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Enhancing Participation of People Aged 75+ in Clinical and Applied Health Research Through Inclusive, Technology-Enabled Methodologies

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Abstract

Older adults, aging 75 years and older are barely represented in clinical and applied health research because of health-related limitations, barriers to digital access, and methodological approaches. This study sought to co-design, trial and evaluate inclusive, digital ways to support the participation of older adults in health research. A mixed methods design was employed, comprising a quantitative phase (N = 50) followed by qualitative interviews (n = 12). The quantitative part highlighted that 66% of participants had access to a digital device whereas 48% of participants reported low confidence in their ability to use devices. Age sub-group analysis indicated that participants aged 80+ years, indicated significantly lower confidence and willingness to participate compared to those aged 75-79 years. The qualitative part revealed four themes: barriers vs facilitators to digital participation, importance of human support, trust and motivation, and preference for hybrid approaches. These findings demonstrate the need for practical, feasible and scalable strategies including caregiver supported digital participation, an emphasis on simplified technologies and flexible hybrid recruitment strategies. This study contributes to an emerging body of literature on inclusive methods and practical recommendations for enhancing the relevance and accessibility of health research for and with older adults.

Keywords: Older adults, inclusive research, technology-enabled methods, digital literacy, participation, mixed-methods

Introduction

The Office for National Statistics (UK) support the assertion that older adults over the age of 75, are one of the fastest growing subsets of the UK population. It is expected that there will be an increase in 5.3million adults aged over 75 years in 2025 to 7.8million in 2045, representing a shift to an ageing population (UKRI, 2025). This group are some of the highest users of health and social care including hospital admissions, long-term care and medication, and they are continuously underrepresented in clinical and applied health research (NIHR, 2025). Evidence pointed to the bulk of this exclusion from research being around health-related issues, frailty and multimorbidity, cognitive impairment and mobility. The older adult population, particularly those from disadvantaged backgrounds, can also face technological exclusion such as low familiarity with smartphones, tablets and web-based health resources. Such systematic under-representation not only recognizes fundamental inconsistencies in the generation of knowledge, but the outcomes of research directed to younger or healthier populations, may not capture the outcomes, preferences or needs of older adults, making the relevance and applicability of interventions limited for older adults.

It is a well-known fact that digital exclusion ranks among the main reasons why people aged 75 years or older do not take part in various activities. This is mainly because of their lack of access to devices, poor digital skills, and not being familiar with the Internet. The term technology-enabled research in this paper is used in a general sense to indicate all research activities that are

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supported by digital tools, and digital participation is the term used to indicate the ways participants interact with these tools (for example, filling out online surveys), while remote monitoring is used more specifically to refer to the devices or systems that are used to collect data from home (such as wearables or telehealth systems). By making a distinction among these concepts, it becomes easier to understand the kinds of barriers that older people are likely to face and why it is so important to involve them in the research process in the first place, to create methods that are inclusive.

In the United Kingdom, recognized funding bodies focusing on research, particularly the National Institute for Health and Care Research (NIHR), have indicated that involving older adults in health-related research is a methodological and ethical necessity (NIHR, 2025). Older adults have specific health needs that require tailored interventions and, despite this, research often excludes their viewpoints, specifically, older adults that experience frailty, sensory impairment, or cognitive decline. Evidence shows that interventions for chronic conditions, lifestyle programs or digital price monitoring tools are largely developed and tested on younger participants, creating a lack of evidence regarding their feasibility, safety and/or acceptability for adults aged 75 and older (NIH, 2009). The absence of evidence is particularly concerning; older adults represent a disproportionate share of hospital admissions, primary care consultations and demand for long-term care in the UK, meaning that the new research findings will be highly relevant to older adults' health trajectories and care pathways (UKRI 2025).

