

Breaking through the barriers to recruit research participants in community settings: a qualitative exploration using the Theoretical Domains Framework and Behaviour Change Wheel

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Abstract

Background Recruitment of pregnant or postnatal women and young families into health research is a challenge. Community midwives and health visitors are well placed to invite service users to participate, but evidence suggests that they do not always invite all potentially eligible service users. Our aim was to use the Theoretical Domains Framework to explore health visitors' and community midwives' perceived barriers and enablers to approaching service users about participation in research and to use the Behaviour Change Wheel to suggest theory-based strategies to improve future recruitment.

Methods Health visitors and community midwives working in four NHS Trusts and one community partnership in England were invited to complete an anonymous, online survey. The sample comprised health visitors (n=39) and community midwives (n=22). Qualitative data from open-ended questions about recruitment behaviour informed by the Theoretical Domains Framework were analysed using directed content analysis and inductive coding to identify salient Theoretical Domains Framework domains and specific barriers and enablers. Strategies to address these barriers and enablers were identified using the Behaviour Change Wheel.

Results Six key Theoretical Domains Framework domains were identified as salient to service user approach: (a) environmental context and resources; (b) social/professional role and identity; (c) social influences; (d) goals; (e) beliefs about capabilities; (f) knowledge. Intervention strategies were identified to address specific barriers (insufficient time and staff capacity, inadequate study materials, rejection of the study's relevance to practitioners' role, negative influence of researchers and managers, and competing priorities) and to leverage specific enablers (additional staff resource, the relevance of service user approach to professional role, positive influence of team members, managers and researchers, and a belief in the link between service user approach and improvements in healthcare).

Conclusions This study provides new insights into why community midwives and health visitors do, and do not, invite service users to participate in research. Using the Theoretical Domains Framework and the Behaviour Change Wheel we identified that resourcing and social support for staff together with education and communication about the health benefits of approaching service users about research participation are key to improving research recruitment involving these health professionals.

Background

It is estimated that fewer than half of all clinical research studies achieve their participant recruitment targets[1]. This has economic, ethical and clinical consequences [2] and undermines potential benefits to population health. Recruitment to research involves three stages: (i) identification of eligible service users (ii) approaching them about the study (iii) seeking their agreement to participate and gaining their consent [2]. There is potential for loss of participants at any of these stages, but the stage where most potential participants are lost [3, 4] and about which least is known [5] is the approach, in which eligible people are told about the study and invited to take part. The NHS Constitution for England [6] pledges to inform patients of research studies in which they may be eligible to participate. Data protection legislation prevents researchers approaching potential participants directly [2, 7, 8] and therefore it is common practice for healthcare professionals to approach service users, delivering research invitations, in the course of their clinical care [2]. However, there is substantial evidence that when performing this function, healthcare professionals approach only a proportion of eligible service users [2, 9-12]. This adversely affects recruitment rates, introduces biases to the sample, and deemed too vulnerable for research [2, 9].

There is a growing body of literature addressing why healthcare professionals do not invite all eligible service users to take part in research. Reasons identified include: a protective bias and overprotection of some groups of service users [2, 9, 11-14]; unclear or complex eligibility criteria and insufficient study information [15]; poor understanding of equipoise,

randomisation, allocation, eligibility criteria, informed consent [16]; lack of time or resources to approach service users [15-17]; misgivings about the study methods or rationale [10]; role conflict [4]. Attempts to intervene to address these barriers have, however, had little success [1, 16]. To date, most interventions to improve recruitment rates have been developed as ad-hoc, pragmatic responses to poor recruitment in a particular trial [28]. Consequently, there have been calls for greater understanding of barriers and facilitators to healthcare professionals inviting service users to research [16]. French and Stavropoulou [15] made an important first step towards that goal in their investigation of specialist nurses' perceptions of inviting patients to research as a general concept rather than in relation to a specific study [15]. However, as the authors note, use of an established theoretical framework, such as the Theoretical Domains Framework (TDF) [18-21] to guide data collection and analysis would have enhanced and strengthened their study.

