with these people, but a lot of them, I think they're looking for that medication, rather than to engage with others and do self-help." [Health Professional, 53yr, female]

HPs also described that many patients didn't think that the physical activity opportunities available in their areas were for them:

"I think for physical activity, like say the [medical condition-specific physical activity programme], and the cardio gym I think sometimes people feel that exercise isn't for them." [Health Professional, 53yr, female]

This perception of the patient's intentions and beliefs towards physical activity often impacted on HPs' decisions regarding whether or not to raise the topic. These beliefs were also considered alongside the HPs' perceptions about the barriers to physical activity for their patients, such as lack of time, availability and accessibility:

"There's the cost thing as well, most people don't seem to have that much money to go join a gym or to a regular class or sign up to a running club. There's all that." [Health Professional, 49yr, female]

"There are people who struggle to access things that involve travel or effort or being organised." [HP11, 50yr, male]

Knowledge, environmental context & resources

HPs identified lack of knowledge and time to discuss physical activity with patients as a barrier. Furthermore, access to resources advising what physical activity options are available in the area and time to seek out this information is a critical barrier for HPs:

That's the irony of it, you know, frontline healthcare professionals who are working to 10-minute consultations, you struggle with the accessibility and currency of information. [Health Professional, 50yrs, Male]

To facilitate and help to overcome these barriers, HPs often described the need for up-to-date resources and alternative connecting solutions that rely on an intermediary person or external resource, including; - practice champions, link workers/co-ordinators within practices, and community hubs for broader social prescribing:

"I think there's probably an opportunity with community health and social care hubs, that's part of what they could potentially do is to signpost people and keep the intelligence on what's available and what does it do." [Health Professional, 50yr, male]

"I guess the other thing is to have champions in each practice. And that wouldn't necessarily need to be a clinician. It could be people in admin. Or you could have, you know, more than one. So, people who, you know, could disseminate some information and stuff to the others. That would be quite good, wouldn't it?" [Health Professional, 56yr, female]

Social/professional role and identity

HPs acknowledge their perceived position of influence and responsibility can be utilised to positively motivate patients towards improving their physical activity levels:

"I think health professionals have a responsibility to do that. I don't think we're the only people that can do it, and I don't think it should be our sole task or job, but I think there's an opportunity there, if someone comes along with something that could be helped, or… By improving physical activity, or it could be, in fact, triggered by not being physically active, I think there's a responsibility to bring that up." [Health Professional, 42yr, male]

However, HPs often raised the point that clinicians should not be solely responsible, and in fact many HPs felt that physical activity should not be medicalised but normalised:

"I think of it as take it out of the medical practice. De-medicalise it, make it part of normal life, okay it was me that triggered it but unshackle the medicalisation of it." [Health Professional, 50yr, male],

The HPs often discussed both that the responsibility lies within the wider community and society as well as with the patient who needs to take ownership for their own health.

For some HPs, there was a medico-legal concern for connecting patients to local opportunities such as jog**scotland**, where the HPs lack of knowledge about the suitability and content of these local physical activity groups led to concerns:

"How do I know I'm referring to something appropriate and not a danger to my patients." [Health Professional, 38yr, male]

Patient views

For patients the barriers and facilitators identified fell within the COM-B components of motivation and opportunity.

Motivation

The majority of patients described being open to physical activity discussions with their HP. Patients share the view with HPs that the HP is in a role and position of influence and can act as a motivator and facilitator by connecting them to physical activity options:

"think I'd be more encouraged to do something like that, them [HP] saying, 'you need to increase your walking'. I would maybe say, 'okay, I'll take the dogs out five days a week and that will increase my walking by two and a half times,' or 'I'll make sure I go for a walk every weekend for two and a half…' And that's something you would commit to, because the doctor has said to you, you've got to do that." [Patient, 64yr, female]

Importantly, patients often discussed the dislike of being dictated to and that in particular, the formal prescribing of physical activity may not be always be taken positively by some patients. In contradiction however, many patients discussed the legitimacy of being '*referred*' to something by their HP:

"I think it's something I would be more inclined to try if I was sort of referred to it. I know that sounds ridiculous…I don't know. It's hard to put into words. I think it would just, it sounds silly, but I would just feel more justified in going along if I was being told to go basically. Although I know we, as human beings, hate being told to do things as well. Maybe not being absolutely dictated to that I had to go, but if I was referred to it, I'd feel it was just a more legitimate thing to do if that makes sense." [Patient, 50yr, female]

