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Measuring and assessing the health of refugees from Ukraine in Poland: quantitative-qualitative mixed-methods approach

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Abstract. Following the invasion of the Russian Federation on Ukraine on 24th February 2022, Poland has received an unprecedented influx of refugees. Statistics Poland and the World Health Organization (WHO) immediately recognized the urgent need for reliable data on the health needs of refugees and the barriers relating to their access to medical care, which would enable an effective response to the situation. The sudden surge in healthcare demand caused by the influx of those fleeing war required targeted interventions to ensure the well-being of both the refugees and the Polish population.

The aim of the article is to present the methodology and key findings of the "Health of Refugees from Ukraine in Poland" survey. This comprehensive study included questionnaires conducted among members of refugee households, supplemented by behavioral insights research based on in-depth interviews with refugees from Ukraine. Additionally, interviews were conducted with Polish and Ukrainian healthcare providers, authorities responsible for rescue operations and representatives of non-governmental organizations. The mixed-methods approach was applied, which encompasses both quantitative and qualitative research. Its flexibility and the use of data from administrative registers along with big data enabled real-time analyses and a more precise understanding of the refugees' health situation, with particular regard to the needs of women and older people.

The findings of the research highlight the importance of addressing language and financial barriers, issues related to the unfamiliarity with the health system, as well as service constraints (e.g. long waiting lists) and cultural barriers (e.g. stigma associated with mental health issues). The universal application of this approach has also been approved by the UN Statistical Commission, which recommended its further development and implementation in other countries facing a refugee crisis.

Keywords: refugees, refugee health, health needs, health access, healthcare, mixed methods, behavioral insights

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Pomiar i ocena stanu zdrowia uchodźców z Ukrainy w Polsce – podejście ilościowo-jakościowe oparte na metodach mieszanych

Streszczenie. Konsekwencją zbrojnej agresji Rosji na Ukrainę 24 lutego 2022 r. było przyjęcie przez Polskę bezprecedensowej liczby uchodźców. Główny Urząd Statystyczny i Światowa Organizacja Zdrowia (WHO) natychmiast dostrzegły konieczność szybkiego uzyskania wiarygodnych danych na temat potrzeb zdrowotnych uchodźców i barier związanych z dostępem do opieki medycznej, co umożliwiłoby skuteczne działanie w zaistniałej sytuacji. Nagły wzrost zapotrzebowania na usługi medyczne, spowodowany napływem osób uciekających przed wojną, wymagał bowiem ukierunkowanych interwencji, aby zapewnić dobrostan zarówno uchodźców, jak i ludności polskiej.

Celem artykułu jest przedstawienie metodologii i kluczowych wyników kompleksowego badania „Stan zdrowia uchodźców z Ukrainy w Polsce". Obejmowało ono badanie ankietowe przeprowadzone wśród członków gospodarstw domowych uchodźców, uzupełnione badaniem behawioralnym opartym na pogłębionych wywiadach z ukraińskimi uchodźcami. Ponadto przeprowadzono wywiady z polskimi i ukraińskimi przedstawicielami opieki zdrowotnej, organów odpowiedzialnych za działania ratunkowe i organizacji pozarządowych. Zastosowano metodę mieszaną uwzględniającą badania ilościowe i jakościowe. Jej elastyczność oraz wykorzystanie danych z rejestrów administracyjnych i big data umożliwiły przeprowadzenie analiz w czasie rzeczywistym i dokładniejsze zrozumienie potrzeb zdrowotnych uchodźców, ze szczególnym uwzględnieniem kobiet i osób starszych.

Badanie uwidoczniło potrzebę pokonywania barier językowych i finansowych, jak również wynikających z nieznajomości systemu opieki zdrowotnej i związanych z ograniczeniami w dostępie do usług medycznych (m.in. długim oczekiwaniem na wizytę lekarską) czy barier kulturowych (np. opór przed korzystaniem z usług psychiatrycznych z powodu stygmatyzacji chorych). Zastosowane podejście zostało zaaprobowane przez Komisję Statystyczną ONZ, która zaleciła jego dalszy rozwój i wykorzystywanie w innych krajach mierzących się z kryzysem uchodźczym.