The TDF is an evidence-based tool that provides a systematic approach to understanding healthcare professionals' behaviours and identifying what needs to change [18-21]. Building on this behavioural analysis, it is then possible to use the Behaviour Change Wheel (BCW) to identify the appropriate change mechanisms. Changing behaviour is acknowledged to be challenging, but it is more likely to be successful where interventions are rooted in evidence-based models of behaviour change [22, 23] - an approach that is yet to be used in the development of strategies to help healthcare professionals recruit service users to research [2, 24].

In this study we address that gap, focussing on community midwives and health visitors, professionals who provide community healthcare for women and their children in the UK, from pregnancy to five years of age. Delivering universal services, these practitioners have very high potential reach [25] and are well placed to approach pregnant women, new parents and families about participation in research. However, where health visitors and community midwives have been involved in participant recruitment, disappointing recruitment and limited representativeness of the study sample has been a concern [26-29]. There is very little previous research exploring the experiences of these community health professionals in research, with only one study looking at barriers to community midwives identifying potential participants in a specific randomised controlled trial (RCT) [35] and none that we have found looking at the experiences of health visitors. There are also no interventions designed to improve the potential participant approach rates by these community healthcare professionals.

The aim of this study was to explore health visitors' and community midwives' perceived barriers and enablers to inviting service users about participation in research in order to suggest theory-based strategies to improve future recruitment. Following the BCW approach, the study's objectives were:

- i. To use the TDF [18-21] to conduct a behavioural analysis of what needs to change to enable health visitors and community midwives to approach service users about research participation;
- ii. To use the BCW [19, 20] to link the results of this behavioural analysis to identify intervention elements and policy changes to improve service user approach.

Methods

Design

We used a self-reported, anonymous, online, cross-sectional survey to collect data from the health visitor and community midwife participants about their professional and demographic characteristics, self-reported involvement in study recruitment and the factors that influence their approaches to potential participants about a research study. The questions about recruitment behaviour were informed by the TDF: a validated, systematic approach to assessing the barriers and enablers to desired behaviours. Based on psychological theory, the TDF synthesises the key theoretical constructs from 33 behaviour change theories into 14 domains [21]. Data collection for TDF analysis can be done using interviews, focus groups or surveys [19, 30]. In this study we used an online survey with open-ended questions, which

combined the advantages of yielding qualitative data appropriate for an under-researched topic, whilst minimising the burden of the study for the healthcare professionals and the host organisations.

Draft questions were piloted with a convenience sample of healthcare professionals attending a research café hosted by Anglia Ruskin University, UK. Following examination of pilot data, the authors refined the questionnaire. The redrafted survey was entered onto the host site (Jisc's Online Surveys) and tested for functionality and comprehensibility by five health researchers employed in the authors' Faculty, but not part of the study team. The final questionnaire included 25 questions: 8 questions which gathered demographic data and 17 which invited free text responses to questions about approaching service users about research participation (see additional file 1).

Sampling

Consistent with the exploratory nature of this qualitative study, we used purposive sampling to identify a maximum variation sample of health visitors and community midwives working in different community settings with experience of inviting service users to participate. Participating organisations could not identify which staff had experience of the service user approach, therefore they sent an email to all of their health visitors and community midwives inviting them to take part in the study, and we used a screening question to select staff who had experience of the service user approach.

Participants and setting

We invited staff delivering community public health nursing (health visiting) and community midwifery services for four NHS Trusts and one social enterprise to complete the questionnaire. These organisations covered both rural and urban areas, in different regions of England.

Research team and reflexivity

At the time of data collection, the researchers included two registered nurses (SR and FM), one of whom is also a health visitor (SR), a social worker (JA) and a research fellow (JR). JR, JA and SR were all employed as researchers at Anglia Ruskin University; FM was employed by NIHR as Research Delivery Manager and Continuous Improvement Lead for CRN Eastern. All researchers have a PhD and experience working in non-academic roles with families, in clinical or community settings. We also all have experience of working with health and social care professionals to recruit participants to research projects, and these experiences prompted our interest in this study. Our application of an approach rooted in psychological theory to frame the study is influenced by our training as psychologists (JR and SR).