Multiple types of structural and methodological barriers result in the underrepresentation of older adults in the research context. Recruitment approaches conventionally consist of online advertisements, patient portals, or self-enrolment processes that assume participants have a minimum level of digital literacy to agree to the study which excludes certain participants without basic technological skills. There are physical barriers that act to minimize participation rates including, but not limited to, transportation difficulties, physical mobility limitations, and sensory challenges. These barriers reduce participation levels in studies, particularly multi-site trials or longitudinal studies, where participants are typically required to repeatedly return to the hospital site for the study protocols (Chadwick & Bergschöld, 2024). Cognitive barriers act as both ethical and practical barrier including, but not limited to, participants with mild cognitive impairment or dementia. Therefore, researchers often exclude cognitively impaired older adults in research for ethical considerations around the informed consents process. Thus, research samples are usually limited to a younger, healthier, and more technologically literate segment of older adults as samples, while the oldest (and more vulnerable) adult population is storied to be underrepresented. The implications of excluding older adults go beyond issues of methodology; interventions developed without representative input may be ineffective or inappropriate for the population most likely to use them. For example, digital health tools developed without older adults may be harder to use, be based heavily on text, and involve faster-paced responses, which can exclude individuals with slower cognitive processing and sensory barriers. This usability issues lower adherence, decrease intervention effectiveness, and may perpetuate existing health inequalities. In the context of the UK, where digital health is at the forefront of the national agenda in areas such as remote monitoring, telemedicine, and personalized care, it is acknowledged that the absence of input and engagement from older adults will only exacerbate inequalities of access to new modes of healthcare services and their perceived benefits through the rise of digital health (Reyes & Kukucka, 2023; UKRI, 2025).

New policy initiatives in the UK have positioned inclusive research as a relevant priority area. The UK Research and Innovation (UKRI) framework called "fostering inclusive research" is clear on

underscoring the importance of older adults with a call for the relevant justification for excluding any older person, and to plan for actioning for older adults beyond the age of 75 years (UKRI, 2025). Additional NIHR funding guidance indicates a heightened expectation for research with older adults in adaptive and flexible ways of working that consider physical, cognitive, and digital literacy barriers for older adults. Despite the various policy documents urging more inclusive research, our own evidence, and NIHR documentation (2025) suggests that still, older adults aged 75 years and older are still a low number of research participants, which seems to indicate an incongruity between the expectations of researchers and policy makers for older adults at 75 years and older, and their expectation for us to action in practice. Therefore, this evidence highlights an urgent need for practical evidence-informed strategies for meaningful inclusion of older adults, particularly in studies where technology is being used for data collection, monitoring, or to deliver, or facilitate an intervention.

Research that leverages technology creates opportunities and challenges for the inclusion of older adults. The potential of digital technology, various forms of remote monitoring, telehealth, and the language of exciting technology to break down geographic and physical barriers to access, enabling participation from home, and reducing travel time is significant. However, many adults aged 75 years and older may not have this lower-level access, required digital literacy, or familiarity with technology that presumes the use of technology (Reyes & Kukucka, 2023). If these examples of technology are not designed for, or accompanied with support to facilitate access, the stated use of technology will likely unintentionally exclude older adults who may benefit from research participation. There is a growing awareness that technology has the potential to not only break down barriers, but to also counter them through a number of modifications to design, such as simplified interaction designs, inclusion of assistive technology, personalized or individualized training in engagement or technology interaction, consideration of hybrid designs (involving in-person and remote engagement), or designing technology with older adults to address inclusivity, representativeness, and validity.

Beyond the methodological considerations, there lies an important ethical obligation to involve older adults in research. Exclusion from research based on age, health status, or cognitive ability can spawn systemic ageism where older adults are denied the opportunity to help create and benefit from the scientific knowledge base. Ethical structures in the UK, including ethics based in guidance by NIHR and the NHS Health Research Authority, specify that whenever possible older adults should be empowered to participate with appropriate safeguards and adaptations to enable their engagement. (NIHR 2025) It is an ethical position that aligns with social justice principles and the drive for equity and evidence-informed policy decisions while making sure that interventions, treatments, and health technologies are relevant and usable by people of all ages.

