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From medical support to health information and navigation: volunteer perspectives on the potential of a digital helpdesk to support equitable healthcare access for mobile populations living in disadvantaged circumstances in Europe

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Abstract

Background

Mobile populations living in disadvantaged circumstances in Europe, including refugees and (un)documented migrants, face persistent barriers to healthcare access. Digital approaches may support healthcare navigation, information provision, and access to care. This study explored volunteers' perspectives on the potential development and implementation of a volunteer-operated digital helpdesk intended to provide remote health information, guidance, and clinical support to mobile populations living in disadvantaged circumstances in Europe.

Methods

This exploratory pre-implementation study combined a survey (n = 73) and semi-structured in-depth interviews (n = 14) with volunteers experienced in supporting mobile populations. Interview participants were recruited through the survey and purposively sampled to ensure professional diversity. Survey data were analysed descriptively, and interviews were thematically analysed using a hybrid deductive-inductive approach guided by the Health Equity Implementation Framework.

Results

Of the survey respondents, 97% believed a digital helpdesk could support the health and well-being of mobile populations, and 85% were willing to volunteer remotely. However, 60% expressed concerns about the risks of providing remote support to mobile populations. Interviews highlighted concerns about patient safety, diagnostic limitations of remote interaction, medical liability, trust, and differences between European healthcare systems, which may influence access to appropriate care.

Conclusions

Most participants questioned the feasibility of a digital helpdesk, including remote clinical support, and instead favoured an information- and signposting-based platform directing users to existing services. Future research should explore the feasibility and acceptability of such a platform and its potential to contribute to more equitable healthcare access for mobile populations in Europe.

Background

Access to healthcare is internationally recognised as a universal human right, regardless of legal status [1–4]. Nevertheless, individuals who frequently change their place of residence, whether forcibly or voluntarily, including refugees, asylum seekers, and undocumented migrants (UDMs), continue to face substantial barriers to timely and appropriate healthcare. In this study, these groups are collectively

referred to as *mobile populations living in disadvantaged circumstances*, hereafter *mobile populations* [5, 6].

The growing number of mobile populations in Europe highlights the need to improve equitable access to healthcare. In 2025, more than 650,000 first-time asylum applications were registered [7], and estimates suggest that between 2.8 and 3.5 million UDMs were living in Europe at the time of the most recent estimate in 2017 [8]. Common barriers for these groups include limited knowledge of healthcare systems, restricted access to health information, language and cultural barriers, and administrative obstacles [9–12]. These barriers are often exacerbated for individuals with insecure or undocumented legal status, for whom fear of deportation, uncertainty about healthcare rights, lack of GP registration, and financial constraints may discourage care-seeking [4, 9, 12, 13].

Digital health interventions may help address some of the aforementioned barriers by improving remote access to healthcare services and health information [14]. The widespread use of smartphones among refugees and migrants creates opportunities to deliver digital health support [15, 16]. International health and humanitarian organisations have highlighted the need for digital tools that facilitate access to health information, support healthcare navigation, and improve communication with health services across borders [17, 18]. Developing a digital helpdesk for mobile populations could be one such approach, providing health information, guidance, and support for accessing healthcare through digital communication channels. Although several digital initiatives seek to improve healthcare access for underserved populations in Europe, evidence on the effective design and implementation of digital helpdesks for mobile populations remains scarce. Existing examples include the Doctors of the World medical helpdesk for UDMs in the Netherlands and Arene's online GP services for Ukrainian refugees [19, 20]. By providing reliable information and guidance, such services may help address the limited awareness of available healthcare services and entitlements [12, 21, 22].

Building on the potential demonstrated by these initiatives, the concept of a digital helpdesk emerged in collaboration with the Dutch organisation Boat Refugee Foundation (BRF) as a way to support healthcare access for mobile populations while enabling volunteers to contribute remotely. The proposed helpdesk was envisioned as a volunteer-led remote service providing health information, support with healthcare navigation, and, where feasible, limited forms of remote clinical care. However, little is known about how such services should be designed and implemented. In particular, the perspectives of volunteers with experience in supporting mobile populations remain underexplored, despite the important role they could play in delivering this type of remote support. Understanding their views on opportunities, challenges, and design considerations is therefore essential.

This study aimed to explore the perspectives, perceived opportunities, challenges, and recommendations of volunteers experienced in supporting mobile populations in Europe regarding the potential development and implementation of a digital helpdesk providing health information and healthcare support to facilitate access to healthcare services for mobile populations living in disadvantaged circumstances.

Methods

Study design

This pre-implementation study was conducted as part of an exploratory initiative investigating the feasibility and potential design of a volunteer-operated digital helpdesk aimed at providing healthcare support for mobile populations in Europe. An exploratory sequential mixed-methods design was used, combining a survey (Phase 1) with in-depth interviews (Phase 2). The survey indicated generally positive views on a digital helpdesk and remote volunteering, and therefore prompted the decision to conduct in-depth interviews to further explore volunteer perspectives on the opportunities and challenges of a volunteer-led digital helpdesk. The COREQ checklist guided the reporting of the study [23]; see Related file 1.

Study setting and study population

The study population consisted of volunteers with experience in providing medical, psychosocial, or practical support to mobile populations in Europe. Inclusion criteria were: (1) being a current or former volunteer, (2) having experience providing support to mobile populations in a European context, and (3) being aged 18 years or older. In addition to volunteers with a medical background, interpreters were included given their central role in language mediation within clinical care encounters. No formal exclusion criteria were applied at the survey level. Survey participants who indicated willingness to participate in interviews were invited by email. People who worked as support crew employees were included in the survey but excluded from the interviews, as the initial research focus was on providing medical or psychosocial support rather than operational or logistical support.