Słowa kluczowe: uchodźcy, zdrowie uchodźców, potrzeby zdrowotne, dostęp do służby zdrowia, opieka zdrowotna, metody mieszane, badania behawioralne

1. Introduction

The literature review on refugee health often emphasizes that high-quality data are not always available, yet essential to guiding national and international health policies towards developing and implementing interventions required to address refugees' health needs effectively (Seagle et al., 2020). According to the World Health Organization (WHO), the main problems refugees encounter in a host country include not only health challenges, but also the fear of detention or deportation resulting from their precarious legal status, acts of discrimination, as well as social, cultural, linguistic, administrative and financial barriers (WHO, 2022c). The large influx of refugees poses a challenge to the host country with regards to their widely-understood integration into the society (Campomori et al., 2023); on the other hand, it presents an opportunity to demonstrate its commitment to humanitarian aid and

expand its cultural diversity through the successful integration of refugees. The host country's healthcare system, already strained by the aftermath of the COVID-19 pandemic, faced with a shortage of healthcare workforce and treatment-centric approaches (Campomori et al., 2023), becomes further challenged in terms of its ability to provide quality care to both the host population and the refugees (Seagle et al., 2020). Nevertheless, it also shows the country's capacity to adapt and provide quality care for all. One of the opportunities that refugees bring is the potential to contribute their skills and talents to the workforce and local communities. While there may be initial challenges related to job competition and reliance on public services (Fajth et al., 2019; Nie, 2015), refugees have the potential to become valuable contributors to the economy of the host country. Refugees also offer diverse perspectives and experiences that can enhance the social and cultural fabric of the host country.

Refugees may face unique health-related challenges connected with, for example, health disparities among their populations and barriers to reaching general healthcare or mental healthcare services for those dealing with the effects of forced displacement. The host country's healthcare system may struggle to meet the increased demand, resulting in limited resources and reduced access to care for all. This situation is likely to deepen the health inequalities and decrease the quality of care. However, it also presents an opportunity to improve the system's resilience and adaptability, potentially leading to long-term benefits for all.

In order for the complex process of refugee integration to be successful, particularly in terms of the transition from reception to self-sufficiency, a coordinated response from all the stakeholders, including state entities (such as health, social, labor and legal sectors) and non-state actors, like non-governmental organizations (NGOs) and the refugees themselves, is required (Campomori et al., 2023). This multifaceted collaboration, when supported by reliable data, can facilitate a smoother and more successful transition for those seeking refuge, leading to positive outcomes for both refugees and the host community. The experience of Poland in generating this information, as detailed in this study, offers valuable insights that can strengthen integration efforts made in other countries.

Through the careful examination of the healthcare experiences of refugees from Ukraine in Poland, this study contributes to the existing body of knowledge on refugee health and provides valuable insights for policymakers and practitioners working to improve healthcare access and utilization among refugee populations (Seagle et al., 2020).

Since the start of the full-scale war following the Russian Federation's invasion in February 2022, the influx of refugees into Poland has been unprecedented in the recent times and has reached the Second World War level of population movement. The number of people crossing the border between Ukraine and Poland (to stay or move on to other countries) has reached over 14.5 million, representing about 27.5%

of the total estimated population of Poland. As of August 2023, around 12 million individuals crossed the Polish-Ukrainian border in both directions. Among those who stayed in Poland, over 1.6 million refugees have been registered in Poland and received a PESEL identification number (Personal Identification Number in the Common Electronic System of Population Register; Dane.gov.pl, 2023; Sas, 2023); this number is equivalent to approximately 4.4% of Poland's population (37.6 million), suggesting that Poland has successfully integrated these refugees into its socio-economic environment within a short period of time. Each person with a PESEL number is entitled to public healthcare, parental benefits, family care and social assistance (Sas, 2023). This great influx of individuals to Poland has placed considerable demands on the healthcare system, which had already been experiencing the strain caused by the COVID-19 pandemic and systemic issues. Even with Poland's dedicated inclusive healthcare service delivery to refugees, the challenge is to plan a strategic response to meet an uncertain level of need for health services without health status and needs representative data, while ensuring that the host population's access to quality healthcare remains unhindered (United Nations Statistical Commission [UNSC], n.d.).

In response, Statistics Poland, the WHO Country Office in Poland, the Behavioural and Cultural Insights Unit at the WHO Regional Office for Europe and the Health and Migration Programme of the WHO Headquarters conducted a study called "Health of Refugees from Ukraine in Poland". It is based on quantitative data collected from refugee households[1] and research on qualitative behavioral insights. This mixed-methods approach was used to gain insights into refugees' health status, their perceived health needs and the barriers they faced when accessing healthcare services (Spiegel, 2022; UNSC, n.d.; WHO & Statistics Poland, 2023). The study also explored the healthcare providers' perspectives on the services offered to refugees from Ukraine.