Data collection

A hyperlink in the email opened to the participant information sheet. Potential participants were informed that the survey was anonymous, no personally identifiable information would be captured and once submitted their survey answers could not be withdrawn. Recipients were asked to confirm their consent before starting the survey and again before submitting their completed surveys. The survey was open for four weeks, and a reminder sent after two weeks.

Analysis

Data were downloaded from Jisc's Online Surveys. Quantitative data were imported into SPSS Version 26 and analysed descriptively. Qualitative data were imported into NVivo Version 12 [31]. Two researchers (JR and KL) independently coded text into each of the fourteen theoretical domains of the TDF. They agreed on 99.1% of their coding decisions. The few differences in coding were discussed, and a consensus opinion reached. Specific barriers and enablers to service user recruitment were then identified within each domain. Salient TDF domains, identified as the domains which best explained the variation in service user approach behaviour, were mapped to intervention functions using the BCW, and

components for an intervention to support the desired behaviour were selected by applying the APEASE criteria (affordability, practicability, effectiveness, acceptability, safety and equity) [19].

Results

Sample characteristics

347 community midwives and health visitors were informed of the survey by their employer and 114 completed the survey. Of these, sixty one respondents (54%) had experience of approaching service users about participation in research; this figure was higher among community midwives (N=22, 76% of all community midwife respondents) than among health visitors (N=39, 51% of all health visitor respondents). We did not calculate a response rate for health visitors and community midwives with experience of service user approach, as the employing organisations did not have data on the numbers of staff with that experience. Table 1 presents the demographic and other characteristics of the health visitor and community midwife respondents with experience of service user approach.

Table 1. Demographic and other characteristics of health visitor (HV) and community midwife (CM) participants who had experience of approaching service users about participation in research.

Participant characteristics	HV (n=39)	CM (n=22)
Gender		
Female	37 (95%)	22 (100%)
Male	1 (3%)	0 (0%)
Prefer not to say	1 (3%)	0 (0%)
Ethnicity		
Other than white British	8 (21%)	11 (50%)
White British	31 (79%)	11 (50%)
Years of experience		
Less than 2 years	6 (15%)	2 (9%)
2-5 years	10 (26%)	5 (23%)
5-10 years	5 (13%)	1 (5%)
More than 10 years	18 (46%)	14 (64%)
Description of current practice environment¹		
Urban	28 (72%)	11 (50%)
Rural	9 (23%)	7 (32%)
Ethnically diverse	21 (54%)	8 (36%)
Economically deprived	27 (69%)	4 (18%)
Affluent	7 (18%)	6 (27%)

¹ Participants could choose more than one option, so % does not add up to 100.

Behavioural analysis of factors influencing the desired behaviours using the TDF

Across the dataset, 408 responses were mapped to 14 TDF domains and forty five specific barriers/enablers. Table 2 shows the number of responses coded to each of the TDF domains and the rank order of the TDF Domains for health visitors and community midwives. The same six domains dominated for both professional groups, and responses coded to these six domains accounted for 81% of all coded responses for health visitors and community midwives alike. These were: (a) environmental context and resources (b) goals (c) social/professional role and identity (d) social influences (e) beliefs about capabilities and (f) knowledge. The barriers and enablers for these key domains are outlined below, with example quotations.

Table 2. The frequency and rank order of responses coded to each of the TDF Domains for health visitors (HV) and community midwives (CM)

TDF Domain	HV (n=39)		CM (n=22).	
	Frequency	Rank	Frequency	Rank
Environmental context & resources	50	1	40	1
Social/professional role and identity	37	2	21	2
Social influences	37	2	14	5
Goals	29	4	16	4
Beliefs about capabilities	29	4	19	3
Knowledge	27	6	11	6
Beliefs about consequences	19	7	8	7
Emotion	14	8	6	8
Reinforcement	5	9	5	9
Intentions	5	9	3	10
Skills	3	11	2	11
Optimism	2	12	2	11
Memory, attention & decision processes	2	12	1	13
Behavioural regulation	0	14	1	13

(a) Environmental context and resources

Across the dataset, environmental context and resources was the most frequently identified domain. This domain was apparent in the responses of 27 (68%) health visitors and 18 community midwives (78%). Specific barriers identified were heavy caseloads and insufficient time, staff resource, inadequate study materials, and language barriers. Specific enablers were additional time, additional staff resource, and concise and accessible information.