Additional participants for the interviews were purposively sampled through the professional network of the research team to ensure variation in volunteer roles and professional backgrounds. Two of the 14 interview participants had a prior professional relationship with the research team through earlier volunteer or research activities. No personal relationships existed, and participants were informed that participation was voluntary and would not affect their current or future involvement in volunteer activities.

Data collection and analysis

Phase 1 – Survey

Initial data collection consisted of a self-administered questionnaire developed by the researchers in collaboration with BRF. The questionnaire explored (1) perspectives on developing and implementing a digital helpdesk to support mobile populations in Europe and (2) volunteers' views on remote engagement, including the potential to continue volunteering through a digital platform. The

questionnaire included both closed- and open-ended items. All open-ended responses were analysed, while only selected closed-ended items relevant to the present study were analysed. Other closed-ended items were not included in the analysis. The full questionnaire is provided in Supplementary file 1.

Using convenience sampling, the questionnaire was distributed via social media and a BRF newsletter between March and May 2023, resulting in 38 completed responses. To increase participation, the survey was redistributed between March and May 2025, resulting in a total of 73 responses. At the end of the questionnaire, participants were invited to leave their contact details if they were willing to take part in a follow-up interview.

Quantitative data analysis

Closed-ended responses were originally collected on a 7-point Likert scale and subsequently dichotomised into “disagree” (scores 1–3) and “agree” (scores 4–7) to improve interpretability. Descriptive statistics and visualisations were generated using Microsoft Excel (version 16.84) and R (version 4.4.3).

Phase 2 – In-depth interviews

In-depth interviews were conducted with 14 participants. A semi-structured interview guide was developed based on survey findings and guided by selected domains of the Health Equity Implementation Framework (HEIF): the innovation (a digital helpdesk), the recipients (mobile populations and volunteers), the clinical encounter, the inner and outer context, and societal influence [24, 25]. The domains were combined where appropriate to reflect the aims and context of the study. The interview guide was piloted within the research team to refine clarity and comprehensibility (see Supplementary file 2). Of the 73 survey respondents, 26 expressed interest in a follow-up interview and were contacted by email. Eighteen did not respond, and eight agreed to participate. Six additional participants were recruited through the research team’s professional networks, all of whom had completed the survey.

All interviews were conducted online via Microsoft Teams by SR in April and May 2025, enabling volunteers with limited availability or those living in different European countries to participate. Seven interviews were conducted in Dutch and seven in English, and all were audio-recorded with consent.

During data collection, participants struggled to envision a digital helpdesk without an existing example. Consequently, discussions shifted from how such a helpdesk could be designed and implemented to the feasibility of a volunteer-operated digital helpdesk and the conditions under which it could improve healthcare access for mobile populations. Although the interview guide remained unchanged, greater emphasis was placed on these exploratory themes, allowing participants to further reflect on the concept and its potential role in practice.

Data management and qualitative data analysis

Informed consent

forms, audio recordings, and interview transcripts were stored on a secure cloud server at the Amsterdam health & technology institute (ahti), accessible only to members of the research team via organisational email accounts and individual passwords. Audio recordings were transcribed verbatim by SR following each interview. The transcripts were checked for accuracy and pseudonymised by removing names and other identifying information. Audio recordings were permanently deleted after transcription, while the pseudonymised transcripts were retained securely for eight years.

Open-ended survey responses and interview transcripts were analysed thematically following the six steps described by Braun and Clarke [26]. Open-ended survey responses were analysed to inform the interview guide but are not reported separately in the Results. Interview transcripts were read repeatedly for familiarisation, after which an initial set of deductive codes, informed by the open-ended survey responses, was applied to the interview data [26]. Additional inductive codes were added as new insights emerged. Coding was conducted in Atlas.ti (version 24 for Mac). SR and SvdW performed initial and secondary coding, respectively. Codes were subsequently grouped into broader themes and organised according to the domains of the HEIF [24]. Coding decisions and emerging themes were discussed regularly with PT, and the codebook was refined until consensus was reached. All transcripts were re-coded using the final codebook to ensure consistency, and analytical memos were maintained throughout the analysis to document coding decisions and reflections. After 14 interviews, no substantial new themes emerged, indicating data saturation.

Ethical considerations

This research was approved by the non-WMO ethics committee of the Amsterdam University Medical Center (AUMC) on 21 November 2024 (reference number 2024.1052). Prior to the interviews, participants received written information outlining the study objectives, interview procedures, the voluntary nature of participation, confidentiality, and data management, after which they provided written informed consent digitally via email.

Results

The Results section begins with the survey findings, including participant demographics and responses to the closed-ended questionnaire items. Subsequently, the interview findings are reported, including participants' initial impressions of the digital helpdesk concept, perceived opportunities and challenges, and recommendations for potential development.

Survey findings

Participant characteristics

Seventy-three individuals completed the survey, including 11 males and 62 females. Participants included medical doctors (34.2%), mental health professionals (19.2%), nurses (11.0%), support crew volunteers (12.3%), and interpreters (2.7%). “Other” professions included medical coordinators, programme directors, and participants without a specific profession or volunteer role (20.5%). Most respondents were aged 19 to 33 years (45.2%) and lived in the Netherlands (68.5%). Other countries of residence included Belgium (1.4%), Canada (1.4%), Cyprus (1.4%), Denmark (2.7%), France (1.4%), Germany (2.7%), Italy (1.4%), Portugal (1.4%), Spain (4.1%), Switzerland (1.4%), the United Kingdom (5.5%), and the United States of America (6.8%). Most were employed (79.5%), held a postgraduate degree (72.6%), and had zero to ten years of work experience (56.2%). Full demographic details are presented in Table 1.

