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Complete List of Authors:	Dawes, Jo; Kingston University and St George's, University of London, Faculty of Health, Social Care and Education; Deaton, Stuart; Kingston University and St George's, University of London, Faculty of Health, Social Care and Education Greenwood, Nan; Kingston University and St George's, University of London, Faculty of Health, Social Care and Education
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TITLE

Homeless people's access to primary care physiotherapy services: an exploratory investigation

CORRESPONDING AUTHOR

Name: Jo Dawes[a]

Postal address: Faculty of Health, Social Care and Education, Kingston University and St George's, University of London, Cranmer Terrace, London, United Kingdom, SW17 0RE

e-mail: j.dawes@sgul.kingston.ac.uk

Telephone: 00 44 (0) 2087250819

CO-AUTHORS

Stuart Deaton[a] and Nan Greenwood[a]

AFFILIATIONS

[a]Faculty of Health, Social Care and Education, Kingston University and St George's, University of London, London, United Kingdom

KEY WORDS

Homelessness, physiotherapy, general practice, primary care.

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ABSTRACT

Objectives: The purpose of this study was to explore homeless people's access to physiotherapy.

Design: This exploratory, mixed methods study combined quantitative and qualitative data collection and analysis. During a nine-month period, quantitative data were gathered from the healthcare records of homeless patients referred to physiotherapy by a General Practitioner (GP) practice. Corresponding physiotherapy records of those homeless patients received by the local physiotherapy department were also searched. Qualitative semi-structured telephone interviews with patient facing staff employed at the referring GP practice were used to discuss the quantitative findings and gather further insight.

Setting: Primary care and with data gathered from two sites. The sites involved were: a dedicated GP practice, which cares solely for homeless people and the physiotherapy department receiving their referrals.

Participants: In the qualitative phase of this study, five patient facing staff were interviewed.

Results: Despite recognition that homeless people often experience musculoskeletal problems, few were actually referred to physiotherapy during the data collection period. Semi-structured interviews revealed numerous suggestions as to why homeless people can struggle to attend out-patient services like physiotherapy, the complex circumstances clinicians need to consider before making referrals and suggestions for making physiotherapy more accessible to homeless people.

Conclusions: Homeless people with musculoskeletal problems may be excluded from physiotherapy treatment that could help them. There may be strategies that could be employed to make accessing physiotherapy easier for homeless people.

STRENGTHS AND LIMITATIONS OF THIS STUDY

Strengths

- This study explores the healthcare of homeless people, a topic that has received little attention previously.
- This is an indepth mixed methods study, which integrated quantitative patient data collection and analysis with qualitative interviews, allowing thorough investigation of the research question.

Limitations

- This is a small scale exploratory, study restricted to one GP practice and one physiotherapy department, therefore generalisability to other practices may be limited.

INTRODUCTION

Homeless people are a heterogeneous population, many of whom experience "tri-morbidity" of health issues (the combination of mental ill health, physical ill health, and drug or alcohol misuse).[1] An ongoing, national study of health and wellbeing needs of over 3,355 homeless people in the United Kingdom (UK) suggested that 78% have physical health problems, of which 44% were long term and nearly a quarter of which were joint or muscular problems.[2] The best comparable health data available suggests only 14% of the general public in England reported musculoskeletal health problems.[3] Although, caution should be exercised with such comparisons, as Homeless Link data are aggregated over several years, this suggests that the incidence of musculoskeletal disorders may be greater amongst homeless people than housed populations. Additionally, amongst a homeless population, musculoskeletal disorders are likely to be under reported and poorly understood.

Rapid access to physiotherapy is vital in preventing new acute musculoskeletal problems becoming chronic.[4] However, this hard to reach population often faces barriers accessing healthcare, making comprehensive clinical management of their health challenging.[1]

In the UK, access to National Health Service (NHS) physiotherapy for musculoskeletal problems is usually via a General Practitioner (GP) referral. Alternatively, referral by a hospital consultant or, in some areas, self-referral is possible. Although most homeless people (92%) are registered with a GP, 15% with physical health problems do not receive support and 18% have reported being refused access to a GP or dentist in the preceding 12 months.[2] This suggests that, despite many homeless people being

registered with a GP practice, they may not attend and thus are not referred to other healthcare services.

Homeless people in England attend accident and emergency (A&E) departments five times more often than the general public.[5] However, the proportion of attendances for non-emergency musculoskeletal problems is unknown. If, some of these presentations are for musculoskeletal problems, this could be a costly route to treatment when one compares the unit costs of A&E attendance with primary care.[6] The reasons for their heavier use of A&E could be a combination of not having to make an appointment and the relative immediacy of assessment. This is likely to be more compatible with the unpredictable nature of homelessness.

London is a useful example for considering homeless people's access to healthcare, because of its large homeless population (an estimated 7,851 people slept rough 2014/15[7] and approximately 30,000 people were considered and assessed for support from their local authority as a homeless person in 2015).[8]

Although homeless people might find accessing physiotherapy easier by self-referral, it is not consistently offered UK-wide. Currently in London only six out of 32 boroughs offer self-referral[9] so for most homeless people, engagement with GP services is essential.

Alternatively, a homeless person in London might access physiotherapy via "Crisis at Christmas" - a volunteer run service providing homeless people with shelter, practical support and health services, including physiotherapy over the Christmas week. Although it only runs six days a year, 194 physiotherapy patient sessions were provided

in 2015.[10] Data collected during Crisis at Christmas 2013 showed that the majority of people who used the physiotherapy service had soft tissue injuries, but fewer than half had previously sought help.[11] This adds weight to the argument that accessing mainstream physiotherapy year round may be difficult for many homeless people.[11]

This evidence suggests little is known about how homeless people with musculoskeletal problems are managed, and how accessible physiotherapy is to them. The aims of this study were therefore to focus on accessibility of physiotherapy to homeless people with musculoskeletal problems and to observe how their presenting conditions are managed. In London, some National Health Service (NHS) funded specialist General Practices provide primary care services solely for homeless people. In partnership with one such practice and their receiving physiotherapy department, this exploratory study investigated the management of musculoskeletal problems amongst homeless people.

METHODS

Setting

Data were gathered from two sites in London, UK. Site A, was a GP practice, solely serving a population of approximately 800 homeless and vulnerably housed adults. Site B was an NHS physiotherapy outpatient department, which received all NHS neuromusculoskeletal physiotherapy referrals in that local area, including those from Site A.

Study design

This exploratory study employed a mixed methods design. This design was adopted so that collection and analysis of quantitative data could illustrate actual service referral and

treatment outcome activity and qualitative interviews could then be used to explore reasons behind the quantitative findings. The design comprised of two linked phases. Two researchers (JD and SD) collected and analysed the data. The purpose of the first phase was to gather patient data from sites A and B to allow comparison of data and determine the patterns and treatment of homeless people referred to physiotherapy. The second phase used qualitative interviews to explore the quantitative findings from the perspectives of staff from site A and gain insight into potential reasons explaining them.

Phase 1: Quantitative phase

Preliminary fieldwork facilitated understanding of how patient data were collected in each site and could be extracted from patient records systems. Anonymised data from all patients referred from Site A to Site B over nine months were collected from the patient records systems at both sites.

At site A, a practice administrator searched the patient records system (Egton Medical Information Systems- EMIS) for patients referred to physiotherapy during the nine month study. Anonymised patient data was collated in Excel. Information included: patient code number, physiotherapy referral date, referrer name, referral reason, age, gender, ethnicity, housing status, support from key worker staff, number of co-morbidities (including recorded addiction) and whether a discharge summary had been received from the physiotherapy department.

At site B, a search of the patient records system (CSE Severlec, electronic care record, RiO) for all patients referred from site A was undertaken. The physiotherapy manager

anonymised all patient records ensuring patients could not be recognised by the research team and provided anonymised copies of discharge summaries.

Quantitative data analysis

As the two sites used different patient record systems, the two anonymised data sets were matched using patients' gender, age at time of referral and referral date. Cross checking of anonymised discharge summaries was used to maximise match accuracy. JD and SD, who undertook the matching and analysis, were external to the two clinical sites ensuring patient anonymity was maintained.

The matched data were analysed using descriptive statistics (mean, SD, median and ranges) of age, gender and numbers of co-morbidities to establish the demographic characteristics of the homeless people referred to physiotherapy. Reasons for referral; attendance patterns; physiotherapy interventions; and outcomes of treatments were also identified and summarised in a quantitative data summary sheet. This then formed the structure for qualitative, semi-structured telephone interviews with site A practice staff.

Phase 2: Qualitative phase

To understand patterns within the data and staff perspectives of these, all patient facing GP practice staff (n=9, including GPs, nurse practitioners, practice clinical leader, healthcare assistants and reception staff) were invited for a recorded telephone interview. They were provided with a consent form and a participant information sheet.

Participants were e-mailed the quantitative data summary sheet and asked to have this in front of them during their interview. The interviewer used a topic guide, which consisted of open questions relating to the information presented on the quantitative data summary sheet. The interviewer worked through the interview guide, encouraging participants to give as much detail as possible. When necessary, clarification was sought either by the interviewer paraphrasing and repeating back to the interviewee what they had interpreted the interviewee said, or, by asking the interviewee to explain what they meant. This process of clarification is a form of member checking which can add to the accuracy and credibility of the data gathering process.[12] With consent, all interviews were digitally recorded and transcribed verbatim. Five staff were interviewed, including two GPs, two nurses and a receptionist.

Qualitative data analysis

Interview transcripts were analysed using thematic analysis, a six phase process which involved searching across the data for repeated patterns of meaning (themes).[13] The phases of analysis used in this study involved: both JD and SD reading and rereading the interview transcripts and becoming thoroughly familiar with the content; both researchers independently generated initial codes and searched for themes within the transcripts; then together JD and SD reviewed and discussed the themes generated, which resulted in defining and naming themes collaboratively. Themes were reviewed by NG, finalised and presented, supported by direct quotes or “thick descriptions” to provide additional context.[14]

RESULTS

Quantitative results

The data presented (Table 1) are from patient records for people referred from Site A to Site B during the nine month study. During that time, 33 patients were referred to physiotherapy, (one patient was referred twice, giving 34 patient records in total). Across the two sites it was possible to match 24 of the 33 (72.7%) patients. As one person was referred twice, there were 25 patient records.

Table 1: Patient demographic information of referrals from site A to site B

		Patients referred from site A to physiotherapy at site B (n=33)	Patients matched across both sites (n= 24)
Age (years)	Mean	44	44
	Median	48	47
	Range	26 to 62	27 to 62
	S.D.	10.4	10.9
Gender	Male	25 (76%)	19 (79%)
	Female	8 (24%)	5 (21%)
Housing status	Street homeless	5 (15%)	3 (13%)
	Housed	6 (18%)	5 (21%)
	Hostel/ temporary accommodation	15 (45%)	10 (42%)
	Squatting/ sofa surfing	7 (21%)	6 (25%)
Recorded drug or alcohol problem	Yes	14 (42%)	11 (46%)
	No	19 (58%)	13 (54%)
Key worker	Yes	3 (9%)	2 (8%)
	No	30 (91%)	22 (92%)
Reason for referral	Back/ neck problem	14 (42%)	9 (38%)
	Upper limb problem	10 (30%)	8 (33%)
	Lower limb problem	9 (27%)	7 (28%)

Demographics of the 33 patients referred to physiotherapy and the 24 patients successfully matched across both sites were very similar. Information about the 24

matched individuals, formed the basis of discussions in the qualitative interviews and are discussed in this article.

One patient was referred twice, so there were 25 patient records for the 24 matched patients. The 25 patient records showed that nine (36%) patients did not attend their first appointment, which compares to an average of 14% for the physiotherapy service as a whole.[15] Seven (28%) attended an initial appointment, but did not attend a subsequent appointment and were then discharged from the service. Five (20%) completed treatment and four patients (16%) had treatment ongoing.

A total of 81 physiotherapy sessions were registered amongst the 24 homeless patients. Of these appointments, 49 (60%) were attended, 14 (17%) were cancelled (either by service or by patient), and 18 (22%) were not attended. This compares to the mean rate of “did not attend” (DNA) to the physiotherapy service as a whole, during the study timeframe was 13%.[15] For those attending their initial appointment, the median number of sessions attended was two. The median number of sessions attended by those that completed their treatment and were subsequently discharged from physiotherapy was four (excluding the four patients whose treatment was ongoing). This was similar to the mean number of sessions attended by patients for the physiotherapy service as a whole (4.5).[15]

A greater proportion of those failing to attend their first appointment were non-White British, did not have English as their first language and had reported drug and/or alcohol dependence problems. However, given the low numbers these differences should be viewed with caution.

Ten patients had specific interventions documented at Site B. These included: exercise prescription (n=8); advice (for example postural advice, health promotion or self management) (n=6); and, manual therapy (n=3).

Qualitative results from interviews

Five interviews were recorded with practice staff over a one-month period. Table 2 profiles those interviewed. The interviews lasted from between twelve and 20 minutes.

Table 2: Summary staff interviewed for qualitative data collection

Pseudonym	Role	Experience of working in homelessness
Margaret	Nurse practitioner part time	At practice for six years, has had an interest in homelessness and disadvantaged people since qualifying
Yvonne	General Practitioner part time	Seven years of working in homelessness and many years of working in developing world
Alan	General Practitioner, partner practice, full time	Partner practice for 12 years, also works in acute care with homeless people. Has worked in homelessness since qualifying as a doctor
Helen	Clinical Nurse specialist, full time	Seven years of working in homelessness and management responsibilities at the practice
Kim	Receptionist, part time	Worked at the practice for 10 years. Deals with patients face to face and on the phone, daily.

The staff interviewed had various perspectives on the quantitative findings presented to them, but there was often consensus. By inviting the interviewees to explore and discuss the quantitative findings, a breadth of insight and understanding of these findings was captured. Themes identified included: recognition of homeless people's high incidence of musculoskeletal problems but surprise at low physiotherapy referrals; considerations given before referring to physiotherapy; explanations for non-attendance to physiotherapy appointments; perceptions of what physiotherapy offers; and, suggestions about how to make physiotherapy more accessible.

