When you are homeless, you are not thinking about your medication, but your food, shelter or heat for the night': behavioural determinants of homeless patients' adherence to prescribed medicines

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‘When you are homeless, you are not thinking about your medication, but your food, shelter or heat for the night’: behavioural determinants of homeless patients’ adherence to prescribed medicines

Abstract

Objectives: This study aimed to explore behavioural determinants of homeless patients’ adherence to prescribed medicines using Theoretical Domains Framework (TDF).

Study design: A qualitative study using semi-structured, face-to-face interviews.

Methods: Participants were recruited from a homelessness primary healthcare centre in Aberdeen, United Kingdom (UK). Face-to-face interviews were audio-recorded and transcribed verbatim. Thematic analysis of the interview data was conducted using the Framework Approach based on the Theoretical Domains Framework (TDF). National Health Service (NHS) ethical and Research and Development (R&D) approval was obtained.

Results: Twenty-five patients were interviewed, at which point data saturation was achieved. A total of 13 out of 14 TDF domains were identified that explained the determinants of adherence or non-adherence to prescribed medicines. These included: ‘beliefs about consequences (e.g. non-adherence leading to poor health); ‘goals’ of therapy (e.g. being a ‘normal’ person with particular reference to methadone adherence); and ‘environmental context and resources’ (e.g. stolen medicines and the
lack of secure storage). Obtaining food and shelter were higher priority than access
and adherence to prescribed medicines while being homeless.

Conclusions: Behavioural determinants of non-adherence identified in this study were
mostly related to participants’ homelessness and associated lifestyle. Results are
relevant to developing behaviour change interventions targeting non-adherent
homeless patients and to the education of healthcare professionals serving this
vulnerable population.

Keywords: Adherence, behaviours, homeless, prescription medicines, theoretical
domains framework (TDF), vulnerable patients
'When you are homeless, you are not thinking about your medication, but your food, shelter or heat for the night': behavioural determinants of homeless patients’ adherence to prescribed medicines

Introduction

Homelessness takes many forms including sleeping rough, living in derelict buildings, residing in temporary shelters offered by local authorities as well as living in squats or sofa surfing. In the United Kingdom (UK), individuals are considered homeless if they no longer have a legal right to occupy their accommodation or if it would no longer be reasonable (e.g. due to safety concerns) to continue to live there.

Homelessness is a widespread problem across the globe. In Scotland over 35,000 individuals made applications to Scottish local authorities in 2014-15 requesting accommodation on the basis of homelessness.

Reducing health inequalities remains a key health policy priority in the UK. Healthcare policies emphasise that addressing health inequality requires specific focus on disadvantaged populations at highest risks of health problems, at the level of both healthcare services delivery and research. Evidence suggests that the health status of people who are homeless is lower than the rest of the population, with higher mortality rates, mainly arising from opioid overdose, psychoactive substance use and heart failure. Prevalence of tuberculosis, HIV, hepatitis C are also higher with street dwellers often vulnerable to injuries, assault, exposure and skin problems. Poor health status is associated with a longer length of time registered as homeless.
Given the higher morbidity and mortality rates amongst the homeless population, adherence to prescribed medicines is imperative in achieving optimum health benefits. Limited evidence suggests that homeless patients are less adherent to their prescribed regimen and demonstrate poorer therapy outcomes than the rest of the population. A systematic review of the international literature suggested that socio-economic status of patients may impact patient adherence to their medicines. Further evidence from this specific vulnerable population and clinical groups has been recommended. There is also a dearth of theoretically informed investigation around medicines adherence research with the homeless population. This is despite growing emphasis on the use of theory in research designed to inform behaviour change interventions.

This study aimed to explore behavioural determinants of homeless patients’ adherence to prescribed medicines using Theoretical Domains Framework (TDF).

**Method**

Semi-structured, face-to-face interviews were conducted with patients registered at Marywell Healthcare Centre for the homeless in Aberdeen, North East of Scotland, UK. This centre provides services to a patient population of approximately 380, of whom approximately 50% are on methadone therapy (source: personal communication with lead clinician).

Patients aged 18 years and over, prescribed at least one medicine; and assessed by their general practitioners (GP) as having a good relationship with practice staff were included. This was important to ensure that interviews were conducted in a conducive
and safe environment for both participants and researchers. Those without the
capacity to provide informed consent or unable to communicate in English language
were excluded. GPs and practice nurses followed a screening procedure to identify
suitable participants during routine clinical consultations. Those patients who
expressed an interest were referred to the researchers on site. Further information
about the research was provided before informed consent was obtained. Participants
were offered soft drinks and biscuits for refreshment. No other incentives were
provided.