Table 1
– Characteristics of survey participants (N = 73)

Characteristic	*n (%) or value*
Gender	
Female	62 (84.9)
Male	11 (15.1)
Age (years)	
Mean (range)	39.9 (19–78)[1]
Profession	
Medical doctor	25 (34.2)
Mental health professional	14 (19.2)
Nurse	8 (11.0)
Support crew	9 (12.3)
Translator/interpreter	2 (2.7)
Other	15 (20.5)
Highest educational level	
Secondary vocational education (MBO)	2 (2.7)
Higher professional education (HBO)	5 (6.8)
Undergraduate university (Bachelor's)	6 (8.2)
Postgraduate university (Master's)	53 (72.6)
Doctorate (PhD)	4 (5.5)
Other	3 (4.1)
Work experience	
0–10 years	41 (56.2)
11–25 years	14 (19.2)
≥ 26 years	18 (24.7)

[1] Mean age estimated from grouped age categories.

Overall perspective of survey participants

Most survey participants expressed positive views towards the concept of a digital helpdesk to provide remote (healthcare) support to mobile populations. Nearly all respondents (97%) indicated that such a

platform could meaningfully contribute to the health and well-being of mobile populations, and the majority (85%) reported a willingness to volunteer remotely. At the same time, 60% expressed concerns that providing remote support could cause harm to either volunteers or mobile populations, reflecting uncertainty about the risks of remote assistance. Volunteers also recognised advantages of remote engagement, including not having to leave their home country (64%) and being able to contribute without physically going to a refugee camp (81%). Figure 1 shows the distribution of closed-ended survey responses, categorised as “agree” and “disagree”.

Interview findings

Characteristics of interview participants

A total of 14 interviews were conducted with participants from diverse professional backgrounds: medical doctors (42.9%), mental health professionals (21.4%), nurses (14.3%), interpreters (14.3%), and one medical coordinator (7.1%) (Table 2). Most participants (57%) were recruited via the survey; the remainder (43%) were recruited through the research team’s professional network. The sample included 3 males (21.4%) and 11 females (78.6%). Interviews lasted 35–54 minutes.

Table 2
– Characteristics of interview participants *(n = 14)*

Participant ID	***Country***	***Gender***	***Profession or volunteer role***
P1	The Netherlands	Female	Medical doctor (Global Health and Tropical Medicine)
P2	United Kingdom	Male	Paramedic, medical coordinator
P3	United States	Female	Interpreter
P4	The Netherlands	Female	Mental health professional
P5	Cyprus	Female	Mental health professional
P6	The Netherlands	Female	Medical nurse
P7	The Netherlands	Female	Medical doctor (Global Health and Tropical Medicine)
P8	The Netherlands	Male	Medical doctor (psychiatrist)
P9	The Netherlands	Female	Mental health professional
P10	The Netherlands	Female	Medical doctor (Global Health and Tropical Medicine)
P11	Denmark	Female	Medical nurse
P12	The Netherlands	Female	Medical doctor (Global Health and Tropical Medicine)
P13	Switzerland	Female	Medical doctor
P14	Greece	Male	Interpreter

Initial impression of the digital helpdesk concept

At the start of the interviews, participants were asked about their initial impressions of the concept of a volunteer-operated digital helpdesk to support mobile populations in Europe. Several participants found it difficult to envision the practical functioning of the digital helpdesk, as its scope and design had not yet been defined. Initial perceptions ranged from positive and curious to critical and sceptical. Regarding positive responses, participants described the helpdesk as a potentially valuable and innovative approach to providing remote support. Participants viewed digital support services as well suited to the mobility of the target population, as they could enable support regardless of location.

"I think that it [a digital helpdesk] could be very valuable, as almost everyone has access to some kind of device." - P7

Other participants expressed immediate concerns regarding the safety, feasibility, and appropriateness of providing remote interaction or healthcare-related support to mobile populations across different national contexts. These concerns reflected broader uncertainties about responsibility, accountability, and risks for both mobile populations and volunteers. One participant articulated this apprehension as follows:

" *Initially, straight up, very apprehensive. Because [there are] a lot of big problems to tackle if you're going to do something like that, and I don't know how feasible it really is."* - P2

These initial impressions informed subsequent discussions on the opportunities, challenges, and implementation recommendations for a digital helpdesk.

Perceived opportunities of a digital helpdesk

Volunteers identified potential opportunities for a digital helpdesk for mobile populations, including the opportunity to provide remote care, improve access to health information, and offer a broader range of support beyond medical information and care.

Tackling uncomplicated health-related questions at an early stage

Reducing the burden on already overstretched health services, particularly in low-resource or crisis settings, was a frequently mentioned opportunity offered by remote care through a digital helpdesk. Participants suggested that uncomplicated health-related questions, check-ups during pregnancy, and chronic care monitoring could be addressed through remote assistance. This was illustrated by a volunteer with experience in a refugee camp in Greece:

"And then I think also for pregnant women as well, especially. I think to just have some sort of check in or check-up as much as possible over some sort of platform would be so helpful because we had so many

women who were pregnant on the move, on the migration and yeah, unfortunately they don't really get prenatal care [...]" - P3

Several participants noted that remote access to health advice might enable addressing health concerns at an earlier stage, potentially preventing worsening of symptoms or exacerbation of existing conditions.