The comprehensiveness of data produced by this mixed-methods approach provided depth and breadth of information on the healthcare needs of the refugees. This approach serves as an evidence-informed model for rigorous data collection that provides both statistical evidence from a representative sample and a deeper understanding of the perceived factors that facilitate or hinder access to healthcare among the refugee population.

This study provided an important opportunity to establish a strengthened, dynamic, collaborative partnership between Statistics Poland, the Polish Ministry of Health, WHO and other pivotal stakeholders, including donor and multilateral agencies. This collective effort bolstered coordination between institutions that collect data and those which use them to enable the execution of robust, effective and coherent strategies.

[1] In the study, the term "household" refers to a group of individuals who meet the following criteria: they traveled together from Ukraine, left Ukraine due to armed actions by the Russian Federation, and plan to live together during their stay outside of Ukraine.

2. Methods and data sources

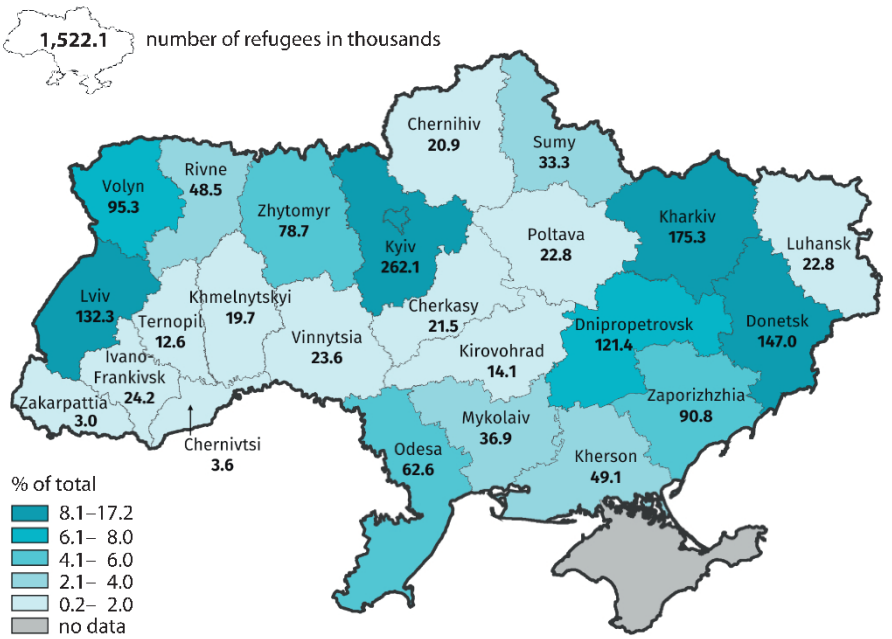
This article describes the application of the mixed-methods approach, which integrates both qualitative and quantitative analyses to ensure a comprehensive understanding of the research topic. Mixed methods, which combine the numerical precision of quantitative data with in-depth insights obtained from qualitative research, allow capturing a more holistic view of complex issues (Creswell & Plano Clark, 2018). The application of the mixed-methods approach resulted in a collection of statistical data from a representative sample, offering broad generalizability and enabling a nuanced understanding of the contexts and barriers related to access to healthcare among refugees. By leveraging the strengths of both methodologies, the study not only delivers a more complete picture of the health-related needs but also facilitates more precise and actionable conclusions and recommendations.

The quantitative analyses involved a two-stage stratified random sampling method, with the sampling conducted at the voivodship level. In the first stage, locations were selected based on simple random sampling; in the second stage, people living in these locations were chosen for the research using systematic sampling. The survey questionnaire was crafted in Ukrainian, English, and Polish. Statistical interviewers carried out questionnaires in 94 locations in Podkarpackie and Lubelskie Voivodships (administrative division units in Poland corresponding to NUTS 2 regions in the European Union), obtaining 1,800 completed questionnaires. The collected data focused on demographic characteristics, health status and needs, disease prevention and vaccination, mental health, health costs and access to healthcare within the surveyed population (WHO & Statistics Poland, 2023). The survey results were estimated using sample weights calculated on the basis of the number of registered refugees from Ukraine.

The importance of big data as a source of information is growing along with its constantly increasing level of accessibility. Big data sources were used to calibrate the weights to reflect the true pattern of refugee movements. The further development of the "Health of Refugees from Ukraine in Poland" survey is planned using data from big data sources, i.e. mobile phone and payment card operators. This method is likely to be useful in obtaining information on the movement of refugees and to monitor expenditures related to healthcare.

