Bournemouth University

Promoting Technology for Self-Care (ProTechS) for people who are sleeping rough

FINAL REPORT 2022

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Contents

Acknowledgements

We wish to thank the following for their contribution to the project

- Simon Chilcott – Head of Service development Big Issue
- Dr Maggie Kirk – GP at Providence Surgery and lead of the Health Bus
- Angie McHale – Service Lead of the homeless heath team at Dorset Health Care University NHS Foundation Trust

We also wish to thank all of the people who had experienced homelessness for sharing their experiences with us.

Section 1: Background and rationale

People sleeping rough have complex health and social needs and can find locating and accessing appropriate local services challenging. The purpose of this project was to determine how rough sleepers currently use technology to self-manage complex care needs, and to co-produce a prototype application supporting navigation and access to appropriate services. The project comprised of two overarching research questions:

1. What technology do people who sleep rough currently use to self-manage complex health and social care needs?
2. What co-produced prototype app design should be developed prior to implementation and evaluation?

It is important to recognise that the term homelessness is an umbrella term for lots of different groups who experience instability in housing including those living on the streets (rough sleepers), people in temporary accommodation and people staying temporarily with friends/family known as "sofa surfing". Homelessness in general across the UK (United Kingdom) is on the increase with 1,768 people were identified as homeless in 2010, rising to 4,677 in 2018 (Open Government 2018). Within the South-West there has also been an increase from 270 individuals in 2010 recorded as homeless, to 536 in 2016, giving the South West region the third highest number of rough sleepers in England in 2018 (Public Health England 2018).

Health outcomes for individuals who are homeless are poorer than that of the general population. The mean age at death for males who are homeless is 45 years and for females 43 years, compared to the means average age at death for people living in homes (men 76 years) and women 81 years (Office for National Statistics 2019). A review by Public Health England (2018) identified that interventions to good health included multi-agency interventions focussed on pharmacology, psychosocial aspects, disease prevention, as well as gendered tailored interventions. Public Health England outline that no single intervention is effective but rather what is needed is system wide integrated approaches to meet the complex needs of these individuals. The NHS 5 Year Forward View (NHS 2014) recognises the current health inequalities experienced, as well as asserting its commitment towards breaking down barriers and supporting individuals to self-manage their own health. However, there has been little focused work exploring how individuals who are homeless, particularly rough sleepers can self-manage. There is, however, an acknowledgement that it is important to engage and hear the experiences of those living on the streets in the development of services. Health outcomes are worst

for those individuals sleeping rough, as such this bid focuses primarily on these individuals (Kiser and Hulton 2018).

Section 2: Aims and Objectives

Aim: To identify potential technological solutions to promote self-care of people sleeping rough and to develop a freely available app enabling navigation and access to resources to manage complex health and social care needs.

Objectives:

1. To locate and summarise the evidence base of the use of technology to promote health and well-being self-management by people who sleep rough
2. To explore current signposting services for people sleeping rough to access appropriate health and social care
3. To co-produce a prototype of an app that could be used to promote self-management of complex health conditions
4. To evaluate the app through involvement of the user community (including usability and technology acceptance evaluations)

Section 3: Methods

Research Design

A sequential mixed methodological approach was employed (MacKenzie Bryers et al. 2014). This included four phases which were developed using the key principles for the development phase of complex interventions (O'Cathain et al. 2019):

1. Phase 1 – Systematic review
2. Phase 2 and Phase 3 – Empirical research including development and deployment of a questionnaire and focus group/one to one interview
3. Phase 4 – Co-production workshops to develop a protype application and then usability testing of the developed prototype

Systematic Review

An integrative review methodology was employed as it enabled the inclusion of both experimental, non-experimental research, qualitative and quantitative studies. The research questions which framed the review were;

1. What mobile health (mHealth) related technology is used by homeless populations?

2. What is the health impact of mobile technology for homeless populations?

The review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2009 Checklist to ensure depth and quality to the review process. The review was undertaken between 4th January 2021 – 30th April 2021 with a search for eligible papers across 10 databases (Cochrane library, Academic Search Ultimate, Medline, CINAHL, SCOPUS, PsychInfo, Cochrane, Google Scholar, Eric and Web of Science).

Empirical Research

Data collection and procedures

Phase 2 consisted of a paper based quantitative survey of 100 people who were currently or had previously slept on the streets. The questionnaire sought to identify availability and accessibility of homeless services in the local area, the participants experience of utilising mobile phones and the internet and to explore their views of potential technological solutions. It was developed by the research team in conjunction with practice partners working in either health organisations or charities working with people who were homeless. The questionnaire included items to collect some demographic information such as date of birth, gender and where they were currently sleeping, alongside a mix of rating scale, multiple response and free-text questions. During data collection, the UK was just emerging out of a national lockdown which was implemented to inhibit the spread of COVID-19. At this time, the local authority, where the research was based, had moved those living on the streets into temporary hotel accommodation, as such participants were accessed through these hotels, as well as homeless shelters and approaching people who were sleeping on the streets. Support to complete the questionnaires was provided to anyone who struggled with literacy. Participants were also asked if they would like to attend a focus group or participate in a one-to-one interview. The purpose of these was to enable an in-depth exploration of access and any barrier experienced in accessing health or wider care services such as food, clean clothes etc. In total sixteen participants engaged in the qualitative aspect of the research.