There was consensus that characteristics of those referred to physiotherapy reflected the homeless people attending their practice. Most interviewees noted that musculoskeletal problems were extremely common amongst their patients.

> *"back problems are a huge bulk of what we see generally. Back, neck, shoulder, upper limb, knee, ankle... Lots of back problems"*
>
> Helen, Clinical Nurse specialist

As a result, there was surprise at the low physiotherapy referral rate. However, numerous explanations for the low referral rate were offered, including: non-recording of referrals on the computer system; the relatively small practice size (approximately 800 registered patients); or, a belief that patients' culture or language might limit their understanding of physiotherapy thereby fostering unwillingness to be referred.

> *"The non-White British … not understanding why we are sending them to physio, and that there is more to it than 'we just want you to do some exercises'"* Margaret, Nurse Practitioner

Additionally, in a population with multiple morbidities, musculoskeletal problems might not always be the most pressing health problem.

> *"It's impossible to tackle everything in every patient that comes in… I wouldn't bombard someone with six referrals when I first see them, even though each of the six conditions they come in with, you would be referring in another population… The morbidity is so high… that we have to help prioritise and we have to make sure we don't scare people off..."* Yvonne, GP

Equally, patients may underplay their symptoms, choosing to manage them themselves.

"I think most people who come in have some musculoskeletal problems, which they underplay and they self-medicate." Yvonne, GP

Staff described both system and patient-related factors they considered before referring to physiotherapy. System-related factors included appointment letters potentially not reaching patients who regularly change address.

"OK we've referred them, do they actually get the appointment, if they haven't got an address? If they have to come to [our practice] to collect their post, how good are they at collecting their post?"

Helen, Clinical nurse specialist

There was also the belief that the referral process and waiting times were long therefore the referred homeless patient may prioritise other issues by the time they are offered an appointment.

"the general slowness in response to physio referrals… the more acute things we may be less likely to refer because we know it will be a month before we get a response, and appointment some time after that" Alan, GP

Patient-related factors staff consider before referring included: symptom severity and chronicity, perceived benefits of physiotherapy, and the challenges homeless people face attending appointments. Interviewees seemed reluctant to refer homeless patients to services, if they perceived them to be unlikely to attend.

"Our referral rates are probably lower than for the amount of severe morbidity we see, I suspect, because we are anticipating high DNA [patient not attending] rates" Yvonne, GP

Participants cited many reasons why homeless people might fail to attend appointments, included: not prioritising their health; poor timekeeping; language barriers; addiction, mental health problems and, chaotic lifestyles.

> *"But obviously with homelessness, if they get to sleep at someone's house and it is far away, it's difficult for them [to get to appointment]."* Kim, Receptionist

> *"with drug and alcohol problems, [some] tend to be less good attenders … partly because they may still be under the influence even if they were intending to attend."* Alan, GP

Although the mean DNA rate was higher amongst homeless people than that for the general population referred to physiotherapy site B[15], it was thought that an uptake of about a third (36%) was "not bad" for this patient group. Interviewees felt that non-attendance to follow-up appointments could be due to misunderstanding about what physiotherapy offers. One participants paraphrases a conversation she had with a patient.

> *" 'oh I went there … the physio looked at me, and he just said I must stretch a few times, how is that supposed to fix my problem?' "*.
>
> Margaret, Nurse Practitioner

Other suggestions were that perhaps one appointment sufficiently alleviated symptoms, or symptoms were improving by the time they reached physiotherapy. Alternatively, homeless people may have had an unpleasant experience at their initial appointment.

"I guess they are a population that are used to not getting the greatest reception…" Alan, GP

There was also a perception that physiotherapy may be evolving to place greater emphasis on self-management, with participants acknowledging that homeless people may not adhere to advice and exercise prescription.

"much less physio is hands-on these days, and it's much more advice. So a lot of people … aren't that good at adhering to advice or doing exercise … and they don't really believe that exercises are going to help."

Yvonne, GP

Some noted that since housed people often struggle with exercise programme adherence, the additional challenge of precarious accommodation that homeless people face means that such exercise programmes are probably unrealistic.

"I mean, where do they do their exercises if they are on the street, if they are squatting or sofa surfing? … that may be often a reason why people don't go back after their first appointment." Yvonne, GP

Consequently, participants said that they would often seek out alternatives in-house, rather than referring externally. For example, they might provide in house injection therapy, analgesia, exercise, advice or information leaflets instead of onwards referral.

"When I began to realise that actually quite a lot of what my patients were getting was advice and exercise sheets, well actually, some of that I can do"

Yvonne, GP

Conversely, one interviewee commented on how physiotherapy could offer an alternative to analgesia in a patient population who often have addiction problems.

> *"In a group of people who substance misuse, we try and reduce our issuing of prescriptions as much as possible… analgesia is very high on the agenda..."* Margaret, Nurse Practitioner.

Interviewees stated the need to manage the expectations of homeless people, as they may lack awareness about what physiotherapy involves. For example, a fundamental aspect of physiotherapy is helping the patient with self-management, so active engagement in rehabilitation is essential.

> *"you [the homeless person] actually have to attend... and then you are not telling them go away with nothing, we can help, but you [the homeless person] have to help yourself in the process"*
>
> Margaret, Nurse Practitioner

Approaches to potentially improve homeless peoples' attendance to physiotherapy mirrored explanations for why they may fail to attend. These included: better prompting, perhaps with texts to mobile phones; a self referral process; shorter waiting times; and, the ability to get an appointment at the time of making the referral. With these ideas in mind, there was a feeling that it was worth testing how referral to and uptake of a physiotherapy service might increase if it were on site in the GP practice, because they recognise that their homeless patients may prefer going somewhere familiar.

> *"familiarity of the practice, they know where they are coming. They perhaps have the trust of something offered under the general practice roof, where they are used to coming." Alan, GP*

DISCUSSION

These findings are important because untreated musculoskeletal problems are common amongst homeless people, but there is limited understanding of how they are managed. Certainly, this study indicates a mismatch between the high incidence of musculoskeletal problems in the homeless population[2] and the few homeless people accessing physiotherapy. The lack of GP registration cannot explain poor access here, as the study was undertaken within a GP practice solely caring for homeless people.

The decision making about whether to refer homeless patients to physiotherapy was interesting. Perceptions that patients lacked understanding about physiotherapy were one consideration and suggest there is value in promoting understanding amongst homeless people and key support staff. Staff also felt that system structures did not facilitate homeless people's attendance. Perhaps traditional processes of referrals, followed by appointment letters sent to patients' addresses, rigid appointment times, and long waiting periods are not ideal for this population.

This study also provided useful insight into clinicians' perceptions about what physiotherapy can offer homeless patients. There seemed to be a belief that physiotherapy was mainly "just advice and exercise". This might explain a reluctance to refer and, at times, staff themselves choosing to provide advice and exercise. However, physiotherapy also includes detailed assessment, manual therapy, education, and specialist knowledge in management of musculoskeletal, respiratory and neurological conditions. If the homeless patients referred for physiotherapy in this study mainly received advice and exercise, there are several possible explanations for this. Firstly,

this study found few people to have completed physiotherapy treatment so perhaps advice and exercise was primarily all this small number of patients needed. Secondly, with long waiting times, and NHS departments under pressure, it is possible that physiotherapists had limited capacity to provide a greater breadth of interventions. Alternatively, if the receiving physiotherapists were inexperienced in supporting homeless people, perhaps presenting with underlying addiction issues or challenging behaviour, basic exercise and advice may have been all the physiotherapists felt comfortable providing.

Clearly more work is needed if homeless people are to receive the care they need. There is scope for education and shared practice across the professions of physiotherapy and General Practice. There is a place for physiotherapists gaining greater understanding about the challenges of homelessness and GPs increased understanding of the full scope of physiotherapy. Homeless people will always face a complex mix of physical health, mental health, addiction and social factors making attending and complying with physiotherapy challenging. However, physiotherapy managers and GPs could work together to address some of the practical barriers facing homeless people who need access to physiotherapy. Piloting physiotherapy provision in GP practices that care for homeless people could be extremely valuable, so they could receive physiotherapy in more familiar territory, thus facilitating attendance. GPs and physiotherapists could work together to optimise understanding of interventions. This potentially, could allow GPs to spend less time dealing with musculoskeletal problems and a physiotherapist working in the GP practice to better understand homelessness issues.

The conclusions drawn here are limited by this being a small, exploratory study, restricted to one GP practice and one physiotherapy department. Consequently, generalisability of findings to other settings may be limited. Ethical approval stipulated that all patient data reaching the research team must be anonymous, so it was impossible to use patient NHS numbers or dates of birth, making matching of data across the two sites problematic. As a result, nine patient records could not be matched. Convenience sampling was used in the qualitative phase of the study and although there was often consensus amongst the participants, the findings are limited by the small sample size. However, the findings do suggest that even if physiotherapy is a resource homeless people could benefit from; their ability to access it is currently limited by numerous factors. Moreover, this study suggests that there may be many ways forward for improving the services to this vulnerable group, which could be delivered by relatively simple service redesign.

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CONTRIBUTORSHIP STATEMENT

Authors Jo Dawes (JD), Stuart Deaton (SD) and Nan Greenwood (NG) all made substantial contributions to the conception or design of the work. JD was the primary collector of data, JD and SD were involved in data analysis and JD, SD and NG were all involved in interpretation of data. JD drafted the work and all three authors revised it critically for important intellectual content. All three authors have approved the final

version to be published and agree to be accountable to all aspects of the work, and ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

COMPETING INTERESTS

The authors of this publication have no conflicts of interest.

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DATA SHARING STATEMENT

In line with the ethical approval granted for this study, no additional unpublished data will be shared from this study.

ETHICAL APPROVAL

The organisations that reviewed this study and provided ethical approval are:

- Faculty Research Ethics Committee, Faculty of Health, Social Care and Education, Kingston University and St George's, University of London
- Ethics Sub-committee, East London NHS Foundation Trust, Trust Headquarters, 9 Alie Street, London, E1 8DE (Project 313)
- Research and Development Committee, Homerton University Hospital Trust, Homerton Row, London, E9 6SR (R&D no: CO1334)

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REPORTING CHECKLIST

Having consulted the Equator Network website[1] for a suitable reporting guideline, none of the main study type guidelines were suitable for our exploratory study. However, a literature search found the GRAMMS (Good Reporting of A Mixed Methods Study) guideline,[2] which has been designed to help consider the quality of mixed methods studies in health services research. Table 1 indicates the page numbers on our submitted article where each criterion has been addressed.

Table 1: GRAMMS guideline checklist and page numbers where each criterion addressed

Criterion number	GRAMMS criterion	Page number in article where criterion is addressed
1	Describe the justification for using a mixed methods approach to the research question	p6 -7 and more information about qualitative methods p8.
2	Describe the design in terms of the purpose, priority and sequence of methods	p7
3	Describe each method in terms of sampling, data collection and analysis	p7-9
4	Describe where integration has occurred, how it has occurred and who has participated in it	p9
5	Describe any limitation of one method associated with the present of the other method	N/A: Presenting the quantitative information to the interviewees was a fundamental strength of this research. So in this instance, the authors do not think that integration of the methods carried limitations.
6	Describe any insights gained from mixing or integrating Methods	p12

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Homeless people's access to primary care physiotherapy services: an exploratory investigation using a follow-up qualitative extension to core quantitative research mixed methods approach

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CORRESPONDING AUTHOR

Name: Jo Dawes[a]

Postal address: Faculty of Health, Social Care and Education, Kingston University and St George's, University of London, Cranmer Terrace, London, United Kingdom, SW17 0RE

e-mail: j.dawes@sgul.kingston.ac.uk

Telephone: 00 44 (0) 2087250819

CO-AUTHORS

Stuart Deaton[a] and Nan Greenwood[a]

AFFILIATIONS

[a]Faculty of Health, Social Care and Education, Kingston University and St George's, University of London, London, United Kingdom

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ABSTRACT

Objectives: The purpose of this study was to appraise referrals of homeless patients to physiotherapy and explore perceptions of barriers to accessing this service.

Design: This exploratory, mixed methods study used a follow up qualitative extension to core quantitative research design. Over nine-months, quantitative data were gathered from the healthcare records of homeless patients referred to physiotherapy by a General Practitioner (GP) practice, including: number of referrals and demographic data regarding all homeless patients referred. Corresponding physiotherapy records of those people referred to physiotherapy were searched regarding outcome from their care. Qualitative semi-structured telephone interviews based on the quantitative findings, were carried out with staff involved with patient care from the referring GP practice and were used to gather further insight into the quantitative findings.

Setting: Two primary care sites provided data for this study: a dedicated GP practice, which cares solely for homeless people and the physiotherapy department receiving their referrals.

Participants: Quantitative data from the healthcare records of 34 homeless patient referrals to physiotherapy were collected and analysed. Additionally, five staff involved in patient care were interviewed.

Results: 34 referrals of homeless people were made to physiotherapy in a nine-month period; it was possible to match 25 of these to records from the physiotherapy department. Of these 25, nine (36%) patients did not attend their first appointment; seven (28%) attended an initial appointment, but did not attend a subsequent appointment and were then discharged from the service, five (20%) completed treatment and four patients (16%) had treatment ongoing. Semi-structured interviews revealed possible barriers preventing homeless people from accessing physiotherapy services,

complex factors to consider before making referrals, and possible ways to improve physiotherapy access.

Conclusions: Homeless people with musculoskeletal problems may be excluded from physiotherapy treatment. Strategies could be employed to make accessing physiotherapy easier for homeless people.