An interview schedule (Box 1) was developed based on the limited available
literature. The interview schedule was reviewed for credibility by an expert panel
including a GP, a nurse practitioner (involved in the healthcare of homeless people), a
GP practice support pharmacist, a community pharmacist and three academic health
services researchers. The schedule was then piloted amongst four participants who
met the inclusion criteria. Based on the pilot results, no changes in the interview
schedule were needed hence the pilot transcripts were analysed together with the main
study interview transcripts. Interviews were planned to take no more than 30 minutes,
were audio-recorded with participant permission, and transcribed verbatim. Interviews
were conducted until data saturation was achieved as deemed by the researchers when
no additional themes were emerging. Duplicate, independent checking of the
transcripts against audio-recordings and subsequent analysis was undertaken.
Quantitative, demographic information was collected from participants prior to each
interview as part of the consent process.
Researchers (VP, KM and DS) met to discuss initial coding after analysing the first four transcripts. Thematic analysis was undertaken using the framework technique based on the Theoretical Domains Framework (TDF) adapted to behavioural determinants of adherence to prescribed medicines. TDF is a theoretical framework of determinants of behaviour which combines 33 theories of behaviour into 14 domains (including knowledge, skills, capabilities, beliefs, emotions, roles and social influences). The TDF has been used by researchers to investigate determinants of behaviours or to explore issues around implementation of behaviour change interventions. In exploratory research, the framework can be applied to either all or part of a research study including formulation of a research instrument, such as a survey or topic guide or interview schedule for a qualitative study; as a basis for a framework for undertaking qualitative data analysis; or to interpret the results.

This research was reviewed and approved by West of Scotland NHS Ethics Service (14/WS/1094) and NHS Grampian Research and Development Committee (2014RG003).

Results

Demographic characteristics

Twenty-five patients were interviewed, the majority of whom were male (n=15) (Table 1) with a mean (SD) age of 40.7 (6.7) years (range: 28-54 years). Most participants rated their health as either fair (n=10) or bad/very bad (n=10) and were unemployed but not currently looking for work (n=19). Participants had been homeless for periods of less than six months (n=4) to over five years (n=3). Several manifestations of homelessness were noted during the interviews that shed further
light into participants’ demographic characteristics and their lifestyle. Incidence of
rough sleeping, consumption of a poor diet, drug misuse, violence and imprisonment
were all noted. Drug or alcohol misuse were the most common reasons cited as
leading to homelessness. Participants reported being prescribed medicines for the
management of wide range of conditions including mental health issues, asthma,
epilepsy, pain and dental issues including co-morbidities.

Table 1 to appear here

Key themes

A total of 13 (out of 14) TDF domains that reflected behavioural determinants of
adherence were identified from the data of which goals, environmental context and
resources, beliefs about consequences, knowledge, social influence and behavioural
regulation were the six most frequently cited domains. These are described in this
section with quotes corresponding to each of the 13 identified domains presented in
Table 2. The final TDF domain not identified in the data was ‘professional/social role
and identity.

Goals

Several participants emphasised the benefits of their prescribed medicines, especially
methadone. They believed that methadone was helping them to lead a ‘normal’ life,
enabling them to feel ‘stable’, ‘confident’ and keeping them away from illicit drug use
and its consequences including crime.
'Now I’m on methadone script, and I’m stable and that, and I’ve not been back to jail and that it’s kept me stable, and it’s managed to keep me and my girlfriend together. If it wasn’t for that then we wouldn’t be together.’ 31 years old, male

Some participants demonstrated clear ‘goals’ with regards to their therapy outcomes in contextualising the importance of adherence. One participant described the goal as to ‘fight the devil’ referring to her addiction with illicit substances.

‘…it’s like fighting the devil. So you’ve got the good one and the bad one [gestures to each shoulder] so you’re trying to eradicate -the bad one to keep the good one. So aye they do work, they work really quite well.’ 47 year old, female

Environmental contexts and resources

The importance of ‘environmental contexts and resources’ was noted as a key determinant in all stages of the medicines taking process, namely access to medicines, retention of medicines and following prescribed regimens. Barriers of access to medicines often related to visiting a community pharmacy for timely collection of dispensed prescriptions. Lack of means to commute to the community pharmacy, or ill health, often prevented timely collection.