Within this domain the most frequently cited barrier was heavy caseloads. Respondents felt they had insufficient time to talk to service users about research opportunities. This barrier was evident in the

responses of 48% of health visitors and 61% of community midwives. Staff shortages, leading to increased individual workloads, compounded the challenge of workload pressures, making it more difficult for health visitors and community midwives to find the time to talk to service users about research opportunities.

It is difficult when the unit is busy and the time constraint, workload is high and staffing levels are poor (CM39)

The quality of supporting information (physical resources) about a particular study was mentioned by both health visitors and community midwives as influencing their service user approach behaviour. The need for comprehensive and accessible study information was particularly important given the workloads and time constraints of these staff. They needed to feel equipped to answer the questions of service users about the research without having to find additional time in their schedules to better inform themselves.

A lot of the time due to time constraints and pressure from management we have little time to find out information so that we are able to answer questions that families may have. I also find it difficult to find the time to enrol families for research due to busy workload (HV38)

It's fine as long as I have been given appropriate info myself in a concise form (CM18)

Some respondents suggested that additional staff, or staff with specific responsibility for research, could facilitate approaches to service users about research opportunities. Others felt that research funding should, but often didn't, cover the financial cost of staff time needed to approach service users about research participation. These respondents felt that the cost was being borne by themselves, as it was added to their existing duties without the allocation of additional staff time to cover this work.

Banging on again... TIME resource explicit and funded up front whether through bid process or combination of NHS Trust and monies from bid and CRN as required. But key weakness as appears Chief Investigators do not acknowledge the 'cost' of what NHS 'jobbing' clinical midwives need to be able to freely enjoy and support consistent good quality research recruitment (CM4)

There should be payment to providers of care for payment of additional time for the research study recruitment (HV85)

Another barrier mentioned by health visitors and community midwives alike was language, encountered when attempting to inform service users who spoke little or no English about potential research opportunities.

It is a difficulty when English isn't their first language (HV87)

(b) Social and professional role and identity

The second most frequently identified domain for both professional groups was professional role and identity. Across the dataset there were different ways in which the respondents' professional role and identity influenced their participant recruitment behaviour. There was an enabling belief expressed by community midwives and health visitors that supporting research is integral to their professional role. However, some health visitors felt strongly that it was not part of their professional role to mention research opportunities to service users. Rather, they felt that this should be the researchers' responsibility. A different subset of the health visitors were somewhat ambivalent, suggesting that the research topic needed to relate to their role and practice, and noting there was potential for conflict with their professional role.

I see it as a professional endeavour and one avenue into understanding the need of clients (HV85)

It is part of my job description (CM49)

Researchers should stop imposing on us and sort it out themselves (HV20)

I approve of encouraging participation in research as a general rule but am very respectful of the boundaries of roles, expectations and service policy (HV59)

(c) Social influences

There was strong evidence that social influences could act as both barriers and enablers to service user approach. Service users' influence could act as a barrier to the health visitors and community midwives approaching service users about research recruitment, and there was evidence that these respondents actively chose whether to inform an eligible service user about a research study; it was a judgement based on the practitioner's perception of the service user's situation

I feel that you have to pick clients who you know would be willing to participate (HV55)

I wouldn't ask them if I thought the client's reaction might not be positive. (CM35)

There was also evidence for the social influence of researchers on the respondents' service user approach behaviour. Researchers who fail to engage with and support the health professionals appear to be a particular barrier to the involvement of health visitors, whereas community midwives identified communicative and supportive researchers as an enabler. These practitioners felt that it was the researchers' responsibility not only to provide the information and physical resources for recruitment, but also to provide support and encouragement in person.

We need more involvement from the researchers rather than just handing it to us! (HV27)

Researchers being visible and approachable, using easy to- understand language and making it relevant to our clinical area, and help in the recruitment process is important (CM102)

A desire to contribute to the team was an enabler for both health visitors and community midwives. However, only health visitors mentioned that the influence of managers could act as both an enabler and a barrier to service user approach.