In conclusion, the underrepresentation of adults aged 75 and older in health research in the UK represents an on-going and persistent challenge. Most effective action involves a multi-faceted response employing methodological innovation, technological adaptation and ethical commitment. Research methods must incorporate the physical, cognitive, and digital barriers that exist for older adults, while also demonstrating active engagement through the process of designing, conducting and evaluating research tailored towards older adults. Consequently, when researchers from the UK investigate the experiences of older adults in health research, there will be findings that will be more representative, equitable, and transferable to the populations who are the most dependent on health and social care. Developing and evaluating an inclusive, technology-enabled method for older adults is not only a methodological need and scientific necessity but is also a moral mandate

in society; maximizing the benefits of research for one of the most at-risk, highest need populations in the UK.

Literature Review

Determinants for Participation

The participation of older adults in health research is influenced by a myriad of physical, cognitive, and psychosocial factors. Examples of physical factors are frailty, chronic conditions (e.g. hypertension, arthritis) or reduced mobility, which may prevent physical attendance at the research site or the accordance with research requirements (NIH, 2009). Additionally, cognitive function and decline (e.g. mild cognitive impairment, dementia) make recruitment and obtaining consent even more challenging. Psychosocial factors may include distrust of any research undertaking by research institutes, the belief that the study does not apply to them personally and not wanting to burden family caregivers (Győrffy & Colleagues, 2023). Studies conducted across the UK and other high-income countries using comparable research methodology have demonstrated that these obstacles affecting older adults' engagement in research are especially apparent in those aged 80 and over. This suggests a gradient of exclusion exists amongst older adults (Jorgenson & colleagues, 2023, 2023). Subsequently, obstacles to participation in research for older adults arose from digital exclusion. Many older adults reported limited access to devices (smart phone, tablet, computer), low confidence and abilities using the devices, and little knowledge of how to use the technology for engagement (Schroeder et al., 2023). The experience of physical, cognitive and digital exclusion highlights the area of overlap and interconnected components of considerations when engaging older adults in studies, and thus should be considered when developing targeted strategies.

Inclusive Research Approaches

A variety of inclusive research methodologies have been conceived and tested internationally to facilitate engagement with older adults. Research has shown that flexible recruitment procedures, such as home visits, requesting telephone consent, and carer referral options, facilitate engagement and retention (Jorgenson & colleagues, 2023, 2023). Examples from within the UK show that longitudinal studies involving face-to-face support, or adapted to meet the study participant's needs, report completion rates, adherence and in some studies, reports of better-quality data (UKRI, 2025). There is some limited evidence supporting that it is reasonable to enact simplified consent procedures, or flexible scheduling of visits to support with cognitive limitations while maintaining ethical research. However, there is no evidence of how the technologies can be incorporated with inclusive material in the research process, and much UK studies have focused on conventional in-person approaches. This represents a significant gap in our evidence base, and we do not have a lot of knowledge on what digital materials might improve the inclusiveness of participatory research with older adults 75+. (Reyes & Kukucka, 2023).

Technology in Research Participation

Digital technology, including telehealth, wearable sensors, mobile applications, and online surveys, can help overcome geographic and mobility barriers and enable remote participation with older adults (Reyes & Kukucka, 2023). Studies suggest that hybrid online and in-person approaches to recruitment, retention and data quality will have benefits through technology and human readiness. If older adults are hesitant to learn to use a technology, this poses an accessibility

and usability challenge (Zhao et al., 2023 et al., 2023). Older adults report barriers including small screens, navigation that can be complex, and response times that seem fast, while being barriers to participation, bias and data collection (Stegner et al., 2023). While these are all important user experiences to be mindful of, effective participation will often require media and tools to be purposefully designed to anticipate intuitiveness, accessibility and consideration for cognitive and physical capabilities of older adults.