STRENGTHS AND LIMITATIONS OF THIS STUDY

Strengths

- This study explores homeless people's access to physiotherapy, a topic that has received little attention previously.
- This is a mixed methods study which uses a follow-up qualitative extension to core quantitative research design. In its quantitative phase, information about the number of homeless people referred to physiotherapy in a defined time period was accurately captured, demographic information about these people was explored and the outcome of physiotherapy care was described. The quantitative findings were then summarised and formed the basis of qualitative interviews with GP practice staff who are directly involved in the care of homeless people. This methodological process allowed for thorough investigation of the research question.

Limitations

- This is a small scale exploratory, study restricted to one GP practice and one physiotherapy department, therefore generalisability to other practices may be limited.
- The scope of the study did not extend to interviewing homeless people about their experience of accessing physiotherapy. In not doing so, it leaves the voice of the homeless people out of this work and potentially adds a degree of bias.

- Difficulty matching patient records from two different healthcare records systems resulted in it being impossible to include all patient records in the data analysis. The reduction in data available for analysis may have impacted on the conclusions that could be drawn.

INTRODUCTION

Homeless people are a heterogeneous population, many of whom experience "tri-morbidity" of health issues (the combination of mental ill health, physical ill health, and drug or alcohol misuse)[1] and whose mortality is substantially increased, even in countries with good support for those with insecure accommodation.[2] An ongoing, national study of health and wellbeing needs of over 3,355 homeless people in the United Kingdom (UK) shows that 2,452 (78%) have physical health problems, of which 1,371 (41%) were joint or muscular problems,[3] nearly three times as high as that of the general public (14% of people in England reported musculoskeletal health problems).[4] Additionally, it is recognised that homeless and disadvantaged populations appear to suffer more serious health problems and may not report minor health problems as frequently,[5] therefore musculoskeletal disorders amongst homeless people may be more serious than amongst housed people and homeless people may be under reporting the less severe problems.

Health problems amongst homeless people are often compounded by a lack of access to healthcare, although currently little is known about the factors that affect access to healthcare.[6] Homeless people are acknowledged as a hard to reach population[7] that often faces barriers accessing healthcare, making comprehensive clinical management of their health challenging.[1] Rapid access to physiotherapy is considered vital in preventing new acute musculoskeletal problems becoming chronic.[8] However, there is no empirical data published on homeless people's access to physiotherapy services.

In the UK, access to National Health Service (NHS) physiotherapy for musculoskeletal problems, is usually via a General Practitioner (GP) referral, alternatively, referral by a hospital consultant or, in some areas, self-referral is possible. Despite 98% of the

English general population being registered with a GP, a recent study has reported that only 83.3% of single homeless people in accommodation, 89% of hidden homeless people and just 65% of rough sleepers were registered.[6] Reasons homeless people have difficulties in registering with a GP may include regularly moving area, having no fixed address, problems keeping appointments and a lack of transport.[6] Moreover, these reasons could also explain why despite many homeless people being registered with a GP practice, they may rarely attend and thus are not referred on to other healthcare services.

It is estimated homeless people in England attend accident and emergency (A&E) departments five times more often than the general public.[9] However, the proportion of these A&E attendances for non-emergency musculoskeletal problems, which might better be dealt with by a physiotherapist in primary care is unknown. If, some of these presentations are for musculoskeletal problems, this could be a costly route to treatment when one compares the unit costs of A&E attendance with primary care.[10] The reasons for their heavier use of A&E could be a combination of not having to make an appointment and the relative immediacy of assessment, which are likely to be more compatible with the unpredictability of homelessness. This hypothesis is supported by the experiences of physiotherapists who, in 2003, reported on running services for homeless people in Glasgow and found improved uptake of physiotherapy when services were provided on a “drop-in” basis, in evening clinics within homeless centres and via outreach to hostels.[11]

London is a useful example for considering the current situation of homeless people’s access to healthcare, because of its large homeless population (an estimated 7,851

people slept rough 2014/15[12] and approximately 30,000 people were considered and assessed for support from their local authority as a homeless person in 2015).[13] Although homeless people might find accessing physiotherapy easier by self-referral, it is not consistently offered UK-wide. Currently in London only six out of 32 boroughs offer self-referral[14] so for most homeless people, engagement with GP services is essential. Alternatively, a homeless person in London might access physiotherapy via "Crisis at Christmas" - a volunteer run service providing homeless people with shelter, practical support and health services, including physiotherapy over the Christmas week. Although it only runs six days a year, 194 physiotherapy patient sessions were provided in 2015.[15] Data collected during Crisis at Christmas 2013 showed that the majority of people who used the physiotherapy service had soft tissue injuries, but fewer than half had previously sought help.[15] Clearly, a short-term service such as this one is not comparable to mainstream physiotherapy services, however, it is currently the only physiotherapy service tailored specifically to homeless people for which any reportable data exist.

Little is known about how homeless people with musculoskeletal problems are currently managed, and how accessible physiotherapy is to them. So, this study focuses on accessibility of physiotherapy to homeless people with musculoskeletal problems and how their conditions are managed. In London, some NHS funded specialist General Practices provide primary care services solely for homeless people. In partnership with one such practice and their receiving mainstream NHS physiotherapy department, this exploratory study investigated the management of musculoskeletal problems amongst homeless people.

Aims of study

- Core quantitative phase: to appraise all referrals made to physiotherapy from a specialist GP practice caring for homeless people in a nine-month period. This includes numbers of referrals made, demographic information about the people referred and outcome of physiotherapy care.
- To summarise the quantitative findings to generate interview questions for qualitative phase of research.
- Follow-up qualitative extension phase: to explore findings of quantitative phase with GP practice staff in order to gain depth of understanding as to explanations for quantitative findings.

METHODS

Setting

Data were gathered from two sites in London, UK. Site A, was a GP practice, solely serving a population of approximately 900 homeless and vulnerably housed adults. Site B was an NHS physiotherapy outpatient department, which received all NHS neuromusculoskeletal physiotherapy referrals in that local area, including those from Site A.

Ethical approval for the study was given by the Faculty Research Ethics Committee, Faculty of Health, Social Care and Education, Kingston University and St George's, University of London.

Study design

This exploratory study employed a follow-up qualitative extension to core quantitative research mixed methods design.[16] This design was adopted so that collection and

analysis of quantitative data could show actual service referral and treatment outcome activity and qualitative interviews could then be used to further explore reasons behind the quantitative findings. Two researchers (JD and SD) collected and analysed the data. The design comprised of two linked phases. The purpose of the first, core quantitative phase was to gather patient data from sites A and B to allow descriptive analysis of data and determine the patterns and treatment of homeless people referred to physiotherapy. The second, follow-up qualitative extension phase used semi-structured interviews to explore the quantitative findings from the perspectives of staff from site A and gain insight into potential reasons explaining them.

Phase 1: Quantitative phase

Preliminary fieldwork facilitated understanding of how patient data were collected in each site and could be extracted from patient records systems- this informed inclusion and exclusion criteria. Included in the study were all patients from site A (of whom were all homeless or vulnerably house). Anonymised data from all patients referred from Site A to Site B over nine months were collected from the patient records systems at both sites. Homeless people not included in this study were those registered at other GP practices, homeless people who self-referred directly to the physiotherapy department and homeless non-GP referrals to the physiotherapy department.

At site A, a practice administrator searched the patient records system (Egton Medical Information Systems- EMIS) for patients referred to physiotherapy during the nine month study. Anonymised patient data were collated in Excel. Information included: patient code number, physiotherapy referral date, referrer name, referral reason, age, gender, ethnicity, housing status, support from key worker staff, number of co-morbidities

(including recorded addiction) and whether a discharge summary had been received from the physiotherapy department.

At site B, a search of the patient records system (CSE Severlec, electronic care record, RiO) for all patients referred from site A was undertaken. The physiotherapy manager anonymised all patient records ensuring patients could not be recognised by the research team and provided anonymised copies of discharge summaries. Figure 1 shows the recruitment and inclusion/ exclusion process.

Figure 1: Flow diagram of recruitment, inclusion and exclusion from core quantitative phase of study

Quantitative data analysis

As the two sites used different patient record systems, the two anonymised data sets were matched using patients' gender, age at time of referral and referral date. Cross checking of anonymised discharge summaries was used to maximise match accuracy. JD and SD, who undertook the matching and analysis, were external to the two clinical sites ensuring patient anonymity was maintained.

The matched data were reported with descriptive statistics (mean, SD, median and ranges) of age, gender and numbers of co-morbidities to establish the demographic characteristics of the homeless people referred to physiotherapy. Reasons for referral; attendance patterns; physiotherapy interventions; and outcomes of treatments were also identified and summarised in a quantitative data summary sheet. This then formed the structure for qualitative, semi-structured telephone interviews with site A practice staff.

Phase 2: Qualitative phase

To understand patterns within the data and staff perspectives, all patient facing GP practice staff (n=9, including GPs, nurse practitioners, practice clinical leader, healthcare assistants and reception staff) were invited for a recorded telephone interview. They were provided with a consent form and a participant information sheet.

Participants were e-mailed the quantitative data summary sheet and asked to have this in front of them during their interview. The interviewer used a topic guide, which consisted of open questions relating to the information presented on the quantitative data summary sheet. The interviewer worked through the topic guide, encouraging participants to give as much detail as possible. When necessary, clarification was sought either by the interviewer paraphrasing and repeating back to the interviewee what they had interpreted the interviewee said, or, by asking the interviewee to explain what they meant. This process of clarification is a form of member checking which can add to the accuracy and credibility of the data gathering process.[17] With consent, all interviews were digitally recorded and transcribed verbatim. Five staff were interviewed, including two GPs, two nurses and a receptionist.

Qualitative data analysis

Interview transcripts were analysed using thematic analysis, a six phase process which involved searching across the data for repeated patterns of meaning (themes).[18] The phases of analysis used in this study involved: both JD and SD reading and rereading the interview transcripts and becoming thoroughly familiar with the content; both researchers independently generated initial codes and searched for themes within the transcripts; then together JD and SD reviewed and discussed the themes generated,

which resulted in defining and naming themes collaboratively. Themes were reviewed by NG, finalised and presented, supported by direct quotes or "thick descriptions" to provide additional context.[19]

RESULTS

Quantitative results

The data presented (Table 1) are from patient records for people referred from Site A to Site B during the nine month study. During that time, 33 patients were referred to physiotherapy (one patient was referred twice, giving 34 patient records in total). Based on the practice having a patient population of 961 patients, this was 3.5% of the practice population referred in this period. A comparable, albeit larger, GP practice in the area, with a patient population of 10,973, serving a similar locality, but predominantly housed population, was reported by site B as making 358 referrals to physiotherapy (average of 4.9% of the practice population).[20] Across the two sites it was possible to match 24 of the 33 (72.7%) patients. As one person was referred twice, there were 25 patient records.

Table 1: Patient demographic information of referrals from site A to site B

		Patients referred from site A to physiotherapy at site B (n=33)	Patients matched across both sites (n= 24)
Age (years)	Mean	44	44
	Median	48	47
	Range	26 to 62	27 to 62
	S.D.	10.4	10.9
Gender	Male	25 (76%)	19 (79%)
	Female	8 (24%)	5 (21%)
Housing status	Street homeless	5 (15%)	3 (13%)
	Housed	6 (18%)	5 (21%)

	Hostel/ temporary accommodation	15 (45%)	10 (42%)
	Squatting/ sofa surfing	7 (21%)	6 (25%)
Recorded drug or alcohol problem	Yes	14 (42%)	11 (46%)
	No	19 (58%)	13 (54%)
Key worker	Yes	3 (9%)	2 (8%)
	No	30 (91%)	22 (92%)
Reason for referral	Back/ neck problem	14 (42%)	9 (38%)
	Upper limb problem	10 (30%)	8 (33%)
	Lower limb problem	9 (27%)	7 (28%)

Pragmatic judgement suggests that the demographics of the 33 patients referred to physiotherapy and the 24 patients successfully matched across both sites appeared very similar in the main characteristics. Information about the 24 matched individuals, formed the basis of discussions in the qualitative interviews and is discussed in this article.

One patient was referred twice, so there were 25 patient records for the 24 matched patients. The 25 patient records showed that nine (36%) patients did not attend their first appointment, which compares to an average of 14% for the physiotherapy service as a whole.[20] Seven (28%) attended an initial appointment, but did not attend a subsequent appointment and were then discharged from the service. Five (20%) completed treatment and four patients (16%) had treatment ongoing.

Table 2: Attendance and treatment outcome for physiotherapy at site B amongst matched referrals from site A

	Outcome for all referrals made to physiotherapy at site B and matched with site B records (n=25)
Did not attend first appointment	9 (36%)
Attended initial appointment, but did not attend a	7 (28%)

subsequent appointment and were then discharged from the service	
Completed treatment	5 (20%)
Treatment ongoing	4 (16%)

A total of 81 physiotherapy sessions were registered amongst the 24 homeless patients. Of these appointments, 49 (60%) were attended, 14 (17%) were cancelled (either by service or by patient), and 18 (22%) were not attended. This compares to the mean rate of "did not attend" (DNA) to the physiotherapy service as a whole, during the study timeframe was 13%.[20] For those attending their initial appointment, the median number of sessions attended was two. The median number of sessions attended by those that completed their treatment and were subsequently discharged from physiotherapy was four (excluding the four patients whose treatment was ongoing). This was similar to the mean number of sessions attended by patients for the physiotherapy service as a whole (4.5).[20]

Table 3: Outcome of physiotherapy treatment sessions at Site B amongst those referred from site A

	Physiotherapy sessions registered for patients referred from site A to site B. (n= 81)
Attended	49 (60%)
Cancelled (either by service or by patient)	14 (17%)
Not attended	18 (22%)
Mean number of sessions for patients who completed treatment	4 sessions

A greater proportion of those failing to attend their first appointment (six out of nine) had reported drug and/or alcohol dependence problems. Ten patients had specific interventions documented at Site B. These included: exercise prescription (n=8); advice (for example postural advice, health promotion or self management) (n=6); and, manual therapy (n=3).

Qualitative results from interviews

Five interviews were recorded with practice staff over a one-month period. The interviews lasted from between twelve and 20 minutes.