Patients acknowledged that a discussion about physical activity (and other lifestyle factors) with their HP can give them motivation and can trigger the '*little push*' towards them thinking and actioning on the advice/suggestion to improve their activity levels:

"Aye, when he sort of brought it up [discussion on improving physical activity] I was, sort of, went home and I was thinking to myself, I was like my jeans are a bit tight on me. And I just started noticing things like that. Then I was like 'right I'm going to do something about it.' Give myself something to aim for." [Patient, 33yr, male]

Patients value HPs as potential motivators and facilitators towards physical activity. Central to this belief is the importance patients place on the ability of HPs to link the benefits of improved physical activity to their health and/or medical conditions combined with the way they approach the topic. Similar to HPs, patients discussed that how the topic is raised by the HP and the perceived responsiveness of a patient to the issue of improving physical activity is key:

"I think, I think you have to sort of be careful on what you're doing on that side of things. Because if you have got people that's on a bit of a downer and that as well, then the fact that you're sort of putting that across to them as well that 'you need to lose a bit of weight' or anything like that, then that could sort of trigger more off. You could get people going away and they could start sulking more. And thinking 'that doctor's called me fat'." [Patient, 33yr, male]

"I suppose, getting people… it's putting the message across without making people feel guilty for not doing exercise, is one of the most important things" [Patient, 43yr, female]

Opportunity

Patients often liked the option of being connected to resources on specific physical activity opportunities by their HP for them to consider and potentially follow-up on. Patients described that connecting to tangible options is favourable because they perceive it as helping them towards implementing the changes in their physical activity instead of generically being told '*you should get more active*' without any discussion of options:

"Having something tangible that the GP's group can recommend, rather than, 'we think you should get a bit more physical activity'." [Patient, 68yr, female]

Participants in some of the interviews suggested that the opportunity to meet with organisers and members of a local jog**scotland** group could allow patients to '*meet and greet'* with local physical activity groups in their area. This potential option was then raised by researchers in latter interviews with patients to ask their views. Patients often described that a '*meet and greet'* (potentially held at a local community location or even the health centre/healthcare practice) could provide them the opportunity to ask questions of what is involved and to meet with people before turning up for the first time – a barrier often mentioned by many individuals during the interviews when they consider starting or turning up to a physical activity opportunity:

"A meet and greet might be good then I wouldn't mind going along to that on my own. If there was maybe other people going at the same time I'd think, 'oh, we're all joining together that'd be fun.' And the chances are you might see someone you recognise so that meet and greet might be okay." [Patient, 63yr, female]

Having the social support to go along to one of these local jog**scotland** groups was often mentioned by the patients, and by the HPs, as acting as a means to help motivate and support patients towards taking the first step towards activity. Furthermore, it was mentioned by patients that a '*buddy system'* could be useful to help in this support:

"I was going to say, not that I've ever been to Alcoholics Anonymous, I know I've got a bit of a food addiction, but I know they'll have their sponsors. So maybe they could buddy up with somebody who really does take a keen interest in where you're at, and wants to help you monitor your progress, motivate you, and all the rest of it, then that might be quite an idea." [Patient, 50yr, female]

Discussion

To our knowledge, this is the first study to focus on identifying potential methods of connecting primary care patients to local community-based physical activity opportunities, such as jogscotland, and the barriers and facilitators to employing those methods of connection. We identified three types of methods of connecting primary care patients to local jogscotland groups: informal passive signposting, informal active signposting, and formal referral or prescribing. Previous quantitative (15, 29–31) and qualitative studies (16, 32) in the UK have highlighted that barriers to physical activity promotion by health professionals include: a lack of time, lack of incentive, lack of knowledge to advise patient, belief that patients wouldn't engage with the advice, appropriateness of discussing during consultation, and medical-legal aspects and responsibility. Our study's findings confirm many of these barriers for HPs which fall within the five domains of the TDF: knowledge; memory, attention & decision processes; environmental context and resources; social/professional role and identity; beliefs about consequences. This study further builds upon this knowledge by providing an understanding of patient views on the barriers and facilitators, as well as reveal some potential solutions suggested by the HPs and patients for overcoming perceived barriers to connecting patients.