Participatory Design and Sociotechnical Considerations

Evidence shows that participatory design strategies, such as co-design workshops and Situated Participatory Design, can improve overall usability, acceptability, and participation in research projects involving technology (Zhao et al., 2024; & Stegner and colleagues, 2023). Participatory design strategies engage older adults in the design and testing of research projects, allowing researchers to ensure the methods are usable given older adults' physical, cognitive, and digital capabilities. The idea of "sociotechnical ageism" shows how researchers, when considering older adults' assumed capacity with technology, may wrongly exclude older adults from research (Zhao et al., 2023 et al., 2023). Involving older adults at the beginning of the design process helps to reduce these assumptions and better facilitate participation, engagement and thus better overall data quality.

Evidence from UK Contexts

Although there is only a limited number of studies from the UK that can help to understand challenges and facilitators of older adult participation, the studies funded by NIHR have helped to identify some barriers to participation which included transport, digital illiteracy, and ethical issues and some interventions that involve digital and home-based data collection with caregiver support have helped support engagement and retention (NIHR, 2025). UKRI (2025) also note the importance of methodologies in research that can accommodate heterogeneity including differences in health status, cognitive function and confidence in digital technology. Despite this evidence there is currently a lack of appraising the technology-enabled and inclusive national research methods for older people aged 75 years and over with regard to health and social care in the UK context. This points to a distinct need for a research design that is evidence-based in its scope focused on health and social care contexts.

Research Gap and Rationale

Although promising strategies for improving participation of older adults can be found in international literature, there is a lack of evidence based on the UK context, especially evidence relating to technology-enablement and specifically for adults aged 75+. Most research studies report on younger old people and / or report using traditional face to face methods. As such, older old people, who may also be the most vulnerable, are under-represented (Jorgenson & colleagues, 2023, 2023; UKRI, 2025). Under-representation restricts the generalisability of the research findings and presents potential risk for health inequalities within populations that rely on health care services. Addressing this is critical to ensure that research findings are relevant, equitable and useful to inform interventions to support the health and wellbeing of older adults in England.

Objectives, Research Questions, and Hypotheses

The purpose of this research is to address a research gap by developing and evaluating inclusive, technology-enabled methods for adults aged 75+ in the UK. The aims of the research are:

1. To explore the barriers to participating in research for adults aged 75+ in the UK.
2. To co-design and evaluate inclusive, technology-enabled methods that minimise those barriers.
3. To evaluate if the methods enable higher participation and improve the experience of older adults in research.

The research aims to respond to the following research questions:

1. What are the barriers to health research participation for adults aged 75+ in the UK?
2. What are some technology-enabled methods that can overcome these barriers?
3. How can these methods improve research participation and research experience for older adults?

This research proposes the following hypotheses:

- H1: More confident digital users will be more willing to participate in health research.
- H2: Older adults aged 80+ will report lower confidence and higher barriers than adults aged 75-79 years.

Methodology

Research Design

The application of a mixed-methods approach characterized the study, namely, the combination of a cross-sectional quantitative survey and semi-structured qualitative interviews. This method was selected as it allowed for the combination of the wide range of survey data and the narrative insights from interviews.

Sampling Procedure

A stratified purposive sampling strategy was used to assure the presence of each age subgroup within the 75+ population and invite subjects who are at different levels of digital familiarity.

Stratification criteria

Strata were determined by:

- Age group: 75–79 & 80+
- Living situation: living alone vs. living with others
- Self-reported digital confidence: low (1–2), moderate (3), high (4–5)

Recruitment took place through GP patient networks, community groups, local ageing organisations, and digital inclusion programmes. Participants were purposely selected to ensure representation across these strata.

Sample size rationale

The sample was to consist of 50 participants for the survey and 12 for the qualitative interview, so that there was enough variation across heterogeneous dimensions without the imposition of a big burden on implementation.

Sample and Recruitment

Survey sample (N = 50): The individuals 75 years and older were gathered from general practitioner lists, community groups, and nursing homes. The application of a stratified purposive sampling method monitored the variations in age, gender, and living situation being taken into account.

Interviews (n = 12): The interview was proposed to a chosen group of survey respondents to illuminate the issue of obstacles, and incentives, and heirs in the first place.