Data Analysis

Quantitative data were analysed using the Statistical Package for Social Sciences (SPSS)
software (IBM, version 27) using descriptive statistics, one-way ANOVA and t-tests. The qualitative data from focus groups/one-to-one interviews was audio recorded, transcribed verbatim and thematically analysed using Braun and Clarke's (2006) process of thematic analysis.

Ethics

Ethical committee approval was granted from the Bournemouth University Research Ethics Committee (Id 31828). All the participants were provided with a Participant Information Sheet and Agreement (Consent) Form and consented to participating. The voluntary nature of the study was emphasised, and participants were assured that they would remain anonymous but that their words may be used in the writing of reports and papers arising from the study. Those who participated were reimbursed for their time with a local supermarket gift voucher of £10 for completing the questionnaire and £20 for participating in the focus group/one-to-one interview. As previously noted, data collection occurred during the COVID-19 pandemic, and as such we ensured that national guidelines on social distancing were followed and the majority of the data collection occurred outside.

Co – production

Phase 4 of the research included the development of three co-production workshops (see figure 1) with people who had experienced homeless to identify an appropriate solution to meet their needs. The co-production workshops included people sleeping rough, the research team and a technological developer to identify potential technological solutions to current challenges. This group met twice, first to generate initial ideas which were then developed by the technological developer and then secondly to review the developing application for further comment and feedback. Lastly, a larger check and challenge group met to review the protype application. Following this a prototype application was developed and evaluated using the System Usability Scale (SUS) (Brook, 1986) with people sleeping rough (n=10).

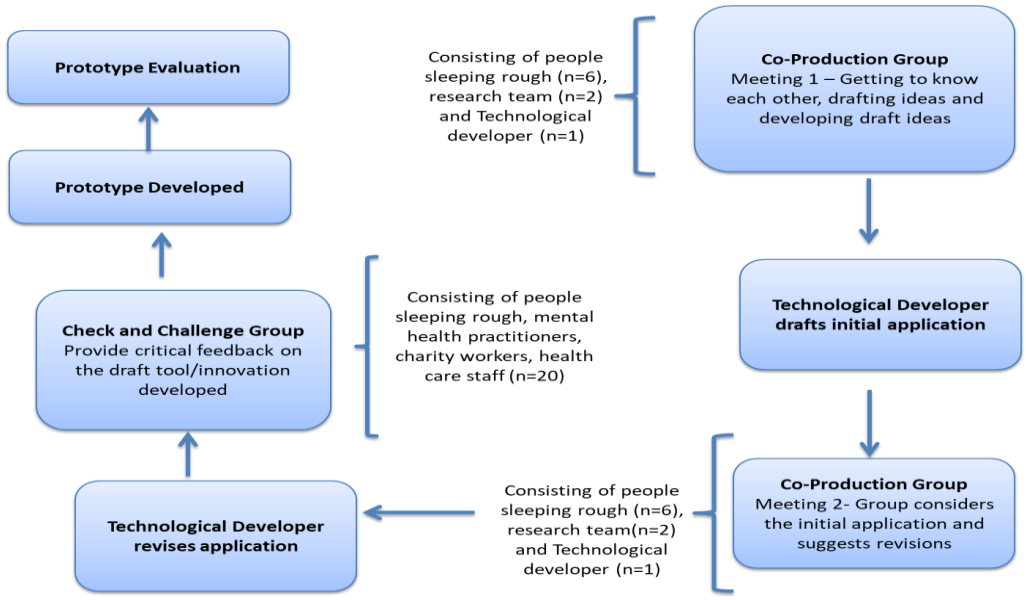

Figure 1 Co-production cycle

Section 4: Findings

Systematic review

The initial search identified 3089 papers and following removal of duplications 2113 papers were identified. During stage 1 of the review these 2113 titles and abstracts were reviewed against clear inclusion/exclusion criterion and 2072 were excluded as they focused on IT solutions on housed populations or non-technological interventions. In stage two of the review, we examined 41 full papers and at this stage excluded 24, resulting in 17 papers being included in the review. The review identified four themes;

1. Mobile phone ownership and usage
2. Barriers to use
3. Social connectedness
4. Health benefits

For a published copy of the review please see Heaslip et al 2021 (Section 5: Dissemination).

Empirical research

In the quantitative survey, 71 male and 29 female participants with an age range of 20 to 71 years were included. The number of females was significantly higher than the 14% nationally expected proportion [Open Government 2018). Sixteen people participated in the focus group/one-to-one interview and their ages ranged from 22 and 66 years and included twelve males and four females. The length of time that they had experienced homelessness varied from 4 weeks to 20 years. Half of the participants were currently homeless, with the rest living in supported accommodation.