The staff interviewed had various perspectives on the quantitative findings presented to them, but there was often consistency in their responses. By inviting the interviewees to explore and discuss the quantitative findings, a breadth of insight and understanding of these findings was captured. Themes identified included: recognition of homeless people's high incidence of musculoskeletal problems paired with an expectation that there would have been more physiotherapy referrals in the timeframe; considerations given before referring to physiotherapy; reasons for missing physiotherapy appointments; perceptions of what physiotherapy offers; and, suggestions for making physiotherapy more accessible.

There was consensus that characteristics of those referred to physiotherapy reflected the homeless people attending their practice. Most interviewees noted that musculoskeletal problems were extremely common amongst their patients.

> *"back problems are a huge bulk of what we see generally. Back, neck, shoulder, upper limb, knee, ankle... Lots of back problems"*
>
> Helen, Clinical Nurse specialist

As a result, there was surprise at the low physiotherapy referral rate. However, numerous explanations for the low referral rate were offered, including: non-recording of referrals on the computer system; the relatively small practice size (approximately 900 registered patients); or, a belief that patients' culture or language might limit their understanding of physiotherapy thereby fostering unwillingness to be referred.

"… not understanding why we are sending them to physio, and that there is more to it than 'we just want you to do some exercises'"

Margaret, Nurse Practitioner

Additionally, in a population with multiple morbidities, musculoskeletal problems might not always be the most pressing health problem.

"It's impossible to tackle everything in every patient that comes in… I wouldn't bombard someone with six referrals when I first see them, even though each of the six conditions they come in with, you would be referring in another population… The morbidity is so high… that we have to help prioritise and we have to make sure we don't scare people off..." Yvonne, GP

Equally, patients may underplay their symptoms, choosing to manage them themselves.

"I think most people who come in have some musculoskeletal problems, which they underplay and they self-medicate." Yvonne, GP

Staff described both system and patient-related factors they considered before referring to physiotherapy. System-related factors included appointment letters potentially not reaching patients who regularly change address.

"OK we've referred them, do they actually get the appointment, if they haven't got an address? If they have to come to [our practice] to collect their post, how good are they at collecting their post?"

Helen, Clinical nurse specialist

There was also the belief that the referral process and waiting times were long therefore the referred homeless patient may prioritise other issues by the time they are offered an appointment.

> *"the general slowness in response to physio referrals… the more acute things we may be less likely to refer because we know it will be a month before we get a response, and appointment some time after that"* Alan, GP

Patient-related factors staff consider before referring included: symptom severity and chronicity, perceived benefits of physiotherapy, and the challenges homeless people face attending appointments. Interviewees seemed reluctant to refer homeless patients to services, if they perceived them to be unlikely to attend.

> *"Our referral rates are probably lower than for the amount of severe morbidity we see, I suspect, because we are anticipating high DNA [patient not attending] rates" Yvonne, GP*

Participants cited many reasons why homeless people might fail to attend appointments, included: not prioritising their health; poor timekeeping; language barriers; addiction, mental health problems and, chaotic lifestyles.

> *"But obviously with homelessness, if they get to sleep at someone's house and it is far away, it's difficult for them [to get to appointment]."*
>
> Kim, Receptionist

> *"with drug and alcohol problems, [some] tend to be less good attenders … partly because they may still be under the influence even if they were intending to attend."* Alan, GP

Although the mean DNA rate was higher amongst homeless people than that for the general population referred to physiotherapy site B[20], interviewees thought that an uptake of about a third (36%) was reasonably successful for this patient group, considering the challenges they have in attending health services. Interviewees felt that non-attendance to follow-up appointments could be due to misunderstanding about what physiotherapy offers. One participants paraphrases a conversation she had with a patient.

> *" 'oh I went there … the physio looked at me, and he just said I must stretch a few times, how is that supposed to fix my problem?' ".*
>
> Margaret, Nurse Practitioner

Other suggestions were that perhaps one appointment sufficiently alleviated symptoms, or symptoms were improving by the time they reached physiotherapy. Alternatively, homeless people may have had an unpleasant experience at their initial appointment.

> *"I guess they are a population that are used to not getting the greatest reception…"* Alan, GP

There was also a perception that physiotherapy may be evolving to place greater emphasis on self-management, with participants acknowledging that homeless people may not adhere to advice and exercise prescription.

> *"much less physio is hands-on these days, and it's much more advice. So a lot of people … aren't that good at adhering to advice or doing exercise … and they don't really believe that exercises are going to help."*
>
> Yvonne, GP

Some noted that since housed people often struggle with exercise programme adherence, the additional challenge of precarious accommodation that homeless people face means that such exercise programmes are probably unrealistic.

> *"I mean, where do they do their exercises if they are on the street, if they are squatting or sofa surfing? … that may be often a reason why people don't go back after their first appointment."* Yvonne, GP

Consequently, participants said that they would often seek out alternatives in-house, rather than referring externally. For example, they might provide in house injection therapy, analgesia, exercise, advice or information leaflets instead of onwards referral.

> *"When I began to realise that actually quite a lot of what my patients were getting was advice and exercise sheets, well actually, some of that I can do"* Yvonne, GP

Conversely, one interviewee commented on how physiotherapy could offer an alternative to analgesia in a patient population who often have addiction problems.

> *"In a group of people who substance misuse, we try and reduce our issuing of prescriptions as much as possible… analgesia is very high on the agenda..."* Margaret, Nurse Practitioner.

Interviewees stated the need to manage the expectations of homeless people, as they may lack awareness about what physiotherapy involves. For example, a fundamental aspect of physiotherapy is helping the patient with self-management, so active engagement in rehabilitation is essential.

"you [the homeless person] actually have to attend... and then you [the practitioner] are not telling them go away with nothing, we can help, but you [the homeless person] have to help yourself in the process"

Margaret, Nurse Practitioner

Approaches to potentially improve homeless peoples' attendance to physiotherapy mirrored explanations for why they may fail to attend. These included: better prompting, perhaps with texts to mobile phones; a self referral process; shorter waiting times; and, the ability to get an appointment at the time of making the referral. With these ideas in mind, there was a feeling that it was worth testing how referral to and uptake of a physiotherapy service might increase if it were on site in the GP practice, because they recognise that their homeless patients may prefer going somewhere familiar.

"familiarity of the practice, they know where they are coming. They perhaps have the trust of something offered under the general practice roof, where they are used to coming." Alan, GP

DISCUSSION

The study succeeded in achieving its aims by collecting and descriptively reporting quantitative information about homeless people referred to physiotherapy by a dedicated GP practice. The quantitative findings were then thoroughly explored via the qualitative interviews with referring staff and offered detailed contextual insight into the quantitative findings. This study is important because physical health problems, including those of musculoskeletal origin, such as traumatic injury[21] are prevalent amongst homeless people, but there is limited understanding of how they currently are managed. Certainly, the quantitative findings of this study highlights a potential mismatch between the high

incidence of musculoskeletal problems in the homeless population[3] and the few homeless people accessing physiotherapy. The recognised lack of GP registration amongst many homeless individuals[6] cannot explain poor access here, as the study was undertaken within a GP practice solely caring for homeless people. Although the referral rate of the GP practice in this study was found to be only slightly lower than a practice serving a predominantly housed population in the same locality, this study would suggest that barriers to attending physiotherapy are a significant issue to the homeless population, as their failure to attend initial appointments was greater than that of the general population referred to physiotherapy at site B during the same time frame. Barriers to attending primary care appointments have been described as including frequent moving between areas, a chaotic lifestyle and lack of transport,[6] findings that were supported by the qualitative phase of this study.

Explanations for the decision making by practice staff about whether to refer homeless patients to physiotherapy was wide ranging. Perceptions that patients lacked understanding about physiotherapy were one consideration, a view that echoes what the physiotherapists working with homeless people in Glasgow found [11] and would suggest there is value in promoting understanding amongst homeless people and key support staff. Staff also felt that system structures did not facilitate homeless people's attendance. Traditional processes of referrals, followed by appointment letters sent to patients' addresses, rigid appointment times, and long waiting periods may not ideal for this population. Although the GP practice in this study was served a solely for the care of homeless people, the receiving physiotherapy department was not. It is suggested that primary health care programmes that are specifically tailored to meet the needs of homeless people might be more effective in the achievement of positive health outcomes that standard primary health care.[22] So, it is conceivable that despite homeless people

being registered with a dedicated GP practice which is sensitive to their care needs, if the service they are referred to a mainstream service, the barriers to them successfully accessing that service will still exist. Moreover, when one considers the patient contact provided to homeless people by purposefully accessible services such as Crisis at Christmas[16] and the drop-in and out-reach models used in Glasgow,[11] physiotherapy is a service homeless people will access, if it is easy for them to do so.

This study provided useful insight into clinicians' perceptions about what physiotherapy can offer homeless patients, and might explain reluctance amongst staff to refer and, at times, choosing to provide advice and exercise leaflets themselves instead of making a referral, but in doing so potentially denying those patients access to the broader range of skills a physiotherapist potentially could offer. However, the quantitative data regarding interventions provided to the patients within this study did show that physiotherapy treatment received was predominantly advice and exercise, which certainly resonated with the interviewees. It is possible that in this study as a number of patients referred attended but did not complete physiotherapy treatment, perhaps advice and exercise was primarily all these patients needed, before electing not to return. Alternatively, if the receiving physiotherapists were inexperienced in supporting homeless people, who perhaps presented with underlying addiction issues or challenging behaviour, basic exercise and advice may have been all the physiotherapists felt comfortable providing.

The conclusions drawn here are limited by this being a small, exploratory study, restricted to one GP practice and one physiotherapy department. Consequently, generalisability of findings to other settings may be limited. Ethical approval stipulated that all patient data reaching the research team must be anonymous, so it was impossible to use patient NHS numbers or dates of birth, making matching of data

across the two sites problematic. As a result, nine patient records could not be matched and although it is not known exactly why matching for all patient records was not possible, some suggestions include variability of dates used to signify referral transfer between sites and certainly on some records data was incomplete. During the qualitative phase staff looking after homeless people were interviewed, but homeless people were not. In not doing so, the voice of the homeless people was left out of this work and potentially adds a degree of bias.

Clearly more work is needed if homeless people are to receive comprehensive care. Future studies should include collecting data directly from homeless people, to ensure their contribution to understanding of this area is fully explored. There is scope for future work to investigate education and shared practice across the professions of physiotherapy and General Practice. There is a place for physiotherapists gaining greater understanding about the challenges of homelessness and GPs increased understanding of the full scope of physiotherapy. Homeless people face a complex mix of physical health, mental health, addiction and social factors making attending and complying with health care services, such as physiotherapy challenging, but, physiotherapy managers and GPs could work together to address some of the practical barriers facing homeless people who need access to physiotherapy. Piloting physiotherapy provision in GP practices that care for homeless people could be extremely valuable, so physiotherapy could be offered in more familiar territory, thus facilitating attendance. GPs and physiotherapists could work together to optimise understanding of interventions. This potentially, could allow GPs to spend less time dealing with musculoskeletal problems and a physiotherapist working in the GP practice to better understand homelessness issues. However, the findings do suggest that even if physiotherapy is a resource homeless people could benefit from; their ability to access it

is currently limited by numerous factors. Moreover, this study suggests that there may be many ways forward for improving the services to this vulnerable group, which could be delivered by relatively simple service redesign.

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CONTRIBUTORSHIP STATEMENT

Authors Jo Dawes (JD), Stuart Deaton (SD) and Nan Greenwood (NG) all made substantial contributions to the conception or design of the work. JD was the primary collector of data, JD and SD were involved in data analysis and JD, SD and NG were all involved in interpretation of data. JD drafted the work and all three authors revised it critically for important intellectual content. All three authors have approved the final version to be published and agree to be accountable to all aspects of the work, and ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

COMPETING INTERESTS

The authors of this publication have no conflicts of interest.

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DATA SHARING STATEMENT

In line with the ethical approval granted for this study, no additional unpublished data will be shared from this study.

ETHICAL APPROVAL

The organisations that reviewed this study and provided ethical approval are:

- Faculty Research Ethics Committee, Faculty of Health, Social Care and Education, Kingston University and St George's, University of London
- Ethics Sub-committee, East London NHS Foundation Trust, Trust Headquarters, 9 Alie Street, London, E1 8DE (Project 313)
- Research and Development Committee, Homerton University Hospital Trust, Homerton Row, London, E9 6SR (R&D no: CO1334)

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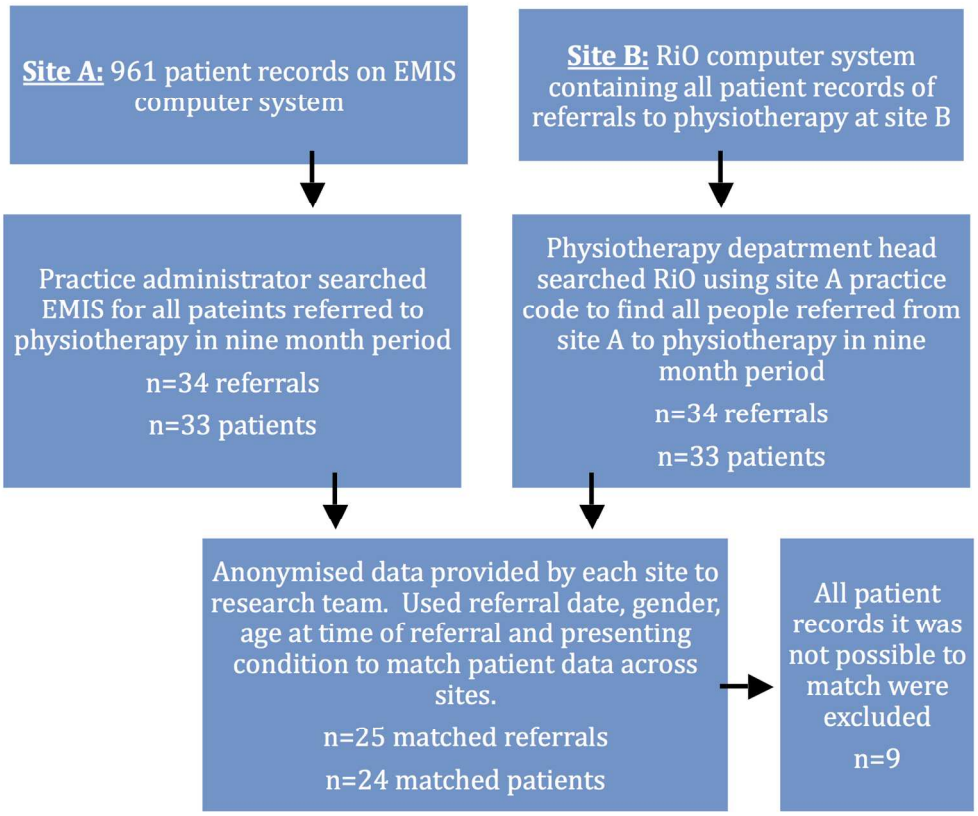

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APPENDIX

Summary staff interviewed for qualitative data collection

Pseudonym	Role	Experience of working in homelessness
Margaret	Nurse practitioner part time	At practice for six years, has had an interest in homelessness and disadvantaged people since qualifying
Yvonne	General Practitioner part time	Seven years of working in homelessness and many years of working in developing world
Alan	General Practitioner, partner practice, full time	Partner practice for 12 years, also works in acute care with homeless people. Has worked in homelessness since qualifying as a doctor
Helen	Clinical Nurse specialist, full time	Seven years of working in homelessness and management responsibilities at the practice
Kim	Receptionist, part time	Worked at the practice for 10 years. Deals with patients face to face and on the phone, daily.