It is important to highlight that the survey included individuals from all regions of Ukraine, which was crucial for ensuring the credibility of the study. Figure 1 shows the number of refugees from each Ukrainian region who found temporary shelter in Poland between 24th February and 31st August 2022 and who were residing in Poland at the time of the survey.

Figure 1. Ukrainian refugees by place of origin



Source: WHO and Statistics Poland (2023).

The "Health of Refugees from Ukraine in Poland" survey was preceded by a pilot study[2] conducted at the reception points on the Polish-Ukrainian border in Podkarpackie Voivodship. At the end of May 2022, the activities of most reception points at the border were suspended as the number of people crossing the border decreased. As many refugees continued to move through Poland, it became necessary to identify new refugee locations for the survey.

In tandem, a behavioral insights study, supported by the WHO Regional Office for Europe, delved into the health service needs and access for Ukrainian refugees in Poland. This study employed a modified capability, opportunity, motivation and behaviors (COM-B) framework to explore the barriers and enablers of behaviors. The research questions (WHO & Statistics Poland, 2023) aimed to identify:

- health-related service needs and expectations of refugees from Ukraine in Poland in the area of prevention, treatment, care and previous health-seeking behaviors;
- barriers and facilitators in accessing and utilizing healthcare services, focusing on: the awareness and knowledge of the available services and treatment needs, the motivational factors and barriers to seeking care, the perceived opportunities and experiences with health services, including any stigma or discrimination and the level of the support received from family, community and health services;
- behavioral and cultural factors influencing health service uptake.

[2] The precision for the study was 98% and 97% for the pilot study.

After the ethical approvals were secured, participants aged 18 and above, who had left Ukraine due to the war and resided in Poland for at least two weeks, were purposively selected through maximum variation sampling. In-depth online interviews, conducted by the Ukrainian research agency Sociologist, involved a total of 35 participants drawn from the 1,800 households surveyed between 25th August and 7th September 2022. These studies yielded valuable insights contributing to the formulation of programs and services aimed at assisting refugees from Ukraine in Poland in addressing their health-related concerns and issues.

Additionally, 25 interviews were conducted with Polish and Ukrainian healthcare providers, response authorities and staff from NGOs. The objective was to glean insights into their perspectives on the challenges associated with providing healthcare to refugees. Participants were selected through purposive sampling to ensure a diverse range of expertise and experiences relevant to the study's focus.

3. Results

The findings from the relevant components of the study (WHO & Statistics Poland, 2023) provided valuable insights that were used to actively shape the programs and services designed to assist refugees from Ukraine in Poland. It was anticipated that most refugees would be women and children, given that the Ukrainian government had restricted the departure of men under the age of 60, excluding cases of exceptional family circumstances. The results of the quantitative survey of 1,800 households were that 70% (1,260) of refugees were females, 59% (1,062) of refugees were over 18 years of age, and 41% (738) were children under the age of 18. With regards to the level of education, 53% had higher post-primary education, with 47% holding university degrees. The top five health problems reported were acute illness (43%), chronic disease (39%), oral health conditions (18%), mental health conditions (6%) and COVID-19-related illnesses (3%). The main identified healthcare access challenges were associated with language barriers and limited information about the functioning of the health system (50%), which also hindered refugees' ability to explain their symptoms to healthcare providers, and the health cost (33%), with one in four respondents spending over 25% of their income on healthcare. Other challenges related to difficulties in reaching medical facilities (14%), long waiting time (7%) and the unavailability of medical care or treatment (7%).[3] Out of the total of refugees who arrived in Poland, 35% were vaccinated against COVID-19. This is similar to the proportion of those vaccinated in Ukraine; according to WHO data, those fully vaccinated accounted for 37% of Ukraine's total population as of 27th February 2022.

[3] The percentages add up to over 100% as respondents were able to give more than one answer.

These figures are lower than in Poland, where the percentage of people who were fully vaccinated reached 60% of the total population in the same or similar period.

Thanks to the integration of data from both quantitative and qualitative surveys, which includes big data as well as administrative records, significant differences in certain characteristics compared to administrative records have been identified. Consequently, it was found that not all refugees registered to obtain the PESEL number. This conclusion was confirmed by the "Health of Refugees from Ukraine in Poland" survey, which revealed that across every age group and for both men and women, the number of refugees was higher than the number recorded in the PESEL register (see Figure 2). The largest discrepancy was observed among the population over the age of 54.