I do this as it supports my colleagues (CM106)

We share enthusiasm about research and how it impacts on all of us, practitioner and patient alike (HV50)

Some managers encourage participation whereas others are mindful of time restraints (HV91)

(d) Goals

Across both professional groups it was apparent that introducing research opportunities to service users was not a high priority. This posed a significant barrier to some, but not all respondents, and was the fourth most frequently identified TDF Domain for both professional groups (Table 2). Both health visitors and community midwives emphasised that service users' needs always take precedence, yet this evidently did not include the service user's right to be informed of research opportunities. Rather, the commissioned targets took precedence. Since commissioned targets did not include contributing to research, supporting research by approaching service users about research opportunities fell to the bottom of the list of activities to be completed during a busy clinical encounter.

I just about have time to do the job of health visiting. We have targets to meet. A very demanding caseload. Extensive safeguarding. Typing up complex patient notes. Worrying about the lack of resources to actually support the dire needs of my caseload. Sorting out other people's research is the last thing I need or want to do (HV 20)

Due to the volume of topics we already have to discuss within a limited time, research would likely slip to the bottom (CM105)

However, other respondents commented that even in the face of competing clinical targets, they considered approaching service users about research participation to be a priority because practice and care is improved by research, and good research evidence requires participation by their service users. Thus, a belief that research underpins high quality care meant that the goals domain could also act as a counterbalancing enabler to research recruitment behaviour.

Research into maternity services is a growing area and it is important that all are involved to ensure the service moves forward with robust clinical findings to support out work (CM5)

Despite the time constraints, in order to gather evidence of effective interventions, good practice etc., we need to be doing research. (HV59)

(e) Beliefs about capabilities

For the most part, beliefs about capabilities acted as an enabler for both professional groups. However, this domain overlapped with the domain of environmental context and resources, and the domain of knowledge. Thus, some respondents expressed a lack of confidence in approaching service users in certain situations, such as more challenging clinical situations or when time was short. Others explained that their confidence in approaching service users about research participation was contingent on their knowledge about the study.

I feel competent and confident and know where to access support (CM4)

I am confident, if I was allocated time and resources (HV6)

I am relatively confident, except in labour (CM2)

I am confident if I know enough to offer a brief explanation or can signpost (HV47)

(f) Knowledge

Knowledge could act as a barrier or enabler for both health visitors and community midwives. In particular both professional groups emphasised the need for good procedural knowledge about the study, and knowledge of the scientific rationale for the study. A few participants also mentioned needing knowledge of the research topic.

It must be with midwives who have the relevant knowledge (CM4).

Knowing that participation is voluntary and that participants can withdraw within defined boundaries gives me greater confidence in approaching service users. Understanding the process of ethical approval and how research projects are planned, their protocols laid out etc. gives me greater confidence in explaining participation to others. I would also want to understand the research project objectives and the implication/commitment required from participants to feel confident that I could then 'sell' this to a patient (HV59).

Development of an intervention strategy

The intervention functions which map to the salient TDF Domains are shown in Table 3, together with example behaviour change techniques (BCTs) and policies for inclusion in a complex intervention to support health visitors and community midwives to approach eligible service users offering them the choice to take part in a research study. How these could combine into a complex intervention is depicted in Figure 1.

[INSERT TABLE 3]

Figure 1. Outline of a complex intervention to support health visitors and community midwives to approach service users about research participation.

[INSERT FIGURE 1]

The white boxes surround selected behaviour change techniques, and the surrounding blue boxes indicate supporting policies.

Discussion

We have used theory-based tools (TDF and BCW) to identify components of a complex intervention to support health visitors and community midwives to approach service users about research participation. This intervention would target key barriers including time and resource constraints, conflicting priorities, perceived role conflict and negative social influences. It would also leverage enablers including social influence of peers, managers and researchers, training and resources and beliefs in the relevance of this behaviour to healthcare and practice. We suggest that research processes need to be streamlined and the improvements made to the quality of support and resources for staff asked to invite service users to participate in research. In addition, there needs to be education and communication about the health benefits of excellent service user approach which should include first-person accounts from health visitors and community midwives who carry out this activity. These measures would be supported by policy changes to ensure health visitors and community midwives are allocated time for research-related tasks, although we recognise the challenges to realising this in practice.