In the present study, HPs and patients discussed various potential methods of connecting primary care patients to community-based physical activity opportunities, with assorted ways of implementing each method suggested. What is apparent from the discussions is that there was no single method that was deemed 'best'. Both patient and HP participants highlight the necessity for a variety of means to make connections to accommodate individual preferences. These methods of connection range in their level of health professionals' workload or involvement, from a passive signposting approach at the practice level, a light touch signposting approach, to a more formal prescribing or referral. Importantly, within and across these methods the level of workload for the patient can vary from a low level of referral and follow up (i.e. direct referral to a physical activity group organiser or other intermediary person who then contacts the patient), to a higher-level workload of self-referral and follow-up (i.e. signposted or indirectly prescribed physical activity but the patient takes action to seek further information from community physical activity groups).

The diversity of methods and workloads for both 'actors' in physical activity promotion and connection reflects individualistic needs and wants as well as beliefs related to whose responsibility it is to 'do something' about improving physical activity levels. Both HPs and patients highlighted that linking physical activity promotion with clinical consultation is a key opportunity for potential and opportunistic intervention. Furthermore, many HPs and some patients acknowledged that the responsibility for increasing physical activity should not be limited to the HP and their professional role, rather it also lies within individuals and with wider society and societal norms about self-management. These findings mirror those previously found in qualitative studies conducted with HPs discussing the limitations of exercise referral and exercise on prescription schemes (16, 33). This body of work together with our findings reiterate that there is a shared responsibility in health promotion with HPs and patients alike indicating a desire and acceptance of connections from HPs to non-medical support for self-management also known as social prescribing (also known as community referral).

Mirroring previous findings (16, 34), both HPs and patients see the role of the HP as a facilitators, but should not be dictators, in physical activity promotion due to the perception of the HP as a key person of influence with professional responsibility. However, patients often contradicted themselves during discussions in describing that they 'did not want to be parented' but also reflected that being encouraged or directed by their HP to make changes to their physical activity and/or lifestyle habits was an influential and motivational factor in making changes. In effect, what they were describing was a need to hit a fine balance between directing and suggesting in a supportive manner and being too directive and prescriptive, an important aspect for implementation of behaviour change techniques (35). With HPs acting as facilitators and motivators, it was apparent that for patients the acknowledgement and action of the HP raising the topic of physical activity improvement provided a legitimacy to the issue and an opportunity to do something about the problem. We have categorised the identified methods of connecting into three; informal passive signposting, informal active signposting, and formal referral/prescribing to reflect the implementation workload for the HP. However, from a patient's perspective the very nature of the HP connecting them to physical activity opportunities across any

means of signposting or referral, was seen as ‘formal’ acknowledgement of the problem. The three modalities are not mutually exclusive and all three may be beneficial for some people.

The HP-patient relationship and the manner in which HPs raise the topic of physical activity with their patients was also an important consideration raised within discussions and linked to how the HP can act to motivate or facilitate physical activity promotion. Timing in particular was of key importance, ‘getting the patient at the right time’ and open and motivated (16, 32) to the suggestion of improving their physical activity was a focal part of the HPs decision-processing. How the topic was raised and linked to patient’s specific health conditions was central to the patient’s acceptance and openness to the topic, supporting previous patient views on health promotion in healthcare (34). Within any HP-patient conversation about improving physical activity, both patients and HPs felt that providing patients with tangible physical activity opportunities to look in to, in contrast to ‘you should get more exercise’, was a preferable and more effective approach. However, for the HPs accessing or having the knowledge of different local physical activity groups and opportunities was a major barrier to being able to achieve this, a barrier previously identified for health promotion in primary care (36). Being able to provide up-to-date information on an assortment of physical activity groups, together with the knowledge of what these different groups do and who they are suitable for was sought. HPs, with concern about the medico-legal aspects of connecting patients to local activity groups about which they were not familiar, identified that a solution to their lack of time and knowledge of the different opportunities would be for an intermediary person (e.g. practice champion, community hub, or link worker) to be available for the local area in which they could signpost or formally refer patients towards. Similar to Leenaars et al (36), the link worker or community hub solution was seen by HPs to be able to bridge the connection between primary care and third party groups, providing the patients with more detailed information on the variety of options available in their local area. This type of resource was also seen to be a key solution to alleviate the time pressures HPs experienced within a consultation to discuss specific physical activity opportunities and supported the consensus that patients can also self-refer to this type of resource and take responsibility for their own health improvement.