Figure 2. Number of Ukrainian refugees in Poland by gender in each age group: household survey and the PESEL register

Source: WHO and Statistics Poland (2023).

The qualitative study (WHO & Statistics Poland, 2023) provided detailed insights that complemented the statistical data and offered a deeper understanding of the healthcare needs of the refugees as well as the barriers to and drivers of accessing care. For example, the interviews helped uncover gender-specific dimensions of the barriers to seeking and receiving timely care, such as women encountering challenges related to childcare and caregiving to older adults without the usual social support mechanisms. The qualitative research also allowed a more nuanced understanding of

the sensitivity related to mental health. Quantitative survey interviewers struggled to elicit responses from people on this topic, and the qualitative study showed that mental health issues tend to be stigmatized, which, as some respondents suggested, may be related to the history of mental healthcare in former Soviet states (Ociepa-Kicińska & Gorzałczyńska-Koczkodaj, 2022). In addition, practical issues were found to impact uptake of mental health services, such as the type of services offered (group versus individual), location and language. Moreover, during the in-depth interviews, dental care was mentioned as a priority need and this was confirmed as a high-priority issue in the representative sample of refugees in the quantitative survey. Despite facing some barriers to accessing health services, refugees in Poland had an overall positive perception of the healthcare system.

In-depth interviews with both Polish and Ukrainian healthcare providers working in Poland, the response authorities and representatives of NGOs offered additional and important perspectives. The results of these interviews show that healthcare workers and NGO staff are motivated by compassion for their neighbors and that NGOs play an important role in increasing access to health services. Polish healthcare providers confirmed that language is a barrier when interacting with refugees, as are the other challenges that the users of the Polish healthcare system encounter, such as long waiting time for appointments.

The results of the household survey and the behavioral insights research helped identify these problems and elicited refugees' expectations about the healthcare system. Based on the findings of these surveys, there is a need for information targeting older people, those with disabilities, those suffering from chronic diseases or showing low health literacy. Moreover, targeted information should be disseminated among refugees on prevention services, specialized care and vaccinations. The findings from both surveys also indicate a need for mental health services that factor in the stigma that may prevent people from Ukraine from seeking help.

The described data collection strategy combined quantitative and qualitative data to provide evidence for a nuanced understanding of the healthcare situation of the refugees and to allow for informed decision-making by national authorities. This holistic perspective enabled stakeholders responsible for refugee health in Poland to design interventions that effectively addressed refugees' immediate healthcare needs, while also allowing more resilient and inclusive healthcare responses to meet the broader needs of refugees and the host community.

On the basis of the results of the fruitful collaboration between Statistics Poland, national health sector agencies and entities from the three levels of the WHO, the following considerations are noteworthy:

- high-quality and timely data are needed. Data on the healthcare needs facing refugees and migrants and the barriers to accessing healthcare services are often scarce and of poor quality. Reliable, robust and timely data are essential for a better understanding of population movements and necessary to formulate appropriate healthcare-related responses;

- in order to improve relevant health-related policies, standardized tools are needed, i.e. systematically collected and disaggregated by migratory status data, representative of both refugee and migrant populations, comparable across countries and over time. Disaggregated data, including those on refugees and migrants, allow the healthcare stakeholders to understand and address the health needs of refugees, develop inclusive public health approaches, track the progress towards the national and global health goals, and enable decision-makers to understand and respond to public health challenges at a national level.

Achieving many of the health and health-related Sustainable Development Goals and targets will require fit-for-purpose data on the health of refugees and migrants. Data integrated from various sources create a more comprehensive picture of the examined situation. In addition to the quantitative and qualitative methods used, exploring data integration methods using data from the health, social, economic and other sectors are likely to prove useful. Big data and other innovative and emerging sources of data can also contribute to the broader understanding of the refugee health-related issues. The collaboration of various entities and the coordination of their activities are key to making progress and achieving success in the area of health and data, as demonstrated by the cooperation between Statistics Poland and WHO during the course of preparing the "Health of Refugees from Ukraine in Poland" study. Extending this type of collaboration across the health sector and national statistical systems ensures a timely and effective collection and availability of data on the health of refugees and migrants around the world, benefiting the health of more than a billion people worldwide.