‘Sometimes it was a lot of (problems) getting there (to a chemist), like sometimes people would say I’ll give you a lift and then they wouldn’t turn up. Never had money for bus fares and sometimes I wasn’t actually fit to walk up to my chemist.’ 38 years old, male

Lack of stable accommodation and chaotic lifestyle meant that adherence to prescribed medicines was not always the participants’ main priority.

‘When you are homeless, you are not thinking about your medication; but your food, shelter or heat for the night’ 28 years old, female
One participant described sleeping rough in the area where the pharmacy was located so as to enable convenient access to prescribed medicines. This demonstrates a strong sense of ‘motivation’ and ‘behavioural regulation’ with regards to the importance of timely access to prescribed medicines.

‘Just getting to the chemist was a problem with me being homeless because I didn’t know which end of the town I was going to be in every night. I didn’t know...I could have nowhere to go. I was just walking about the streets normally. I used to walk up to the general area where my chemist is and just end up lying and sleeping there or somewhere.’ 38 years old, male

Lack of secure space to store prescribed medicines was a common issue for participants. Some participants made reference to medicines with special storage requirements.

‘Methadone is supposed to be stored in the fridge as well so if you don’t have a home you haven’t got a fridge...’ 35 years old, female

Belief about consequences

‘Beliefs about consequences’ of non-adherence was a key determinant of adherence to prescribed medicines. For example, with particular reference to methadone, the prospect of reverting back to past habits of drug misuse was perceived as one such consequence. References were also made to other prescribed medicines.

‘I would be a high risk again with blood clots (if I don’t take my warfarin)...if you come off the trazodone it can kind of make you paranoid. And I know by getting an endoscopy I know that if I don’t take the omeprazole I can suffer.’ 47 years old, female
‘Knowledge’ of prescribed medicines

Most participants identified themselves as being aware of the importance of adherent behaviour. Participants demonstrated their knowledge with regards to why specific medicines had been prescribed to them by their GPs.

*I’m on methadone, salbutamol, Seretide, something for my chest, Epilim for my epilepsy. Only got diagnosed with epilepsy last year and I’ve been asthmatic all my life. Probably got made a lot worse when I was homeless.* 40 years old, male

Some reported having conversations with their prescribers demonstrating involvement in shared decision-making in prescribing of medicines.

*I say what’s wrong, they [the prescriber] say what’s maybe good and then we sort of like, try and work it that way.* 40 year old, female

Social influence

Some participants gave accounts of willingly sharing their medicines in their social circle. Theft was often a barrier to retention of medicines as indicated by participants sleeping rough as well as in temporary accommodation such as hostels.

*You are keeping (medicines) in your socks, down your trousers, bra even. Because if you fall asleep and it’s in your socks it could be quite easily stolen.* 28 years old, female

Participants mentioned their apprehension of encountering individuals in pharmacy premises with whom they had strained or violent relationships in the past. Such apprehension was also related to potentially encountering strangers asking participants to illegally sell their prescribed methadone.
‘I’ve came out of pharmacies heaps of times and folk have been like oi you on meth, have you got meth
for sale? And I’m like nah sorry ... Some of them persist and try and get you… and I’m not selling any.’
38 years old, male

**Behavioural regulation**

Examples of adherent practices related to setting up phone reminders to take their medicines as well as prioritising the collection of prescriptions as their first activity in the morning.

‘...even now when I’m not daily dispense it’s quite easy [to take medicines as prescribed]. I take it every morning at the same time so I don’t forget...I take it at the same time every day for the simple reason it’s routine. A lot easier.’ 41 years old, male

Examples of non-adherent practices were also cited by participants. Forgetfulness was often a key issue. Accounts of doubling up the dosage to make up for the missed doses and finding their own way of adjusting the dosage and medicines regimen were some examples of non-adherent practices.

**Discussion and conclusion**

**Discussion of key findings**

Results from this study have provided a unique perspective on this vulnerable and under-researched population with regards to the behavioural determinants in relation to their adherence to prescribed medicines.