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Homeless people's access to primary care physiotherapy services: an exploratory, mixed-method investigation using a follow-up qualitative extension to core quantitative research

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TITLE

Homeless people's access to primary care physiotherapy services: an exploratory, mixed-method investigation using a follow-up qualitative extension to core quantitative research

CORRESPONDING AUTHOR

Name: Jo Dawes[a]

Postal address: Faculty of Health, Social Care and Education, Kingston University and St George's, University of London, Cranmer Terrace, London, United Kingdom, SW17 0RE

e-mail: j.dawes@sgul.kingston.ac.uk

Telephone: 00 44 (0) 2087250819

CO-AUTHORS

Stuart Deaton[a] and Nan Greenwood[a]

AFFILIATIONS

[a]Faculty of Health, Social Care and Education, Kingston University and St George's, University of London, London, United Kingdom

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Homelessness, physiotherapy, general practice, primary care, service access

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ABSTRACT

Objectives: The purpose of this study was to appraise referrals of homeless patients to physiotherapy services and explore perceptions of barriers to access.

Design: This exploratory mixed methods study used a follow up qualitative extension to core quantitative research design. Over nine-months, quantitative data were gathered from the healthcare records of homeless patients referred to physiotherapy by a General Practitioner (GP) practice, including the number of referrals and demographic data of all homeless patients referred. Corresponding physiotherapy records of those people referred to physiotherapy were searched for the outcome of their care. Qualitative semi-structured telephone interviews, based on the quantitative findings, were carried out with staff involved with patient care from the referring GP practice and were used to expand insight into the quantitative findings.

Setting: Two primary care sites provided data for this study: a GP practice dedicated exclusively to homeless people; and, the physiotherapy department receiving their referrals.

Participants: Quantitative data from the healthcare records of 34 homeless patient referrals to physiotherapy were collected and analysed. Additionally, five staff involved in patient care were interviewed.

Results: 34 referrals of homeless people were made to physiotherapy in a nine-month period. It was possible to match 25 of these to records from the physiotherapy department. Nine (36%) patients did not attend their first appointment; seven (28%) attended an initial appointment, but did not attend a subsequent appointment and were discharged from the service; five (20%) completed treatment; and four patients (16%) had ongoing treatment. Semi-structured interviews revealed potential barriers preventing homeless people from accessing physiotherapy services, the complex factors facing those making referrals, and possible ways to improve physiotherapy access.

Conclusions: Homeless people with musculoskeletal problems may fail to access physiotherapy treatment, but opportunities exist to make access to physiotherapy easier.

ARTICLE SUMMARY

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This study explores homeless people's access to physiotherapy, a topic that previously has received little attention.
- It is a mixed methods study, which uses a follow-up qualitative extension to core quantitative research design and as it is on a small scale, restricted to one GP practice and one physiotherapy department, its findings may not be generalisable.
- The scope of the study did not extend to interviewing homeless people themselves about their experience of accessing physiotherapy, which might have restricted reported perspectives.
- Difficulty matching patient records from two different healthcare record systems resulted in the exclusion of some patient records in the data analysis, potentially distorting conclusions.

INTRODUCTION

Homeless people are a heterogeneous population, many of whom experience a "tri-morbidity" of health issues (mental ill health, physical ill health, and drug or alcohol misuse combined).[1] Their mortality is substantially increased, even in countries with good support for those with insecure accommodation.[2] An ongoing, national study of health and wellbeing needs of over 3,355 homeless people in the United Kingdom (UK) reports that 2,452 (78%) have physical health problems, of which 1,371 (41%) were joint or muscular problems,[3] nearly three times as high as that of the general public (14% of people in England reported musculoskeletal health problems).[4] Additionally, it is recognised that homeless and disadvantaged populations appear to suffer more serious health problems and may not report minor health problems as frequently,[5] therefore musculoskeletal disorders amongst homeless people may be more serious than amongst housed people, and homeless people may be under-reporting the less severe problems.

Homeless people can be difficult to reach and their health problems are often compounded by the barriers they face in accessing healthcare.[6] [7] Consequently, for this population even good health care may fail to be completely integrated, resulting in diminished effectiveness.[1] Rapid access to physiotherapy is considered vital in preventing new acute musculoskeletal problems from becoming chronic.[8] However, there is no empirical data published on homeless people's access to physiotherapy services.

There are three ways in which National Health Service (NHS) funded physiotherapy can be accessed: General Practitioner (GP) referrals, hospital consultant referrals, or self-referrals. Although 98% of the English population is registered with a GP, a recent study

revealed that only 83.3% of single homeless people in accommodation, 89% of hidden homeless people and just 65% of rough sleepers were registered.[6] Possible reasons for low GP registration and healthcare referrals among homeless populations may include peripatetic lifestyles, lack of fixed addresses, issues in keeping appointments and restricted access to transport.[6]

It is estimated that homeless people in England attend accident and emergency (A&E) departments five times more often than the general public.[9] However, the proportion of these A&E attendances for non-emergency musculoskeletal problems, which may otherwise be better managed by a physiotherapist in primary care, are unknown. This suggests the reasons for their heavier use of A&E could be a combination of not having to make an appointment and the relative immediacy of assessment, which are likely to be compatible with the unpredictability of homelessness. A 2003 report of physiotherapy services for homeless people in Glasgow, UK showed that uptake improved when the services were provided on a “drop-in” basis, within homeless centres, and via outreach to hostels,[10] thus suggesting this to be a good solution to access challenges.

London, UK, is a useful city for considering the current situation of homeless people’s access to healthcare because of its large homeless population (an estimated 7,851 people slept rough during 2014/15[11] and approximately 30,000 people were considered and assessed for support from their local authority as a homeless person in 2015).[12] Although homeless people might find accessing physiotherapy easier by self-referral, it is not consistently offered UK-wide. Engagement with GP services among homeless people is essential, as only six out of 32 boroughs in London facilitate self-referral.[13] Alternatively, a homeless person in London might access physiotherapy via

"Crisis at Christmas" - a volunteer run service providing homeless people with shelter, practical support and health services, including physiotherapy over the Christmas week. Although it only runs six days a year, 194 physiotherapy patient sessions were provided in 2015.[14] Data collected during Crisis at Christmas 2013 showed that the majority of people who used the physiotherapy service had soft tissue injuries, but fewer than half had previously sought help.[14] Although, a short-term service such as this one is not comparable to mainstream physiotherapy services; however, it is currently the only physiotherapy service tailored specifically to homeless people for which any reportable data exists.

Little is known about the year-round problems of homeless people with musculoskeletal difficulties. In London, some NHS funded specialist GP Practices provide primary care services solely for homeless people. In partnership with one such practice and their receiving NHS physiotherapy department, this exploratory study investigated the accessibility of physiotherapy to homeless people, and how their musculoskeletal problems are managed.

Aims of study

- To appraise all referrals made to physiotherapy from a specialist GP practice caring for homeless people in a nine-month period. This includes numbers of referrals made, demographic information about the people referred and outcome of physiotherapy care.
- To summarise the quantitative findings to generate interview questions for qualitative phase of research.
- To gain further insights regarding the quantitative findings, GP practice staff were interviewed.

METHODS

Setting

Data were gathered from two sites in London, UK. Site A was a GP practice, solely serving a population of approximately 900 homeless and vulnerably housed adults. Site B was an NHS physiotherapy outpatient department, which received all NHS neuromusculoskeletal physiotherapy referrals in that local area, including those from Site A. The Faculty Research Ethics Committee, Faculty of Health, Social Care and Education, Kingston University and St George's, University of London provided ethical approval for the study.

Study design

This exploratory study employed a follow-up qualitative extension to core quantitative research mixed methods design.[15] In this study design, the quantitative data described the characteristics of the service referrals, while the qualitative aspect explored the reasons behind the quantitative findings. Two researchers (JD and SD) collected and analysed the data. The design comprised two linked phases. The purpose of the first core quantitative phase was to gather patient data from sites A and B, and to determine the patterns and treatment of homeless people referred to physiotherapy. The second qualitative phase used semi-structured interviews to explore the possible explanatory factors of the quantitative findings from the perspective of the staff from site A.

Phase 1: Quantitative phase

Preliminary fieldwork was carried out to understand how patient data were collected and could be extracted from patient record systems in each site. Included in the study were all patients from site A (n=961), all of whom were homeless or vulnerably housed. Anonymised data from all patients referred from Site A to Site B over nine months were collected from the patient records systems at both sites. Excluded from this study were homeless people registered at other GP practices, homeless people who self-referred directly to the physiotherapy department and homeless non-GP referrals to the physiotherapy department.

At site A, a practice administrator searched the patient records system (Egton Medical Information Systems- EMIS) for patients referred to physiotherapy during the nine month study. The following anonymised information was gathered: patient code number, physiotherapy referral date, referrer name, referral reason, age, gender, ethnicity, housing status, support from key worker staff, number of co-morbidities (including recorded addiction) and whether a discharge summary had been received from the physiotherapy department.

At site B, the physiotherapy manager searched the patient records system (CSE Severlec, electronic care record, RiO) for all patients referred from site A. They provided the research team with anonymised summaries of all site A patient records and anonymised copies of discharge summaries for these patients.

Quantitative data analysis

As the two sites used different patient record systems, the two anonymised data sets were matched using patients' gender, age at time of referral, referral date and presenting

condition. Cross checking of anonymised discharge summaries was used to maximise match accuracy. JD and SD, who undertook the matching and analysis, were external to the two clinical sites ensuring patient anonymity was maintained.

The matched data were reported with descriptive statistics (mean, SD, median and ranges) of age, gender and numbers of co-morbidities to establish the demographic characteristics of the homeless people referred to physiotherapy. Reasons for referral, attendance patterns, physiotherapy interventions, and outcomes of treatments were also identified and summarised in a quantitative data summary sheet. This formed the outline for qualitative, semi-structured telephone interviews with site A practice staff.

Phase 2: Qualitative phase

To understand patterns within the data and staff perspectives, all patient facing GP practice staff (n=9, including GPs, nurse practitioners, practice clinical leader, healthcare assistants and reception staff) were invited for a recorded telephone interview. They were provided with a consent form and a participant information sheet.

Participants were e-mailed the quantitative data summary sheet and asked to have this in front of them during their interview. The interviewer used a topic guide, which consisted of open questions relating to the information presented on the quantitative data summary sheet. The interviewer worked through the topic guide, encouraging participants to give as much detail as possible. When necessary, clarification was sought either by the interviewer paraphrasing and repeating back to the interviewee what they had interpreted the interviewee said, or by asking the interviewee to explain what they meant. This process of clarification is a form of member checking which can add to the accuracy and credibility of the data gathering process.[16] With consent, all interviews

were digitally recorded and transcribed verbatim. Five staff were interviewed, including two GPs, two nurses and a receptionist.

Qualitative data analysis

Interview transcripts were analysed using thematic analysis, a six phase process which involved searching across the data for repeated patterns of meaning (themes).[17] The phases of analysis used in this study involved: both JD and SD reading and rereading the interview transcripts and becoming thoroughly familiar with the content; both researchers independently generated initial codes and searched for themes within the transcripts; then together JD and SD reviewed and discussed the themes generated, which resulted in defining and naming themes collaboratively. Themes were reviewed by NG, finalised and presented, supported by direct quotes or "thick descriptions" to provide additional context.[18]

RESULTS

Quantitative results

The data presented (Table 1) are from patient records for people referred from Site A to Site B during the nine month study. During that time, 33 patients were referred to physiotherapy (one patient was referred twice, giving 34 patient records in total). Based on the practice having a patient population of 961 patients, this was 3.5% of the practice population referred in this period. A comparable, albeit larger, GP practice in the area, with a patient population of 10,973, serving a similar locality, but predominantly housed population, was reported by site B as making 358 referrals to physiotherapy (average of 4.9% of the practice population).[19] Across the two sites it was possible to match 24 of

the 33 (72.7%) patients. As one person was referred twice, there were 25 patient records.