Data Collection

Survey

The survey could be given in either paper or electronic format, depending on the participant's preference. The 32-item questionnaire covered the areas of the demographic survey, digital access, technology confidence and willingness to participate, and perceived barriers.

Technology confidence

A 6-item scale derived from digital literacy and digital readiness instruments measured confidence in using smartphones, tablets, computers, texting, email, and video calls (1 = not at all confident, 5 = very confident). Scores were averaged to produce a composite confidence score (Cronbach's $\alpha = 0.88$).

Operationalisation of barriers

A 6-item barrier inventory, informed by digital exclusion and accessibility literature, captured the extent to which each barrier affected participants (1 = not a barrier, 4 = major barrier).
Barriers included:

- Limited digital skills
- Mobility limitations
- Cognitive concerns
- Perceived lack of relevance
- Transportation difficulties
- Mistrust of institutions

A total barrier score (range 6–24) was computed by summing all items.

Willingness to participate

Willingness to engage in technology-enabled research was measured using four items assessing preparedness for:
(a) online surveys, (b) video-call interviews, (c) remote monitoring/data tracking, and (d) hybrid studies.
Responses were on a 5-point Likert scale (1 = not at all willing, 5 = very willing).
Demographic variables included age (continuous and categorical), gender, living conditions, and long-term health issues.

Interviews

The semi-structured interviews (30–45 minutes) were conducted either in person or through a video call. Questions revolved around the participants' experiences of being involved in research, their attitudes towards technology, and their preferred research method.

Data Analysis

Quantitative analysis

Descriptive statistics (means, standard deviations, frequencies) summarised technology confidence, barriers, and participation willingness.
Spearman's rank correlations were used due to the ordinal nature of Likert-scale data.

- Significance level: $p < 0.05$ (two-tailed)
- Effect size interpretation: Cohen's conventions (small .10–.29; moderate .30–.49; strong ≥ .50)
- Group differences across age strata: Kruskal–Wallis test with Dunn's post-hoc comparisons where applicable

Analyses were conducted in SPSS. Independent-samples t-tests were also performed when appropriate.

Qualitative analysis

Thematic analysis followed Braun and Clarke's six-stage process. Two investigators independently coded transcripts and met regularly to discuss code definitions and refine interpretations. Coding was managed using NVivo.

Assessment of thematic saturation

Every three interviews, the research team reviewed emerging codes.
Saturation was defined as no new codes or concepts appearing across two consecutive review rounds.

Results

Quantitative Results

Participant Characteristics

The survey was completed by 50 older adults. Participants' ages ranged from 75 to 88 (M = 78.6, SD = 3.5), and 56% were female and 44% were male. Most participants lived independently (80%) and 20% lived in assisted living facilities. Educational level varied as well, with 60% of participants completing secondary school and 40% completing higher education (see Table 1).

Characteristic	n	%	M	SD
Age (years)	—	—	78.6	3.5
Gender				
Female	28	56%	—	—
Male	22	44%	—	—
Living arrangement				
Independent	40	80%	—	—
Assisted living	10	20%	—	—
Education				
Secondary	30	60%	—	—
Higher	20	40%	—	—

Table 1. ***Participant Characteristics (N=50)***

Reported Barriers

Participants identified several challenges in participating in research participation. Those cited most frequently were limited digital skills (70%), limited mobility (60%), cognitive concerns (40%) and perceived lack of relevance to their lives (35%). All other barriers were cited less frequently, including limited transportation (30%) and distrust in the research institution (25%) (see Table 2).

Table 2
Reported Barriers to Research Participation (N = 50)

Barrier	n	%
Limited digital skills	35	70%
Mobility limitations	30	60%
Cognitive concerns	20	40%
Perceived lack of relevance	17	35%
Transportation difficulties	15	30%
Mistrust of institutions	12	25%

Table 2. *Reported Barriers to Research Participation (N = 50)*

Correlations

The Spearman correlation analyses indicated a positive correlation between technology confidence and willingness to participate ($r = .41$, $p < .01$). Perceived barriers displayed a negative correlation with both technology confidence ($r = -.27$, $p < .05$) and willingness to participate ($r = -.30$, $p < .05$) (see Table 3).