It was acknowledged by both HPs and patients that for many individuals having social support to begin, and to maintain, any physical activity improvement is fundamental to success. With this in mind, HPs and patients discussed that an opportunity to meet ‘people like me’ who are also trying to engage with a physical activity opportunity would be a potential supportive solution that the practice and wider community could be involved with. In particular, providing an opportunity to ‘meet and greet’ members and organisers of local jogscotland and other community-based groups can provide the chance to build relationships as well as provide the opportunity for patients and HPs alike to ask the group questions about what is involved and who the group is suitable for. In the example of jogscotland, patients and HPs would find it useful to know that local jogscotland groups work on the premise that ‘no one gets left behind’ and everyone is encouraged to speak with others and pair up with new starts when they turn up to the group (an unofficial buddy system). Further, groups are run by trained volunteers and are well-established. Unlike many referral schemes or programmes, the groups are not limited to a timeframe (i.e. 12-week programme) or at risk of disappearing after funding ends. Knowledge about the long-term nature

of jogscotland is key for the HPs in aiding their decision to connect their patients to tangible, supportive physical activity options whilst reassuring them that what they are signposting or referring their patients onto still exists.

The main strength of the current study is the unique opportunity provided to explore both actors in health promotion implementation discussions and in gaining an understanding of how different methods of connection impact on the workload associated with the connection for both the HP in their implementation and for the patient in their actioning. Utilising COM-B model for patient views provided a useful framework in understanding key aspects of health-related behaviour and how primary care and the HP can play an important role in providing opportunity and motivation for patients in physical activity improvement. Utilising the TDF for HPs views provided a valuable means to understand the individual and organisational determinants of the HPs behaviour and decision-making. As these aspects are vital for the implementation of evidence-based practice (27, 28) the identification of the relevant TDF domains was fundamental in understanding the potential solutions to making connections in context.

It is crucial to highlight however that the sample of HPs interviewed for this study self-reported frequent physical activity levels and thus may be more likely to signpost/refer their patients to physical activity opportunities (15). Furthermore, the HPs taking part in this study may not be a truly representative sample of HPs throughout the NHS due to their keen interest in the study and topic of promoting physical activity. Equally there may have been a response bias with patients who were also interested in the topic of physical activity and promotion, thus caution should be implemented in generalisation of the findings.

Conclusions

Physical activity promotion using connection to community-based opportunities was seen by both primary care HPs and patients to be of value. The identified methods of connection from our study reflects the varied associated workload levels for the HP, from passive and no direct involvement, a light touch approach of informal active signposting, to formal referral or prescribing. Across and within these methods there was some variability in the patient's level of associated workload (i.e. from low level where connections are made for them to a higher level, where they self-referral to seek further information.) These varied methods of connecting highlight the diverse and individualist needs and wants of HPs and patients alike for physical activity promotion opportunities. Our findings suggest that supporting HPs to deliver physical activity promotion must focus on resource solutions, examples such as access to an intermediary person or community information hub, and practice-linked social support for patients through meet and greet, or buddy systems. These aspects were seen to be central in giving patients greater variety of physical activity options and the vital information and support to connecting with these local community-based opportunities.

Declarations

Ethical approval and consent to participate

Ethical approval for the study was obtained from NHS Research Ethics Committee and NHS Fife Research & Development (Ref: 18-062 248451 18/LO/1588) and the University of St Andrews School of Medicine Ethics Committee (Ref: MD13995) as part of the larger overall project. All participants provided written informed consent to participant prior to commencement of interviews.

Consent for publication

The views expressed by the participants was obtained following written informed consent. This consent included the use of anonymous quotations from interviews after all identifying information was removed from interview transcripts.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Author Contributions

Conceptualization & design, GO, SAC, KC, RR; Data collection, SAC, RR; Data analysis & interpretation, SAC, GO; Funding acquisition FS, GO; Writing—original draft SAC; Writing—review & editing, GO, KC, RR, FS.

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Abbreviations

COM-B model	Capability, opportunity, motivation behavioural model
GP	General practitioner
HP	Health professional
NHS	National Health Service
NICE	National Institute of Health and Care Excellence
TDF	Theoretical Domains Framework
UK	United Kingdom