Although the TDF and BCW are widely used in implementation science to understand the behaviour of healthcare professionals, to our knowledge this is the first attempt to use them to understand participant recruitment behaviour. Our study goes beyond previous studies looking at barriers and enablers to research recruitment to make theory-based recommendations for future interventions. It also addresses an important and under-researched aspect of health visitors' and community midwives' behaviour. There are a few investigations exploring the research recruitment behaviour of hospital midwives [32–34] but we have identified only one study focusing on community midwives' [35] barriers and one looking at why health visitors declined to take part in a cluster RCT [28].

Studies of barriers to research recruitment involving other healthcare professionals have identified many of the same barriers that were evident in our study. Time constraints, staff shortages and workload are widely reported barriers to research recruitment across health specialities and services in the UK, Finland and US [28, 32, 36–38]. Others have also reported that inaccessible study materials [32, 34, 35], language barriers [14] and inadequate support from researchers [37] pose barriers to research recruitment. Against the backdrop of increased demand and limited resources for healthcare, these may further impede healthcare professionals' engagement with research. However, evidence from systematic reviews suggest that support and additional training alone are not effective in changing service user approach behaviour

of healthcare professionals [2, 39]. As respondents clearly communicated to us, healthcare professionals need time to be allocated to this activity, and that in turn demands funding for the staff resource it uses. Whilst there is an established mechanism for the recovery of costs of research in the NHS[40], no additional funding is attributable for staff asked to approach potential participants during scheduled clinical encounters. Like others in the UK and the US, we call for salary support which releases time for research-related tasks for healthcare professionals asked to assist with research recruitment [36, 38]. It is also important that any salary support funding is visible to the healthcare professionals involved in service user approach.

Our analysis suggests that leveraging an enabling belief in the link between successful research recruitment and improvements in health care could help to address the difficulty of navigating research responsibilities alongside a clinical role. This could be delivered through education and persuasion, supported by service provision and a communications campaign. Importantly, this provides an opportunity to address our finding that some health visitors and community midwives choose not to approach all eligible service users about research opportunities, a tendency which is apparently quite widespread among other healthcare professionals [10–12, 35, 41]. Authors of a thematic meta-synthesis [14] suggest that this behaviour may be underpinned by a widespread belief among healthcare professionals that service users should not decide for themselves whether to take part in research. While the intention may be to protect, a decision by professionals not to offer the opportunity to take part in research necessarily results in a loss of autonomy for that service user and a shift towards paternalism.

Healthcare professionals choosing not to approach some eligible service users can also cause exclusion of certain group perceived as being too vulnerable for research [10]. Such excluded groups have included children [10], low-income and minority women [42], potentially vulnerable pregnant women [35], patients with depression [12] and people who are socially disadvantaged [11]. This necessarily undermines the representativeness of the study sample, the generalisability of the findings and the scientific and social value of the study. To redress this it is imperative that healthcare professionals who are asked by researchers to invite service users into a study are fully aware of the negative consequences of choosing not to invite all eligible service users to take part in a study.

Strengths and limitations

The online survey was a pragmatic way of gathering qualitative data without requiring extensive time from these time-poor professionals. Others have found that, when compared to more in-person interviews, online surveys can collect richer and more detailed data and this method of qualitative data collection [43] and are especially useful with participants for whom travel to a common research site would difficult and for topics where anonymity will likely promote disclosure [44]. Both of these circumstances apply to our study population. The anonymity of the online survey may also have enabled us to collect responses from participants with a wide range of views on research, including negative, ambivalent and positive views, which some interview studies of this topic have not previously accessed[15]. Whilst interviews may have yielded richer data, we found that our respondents were generous in their free-text responses, which delivered ample material to enable us to apply the TDF to analyse the behaviour in question.

The lack of a respondent denominator meant we were unable to calculate an overall response level and the sample sizes, though adequate for a qualitative study using the TDF and BCW [30], are small for samples collected via an online survey. The survey respondents were self-selecting and consequently our findings may have been influenced by response bias, and this limits the generalisability of our findings. Nevertheless, the samples were diverse with respect to the range of environments where the respondents were practicing, their experience in their professional role, and, particularly for community midwives, ethnicity. Whilst the majority of respondents were female, this reflects the demographics of the NHS workforce in these specialisms.