The research identified that most participants were living with ongoing health issues. In terms of health access, this was reported to be difficult for all participants but especially those who were rough sleeping. Health access was reported to be facilitated through homeless charities. The findings identified gender differences in terms of reading confidence, ongoing health issues and health access, with women having lower confidence, worse health and more difficulty accessing health care. Word-of-mouth was the main way in which people identified local services. Time spent living on the street had a significant bearing upon this, with those who were homeless for longer reporting to rely on word of mouth, whereas those new to homelessness reported approaching services through established systems.

In terms of reading and internet use, reading was identified as challenging for 48% of the participants. Only 50 % of participants were able to access the internet, despite this there was a recognition of how technological solutions could enable information and support access to services.

For a detailed overview of the findings please see Heaslip *et al* 2021 and 2022 (Section 5: Dissemination).

Co-production groups

These were run by two of the research team and included four people who were homeless in co-production group 1, and four people who were homeless in co-production group 2. The check and challenge group included eight people who were homeless, and three staff (n=1 from the Big Issue, n=1 from the Health Bus and n=1 from the Homeless Health Team). There were not as many healthcare staff as we had hoped, and this was due to the acute clinical challenges that healthcare organisations were under due to the COVID-19 pandemic.

Conclusion

It is evident that digital solutions could assist in supporting access to information regarding identification of and access to both health and wider care support for people who are homelessness. However, to achieve this, solutions need to be provided at a structural level rather than a reliance on personal access to the internet through mobile phones.

Section 5: Dissemination

This research has been disseminated locally and nationally though presentations and publications including:

Academic Papers

Heaslip, V.; Green, S., Simkhada, B.; Dogan, H.; Richer, S.; 2022. How Do People Who Are Homeless Find Out about Local Health and Social Care Services: A Mixed Method Study. Int. J. Environ. Res. Public Health, 19, 46. https://doi.org/10.3390/ijerph19010046

Heaslip, V.; Richer, S.; Simkhada, B.; Dogan, H.; Green, S. 2021. Use of Technology to Promote Health and Wellbeing of People Who Are Homeless: A Systematic Review. Int. J. Environ. Res. Public Health, 18, 6845. https://doi.org/10.3390/ijerph18136845

Presentations

Heaslip, V.; Richer, S.; Green, S., Simkhada, B.; Dogan, H.; Promoting technology for self-care (ProTechS) for people who are sleeping rough. Sigma Phi Mu Presentation 14th December 2021.

Public engagement

Gender inequalities revealed in support for homeless people in England. 2022. Big Issue 3rd Feb. Available from: https://www.bigissue.com/news/housing/gender-inequalities-in-englands-homeless-population/

Heaslip, V.; Green, S., Simkhada, B.; Dogan, H.; Richer, S.; 2021. Systematic Review Exploring use of mobile health technology with people who are homeless. BU (Bournemouth University) Research Blog. 14th July, Available from: BU Research Blog | homelessness | Bournemouth University

Heaslip, V.; Green, S., Simkhada, B.; Dogan, H.; Richer, S.; 2021. Can technology help to address the shocking health statistics of our homeless population? BU Research Blog. 23rd March, Available from: https://blogs.bournemouth.ac.uk/research/2021/03/23/can-technology-help-to-address-the-shocking-health-statistics-of-our-homeless-population/

Section 6: Budget

The attached financial report (Figure 2) contains some expenditure which is currently being processed by our financial team. We have received invoices and payment requests for activities that took place during the research period but are still making their way through our internal payment process. The figure contained in this report is an accurate forecast of the costs we expect to show on the research account.

The Burdett Trust for Nursing
Grant Budget

Burdett Programme	***Complex Needs in Primary Care***
Organisation Name	***Bournemouth University***
Project Title	***Co-created evidence based application to support rough sleepers to self-manage complex need***
Project Lead Name	***Dr Vanessa Heaslip vheaslip@bournemouth.ac.uk***

			GRANT BUDGET		GRANT SPENDING			
			Complete the appropriate cost lines below for your project					
Description	**Numbers**	**Positions/Grades**	**Budget**	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Total**
Staff Costs								
Research Assistant	1	Grade 4	34,867.00	-	3,419.95	7,409.26	914.86	11,744.07
Research Administrator	1	Grade 3	5,443.00	-	1,673.46	2,295.25	424.35	4,393.06
Total								
Project Management								
Meeting Costs			1,858.00			881.88		881.88
Travel Costs								
Publications Costs								
Conference Costs								
Comms and Marketing			1,300.00				2,400.00	2,400.00
Monitoring Costs								
Evaluation Costs								
Final Report								
Other Costs			7,530.00			1,926.40	16,000.00	17,926.40
Add extra lines for costs particular to the project								
TOTAL GRANT								37,345.41

NOTE:-
included in grant funding
not funded under grants
Overheads of organisations not
Purchase of laptops and mobile phones

Figure 2 Financial Report

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Heaslip, V.; Richer, S.; Simkhada, B.; Dogan, H.; Green, S. 2021. Use of Technology to Promote Health and Wellbeing of People Who Are Homeless: A Systematic Review. Int. J. Environ. Res. Public Health, 18, 6845. https://doi.org/10.3390/ijerph18136845

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