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Figures

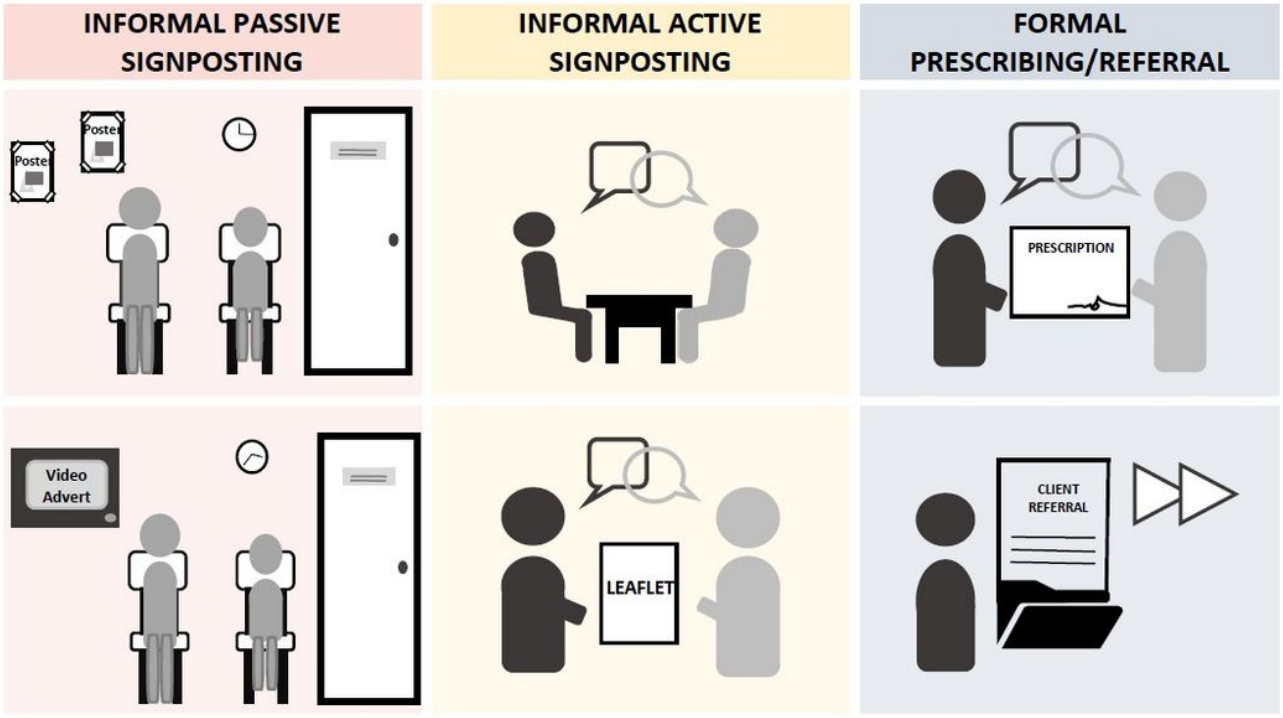

Figure 1

Three potential methods of connecting patients to community-based groups from primary care with examples of how these can be implemented

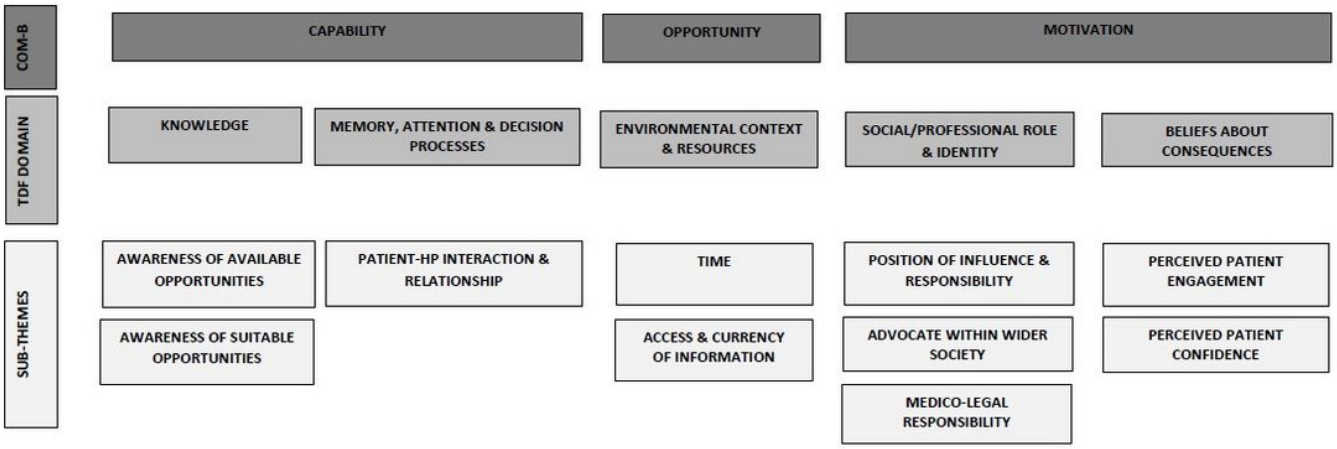

Figure 2

HP barriers and facilitators to connecting patients to community-based physical activity opportunities.