4. Conclusions

The rapid and vast influx of refugees from Ukraine into Poland and other neighboring countries has placed a substantial burden on their healthcare systems; it has also prompted these systems to adapt and innovate, showcasing their resilience in the face of an unprecedented challenge. While the surge in demand for healthcare has undoubtedly placed additional pressure on the existing resources, it has also highlighted the importance of robust health information systems and data-driven decision-making. This influx has prompted a critical examination of the healthcare capacity and a renewed focus on the development of innovative solutions to meet the diverse needs of both the host population and the refugees. By leveraging timely and accurate data, healthcare systems can proactively address challenges, optimize resource allocation and ensure access to quality care for all. This proactive approach, informed by comprehensive data and collaborative efforts, can mitigate the potential strain and foster a more efficient and effective healthcare response.

The surveys conducted by WHO and Statistics Poland (2023), based on a mixed-methods approach that included both quantitative and qualitative research, revealed new social phenomena and processes. Common health issues included acute and

chronic illnesses, oral health problems, mental health concerns and COVID-19. Key difficulties in healthcare access were caused by language barriers and challenges in explaining symptoms, the limited understanding of the functioning of the health system, health costs, long waiting time as well as the benefits available for the refugees. As a result, not all refugees are able to take full advantage of the existing healthcare resources and services. The qualitative research highlighted additional gender-specific obstacles, mental health stigma and the critical role of NGOs. Overall, refugees had a positive perception of the Polish health system despite these barriers.

Statistical offices and national health sector agencies complement each other as producers and users of data. Their collaboration proves essential when a timely collection, analysis and use of data for effective decision-making are needed. Joint planning, data sharing and capitalizing on each other's comparative advantages are key to support evidence-based decision-making and policy formulation in the health sector, ultimately leading to better health-related outcomes and the well-being of the population.

A distinct synergy effect emerges from the collaboration between statistical offices and national health sector agencies, benefitting both sides. Firstly, for WHO reports, statistical offices can provide valuable expertise in data collection, analysis and quality assurance that can provide the health sector with access to reliable and comparable data for health indicators. On the other hand, the health sector data from administrative records, surveys, registries and vital statistics can enrich the statistical databases and, most importantly, enhance the understanding of the health context and the interpretation of data. The collaboration between these institutions helps ensure that the health-related data are accurate, complete, consistent and timely.

Secondly, the cooperation between statistical offices and the health sector enhances the coordination aimed at strengthening health information systems and makes them more fit-for-purpose. By collaborating with statistical offices, the health sector can adopt common frameworks and tools that facilitate the interoperability and comparability of health data across different sources and at various levels. This is paramount to consolidating the efforts for cost-effective and robust evidence-based actions.

Finally, the collaboration between statistical offices and the health sector supports evidence-based decision-making and policy formulation in the health sector. A practical example of this is the study presented herein, which brings together statistical offices, health ministries, development partners, civil society organizations and academic institutions to improve the availability and use of health data for better health outcomes.

It should be noted that big data, which is a vast and real-time source of information, provides an opportunity to implement actions that align with the evolving situations and optimize the coordination of the available resources. The collaboration between health and statistics in the form of the mixed-methods approach integrated with administrative and big data to cover the information gap in Poland has paved the way for the exploration of big data strategies to gather and generate information in near real-time.

The results of this survey and the use of the mixed-methods approach were presented at a side event during the 54th session of the UNSC, "Towards a global measurement framework of health of refugees and migrants: lessons learned from a refugee health survey". The chief statisticians of the world noted "the initial work undertaken on measuring health of refugees" and called on WHO and partners to further develop this work and collect transformative data, ensuring alignment with existing definitions and statistical frameworks on refugees and migrants, and coordination with Expert Group on Migration Statistics (UNSC, n.d.). These efforts, jointly with the extension of WHO's global action plan to 2030 and the emphasis on behavioral science and cultural insights by WHO's Executive Board and Regional Committee for Europe, have the potential to significantly improve the delivery of health services to refugees (WHO, 2022a, 2022b, 2023).

The study described in this article represents a significant advancement in developing innovative approaches to collecting and analyzing data on refugee health. The mixed-methods approach as well as big data and administrative registers used to calibrate the weights, underscore the need for the continuous adaptation of methodological frameworks in response to the evolving challenges posed by the ongoing war in Ukraine. The flexibility and responsiveness of this methodology allow for real-time updates and offer a more precise understanding of refugees' health needs, thereby facilitating timely and effective policy responses. Furthermore, the universal applicability of this approach allows its implementation in other countries facing refugee crises worldwide. This methodology can be adapted to various contexts, providing a valuable tool for improving health outcomes for displaced populations worldwide. These innovations highlight the importance of dynamic, evidence-based solutions in the face of complex humanitarian crises.

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