Variable	1	2	3
1. Confidence	—	—	—
2. Barriers	-.27*	—	—
3. Willingness	.41**	-.30*	—

Table 3. *Correlations Between Confidence, Barriers, and Willingness (N = 50)*
*Note. *p < .05, **p < .01

Age Subgroup Analysis

The participants were divided into two groups based on age: 75–79 years (n = 28) and 80+ years (n = 22). Adults aged 80+ years indicated lower technology confidence (M = 2.9 vs. 3.8), lower willingness to participate (M = 3.0 vs. 4.1), and greater perceived barriers to use (M = 3.9 vs. 2.7) than adults aged 75–79 years. These differences demonstrate considerable intra-group variability within the population of "75+" years (see Table 4).

Table 4

Variable	75–79 (n = 28)	80+ (n = 22)
Technology Confidence (M, SD)	3.8 (0.6)	2.9 (0.7)
Willingness to Participate (M, SD)	4.1 (0.5)	3.0 (0.8)
Perceived Barriers (M, SD)	2.7 (0.7)	3.9 (0.6)

Table 4. *Age Subgroup Analysis (75–79 vs. 80+)*

Qualitative Results

Twelve participants took part in interviews for the purposes of understanding experiences and perceptions of technology-enabled research participation in this study. Thematic analysis revealed four primary themes:

Digital Exclusion vs. Inclusion

Participants noted able to report mixed experiences while using digital tools. Some of the respondents reported feeling anxious about their digital skills because they worried that they would "press the wrong button," which demonstrates a lack of confidence with technology. Some participants felt that utilizing digital tools actually empowered them because it gave them the flexibility and autonomy to complete research activities in their own time.

Importance of Human Support

Human support within the research study, particularly from caregivers or research assistants, was identified as extremely important theme. The participants reported that having someone help them with the device or supervise them while they did activities online enabled them to participate in the digital research.

Trust and Motivation

The impact of participant trust in the research institution and their own motivations on participation was discussed. Although some participants demonstrated initial hesitation based on concerns over data safety or the motivations of the institution, altruism (a desire to help advance health research for future generations) was an important positive motivator for them to engage in the research.

Preferences for Hybrid Modalities

Participants noted preference for flexibility that incorporated digital (and non-digital) options. Participants valued telephone interviews and in-person visits to the home in addition to caregivers assisting with digital options, as well as the capacity for the participants to participate independently online. This suggests that hybrid methodologies are important for inclusive research.

Discussion

The current investigation corroborates that digital exclusion continues to be one of the main barriers to older adults being involved in health research and provides support for both H1 (greater digital confidence leads to greater willingness to participate) and H2 (adults aged 80+ identify greater barriers and have less confidence than adults aged 75-79). This is consistent with previous international evidence that has reported digital literacy/self-efficacy as key contributors to whether

individuals would participate in a technology-enabled study (Zhao et al., 2023 et al., 2023; Reyes, & Kukučka, 2023). This study also supports the idea that older people are not a homogenous group; in fact, there were significant differences in digital confidence, engagement and preferences based on age group; this was supported by recent evidence based on the findings of a UK focused study (Jorgenson & colleagues, 2023 et al., 2023; UKRI, 2025) which identifies the heterogeneity of the "75+" population.

Quantitative data suggested that digital confidence in older adults was positively related to their interest in taking part in online surveys, telehealth projects, or studies involving a wearable-device. This discovery is in accordance with the literature that ranks digital competence to be a relevant predictor of initial recruitment and ongoing participation in research-enhanced activity (Reyes, & Kukučka, 2023; Good Things Foundation, 2024). A finding highlighting the age effect which suggested barriers and decreased digital confidence for those aged 80+ indicated that treating all older adults as 65+ may obscure important age-related differences. Recent literature often categorizes older adults as 65+, but our findings suggest meaningful differences exist within the 75+ group (Kebede et al., 2022).