While adherent practices were noted amongst some participants, both intentional and unintentional non-adherence were apparent in the data. Participants’ beliefs about consequences, perceived goals of therapy and environmental contexts and resources
were amongst the behavioural determinants associated with adherence to prescribed medicines. Socio-economic factors such as unstable housing, family conflict, being alone have been shown to negatively impact on adherence to prescribed medicines in research studies undertaken with the general population. Participants in this study have demonstrated the importance of these factors in adhering to prescribed medicines in the context of their homelessness. Interventions to improve adherence of medicines amongst the homeless population can benefit from focusing on the behavioural determinants identified in this study. Use of behaviour change technique taxonomy (BCTT version 1) provides a methodology for identifying content of any complex behaviour change interventions that are to be designed, implemented and evaluated. A recent systematic review of the international literature around interventions to improve adherent behaviour has shown that even the most effective interventions did not lead to large improvements in adherence or clinical outcomes. Novel use of theoretical frameworks are essential in designing complex interventions of behaviour changes more likely to succeed.

Lack of secure storage was one of the key barriers faced in retaining the prescribed medicines. Some local authorities in the UK have developed medicines management policies for homeless individuals living in temporary accommodation, such as hostels, where locked facilities to store prescribed medicines have been made available. Results of this study suggests that while such provisions are likely to benefit the occupants, there is a potential need for such services to be extended to the wider homeless population, for example to those sleeping rough. Delivery of prescribed medicines to the temporary accommodation or a nominated social care professional collecting prescriptions on behalf of the homeless individual are also amongst the
recommended options.\textsuperscript{19} With hindsight, such an approach could also mean missed opportunities for community pharmacy in providing opportunistic advice to this vulnerable population. Previous prospective evaluation conducted with homeless individuals has shown that access to temporary homeless shelters can lead to improvements in the health status and access to care during their time in such accomodation.\textsuperscript{20} Similar improvement in outcomes has been shown across diverse areas, such as substance abstinence and reduction in risk taking behaviours, especially when supportive services are offered on site, for example for counselling or provision of regular meals.\textsuperscript{21}

**Study strengths and limitations**

This study has some limitations. Not every participant in this study was currently homeless as some participants had recently moved to temporary or more permanent housing but were still registered with the homeless healthcare practice. With such participants, the researchers enquired about their experiences while they were facing homelessness. In this research only the patients with a good relationship with the healthcare professionals were included. This approach was used to ensure the safety of both research participants and the researchers. In addition, participants were recruited through their primary healthcare centre, an environment where they were known to be comfortable. It is likely that the results may not be representative of all homeless populations nevertheless this exploratory research gives valuable insight into an under-researched population.

Duplicate checking of transcripts against audio-recordings and independent framework analysis of the confirmed transcripts maximised the trustworthiness of the
findings. Use of the TDF allowed key determinants of adherent and non-adherent
behaviours with prescribed medicines to be explored.

**Practice and research implications**

The results of this study suggest that homeless patients face many unique barriers
around adherence to prescribed medicines, mostly associated with homelessness and
associated lifestyle. While health professionals based in specialist homelessness
healthcare facilities might be more aware of the barriers, homeless patients who are
using mainstream healthcare services such as community pharmacy will benefit from
the wider healthcare professional sectors’ greater awareness and understanding of
these barriers. Patient counselling should be tailored to address the unmet needs of
these patients.

There is scope for greater integration between health and social care services to
enable homeless patients to retain, manage and derive optimal benefit from their
medicines. Future research needs to consider wider aspects of self care including
homeless individual’s diet, injury prevention and management, sleep, health literacy,
physical activity and hygiene. Scope of the current study should also be extended to
the wider population using survey methodology to reach those who do not access
healthcare centres. Exploration of the perspectives of the wider health and social care
profession are also warranted. Such research will provide foundations to the
development and implementation of theoretically based interventions for homeless
individuals to optimally manage their medicines including provision of safe storage
facilities and its impact on adherence and health outcomes.
Conclusion

Participants associated the behavioural determinants of non-adherence identified with homelessness and related lifestyle. Results are relevant to developing targeted behaviour change interventions for non-adherent homeless patients.

Results suggest that there is scope for greater integration between health and social care services to enable homeless patients to retain, manage and derive most benefit from their prescribed medicines. While housing homeless individuals remains a government policy priority, in future policies should also address healthcare issues faced by homeless individuals as identified in this study. Homeless patients could benefit from healthcare professionals’ understanding and recognition of the barriers associated with adherence to medicines.

References