"And the positive thing with the helpdesk obviously, probably we would be able to answer questions a little bit earlier and give access to healthcare also earlier. For example, if I think about chronic diseases." - P13

Participants further emphasised that a digital helpdesk could be particularly meaningful for mobile populations living in remote regions with limited access to healthcare services. In such contexts, a digital helpdesk was seen as a potential means to provide advice on how to manage chronic physical or mental health problems when in-person care is temporarily or structurally inaccessible. As one participant explained:

"*Where you need to walk 20 kilometres to get to a healthcare facility. Or if the river has flooded, that you can't get there, that you can still get help [through a helpdesk]."* - P9

Facilitating access to existing healthcare services

Beyond settings where healthcare services are physically absent, participants viewed a digital helpdesk as a means to improve healthcare access by helping mobile populations navigate formally available healthcare services. This was considered particularly relevant in Northern European contexts where administrative, financial, legal, or systemic barriers limit access to care. In such settings, the helpdesk was perceived as an intermediary, providing information, guidance, and referrals to appropriate healthcare services.

"I think it would improve access in the sense that it provides information and therefore knowledge and therefore empowerment. [...] In systems such as Northern Europe, where access is there, but it's often the lack of knowledge that people are not empowered to seek care. So yes, I think any further platform or initiative that is providing information is always going to be a good thing because that's the biggest barrier in my opinion." - P6

Connecting health, social and legal support for mobile populations

Moreover, participants perceived a digital platform providing clear and accessible health information as a means to improve health literacy, particularly regarding chronic conditions and mental health. Given the high prevalence of psychological distress among mobile populations, the helpdesk was seen as a way to support symptom recognition, increase understanding of the relationship between mental and physical health, and facilitate timely access to care.

"Well, first of all, the medical and the psychological can also come together at some point, because you know a lot of asylum seekers, as I see, they have a lot of physical symptoms that are coming from the

psychological distress that they are feeling. So, a lot of information, explanation about that would be very important.” - P5

Participants also suggested integrating social care and legal information into the helpdesk, noting that these domains are closely intertwined with health and well-being for mobile populations.

“[...] Because some of the problems, although initially framed as medical concerns, are often also psychosocial or social in nature.” - P4

Providing access to such information was perceived as a way to empower individuals, address underlying stressors, and ultimately contribute to improved overall well-being.

Perceived challenges of a digital helpdesk

Despite the perceived opportunities of a digital helpdesk for mobile populations, participants also identified several challenges to its implementation and use. These included clinical limitations, communication challenges, mobile population-specific challenges, organisational and sustainability issues, and broader contextual challenges.

Clinical and diagnostic limitations of a digital helpdesk

Clinical and diagnostic limitations of providing digital care were commonly raised during the interviews. Participants believed that remote interactions between volunteers and mobile populations could limit adequate assessment of health problems. In particular, the lack of face-to-face contact and the inability to perform a physical examination were considered important limitations to providing safe medical advice, increasing the risk of misinterpretation, misjudgement, and misdiagnosis.

“I can't see the patient. I can't speak to them face to face. I can't, you know, so much of medicine is visual, and observational, based on what you see of the patient, how they're presenting, visually, as to how worried you should be. Removing that is a huge [risk], it takes away so much of the ability to diagnose an emergency.” - P2

For many participants, these limitations formed a clear boundary for the scope of a potential digital helpdesk. The inability to conduct physical examinations was a frequently reported reason to exclude diagnostic care from a digital platform. Similarly, acute situations and complex medical cases were widely regarded as inappropriate to manage through a digital helpdesk, due to concerns about patient safety and clinical responsibility.

“Of course there are also urgent medical issues, but I don't think a [digital helpdesk] is suitable for that, because then you have that urgency, and you end up with all kinds of legal and medical-ethical issues about who is responsible for the provision of medical care.” - P7

Communication and cultural challenges

Furthermore, communication-related challenges were commonly raised by participants. Language barriers were frequently identified as an obstacle to effective remote interaction between volunteers and mobile populations. Participants emphasised the difficulty of ensuring accurate translation, particularly when discussing complex or sensitive health issues. Although automated translation tools were considered potentially useful, concerns were repeatedly expressed about the risk of inaccurate or incomplete translations, which could lead to misunderstandings or inappropriate advice.

"I mean, if it's done over a chat, I can imagine the translation will become automated. And of course it's great, but it's not the same [...]. Through my experience, there's nothing like an in-person interpreter who's fluent in the language." - P3

Beyond language, participants also highlighted cultural differences in how healthcare needs are understood and communicated. Variations in health beliefs, expectations of care, and communication styles were perceived as potential challenges to effective digital interaction between volunteers and mobile populations.

"I think the way people ask for help and what kind of help they are looking for really varies depending on their experience of healthcare from where they are from. [...] And I think that can easily get lost in translation. Plus, just like cultural differences, like different ways of communicating around healthcare needs. [...] If you are face-to-face, then you can still have the interpersonal and non-verbal communication. That really helps. If you're using digital, then you're stuck." - P6

Mobile population-specific challenges to using a digital helpdesk

Participants identified several challenges that could limit the use of a digital helpdesk among mobile populations. Frequently mentioned challenges included limited access to digital devices, varying levels of (digital) literacy, and unfamiliarity with online platforms. Participants also highlighted concerns about trust and privacy, noting that fear of authorities, deportation, and being tracked could discourage engagement with a digital helpdesk.

"[...] They do not have issues asking a question about their medical health. They basically have a trust issue because they think this kind of question or this kind of documents or whatever information they have about their health problem, is going to affect asylum care or somehow affect their lives in Europe. [...]" - P14

Participants also noted that cultural differences in privacy norms and self-disclosure may affect willingness to share personal or health information online. In particular, individuals may be reluctant to discuss sensitive issues through a digital helpdesk before trust has been established with the volunteer.