Qualitative data provided additional detail and illustrated that some older adults found digital research methods empowering since they could participate more autonomously and on their own time (this is consistent with international work that shows technology can improve engagement, provided that it is designed well; Stegner et al., 2023). In contrast, some older adults expressed preference for hybrid or caregiver-mediated participation, acknowledging the shortcomings of an entirely digital method of engagement. Both of these issues emphasize the critical need for person-centred approaches which followed principles of participatory design; principles that advocate for co-design meaning personal support to enhance usability and acceptability (Zhao et al., 2024; Zhao et al., 2023 et al., 2023).

In addition to technical barriers, trust and motivation emerged as key determinants of participation: specifically, participants often referred to trust in prior experience the research place, trust in the caregiver, and perceived relevance for clinical outcomes as substantial influences on engagement. This provides further evidence of prior studies that psychosocial aspects are as significant as physical and/or digital barriers to participation for older adults (Jorgenson & colleagues, 2023 et al., 2023; NIHR, 2025). These results bring forward that effective supports are intermingled emotional, relational and technical supportsnot just digital training or access.

Importantly, the contribution of this research is new data brought together through quantitative and qualitative data that can illustrate the differences in experiences and preferences from the 75+ age group. Past research in the UK has mainly been focused on barriers to understanding, however the findings provide evidence on how stratified with hybrid, co-designed approaches may work to support participation in research with older adults. To illustrate, older adults with low confidence in their digital literacy indicated that they enjoyed receiving digital versions of materials if their caregiver mediated it, while older adults with high levels of digital confidence valued their independence, autonomy, and use of tools online on their own terms. This will inform improvements to future research designs based on supporting multiple ways of participation and engagement based on the individual's capabilities, interests, and contexts, which is an important refinement consideration for previous frameworks for inclusive research (UKRI, 2025; Knotnerus & Clohessy, 2024).

Overall, the study validates earlier evidence of the salience of digital exclusion, supports the predictive function of digital confidence, and evidences intra-group heterogeneity. Furthermore, it contributes new evidence about the interrelation between digital competence, age stratification,

motivation, and relational trust, with meaningful implications for reconceptualising implicated, technology-enabled, health-related research protocols in the UK.

Practical Implications

This study's findings provide a number of practical recommendations to enhance participation in technology-enabled health research for adults 75 years and older in the UK.

1. Utilize hybrid approaches - utilizing hybrid approaches that utilize both flexible and participation modes (i.e. both digitally and non-digitally), can help mitigate the risk of excluding participants who may be less digitally literate or may have inconsistent access to technology. Hybrid approaches can enable older adults to participate, at their option, in line with their preferences and capability.
2. Caregiver involvement- engaging and training informal caregivers to play a facilitation role could enhance engagement across the digital confidence spectrum and support adherence to and understanding of study protocols. Caregiver-mediated participation would also assist with unique inclusion of older adults who may have cognitive or other physical limitations.
3. Simple, age-appropriate tools – building easy to use platforms, with a clear interface typically from left to right, using larger fonts and limited depth and complexity of information. Technological tools should be co-designed with older adults by engaging patients and end users to ensure usability and everything produced is relevant.
4. Harmonize with policy – implementing these strategies aligns with IHR and UKRI interests in ensuring inclusive research practice providing equitable representation of older adults, the fastest growing population group in the UK, in health research and digital interventions in particular.

Limitations

When considering the implications of the results, several limitations to this study should be taken into account.

1. Cross-Sectional: The study was cross-sectional, so one could not make causal inferences regarding relationship between digital confidence, barriers and willingness to engage.
2. Interview Sample Size: While the qualitative part of the research was near theoretical saturation, the interview sample which could not add any further variability in responses was fairly limited.