Conclusions

This study uses a theory-informed approach to gain new insights into improving research recruitment where health visitors and community midwives invite service users to take part in a study. We found that resourcing and social support for staff, together with education and communication about the health benefits of approaching service users about research participation, are key to improving research recruitment involving these health professionals. Given the strong evidence for the importance of social and professional factors influencing whether health visitors and community midwives approach service users about research, we suggest that further work to improve research recruitment could usefully employ a participative approach. The aim would be to develop co-produced interventions tailored to the needs and specific context of each healthcare profession which should then be rigorously evaluated for effectiveness.

List Of Abbreviations

CM	Community midwife
HV	Health visitor (community public health nurse)
TDF	Theoretical Domains Framework
BCW	Behaviour Change Wheel
NHS	National Health Service
RCT	Randomised Controlled Trial

Declarations

Ethics approval and consent to participate

Permission to conduct the study was provided by the Anglia Ruskin University Faculty of Health, Social Care and Education Research Ethics Panel (Reference FHSCE_DREP-16-106) on 23rd February 2017 and Health Research Authority approval (REC reference 17/HRA/1753) was granted on 10th April 2017. Local R&D permission was granted by four NHS Trusts and one social enterprise contracted to the NHS. All participants provided informed consent online prior to commencing the study.

Consent for publication

Participants consented to the publication of individual direct quotes (anonymised).

Availability of data and materials

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

Competing interests

None declared

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Authors' contributions

JR wrote the protocol, obtained ethics and governance permissions, assembled the research team, liaised with participants' employers, project managed the study, conducted the data analysis with KL and wrote the paper. SR, JA and FM commented on the protocol, contributed to the questionnaire design and study design and commented on the paper. All authors read and approved the final manuscript.

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Additional File Details

File name: Additional file 1

File format: pdf

Title of data: Survey questions inviting free text responses to questions about approaching service users about research participation

Description of data: Survey questions from the self-reported, anonymous, online, cross-sectional survey to collect data from the health visitor and community midwife participants about the factors that influence their approaches to potential participants about a research study. The questions were informed by the Theoretical Domains Framework.

Table 3

Table 3. Strategies to improve research recruitment by health visitors and community midwives: mapping behavioural determinants to possible behaviour change techniques and policies to support intervention functions.

Barriers to be addressed	Enablers to leverage	TDF Domain	Mapped intervention functions	Example BCTs for selected intervention functions	Policy categories to support the intervention functions
Time constraints Insufficient staff Language barriers	High quality accessible study materials	Environmental context and resources	Environmental restructuring	Environmental restructuring - minimise time requirement via materials and procedures	Change to guidelines regarding costs of participant approach; guidelines for researchers and managers on support for HCPs
Rejection of relevance to role; concern for role conflict.	Belief in relevance to care and practice	Social/ professional role and identity	Education Persuasion Modelling	Education - information about health consequences of equitable/inequitable service user approach	Service provision for initial/ongoing training for HCPs; communication and marketing about health consequences
Beliefs about service users; unsupportive researchers	Team, researchers management influence	Social influences	Restriction, Environmental restructuring, Modelling, Enablement	Environmental restructuring - Modelling of positive social influences; researcher support for participant support	Communication and marketing -about health consequence
Research support is not a commissioned target	Belief of link to quality of healthcare	Goals	Education, persuasion, incentivisation, coercion, modelling, enablement	Education and persuasion - information about health and care consequences	Communication and marketing about health consequences of and financial support for service user approach
Lack of confidence due to resource, context, knowledge,	Confidence to approach service users	Beliefs about capabilities	Education, persuasion, modelling, enablement	Education plus support via context and knowledge	Guidelines for researchers and managers on support for HCPs
Poor knowledge of study procedures, study rationale and research topic	Knowledge of study procedures, study rationale and research topic	Knowledge	Education	Education to improve baseline research knowledge; training to build procedural knowledge, understanding of	Service provision for initial/ongoing research training for HCPs; guidelines for researchers