"[...] It really depends on the type of help needed, but certainly for women with women's health issues, there is reluctance. [...] For example, [...] people who are facing an unwanted pregnancy. I am not sure if they would dare to ask a helpdesk where they can go for help." - P1

Risks and unintended consequences for mobile populations

Additionally, participants described potential risks and unintended consequences associated with the implementation of a digital helpdesk. Several participants mentioned that remote support might delay in-person care if individuals wait for responses instead of seeking immediate assistance and care when necessary.

“[...] It can also become complicated when you find yourself thinking: this person needs acute care [...], but how do we arrange that? And doesn’t it [using a digital helpdesk] then cause delay if someone is really trying to arrange that [acute in-person care]?” - P10

Participants also highlighted structural constraints that could limit the feasibility of following advice provided through a helpdesk, such as financial constraints or restricted access to healthcare services. In such cases, receiving advice without being able to act on it could lead to frustration or distress.

“But I know sometimes they can't leave the camp [...]. If you give a solution and they're not able to access it, I don't know how that might affect them.” - P3

Volunteer-related challenges to implementing a digital helpdesk

Participants also raised concerns about whether digital helpdesk volunteers could provide appropriate support and health-related advice without a medical background, and stressed the need for medical staff. Some were hesitant about relying on volunteers given the expertise required to navigate different European healthcare systems, referral pathways, insurance policies, and legal entitlements. One participant explained:

“Then you have a series of countries where you have to have people who are able to give useful information in the context that the person currently finds themselves in. [...] Do you need to have people working on a helpdesk who know and understand the healthcare system of the country that the migrant is currently in?” - P6

Lastly, fear of causing harm and frustration when being unable to provide sufficient assistance were mentioned as possible unintended consequences for volunteers themselves.

“[...] it could be upsetting if someone calls who you think is very ill, but who is unable to come to the hospital, and you can do so little to help. That can be physically stressful, because you're genuinely concerned about that person.” - P1

Organisational challenges of implementing a digital helpdesk

Organisational challenges centred on financial sustainability, legal responsibility, and governance. Participants noted that implementation costs, particularly for professional translation services, could be substantial, challenging long-term sustainability despite the involvement of volunteers. They also questioned whether volunteers could legally provide medical advice across borders and raised concerns about liability if remote consultations were to cause patient harm through misjudgement or misunderstanding.

"If someone ends up in the hospital [after consulting the helpdesk], and they think: 'yes, but we called the helpdesk, and they said it was fine and that it [further medical treatment] wasn't necessary at all.' Yes, that is tricky." - P1

Participants also expressed concerns that a digital helpdesk might replace or undermine existing on-site healthcare services, potentially leading to responsibility shifting from local authorities or governments to a volunteer-operated platform. As one participant stated:

"There is also a lot of regular care that people are also entitled to. And you should not set up a parallel system because regular care is insufficient, while it does have legal obligations." - P10

Recommendations for implementation, feasibility, and scope

Many participants questioned whether a volunteer-operated digital helpdesk should be implemented at all, citing concerns about limited contextual knowledge of volunteers, delayed care, communication challenges, privacy risks, and limited added value, particularly in acute or complex situations.

"The patient gains no real benefit from speaking to the person. The information they need is: this is the nearest place you can get actual medical care and it's accessible. [...] You're delaying their care in fact, because really the answer should always be: 'go and seek appropriate care', because on the phone is not appropriate care." - P2

Therefore, participants shared recommendations regarding the design and implementation of digital support for mobile populations, while also reflecting critically on the feasibility and scope of a volunteer-operated digital helpdesk.

Alternative model: an information- and signposting-based platform

Based on the identified challenges, some participants advocated for a platform that avoids real-time clinical interaction and focuses on reliable health and legal information, signposting, and referrals to existing services across Europe. Some also suggested developing a database or network of accessible healthcare and social services along European migration routes to support independent navigation:

"I think you would need to establish a network of different practices or different healthcare providers in main cities, perhaps along migrant routes." - P6

Although participants acknowledged that an information platform would not address structural barriers to healthcare access, such as restricted mobility, lack of transport, or limited service availability, most viewed the provision of clear and accessible information as a meaningful and pragmatic first step in supporting mobile populations in Europe.

"[...] Providing information is really a major problem. There is a huge gap in the provision of information. I think [...] that interaction is important, but perhaps that is a second step, and starting with information provision may already be a first step." - P7

Involving mobile populations and existing organisations in digital initiatives

Participants emphasised that any digital initiative should start by involving stakeholders and end users, including mobile populations. Engaging mobile populations as volunteers or contributors was seen as a way to ensure that the platform reflects users' linguistic and cultural needs. Additionally, building trust through trusted local actors and community members was considered essential for uptake. Participants also recommended collaborating with existing support organisations and European initiatives to avoid duplication, ensure country-specific relevance, and support integration into existing healthcare structures.

Discussion

This exploratory mixed-methods study explored volunteers' perspectives on the potential development and implementation of a digital helpdesk to provide health information and healthcare support for mobile populations living in disadvantaged circumstances in Europe. The helpdesk was initially conceptualised as a volunteer-staffed service to offer medical support, provide health information, and facilitate access to healthcare services. Although volunteers were willing to contribute remotely and saw clear potential to improve access to healthcare, most questioned the safety and feasibility of remote clinical support. Instead, they favoured an information- and signposting-based platform that directs users to existing services. This shift, from medical support to health information and navigation, reflects a fundamental tension between the aim of expanding access to care and safeguarding quality, safety, and professional accountability in a digital setting.