Table 1: Patient demographic information of referrals from site A to site B

		Patients referred from site A to physiotherapy at site B (n=33)	Patients matched across both sites (n= 24)
Age (years)	Mean	44	44
	Median	48	47
	Range	26 to 62	27 to 62
	S.D.	10.4	10.9
Gender	Male	25 (76%)	19 (79%)
	Female	8 (24%)	5 (21%)
Housing status	Street homeless	5 (15%)	3 (13%)
	Housed	6 (18%)	5 (21%)
	Hostel/ temporary accommodation	15 (45%)	10 (42%)
	Squatting/ sofa surfing	7 (21%)	6 (25%)
Recorded drug or alcohol problem	Yes	14 (42%)	11 (46%)
	No	19 (58%)	13 (54%)
Key worker	Yes	3 (9%)	2 (8%)
	No	30 (91%)	22 (92%)
Reason for referral	Back/ neck problem	14 (42%)	9 (38%)
	Upper limb problem	10 (30%)	8 (33%)
	Lower limb problem	9 (27%)	7 (28%)

Information about the 24 matched individuals and 25 patient records formed the basis of discussions in the qualitative interviews. Nine (36%) patients did not attend their first appointment, which compares to an average of 14% for the physiotherapy service as a whole.[19] Seven (28%) attended an initial appointment, but did not attend a subsequent appointment and were then discharged from the service. Five (20%) completed treatment and four patients (16%) had treatment ongoing (see table 2).

Table 2: Attendance and treatment outcome for physiotherapy at site B amongst matched referrals from site A

	Outcome for all referrals made to physiotherapy at site B and matched with site B records (n=25)
Did not attend first appointment	9 (36%)
Attended initial appointment, but did not attend a subsequent appointment and were then discharged from the service	7 (28%)
Completed treatment	5 (20%)
Treatment ongoing	4 (16%)

Table 3 shows a total of 81 physiotherapy sessions were registered amongst the 24 homeless patients. Of these appointments, 49 (60%) were attended, 14 (17%) were cancelled (either by service or by patient), and 18 (22%) were not attended. This compares to the mean rate of "did not attend" (DNA) to the physiotherapy service as a whole, during the study timeframe was 13%.[19] For those attending their initial appointment, the median number of sessions attended was two. The median number of sessions attended by those who completed their treatment and were subsequently discharged from physiotherapy was four (excluding the four patients whose treatment was ongoing). This was similar to the mean number of sessions attended by patients for the physiotherapy service as a whole (4.5).[19]

Table 3: Outcome of physiotherapy treatment sessions at Site B amongst those referred from site A

	Physiotherapy sessions registered for patients referred from site A to site B. (n= 81)
Attended	49 (60%)
Cancelled (either by service or by patient)	14 (17%)
Not attended	18 (22%)
Mean number of sessions for patients who completed treatment	4

A greater proportion of those failing to attend their first appointment (six out of nine) had reported drug and/or alcohol dependence problems compared to those who attended. Ten patients had specific interventions documented at Site B. These included: exercise prescription (n=8); advice (for example, postural advice, health promotion or self management) (n=6); and, manual therapy (n=3).

Qualitative results from interviews

Five digitally recorded interviews with practice staff were carried out over a one-month period. The interviews lasted from between twelve and 20 minutes.

During the interviews, staff explored and discussed the quantitative findings. They had various perspectives on the information presented to them, but there was often consistency across their responses. This process provided a breadth of insight and understanding to the quantitative findings. Themes identified included: recognition of homeless people's high incidence of musculoskeletal problems paired with an expectation that there would have been more physiotherapy referrals in the timeframe; considerations given before referring to physiotherapy; reasons for missing physiotherapy appointments; perceptions of what physiotherapy offers; and, suggestions for making physiotherapy more accessible.

There was consensus that the characteristics of those referred to physiotherapy reflected the wider homeless population attending their practice. Most interviewees noted that musculoskeletal problems were extremely common amongst their patients.

"back problems are a huge bulk of what we see generally. Back, neck, shoulder, upper limb, knee, ankle... Lots of back problems"

Helen, Clinical Nurse Specialist

As a result, there was surprise at the low physiotherapy referral rate. However, numerous explanations for the this were offered, including: non-recording of referrals on the computer system; the relatively small practice size (approximately 900 registered patients); or, a belief that patients' culture or language might limit their understanding of physiotherapy thereby fostering an unwillingness to be referred.

"… not understanding why we are sending them to physio, and that there is more to it than 'we just want you to do some exercises'"

Margaret, Nurse Practitioner

Additionally, in a population with multiple morbidities, musculoskeletal problems might not always be the most pressing health problem.

"It's impossible to tackle everything in every patient that comes in… I wouldn't bombard someone with six referrals when I first see them, even though each of the six conditions they come in with, you would be referring in another population… The morbidity is so high… that we have to help prioritise and we have to make sure we don't scare people off..." Yvonne, GP

Equally, patients may underplay their symptoms, choosing to manage them themselves.

"I think most people who come in have some musculoskeletal problems, which they underplay and they self-medicate." Yvonne, GP

Staff described system-related factors that staff considered before referring included appointment letters potentially not reaching patients who regularly changed address.

"OK we've referred them, do they actually get the appointment, if they haven't got an address? If they have to come to [our practice] to collect their post, how good are they at collecting their post?"

Helen, Clinical Nurse Specialist

There was also the belief that the referral process and waiting times were long therefore the referred homeless patient may prioritise other issues by the time they are offered an appointment.

"the general slowness in response to physio referrals… the more acute things we may be less likely to refer because we know it will be a month before we get a response, and appointment some time after that" Alan, GP

Staff also considered, patient-related factors before referring, such as: symptom severity and chronicity, perceived benefits of physiotherapy, and the challenges homeless people face attending appointments. Interviewees seemed reluctant to refer homeless patients, as they did not believe that such patients would attend the service.

"Our referral rates are probably lower than for the amount of severe morbidity we see, I suspect, because we are anticipating high DNA [patient not attending] rates" Yvonne, GP

Participants cited many reasons why homeless people might fail to attend appointments, including: not prioritising their health; poor timekeeping; language barriers; addiction, mental health problems and chaotic lifestyles.

"But obviously with homelessness, if they get to sleep at someone's house and it is far away, it's difficult for them [to get to appointment]."

Kim, Receptionist

"with drug and alcohol problems, [some] tend to be less good attenders … partly because they may still be under the influence even if they were intending to attend." Alan, GP

Interviewees thought that an uptake of about a third (36%) was reasonably successful for this patient group, considering the challenges they have in attending health services. Interviewees felt that non-attendance to follow-up appointments could be due to misunderstanding about what physiotherapy offers. One participant paraphrases a conversation she had with a patient.

" 'oh I went there … the physio looked at me, and he just said I must stretch a few times, how is that supposed to fix my problem?' ".

Margaret, Nurse Practitioner

Other suggestions were that perhaps one appointment sufficiently alleviated symptoms, or symptoms were improving by the time they reached physiotherapy. Alternatively, one participant suggested homeless people may have had an unpleasant experience at their initial appointment.

"I guess they are a population that are used to not getting the greatest reception…" Alan, GP

There was also a perception that physiotherapy may be evolving to place greater emphasis on self-management, with participants acknowledging that homeless people may not adhere to advice and exercise prescription.

"much less physio is hands-on these days, and it's much more advice. So a lot of people … aren't that good at adhering to advice or doing exercise … and they don't really believe that exercises are going to help."

Yvonne, GP

Some noted that since housed people often struggle with exercise programme adherence, the additional challenge of precarious accommodation that homeless people face means that such exercise programmes are probably unrealistic.

"I mean, where do they do their exercises if they are on the street, if they are squatting or sofa surfing? … that may be often a reason why people don't go back after their first appointment." Yvonne, GP

Consequently, participants said that they would often seek out alternatives in-house, rather than referring externally. For example, they might provide in house injection therapy, analgesia, exercise, advice or information leaflets instead of onwards referral.

"When I began to realise that actually quite a lot of what my patients were getting was advice and exercise sheets, well actually, some of that I can do"

Yvonne, GP

Conversely, one interviewee commented on how physiotherapy could offer an alternative to analgesia in a patient population who often have addiction problems.

"In a group of people who substance misuse, we try and reduce our issuing of prescriptions as much as possible… analgesia is very high on the agenda..." Margaret, Nurse Practitioner.

Interviewees stated the need to manage the expectations of homeless people, as they may lack awareness about what physiotherapy involves. For example, a fundamental aspect of physiotherapy is helping the patient with self-management, so active engagement in rehabilitation is essential.

> *"you [the homeless person] actually have to attend... and then you [the practitioner] are not telling them go away with nothing, we can help, but you [the homeless person] have to help yourself in the process"*
>
> Margaret, Nurse Practitioner

Analysis suggested that approaches to potentially improve homeless peoples' attendance to physiotherapy mirrored explanations for why they may fail to attend. These included: better prompting, perhaps with texts to mobile phones; a self referral process; shorter waiting times; and, the ability to get an appointment at the time of making the referral. With these ideas in mind, there was a feeling that it was worth testing how referral to and uptake of a physiotherapy service might increase if it were on site in the GP practice, because they recognise that their homeless patients may prefer going somewhere familiar.

> *"familiarity of the practice, they know where they are coming. They perhaps have the trust of something offered under the general practice roof, where they are used to coming." Alan, GP*

DISCUSSION

The study succeeded in achieving its aims by collecting and descriptively reporting quantitative information about homeless people referred to physiotherapy by a dedicated GP practice. The quantitative findings were then thoroughly explored via the qualitative

interviews with referring staff, offering detailed contextual insight. This study is important because physical health problems, including those of musculoskeletal origin, such as traumatic injury[20] are prevalent amongst homeless people, but there is limited understanding of how they currently are managed. Certainly, the quantitative findings of this study highlights a potential mismatch between the high incidence of musculoskeletal problems in the homeless population[3] and the few homeless people accessing physiotherapy. The recognised lack of GP registration amongst many homeless individuals[6] cannot explain poor access here, as the study was undertaken within a GP practice solely caring for homeless people. Although the referral rate of the GP practice in this study was found to be only slightly lower than a practice serving a predominantly housed population in the same locality, this study would suggest that barriers to attending physiotherapy are a significant issue to the homeless population, as their failure to attend initial appointments was greater than that of the general population referred to physiotherapy at site B during the same time frame. Barriers to attending primary care appointments have been described as including frequent moving between areas, a chaotic lifestyle and lack of transport,[6] findings that were supported by the qualitative phase of this study.

Explanations for the decisions made by practice staff about whether to refer homeless patients to physiotherapy were wide ranging. Perceptions that patients lacked understanding about physiotherapy were one consideration, a view that supports the findings of the physiotherapists working with homeless people in Glasgow.[10] This would suggest that there is value in promoting understanding amongst homeless people and key support staff. Staff also felt that system structures did not facilitate homeless people's attendance. Traditional processes of referrals, followed by appointment letters sent to patients' addresses, rigid appointment times, and long waiting periods may not

ideal for this population. The GP practice in this study provided care solely to homeless people, whereas the receiving physiotherapy department served the whole community. It is suggested that primary health care programmes specifically tailored to meet the needs of homeless people might be more effective in the achievement of positive health outcomes than standard primary health care.[21] Although, the homeless people in this study had a dedicated GP practice sensitive to their care needs as their first point of contact, there were still barriers to their access imposed. Programmes that emphasise easy access, such as the Crisis at Christmas[15] and the drop-in and out-reach models in Glasgow,[10] may facilitate increased access to these services.

Our findings might help explain why some GPs choose to manage patients themselves rather than referring them to physiotherapy. However, this course of action potentially denies those patients access to the broader range of skills a physiotherapist could offer. However, the quantitative data regarding interventions provided to the patients within this study did show that physiotherapy treatment received was predominantly advice and exercise, which certainly resonated with the interviewees. It is possible that the patients who attended but did not complete their course of physiotherapy only needed advice and exercise, and therefore elected not to return. Alternatively, the physiotherapists may not have had adequate training or were ill-equipped to handle the underlying addiction issues and challenging behaviours that homeless individuals may present with.

The conclusions drawn here are limited by this being a small, exploratory study. Consequently, the findings may have limited application in other settings. Ethical approval stipulated that all patient data reaching the research team must be anonymous, so it was impossible to use patient NHS numbers or dates of birth during quantitative data collection. Consequently, using four patient characteristics to match data across the

two sites problematic, resulting in a failure to match nine patient records. Although it is not known exactly why matching for all patient records was not possible, some suggestions include variability of dates used to signify referral transfer between sites and certainly on some records data was incomplete. During the qualitative phase staff looking after homeless people were interviewed, but homeless people were not. By leaving the perspective of the homeless people out of this work a degree of bias was potentially added.

Clearly, more work is needed if homeless people are to receive more comprehensive care. Future research in this field should include input from homeless people themselves, and investigation into education and shared practice between physiotherapists and GPs. The complex mix of physical, mental and social problems faced by homeless people means that both attendance at and compliance with care services are a challenge. Co-operation between agencies to reduce these barriers would be beneficial; for example, piloting physiotherapy services within GP practices which care for homeless people could facilitate better attendance. Nevertheless, even if such care resources are available, findings suggest that homeless people's ability to access them is currently limited by numerous factors. Equally, there may be ways forward for improving care by relatively simple service re-design.

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CONTRIBUTORSHIP STATEMENT

Authors Jo Dawes (JD), Stuart Deaton (SD) and Nan Greenwood (NG) all made substantial contributions to the conception or design of the work. JD was the primary collector of data, JD and SD were involved in data analysis and JD, SD and NG were all involved in interpretation of data. JD drafted the work and all three authors revised it critically for important intellectual content. All three authors have approved the final version to be published and agree to be accountable to all aspects of the work, and ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

COMPETING INTERESTS

The authors of this publication have no conflicts of interest.

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DATA SHARING STATEMENT

In line with the ethical approval granted for this study, no additional unpublished data will be shared from this study.