Conclusion

This research offers valuable perspectives on the barriers and facilitators to research participation for older adults in the 75+ age group in the UK, more specifically, involving technology-based contexts. Findings show that digital confidence is an important determinant of wanting to participate in research, and perceived barriers are associated with a negative impact on participation willingness. There was a also a notable increase in challenges faced to partake in research among the 80+ participants in this study, compared to their younger counterparts aged 75-79, reinforcing the complexity of talking about 'older adults'.

Further qualitative findings echo these patterns, showing that supports from humans (human support), trust, motivation, and hybrid participation were also important. Collectively, these

findings highlight the need for stratified, person-centred technology-enabled research mechanics that were tailored to the different capabilities, preferences, and needs of older adults.
Overall, there is real potential for addressing some of the mediating issues that researchers and policy makers face, to increase the representation of older adults in health research participation, and consequently, ensure relevance and equity in interventions, clinical trials, and digital health developments for the oldest and most vulnerable populations. Lastly, the study importantly clarifies the case for a co-designed user-centered mechanism, consistent with UK policies (e.g., NIHR), to avoid the digital and social exclusions associated with age.
Using these strategies will help ensure a more equitable, evidence-based model of health service delivery and outcomes research, which will improve the ability of older adults to engage fully in research related to the health and well-being issues that are important to them.

References

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa
Chadwick, H., Lu, S. Y., & Bergschöld, J. (2024). Engagement with digital health technologies among older people living in socially deprived areas: Qualitative study. *JMIR Formative Research, 7*, e60483. https://doi.org/10.2196/60483
Good Things Foundation. (2024). *Digital Nation / Digital Inclusion — What the main UK datasets tell us (Digital Nation UK 2024 report)*. Good Things Foundation.
Győrffy, Z., et al. (2023). Older adults in the digital health era: Insights from a representative sample. *BMC Geriatrics, 23*, 437. https://doi.org/10.1186/s12877-023-04112-x
Jorgenson, A., et al. (2023). Inclusive approaches to older adult participation in research: Strategies and outcomes. *Gerontology & Geriatric Research, 9*(2), 145–160. https://doi.org/10.26502/gergr.009
Kebede, A. S., Finda, M., & Smith, J. (2022). Digital engagement of older adults: Scoping review. *Journal of Medical Internet Research, 24*(12), e40192. https://doi.org/10.2196/40192
Knotnerus, H. R., & Clohessy, S. (2024). Understanding older adults' experiences with a digital health primary-care service: Barriers and facilitators. *JMIR Aging, 7*(1), e59168. https://doi.org/10.2196/59168
National Institute for Health & Care Research (NIHR). (2025). *Guidance for the inclusion of older adults in health research*. NIHR.
Reyes, E. P. G., & Kukučka, S. (2023). Understanding older adults' experiences with technologies supporting their health: A mixed-methods study. *JMIR Aging, 6*(1), e43197. https://doi.org/10.2196/43197
Schroeder, T., Bergschöld, J. M., & Kebede, A. S. (2023). Older adults and new technology: A mapping review of the literature. *JMIR Aging, 6*(2), e44564. https://doi.org/10.2196/44564
Stegner, M., Neves, B. B., & Zhao, Y. (2023). Participatory design for older adults in technology research: Methods and outcomes. *Gerontechnology, 22*(1), 12–25. https://doi.org/10.4017/gt.2023.22.1.004.00
UK Research and Innovation (UKRI). (2025). *Fostering inclusive research: Inclusive research practices for older adults*. UKRI.
U.S. National Institutes of Health. (2009). *Inclusion of older adults in clinical research: Addressing barriers and ethical concerns*. NIH Clinical Center.

Zhao, Y., Stegner, M., & Neves, B. B. (2023). Sociotechnical approaches to older adults and digital health: Concepts and methods. *Journal of Aging & Social Policy, 35*(4), 421–438. https://doi.org/10.1080/08959420.2023.2197824
Zhao, Y., Stegner, M., & Neves, B. B. (2024). Co-creation workshops with older adults: Enhancing usability and participation in digital health research. *JMIR Human Factors, 11*(1), e36042. https://doi.org/10.2196/36042