Figures

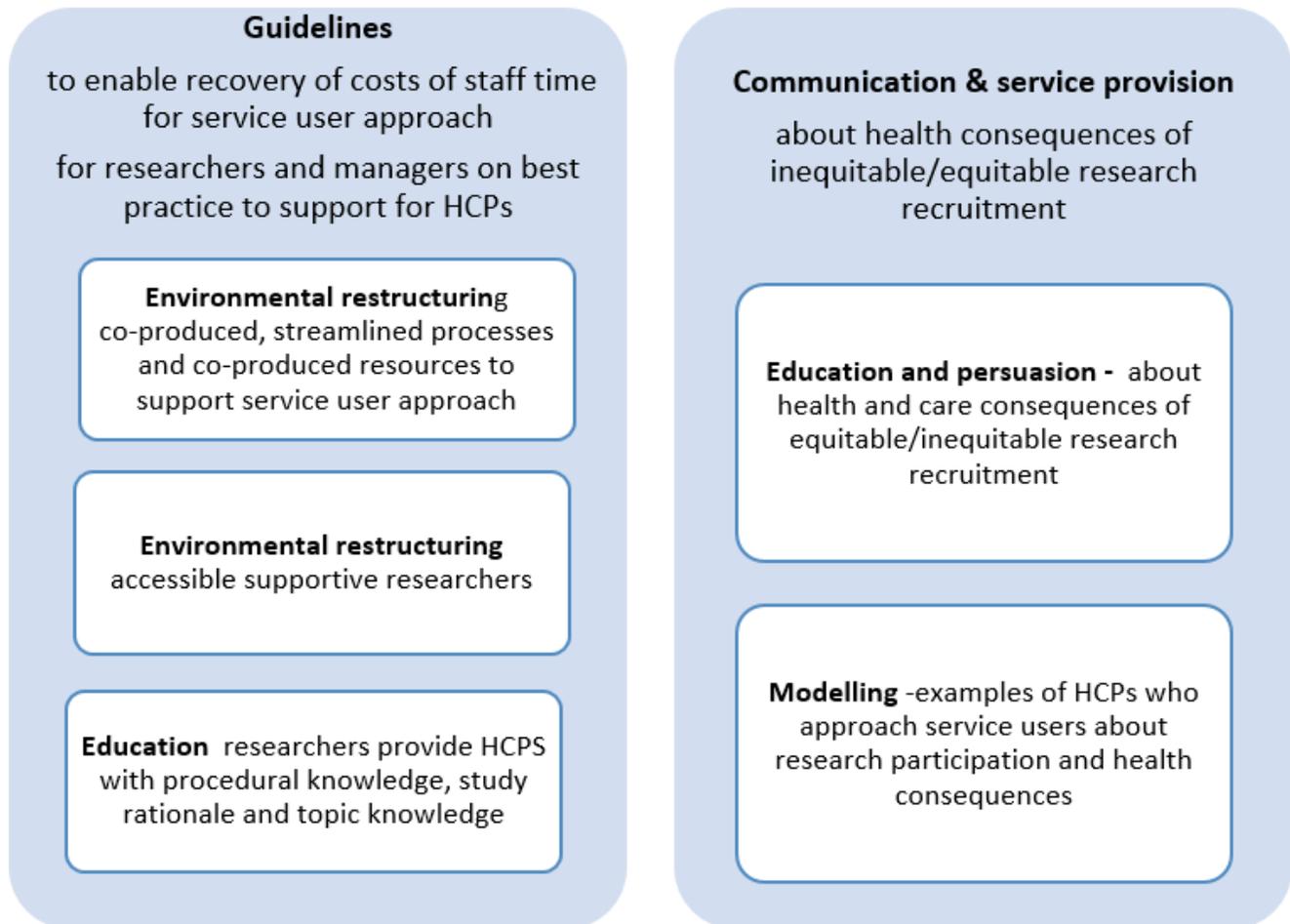


Figure 1

Outline of a complex intervention to support health visitors and community midwives to approach service users about research participation.

Supplementary Files

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- [CompletedCOREQChecklist.pdf](#)
- [Additionalfile1.pdf](#)