ETHICAL APPROVAL

The organisations that reviewed this study and provided ethical approval are:

- Faculty Research Ethics Committee, Faculty of Health, Social Care and Education, Kingston University and St George's, University of London
- Ethics Sub-committee, East London NHS Foundation Trust, Trust Headquarters, 9 Alie Street, London, E1 8DE (Project 313)
- Research and Development Committee, Homerton University Hospital Trust, Homerton Row, London, E9 6SR (R&D no: CO1334)

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APPENDIX

Summary staff interviewed for qualitative data collection

Pseudonym	Role	Experience of working in homelessness
Margaret	Nurse practitioner part time	At practice for six years, has had an interest in homelessness and disadvantaged people since qualifying
Yvonne	General Practitioner part time	Seven years of working in homelessness and many years of working in developing world
Alan	General Practitioner, partner practice, full time	Partner practice for 12 years, also works in acute care with homeless people. Has worked in homelessness since qualifying as a doctor
Helen	Clinical Nurse specialist, full time	Seven years of working in homelessness and management responsibilities at the practice
Kim	Receptionist, part time	Worked at the practice for 10 years. Deals with patients face to face and on the phone, daily.

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Homeless people's access to primary care physiotherapy services: an exploratory, mixed-method investigation using a follow-up qualitative extension to core quantitative research

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TITLE

Homeless people's access to primary care physiotherapy services: an exploratory, mixed-method investigation using a follow-up qualitative extension to core quantitative research

CORRESPONDING AUTHOR

Name: Jo Dawes[a]

Postal address: Faculty of Health, Social Care and Education, Kingston University and St George's, University of London, Cranmer Terrace, London, United Kingdom, SW17 0RE

e-mail: j.dawes@sgul.kingston.ac.uk

Telephone: 00 44 (0) 2087250819

CO-AUTHORS

Stuart Deaton[a] and Nan Greenwood[a]

AFFILIATIONS

[a]Faculty of Health, Social Care and Education, Kingston University and St George's, University of London, London, United Kingdom

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ABSTRACT

Objectives: The purpose of this study was to appraise referrals of homeless patients to physiotherapy services and explore perceptions of barriers to access.

Design: This exploratory mixed methods study used a follow up qualitative extension to core quantitative research design. Over nine-months, quantitative data were gathered from the healthcare records of homeless patients referred to physiotherapy by a General Practitioner (GP) practice, including the number of referrals and demographic data of all homeless patients referred. Corresponding physiotherapy records of those people referred to physiotherapy were searched for the outcome of their care. Qualitative semi-structured telephone interviews, based on the quantitative findings, were carried out with staff involved with patient care from the referring GP practice and were used to expand insight into the quantitative findings.

Setting: Two primary care sites provided data for this study: a GP practice dedicated exclusively to homeless people; and, the physiotherapy department receiving their referrals.

Participants: Quantitative data from the healthcare records of 34 homeless patient referrals to physiotherapy were collected and analysed. Additionally, five staff involved in patient care were interviewed.

Results: 34 referrals of homeless people were made to physiotherapy in a nine-month period. It was possible to match 25 of these to records from the physiotherapy department. Nine (36%) patients did not attend their first appointment; seven (28%) attended an initial appointment, but did not attend a subsequent appointment and were discharged from the service; five (20%) completed treatment; and four patients (16%) had ongoing treatment. Semi-structured interviews revealed potential barriers preventing homeless people from accessing physiotherapy services, the complex factors facing those making referrals, and possible ways to improve physiotherapy access.

Conclusions: Homeless people with musculoskeletal problems may fail to access physiotherapy treatment, but opportunities exist to make access to physiotherapy easier.

ARTICLE SUMMARY

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This study explores homeless people's access to physiotherapy, a topic that previously has received little attention.
- It is a mixed methods study, which uses a follow-up qualitative extension to core quantitative research design and as it is on a small scale, restricted to one GP practice and one physiotherapy department, its findings may not be generalisable.
- The scope of the study did not extend to interviewing homeless people themselves about their experience of accessing physiotherapy, which might have restricted reported perspectives.
- Difficulty matching patient records from two different healthcare record systems resulted in the exclusion of some patient records in the data analysis, potentially distorting conclusions.

INTRODUCTION

Homeless people are a heterogeneous population, many of whom experience a "tri-morbidity" of health issues (mental ill health, physical ill health, and drug or alcohol misuse combined).[1] Their mortality is substantially increased, even in countries with good support for those with insecure accommodation.[2] An ongoing, national study of health and wellbeing needs of over 3,355 homeless people in the United Kingdom (UK) reports that 2,452 (78%) have physical health problems, of which 1,371 (41%) were joint or muscular problems,[3] nearly three times as high as that of the general public (14% of people in England reported musculoskeletal health problems).[4] Additionally, it is recognised that homeless and disadvantaged populations appear to suffer more serious health problems and may not report minor health problems as frequently,[5] therefore musculoskeletal disorders amongst homeless people may be more serious than amongst housed people, and homeless people may be under-reporting the less severe problems.

Homeless people can be difficult to reach, and their health problems are often compounded by the barriers they face in accessing healthcare.[6] [7] Consequently, for this population even good health care may fail to be completely integrated, resulting in diminished effectiveness.[1] Rapid access to physiotherapy is considered vital in preventing new acute musculoskeletal problems from becoming chronic.[8] However, there is no empirical data published on homeless people's access to physiotherapy services.

There are three ways in which National Health Service (NHS) funded physiotherapy can be accessed: General Practitioner (GP) referrals, hospital consultant referrals, or self-referrals. Although 98% of the English population is registered with a GP, a recent study

revealed that only 83.3% of single homeless people with accommodation, 89% of 'hidden homeless' people (those not included in government statistics, and tending to be out of sight in bed and breakfasts, squats or staying with friends and families) and just 65% of rough sleepers were registered.[6] Possible reasons for low GP registration and healthcare referrals among homeless populations may include peripatetic lifestyles, lack of fixed addresses, issues in keeping appointments and restricted access to transport.[6]

It is estimated that homeless people in England attend accident and emergency (A&E) departments five times more often than the general public.[9] However, the proportion of these A&E attendances for non-emergency musculoskeletal problems, which may otherwise be better managed by a physiotherapist in primary care, are unknown. This suggests the reasons for their heavier use of A&E could be a combination of not having to make an appointment and the relative immediacy of assessment, which are likely to be compatible with the unpredictability of homelessness. A 2003 report of physiotherapy services for homeless people in Glasgow, UK showed that uptake improved when the services were provided on a "drop-in" basis, within homeless centres, and via outreach to hostels,[10] thus suggesting this to be a possible approach to improving access.

London, UK, is a useful city for considering the current situation of homeless people's access to healthcare because of its large homeless population (an estimated 7,851 people slept rough during 2014/15[11] and approximately 30,000 people were considered and assessed for support from their local authority as a homeless person in 2015).[12] Although homeless people might find accessing physiotherapy easier by self-referral, it is not consistently offered UK-wide. Engagement with GP services among homeless people is essential, as only six out of 32 boroughs in London facilitate self-

referral.[13] Alternatively, a homeless person in London might access physiotherapy via "Crisis at Christmas" - a volunteer run service providing homeless people with shelter, practical support and health services, including physiotherapy over the Christmas week. Although it only runs six days a year, 194 physiotherapy patient sessions were provided in 2015.[14] Data collected during Crisis at Christmas 2013 showed that the majority of people who used the physiotherapy service had soft tissue injuries, but fewer than half had previously sought help.[14] Although a short-term service such as this is not comparable to mainstream physiotherapy, nonetheless it is currently the only physiotherapy service tailored specifically to homeless people for which any reportable data exists.

Little is known about the year-round problems of homeless people with musculoskeletal difficulties. In London, some NHS funded specialist GP Practices provide primary care services solely for homeless people. In partnership with one such practice and their receiving NHS physiotherapy department, this exploratory study investigated the accessibility of physiotherapy to homeless people, and how their musculoskeletal problems are managed.

Aims of study

- To appraise all referrals made to physiotherapy from a GP practice caring for homeless people in a nine-month period. This includes numbers of referrals made, demographic information about the people referred and outcome of physiotherapy.
- To summarise the quantitative findings to generate interview questions for qualitative phase of research.

- To gain further insights regarding the quantitative findings, GP practice staff were interviewed.

METHODS

Setting

Data were gathered from two sites in London, UK. Site A was a GP practice, solely serving a population of approximately 900 homeless and vulnerably housed adults. Site B was an NHS physiotherapy outpatient department, which received all NHS neuromusculoskeletal physiotherapy referrals in that local area, including those from Site A. The Faculty Research Ethics Committee, Faculty of Health, Social Care and Education, Kingston University and St George's, University of London provided ethical approval for the study.

Study design

This exploratory study employed a follow-up qualitative extension to core quantitative research mixed methods design.[15] In this study design, the quantitative data described the characteristics of the service referrals, while the qualitative aspect explored the reasons behind the quantitative findings. Two researchers (JD and SD) collected and analysed the data. The design comprised two linked phases. The purpose of the first core quantitative phase was to gather patient data from sites A and B, and to determine the patterns and treatment of homeless people referred to physiotherapy. The second qualitative phase used semi-structured interviews to explore the possible explanatory factors of the quantitative findings from the perspective of the staff from site A.

Phase 1: Quantitative phase

Preliminary fieldwork was carried out to understand how patient data could be collected and extracted from patient record systems in each site. Included in the study were all patients from site A (n=961), all of whom were homeless or vulnerably housed. Anonymised data from all patients referred from Site A to Site B over nine months were collected from the patient records systems at both sites. Excluded from this study were homeless people registered at other GP practices, homeless people who self-referred directly to the physiotherapy department and homeless non-GP referrals to the physiotherapy department.

At site A, a practice administrator searched the patient records system (Egton Medical Information Systems- EMIS) for patients referred to physiotherapy during the nine month study. The following anonymised information was gathered: patient code number, physiotherapy referral date, referrer name, referral reason, age, gender, ethnicity, housing status, support from key worker staff, number of co-morbidities (including recorded addiction) and whether a discharge summary had been received from the physiotherapy department.

At site B, the physiotherapy manager searched the patient records system (CSE Severlec, electronic care record, RiO) for all patients referred from site A. They provided the research team with anonymised summaries of all site A patient records and anonymised copies of discharge summaries for these patients.

Quantitative data analysis

As the two sites used different patient record systems, the two anonymised data sets were matched using patients' gender, age at time of referral, referral date and presenting condition. Cross checking of anonymised discharge summaries was used to maximise match accuracy. JD and SD, who undertook the matching and analysis, were external to the two clinical sites ensuring patient anonymity was maintained.

The matched data were reported with descriptive statistics (mean, SD, median and ranges) of age, gender and numbers of co-morbidities to establish the demographic characteristics of the homeless people referred to physiotherapy. Reasons for referral, attendance patterns, physiotherapy interventions, and outcomes of treatments were also identified and summarised in a quantitative data summary sheet. This formed the outline for qualitative, semi-structured telephone interviews with site A practice staff.

Phase 2: Qualitative phase

To understand patterns within the data and staff perspectives, all patient facing GP practice staff (n=9, including GPs, nurse practitioners, practice clinical leader, healthcare assistants and reception staff) were invited for a recorded telephone interview. They were provided with a consent form and a participant information sheet.

Participants were e-mailed the quantitative data summary sheet and asked to have this in front of them during their interview. The interviewer used a topic guide, which consisted of open questions relating to the information presented on the quantitative data summary sheet. The interviewer worked through the topic guide, encouraging participants to give as much detail as possible. When necessary, clarification was sought either by the interviewer paraphrasing and repeating back to the interviewee what they had interpreted the interviewee said, or by asking the interviewee to explain what they

meant. This process of clarification is a form of member checking which can add to the accuracy and credibility of the data gathering process.[16] With consent, all interviews were digitally recorded and transcribed verbatim. Five staff were interviewed, including two GPs, two nurses and a receptionist.

Qualitative data analysis

Interview transcripts were analysed using thematic analysis, a six phase process which involved searching across the data for repeated patterns of meaning (themes).[17] The phases of analysis used in this study involved: both JD and SD reading and rereading the interview transcripts and becoming thoroughly familiar with the content; both researchers independently generated initial codes and searched for themes within the transcripts; then together JD and SD reviewed and discussed the themes generated, which resulted in defining and naming themes collaboratively. Themes were reviewed by NG, finalised and presented, supported by direct quotes or “thick descriptions” to provide additional context.[18]

RESULTS

Quantitative results

The data presented (Table 1) are from patient records for people referred from Site A to Site B during the nine month study. During that time, 33 patients were referred to physiotherapy (one patient was referred twice, giving 34 patient records in total). Based on the practice having a patient population of 961 patients, this was 3.5% of the practice population referred in this period. A comparable, albeit larger, GP practice in the area, with a patient population of 10,973, serving a similar locality, but predominantly housed

population, was reported by site B as making 358 referrals to physiotherapy (average of 4.9% of the practice population).[19] Across the two sites it was possible to match 24 of the 33 (72.7%) patients. As one person was referred twice, there were 25 patient records.

Table 1: Patient demographic information of referrals from site A to site B

		Patients referred from site A to physiotherapy at site B (n=33)	Patients matched across both sites (n= 24)
Age (years)	Mean	44	44
	Median	48	47
	Range	26 to 62	27 to 62
	S.D.	10.4	10.9
Gender	Male	25 (76%)	19 (79%)
	Female	8 (24%)	5 (21%)
Housing status	Street homeless	5 (15%)	3 (13%)
	Housed	6 (18%)	5 (21%)
	Hostel/ temporary accommodation	15 (45%)	10 (42%)
	Squatting/ sofa surfing	7 (21%)	6 (25%)
Recorded drug or alcohol problem	Yes	14 (42%)	11 (46%)
	No	19 (58%)	13 (54%)
Key worker	Yes	3 (9%)	2 (8%)
	No	30 (91%)	22 (92%)
Reason for referral	Back/ neck problem	14 (42%)	9 (38%)
	Upper limb problem	10 (30%)	8 (33%)
	Lower limb problem	9 (27%)	7 (28%)

Information about the 24 matched individuals and 25 patient records formed the basis of discussions in the qualitative interviews. Nine (36%) patients did not attend their first appointment, which compares to an average of 14% for the physiotherapy service as a whole.[19] Seven (28%) attended an initial appointment, but did not attend a subsequent appointment and were then discharged from the service. Five (20%) completed treatment and four patients (16%) had treatment ongoing.