Survey findings indicated that volunteers were willing to participate in a digital helpdesk and valued the opportunity to contribute remotely without the need to travel. Participants recognised that a digital platform could improve access to healthcare by offering reliable (mental) health information and referrals to existing services, particularly for people with limited awareness of available resources. At the same time, participants identified challenges that mobile populations may face when using a digital helpdesk, including limited access to digital resources, varying levels of (digital) literacy, and concerns about trust and privacy, often linked to fears of authorities, deportation, and surveillance. Participants also raised concerns about the risks of providing remote advice or healthcare through a digital helpdesk,

including clinical and diagnostic limitations, communication and cultural challenges, legal and ethical responsibilities, and the risk of inappropriate or delayed care. Together, these findings suggest that volunteers believe the potential risks of a digital helpdesk may outweigh its benefits.

Previous research similarly reports both enthusiasm for digital approaches to support mobile populations and concerns about their feasibility and implications [27–30]. Digital health technologies, including remote platforms, may facilitate access to healthcare by reducing travel requirements or costs [30–32], which may particularly benefit populations facing geographical or financial barriers. However, studies also describe challenges similar to those identified here, including communication difficulties, confidentiality risks, data security concerns, and doubts about usefulness [27, 30].

Participants' concerns about the limitations of the clinical encounter were mainly related to the inability to perform physical examinations remotely. This is consistent with research among physicians conducting telehealth consultations with asylum seekers during the COVID-19 pandemic, who considered psychological assessments generally feasible but physical examinations difficult, although a majority wished to continue remote consultations [33]. Communication may present an additional challenge in telehealth consultations with mobile populations, particularly when language and cultural differences affect the interpretation of health concerns [27, 33–35]. Limited ability to observe non-verbal cues and communication delays may amplify this, especially for refugees from high-context cultures that rely heavily on implicit and non-verbal communication [27, 34, 35].

Beyond the clinical encounter, digital access itself is unequally distributed among the mobile populations for whom the digital platform is intended. The practical barriers identified in this study, such as limited access to devices and the internet and varying digital literacy, are consistent with previous research. Earlier studies also report limited phone credit and a lack of private spaces for consultations [27, 31, 33, 36]. Participants further noted that digital interventions may exacerbate existing inequities among groups facing barriers to digital access, including migrant women and people with low (digital) literacy [14, 37]. More broadly, digitalisation itself may contribute to the reproduction of existing inequalities when access to and benefits from digital technologies are unevenly distributed, potentially limiting access to essential services among already marginalised groups [34]. To improve the inclusivity of digital initiatives, the International Labour Organization recommends ensuring anonymity, free access, and multilingual availability, in line with the concerns of this study's participants [38]. Without such an equity-oriented approach to design, digital health interventions may fail to reach those who face the greatest barriers to digital access and healthcare.

Trust emerged as a further prerequisite for the successful implementation and use of a digital platform. Participants described how fear of authorities, deportation, and surveillance may discourage mobile populations from sharing health information through a digital platform. These concerns have important policy implications for the governance of digital health services for people with insecure legal status. Measures to protect confidentiality and prevent health information from being shared with immigration enforcement may be important for building trust and ensuring that fear of authorities does not further

discourage healthcare seeking [39]. Without these safeguards, fear of authorities may further discourage healthcare seeking, even when services are available.

Building on these practical challenges, participants also questioned whether a digital helpdesk could meaningfully address the structural barriers that contribute to inequitable access to healthcare among mobile populations. This is consistent with evidence showing that health needs are closely linked to precarious legal status, unstable housing, and insecure employment [4, 12, 40, 41]. Participants therefore argued that any platform should integrate healthcare, legal, and social support, while recognising that digital interventions alone cannot overcome the structural determinants of health inequities.

Given the concerns surrounding the feasibility of a digital helpdesk, several participants questioned the added value of direct remote interaction between volunteers and mobile populations and instead advocated for an information- and signposting-based platform providing reliable information and referrals to existing services. Such an approach could support navigation of healthcare systems while avoiding some of the clinical and safety concerns associated with remote care. However, developing such a platform across Europe may be challenging, as healthcare entitlements for mobile populations vary widely between countries [3, 4, 42]. Even when healthcare entitlements for UDMs and asylum seekers are guaranteed by law, refusal of care, discriminatory practices, and lack of awareness among healthcare professionals in European countries still hinder healthcare access for this group [12], and these barriers may differ between health facilities [43]. Thus, inequities in healthcare access may stem not only from individual health needs but also from legal status or nationality and the country in which a person is located. Although the different reasons for inaccessibility complicate standardised referral pathways, they also highlight the value of mapping available healthcare and support services across Europe, which has been shown to improve service utilisation [44]. Existing initiatives such as PICUM demonstrate that a Europe-wide platform is feasible if adapted to national contexts [45].

At the same time, participants raised concerns about the risk of shifting responsibility for healthcare access from public authorities to a volunteer-operated parallel system. This raises an important policy consideration: digital volunteer initiatives should complement, rather than substitute for, states' responsibilities to ensure equitable access to healthcare and fulfil existing legal and policy obligations. Participants further emphasised that any digital initiative should be co-created with mobile populations and developed in partnership with existing organisations, consistent with recommendations to involve target communities throughout the design of digital health technologies to improve their acceptability, appropriateness, and accessibility [30]. A summary of perceived opportunities, challenges, and recommendations for developing and implementing a digital platform for mobile populations, organised by HEIF domains, is provided in Table 3.

Table 3
– Summary of perceived opportunities, challenges, and recommendations for developing and implementing a digital platform for mobile populations, organised by HEIF domains

HEIF domain	Perceived opportunities	Perceived challenges	Recommendations
Innovation (digital helpdesk)	• Location-independent support that aligns with the mobility of the population. • Opportunity to offer broader support, through medical, social and legal information.	• Limited added value of remote interaction, particularly in acute or complex situations. • High costs of professional translation services.	• Start with an information and signposting platform before considering remote clinical services. • Integrate health, social, and legal information.
Recipients: mobile populations	• Improved health literacy, particularly regarding chronic conditions and mental health. • Earlier identification of health concerns. • Empowerment through clear and accessible information.	• Limited access to digital devices, varying levels of (digital) literacy, and unfamiliarity with online platforms. • Lack of trust and privacy concerns, linked to fear of authorities and deportation. • Reluctance to disclose sensitive issues (e.g. women's health) before trust is established.	• Involve mobile populations in the development of a digital platform to ensure that linguistic and cultural needs are addressed. • Build trust through trusted local actors and community members.
Recipients: volunteers	• Remote volunteering reduces the need to travel and allows wider volunteer engagement.	• Limited knowledge of multiple European healthcare systems, referral pathways, and entitlements. • Potential emotional burden when unable to provide sufficient assistance.	• Involve medically trained staff where health-related advice or information is provided.
Clinical encounter	• Remote support for uncomplicated health questions, pregnancy check-ins, and chronic care monitoring.	• Inability to perform physical examinations and lack of face-to-face contact, increasing the risk of misdiagnosis. • Language barriers and risk of inaccurate automated translation.	• Exclude diagnostic, acute, and complex care from the scope of the platform.

HEIF = Health Equity Implementation Framework; adapted from Woodward et al. [24, 25]. The domains of Outer Context and Societal Influence were combined to better reflect the findings.

HEIF domain	Perceived opportunities	Perceived challenges	Recommendations
		• Cultural differences in communicating healthcare needs and loss of non-verbal cues. • Risk of delaying in-person care.	
Inner context (organisation)	• –	• Financial sustainability of the helpdesk. • Medical liability and legal responsibility for remote advice across borders. • Governance of a volunteer-operated service.	• –
Outer context and societal influence	• Supporting navigation of formally available services in settings where administrative, financial, or legal barriers limit access. • Support where in-person care is temporarily or structurally inaccessible (e.g. remote regions, crisis settings, refugee camps). • Reduced burden on overstretched healthcare services and more efficient use of limited resources.	• Differences in healthcare systems and healthcare entitlements across European countries. • Structural barriers, such as restricted mobility, lack of transport, and financial constraints, continue to exist and cannot be overcome by a digital platform alone. • Risk of shifting responsibility from governments to a volunteer-operated parallel system.	• Collaborate with existing support organisations, NGOs, and European initiatives to avoid duplication and ensure country-specific relevance. • Develop a network or database of accessible healthcare and social services along migration routes. • Complement, rather than replace, existing healthcare services and statutory responsibilities.

HEIF = Health Equity Implementation Framework; adapted from Woodward et al. [24, 25]. The domains of Outer Context and Societal Influence were combined to better reflect the findings.

[Table 3]

Strengths and limitations

To the best of our knowledge, this study is the first to explore the potential of a digital helpdesk aimed at supporting mobile populations from volunteers' perspectives. A key strength is the mixed-methods design: the survey identified general patterns that informed the subsequent in-depth interviews, enabling

a more comprehensive understanding of volunteers' perspectives. The inclusion of participants with diverse professional backgrounds, including interpreters, as well as participants from countries beyond the Netherlands, enhanced the breadth and contextual relevance of the findings. Additionally, all survey respondents who expressed interest in an interview were approached regardless of their attitude towards the proposed concept of a digital helpdesk, supporting the inclusion of a wide range of perspectives.

Several limitations should be considered. First, the design and analysis of the survey component involved some compromises. Although the survey provided valuable initial insights, dichotomising the 7-point Likert scale reduced nuance, as grouping neutral responses with agreement may have obscured uncertainty and differences in perspectives. Second, the questionnaire was originally developed in 2023 and administered in both 2023 and 2025. Changes in the context over time may have affected the relevance of certain questions during the second round of data collection. Third, most interview participants were recruited from survey respondents, potentially limiting the diversity of perspectives. Additional participants were recruited through the research team's professional networks, and some had prior professional relationships with the research team, introducing potential selection and social desirability bias that may have influenced their responses. Finally, the study did not include the perspectives of mobile populations themselves, making their inclusion a priority for future research.

Conclusions

This study provides the first exploration of volunteers' perspectives on the potential development and implementation of a digital helpdesk supporting mobile populations living in disadvantaged circumstances in Europe by providing health information and facilitating access to healthcare. The findings suggest that a digital helpdesk may improve access to and referrals for existing health and support services. However, substantial concerns remain. These include risks associated with remote clinical interactions, challenges related to safety and security, and the feasibility of implementation across heterogeneous European health systems. An alternative model centred on information provision and signposting to existing services, rather than direct interactive support between volunteers and mobile populations, should be further explored. The shift from providing medical support using a digital helpdesk to focusing on providing health information and navigation underscores the importance of early and sustained stakeholder engagement to ensure that digital health interventions are feasible, acceptable, contextually appropriate, and supportive of equitable healthcare access. Future research should further explore whether and under which conditions an information- and signposting-based digital platform can be co-designed, implemented, and evaluated with mobile populations and other relevant stakeholders, and whether such an approach can contribute to more equitable access to healthcare for mobile populations.