Table 2: Attendance and treatment outcome for physiotherapy at site B amongst matched referrals from site A

	Outcome for all referrals made to physiotherapy at site B and matched with site B records (n=25)
Did not attend first appointment	9 (36%)
Attended initial appointment, but did not attend a subsequent appointment and were then discharged from the service	7 (28%)
Completed treatment	5 (20%)
Treatment ongoing	4 (16%)

A total of 81 physiotherapy sessions were registered amongst the 24 homeless patients. Of these appointments, 49 (60%) were attended, 14 (17%) were cancelled (either by service or by patient), and 18 (22%) were not attended. The mean “did not attend” (DNA) rate of the physiotherapy service as a whole, during the study timeframe was 13%,[19] showing that the DNA rate amongst homeless people was higher than the general population. For those attending their initial appointment, the median number of sessions attended was two. The median number of sessions attended by those who completed their treatment and were subsequently discharged from physiotherapy was four (excluding the four patients whose treatment was ongoing). This was similar to the mean number of sessions attended by patients for the physiotherapy service as a whole (4.5).[19]

Table 3: Outcome of physiotherapy treatment sessions at Site B amongst those referred from site A

	Physiotherapy sessions registered for patients referred from site A to site B. (n= 81)
Attended	49 (60%)
Cancelled (either by service or by patient)	14 (17%)
Not attended	18 (22%)
Mean number of sessions for patients who completed treatment	4

A greater proportion of those failing to attend their first appointment (six out of nine) had reported drug and/or alcohol dependence problems compared to those who attended. Ten patients had specific interventions documented at Site B. These included: exercise prescription (n=8); advice (for example, postural advice, health promotion or self management) (n=6); and, manual therapy (n=3).

Qualitative results from interviews

Five digitally recorded interviews with practice staff were carried out over a one-month period. Appendix provides summary information about the five staff interviewed. The interviews lasted from between 12 and 20 minutes.

During the interviews, staff explored and discussed the quantitative findings. They had various perspectives on the information presented to them, but there was often consistency across their responses. This process provided a breadth of insight and understanding to the quantitative findings. Themes identified included: recognition of homeless people's high incidence of musculoskeletal problems paired with an expectation that there should have been more physiotherapy referrals in the timeframe; considerations given before referring to physiotherapy; reasons for missing physiotherapy appointments; perceptions of what physiotherapy offers; and, suggestions for making physiotherapy more accessible.

There was consensus that the characteristics of patients referred to physiotherapy reflected the wider homeless population attending their practice. Most interviewees noted that musculoskeletal problems were extremely common amongst their patients.

"back problems are a huge bulk of what we see generally. Back, neck, shoulder, upper limb, knee, ankle... Lots of back problems"

Helen, Clinical Nurse Specialist

As a result, there was surprise at the low physiotherapy referral rate. However, numerous explanations for the this were offered, including: non-recording of referrals on the computer system; the relatively small practice size (approximately 900 registered patients); or, a belief that patients' culture or language might limit their understanding of physiotherapy thereby fostering an unwillingness to be referred.

"… [patients] not understanding why we are sending them to physio, and that there is more to it than 'we just want you to do some exercises'"

Margaret, Nurse Practitioner

Additionally, in a population with multiple morbidities, musculoskeletal problems might not always be the most pressing health problem.

"It's impossible to tackle everything in every patient that comes in… I wouldn't bombard someone with six referrals when I first see them, even though each of the six conditions they come in with, you would be referring in another population… The morbidity is so high… that we have to help prioritise and we have to make sure we don't scare people off..." Yvonne, GP

Equally, patients may underplay their symptoms, choosing to manage them themselves.

"I think most people who come in have some musculoskeletal problems, which they underplay and they self-medicate." Yvonne, GP

System-related factors may also be important, as appointment letters may have failed to reach patients who regularly changed their address.

> *"OK we've referred them, do they actually get the appointment, if they haven't got an address? If they have to come to [our practice] to collect their post, how good are they at collecting their post?"*
>
> Helen, Clinical Nurse Specialist

There was also the belief that the referral process and waiting times were long, causing homeless patients to prioritise other issues when they were offered an appointment.

> *"the general slowness in response to physio referrals… the more acute things we may be less likely to refer because we know it will be a month before we get a response, and appointment some time after that"* Alan, GP

Staff also considered patient-related factors before referring, such as: symptom severity and chronicity, perceived benefits of physiotherapy, and the challenges homeless people face attending appointments. Interviewees seemed reluctant to refer homeless patients, as they did not believe that such patients would attend the service.

> *"Our referral rates are probably lower than for the amount of severe morbidity we see, I suspect, because we are anticipating high DNA [patient not attending] rates" Yvonne, GP*

Participants cited many reasons why homeless people might fail to attend appointments, including: not prioritising their health; poor timekeeping; language barriers; addiction, mental health problems and chaotic lifestyles.

> *"But obviously with homelessness, if they get to sleep at someone's house and it is far away, it's difficult for them [to get to appointment]."* Kim, Receptionist

"with drug and alcohol problems, [some] tend to be less good attenders … partly because they may still be under the influence even if they were intending to attend." Alan, GP

Interviewees thought that an uptake of about a third (36%) was reasonably successful for this patient group, considering the challenges they have in attending health services. Interviewees felt that non-attendance to follow-up appointments could be due to misunderstanding about what physiotherapy offers. One participant paraphrases a conversation she had with a patient.

" 'Oh I went there … the physio looked at me, and he just said I must stretch a few times, how is that supposed to fix my problem?' ".

Margaret, Nurse Practitioner

Other suggestions were that perhaps one appointment sufficiently alleviated symptoms, or symptoms were improving by the time they reached physiotherapy. Alternatively, one participant suggested homeless people may have had an unpleasant experience at their initial appointment.

"I guess they are a population that are used to not getting the greatest reception…" Alan, GP

There was also a perception that physiotherapy may be evolving to place greater emphasis on self-management, with participants acknowledging that homeless people may not adhere to advice and exercise prescription.

"much less physio is hands-on these days, and it's much more advice. So a lot of people … aren't that good at adhering to advice or doing exercise … and they don't really believe that exercises are going to help."

Yvonne, GP

Some noted that since housed people often struggle with exercise programme adherence, the additional challenge of precarious accommodation that homeless people face means that such exercise programmes are probably unrealistic.

"I mean, where do they do their exercises if they are on the street, if they are squatting or sofa surfing? … that may be often a reason why people don't go back after their first appointment." Yvonne, GP

Consequently, participants said that they would often seek out alternatives in-house, rather than referring externally. For example, they might provide in house injection therapy, analgesia, exercise, advice or information leaflets instead of onwards referral.

"When I began to realise that actually quite a lot of what my patients were getting was advice and exercise sheets, well actually, some of that I can do"

Yvonne, GP

Conversely, one interviewee commented on how physiotherapy could offer an alternative to analgesia in a patient population that often has addiction problems.

"In a group of people who substance misuse, we try and reduce our issuing of prescriptions as much as possible… analgesia is very high on the agenda..." Margaret, Nurse Practitioner.

Interviewees stated the need to manage the expectations of homeless people, as they may lack awareness about what physiotherapy involves.

> *"you [the homeless person] actually have to attend... and then you [the practitioner] are not telling them go away with nothing, we can help, but you [the homeless person] have to help yourself in the process"*
>
> Margaret, Nurse Practitioner

Analysis suggested that approaches to potentially improve homeless peoples' attendance to physiotherapy mirrored explanations for why they may fail to attend. These included: better prompting, perhaps with texts to mobile phones; a self referral process; shorter waiting times; and, the ability to get an appointment at the time of making the referral. With these ideas in mind, there was a feeling that it was worth testing how referral to and uptake of a physiotherapy service might increase if it were on site in the GP practice, because they recognise that their homeless patients may prefer going somewhere familiar.

> *"familiarity of the practice, they know where they are coming. They perhaps have the trust of something offered under the general practice roof, where they are used to coming." Alan, GP*

DISCUSSION

The study succeeded in achieving its aims by collecting and descriptively reporting quantitative information about homeless people referred to physiotherapy by a dedicated GP practice. The quantitative findings were then thoroughly explored via the qualitative interviews with referring staff, offering detailed contextual insight. This study is important because physical health problems, including those of musculoskeletal origin, such as

traumatic injury[20] are prevalent amongst homeless people, but there is limited understanding of how they currently are managed. Certainly, the quantitative findings of this study highlights a potential mismatch between the high incidence of musculoskeletal problems in the homeless population[3] and the few homeless people accessing physiotherapy. The recognised lack of GP registration amongst many homeless individuals[6] cannot explain poor access here, as the study was undertaken within a GP practice solely caring for homeless people. Although the referral rate of the GP practice in this study was found to be only slightly lower than a practice serving a predominantly housed population in the same locality, this study would suggest that barriers to attending physiotherapy are a significant issue to the homeless population, as their failure to attend initial appointments was greater than that of the general population referred to physiotherapy at site B during the same time frame. Barriers to attending primary care appointments have been described as including frequent moving between areas, a chaotic lifestyle and lack of transport,[6] findings that were supported by the qualitative phase of this study.

Explanations for the decisions made by practice staff about whether to refer homeless patients to physiotherapy were wide ranging. Perceptions that patients lacked understanding about physiotherapy were one consideration, a view that supports the findings of the physiotherapists working with homeless people in Glasgow.[10] This would suggest that there is value in promoting understanding amongst homeless people and key support staff. Staff also felt that system structures did not facilitate homeless people's attendance. Traditional processes of referrals, followed by appointment letters sent to patients' addresses, rigid appointment times, and long waiting periods may not ideal for this population. The GP practice in this study provided care solely to homeless people, whereas the receiving physiotherapy department served the whole community. It

is suggested that primary health care programmes specifically tailored to meet the needs of homeless people might be more effective in the achievement of positive health outcomes than standard primary health care.[21] Although, the homeless people in this study had a dedicated GP practice sensitive to their care needs as their first point of contact, there were still barriers to their access imposed. Programmes that emphasise easy access, such as the Crisis at Christmas[15] and the drop-in and out-reach models in Glasgow,[10] may facilitate increased access to these services.

Our findings might help explain why some GPs choose to manage patients themselves rather than referring them to physiotherapy. However, this course of action potentially denies those patients access to the broader range of skills a physiotherapist could offer, including a detailed knowledge of musculoskeletal conditions and rehabilitation techniques (exercise therapy, electrotherapy, acupuncture, manual therapy and self-management). However, the quantitative data regarding interventions provided to the patients within this study did show that physiotherapy treatment received was predominantly advice and exercise, which certainly resonated with the interviewees. It is possible that the patients who attended but did not complete their course of physiotherapy only needed advice and exercise, and therefore elected not to return. Alternatively, the physiotherapists may not have had adequate training or were ill-equipped to handle the underlying addiction issues and challenging behaviours that homeless individuals may present with.

The conclusions drawn here are limited by this being a small, exploratory study. Consequently, the findings may have limited application in other settings. Ethical approval stipulated that all patient data reaching the research team must be anonymous, so it was impossible to use patient NHS numbers or dates of birth during quantitative

data collection. Consequently, using four patient characteristics to match data across the two sites was problematic, resulting in a failure to match nine patient records. Although it is not known exactly why matching for all patient records was not possible, some suggestions include variability of dates used to signify referral transfer between sites and certainly on some records data was incomplete. During the qualitative phase staff looking after homeless people were interviewed, but homeless people were not. By leaving the perspective of the homeless people out of this work a degree of bias was potentially added.

Clearly, more work is needed if homeless people are to receive more comprehensive care. Future research in this field should include input from homeless people themselves, and investigation into education and shared practice between physiotherapists and GPs. The complex mix of physical, mental and social problems faced by homeless people means that both attendance at and compliance with care services are a challenge. Co-operation between agencies to reduce these barriers would be beneficial; for example, piloting physiotherapy services within GP practices which care for homeless people could facilitate better attendance. Nevertheless, even if such care resources are available, findings suggest that homeless people's ability to access them is currently limited by numerous factors. Equally, there may be ways forward for improving care by relatively simple service re-design.

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Authors Jo Dawes (JD), Stuart Deaton (SD) and Nan Greenwood (NG) all made substantial contributions to the conception or design of the work. JD was the primary collector of data, JD and SD were involved in data analysis and JD, SD and NG were all involved in interpretation of data. JD drafted the work and all three authors revised it critically for important intellectual content. All three authors have approved the final version to be published and agree to be accountable to all aspects of the work, and ensure that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

COMPETING INTERESTS

The authors of this publication have no conflicts of interest.

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DATA SHARING STATEMENT

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The organisations that reviewed this study and provided ethical approval are:

- Faculty Research Ethics Committee, Faculty of Health, Social Care and Education, Kingston University and St George's, University of London
- Ethics Sub-committee, East London NHS Foundation Trust, Trust Headquarters, 9 Alie Street, London, E1 8DE (Project 313)
- Research and Development Committee, Homerton University Hospital Trust, Homerton Row, London, E9 6SR (R&D no: CO1334)

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APPENDIX

Summary staff interviewed for qualitative data collection

Pseudonym	Role	Experience of working in homelessness
Margaret	Nurse practitioner part time	At practice for six years, has had an interest in homelessness and disadvantaged people since qualifying
Yvonne	General Practitioner part time	Seven years of working in homelessness and many years of working in developing world
Alan	General Practitioner, partner practice, full time	Partner practice for 12 years, also works in acute care with homeless people. Has worked in homelessness since qualifying as a doctor
Helen	Clinical Nurse specialist, full time	Seven years of working in homelessness and management responsibilities at the practice
Kim	Receptionist, part time	Worked at the practice for 10 years. Deals with patients face to face and on the phone, daily.