Abbreviations

AI

Artificial intelligence
ahti
Amsterdam health & technology institute
AUMC
Amsterdam University Medical Center
BRF
Boat Refugee Foundation
COREQ
Consolidated criteria for reporting qualitative research
COVID-19
Coronavirus disease 2019
GP
General practitioner
HBO
Higher professional education (Dutch:hoger beroepsonderwijs)
HEIF
Health Equity Implementation Framework
MBO
Secondary vocational education (Dutch:middelbaar beroepsonderwijs)
NGO
Non-governmental organisation
non-WMO
Not subject to the Dutch Medical Research Involving Human Subjects Act (Wet medisch-wetenschappelijk onderzoek met mensen)
PhD
Doctor of Philosophy
PICUM
Platform for International Cooperation on Undocumented Migrants
UDM
Undocumented migrant

Declarations

Ethics approval and consent to participate

This research was approved by the non-WMO ethics committee of the Amsterdam University Medical Center (AUMC) on 21 November 2024 (reference number 2024.1052). Approval included the study design, survey, and informed consent forms. Participants provided written informed consent prior to participation, after receiving information about the study aim and data procedures. This research was conducted in accordance with the Declaration of Helsinki.

Consent for publication

All participants provided written informed consent for the publication of their anonymised data.

Availability of data and materials

As participants were not consulted regarding the creation of an open dataset, the datasets generated during this study can be made available from the corresponding author upon reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

SR: conceptualisation, data curation, formal analysis, investigation, software, methodology, project administration, visualisation, writing – original draft

SvdW: formal analysis, validation, visualisation, writing – original draft

PT: conceptualisation, funding acquisition, investigation, data curation, formal analysis, methodology, project administration, supervision, validation

SvdV: conceptualisation, funding acquisition, validation, supervision, writing – review & editing

CA: funding acquisition, supervision, writing – review & editing

All authors read and approved the final manuscript.

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Declaration of generative AI use

ChatGPT (OpenAI, GPT-5.5) was used to assist with language and grammar editing. The authors take full responsibility for the content and final editorial decisions.

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Figures

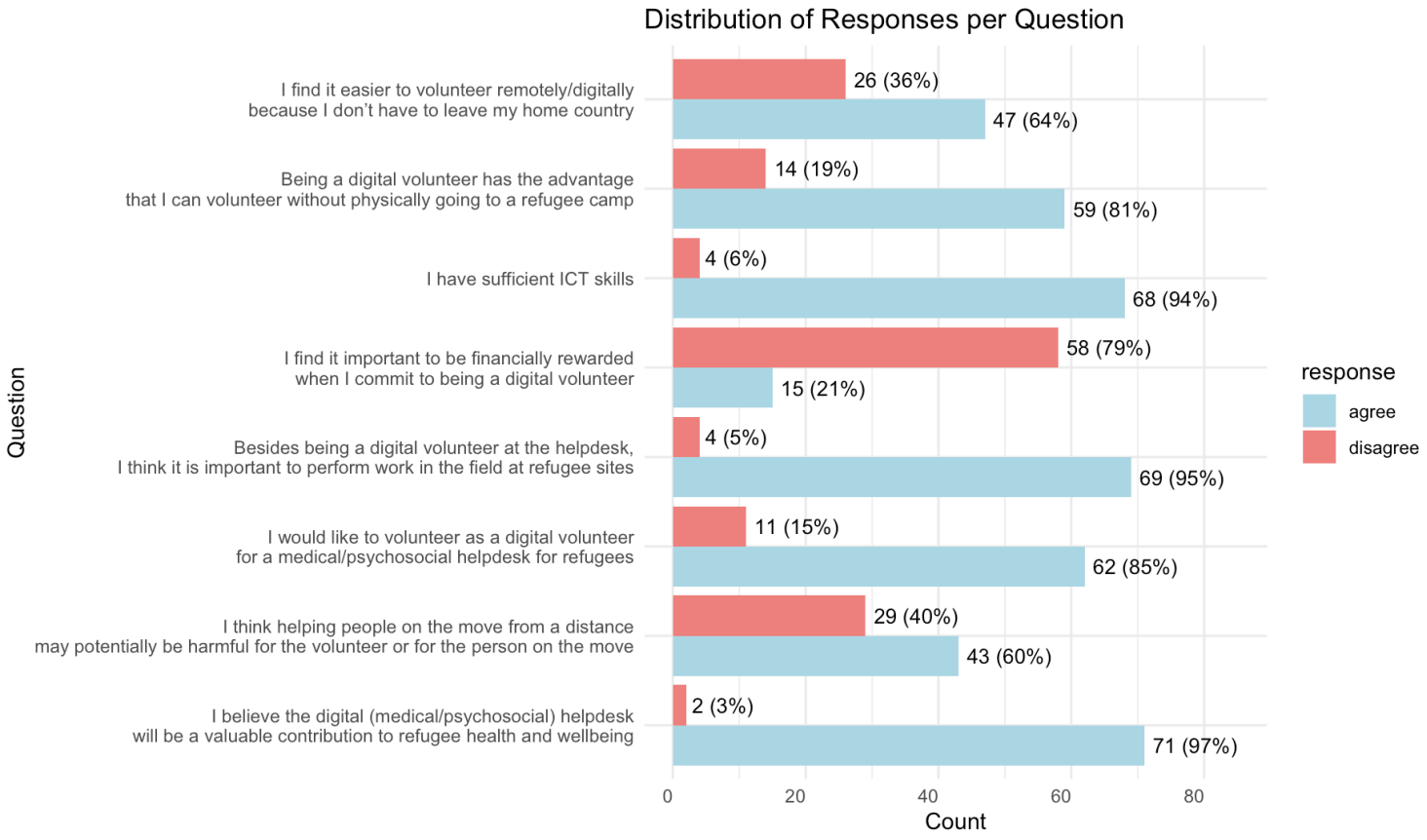


Figure 1

Distribution of closed-ended survey responses

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- SupplementaryFile1Questionnaire.docx
- Supplementaryfile2Interviewguide.docx
- RelatedFile1COREQChecklist.docx