



Original research article

Health care workers and migrant health: Pre- and post-COVID-19 considerations for reviewing and expanding the research agenda

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ABSTRACT

The main purpose of this article is to review several ways in which health care workers could either impact migrant health or be directly impacted by migration and, based on this, suggest the expansion of the current research agenda on migration and health to address a range of topics that are currently either neglected, insufficiently researched, or researched from different perspectives. To ground this suggestion and emphasize the complexity and significance of migrant health research, we start by briefly reviewing several migration-related notions including the process of migration and its key facilitators and benefits; existing barriers to the provision of migrant health care; and the intricate links between health systems, health professionals, and migrant health.

The three areas of research examined in this article address (i) the specific role of health workers in providing care to migrants and refugees and their capacity to do so, (ii) the health problems experienced by health workers who become migrants or refugees, and (iii) the precarious employment conditions experienced by both migrant and non-migrant health care workers. After summarizing the current available evidence on these topics, we discuss key information gaps and strategies to address them, while also incorporating several relevant COVID-19 pandemic considerations and research implications.

Expanding the focus of research studies on migration and health could not only enhance the results of current strategies by supplying additional information to support their implementation but also spearhead the development of new solutions to the migrant health problem.

Introduction

Study purpose

The main purpose of this study is to review the several ways in which health care workers (HCW) could either impact migrant health or be directly impacted by migration and suggest the expansion of the current research agenda on migration and health to address a range of topics that are currently either neglected, insufficiently researched, or researched from different perspectives. We start by briefly summarizing background information about the process of migration, its key facilitators, and several ways in which it benefits destination countries. Next, we discuss key barriers to the provision of migrant and refugee health, along with some of the intricate links between health systems, health professionals, and migrant health. Further, we suggest that, to ensure the success of current solutions and spearhead the development of new

answers to the migrant health problem, future research should include a deliberate focus on examining: (i) the specific role of health workers in providing care to migrants and refugees and their existing expertise and capacity to do so; (ii) the health problems experienced by health workers who become migrants or refugees and their resulting health needs; and (iii) the precarious employment (PE) conditions experienced by both migrant and non-migrant health care workers. To substantiate our suggestion, we provide a brief summary of the current available evidence on these topics and, in the discussion section, elaborate on several key information gaps and the rationale for addressing them.

Background

International migration has increased significantly in recent decades (D.S. Massey and Taylor, 2004; Massey, 2003). For instance, a 2017 United Nations (UN) report on international migration estimated that in 2017, there were 258 million international migrants, a significant in-

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crease when compared with the 2010 (220 millions) and 2000 (173 millions) estimates (UN 2017). While globalization and urbanization are widely recognized as key engines to migration (Arango, 2017; Thomas, 2016), the reasons for migration are multifaceted and may differ among individuals, ethnic groups, and groups of migrants, as well as among countries and continents.

While the increasingly affordable and faster means of transportation are often seen as facilitators to migration (UN 2017; Thomas, 2016), in other instances, the hazardous journeys taken by desperate migrants and refugees' endanger not only their migration dreams but their lives, long-term health, and well-being (Mayers and Freedman, 2019). Some of the key drivers of migration, specific to a migrant's country of origin, include economic and political crises, civil unrest and conflict, *lack of sustainable livelihoods*, increased inequality, and lack of access to health care (UN 2017; ILO 2006). In the case of planned migration, migrants chose their destination country not only based on its immigration policies—that could affect a migrant's paths to citizenship, labor market prospects, integration supports, or deportation rate—but also based on existing socioeconomic and political ties between the origin and destination countries (D.S. Massey and Taylor, 2004; Arango, 2017; ILO 2004). In contrast, refugees who flee war or civil conflict, persecution, global warming, environmental degradation, and other effects of the *Anthropocene* or the *age of humans* on our planet (Abubakar, 2020; Hardesty-Moore et al., 2018), their choice is limited or non-existent, since their destination countries are dictated by geographical vicinity or other immediate survival reasons (Mayers and Freedman, 2019; Sassen, 2014).

Destination countries' considerations and decisions to accept migrants are multifactorial. For instance, migrants may (i) fill workforce shortages, (ii) start businesses and create jobs, (iii) promote international trade and attract foreign capital, (iv) contribute to social and health insurance plans, (v) pay taxes, (vi) contribute to science and technological progress through specialized skills and advanced education, (vii) enhance cultural diversity and bring new perspectives (UN 2017; Sassen, 2014) or (viii) make financial investments in exchange for citizenship status (Tanasoca, 2016). This list is not mutually exclusive and some mechanisms occur simultaneously. Besides the recruitment of highly skilled applicants into occupations requiring high skills, which could be understood as social class selection of migrants (Benach et al., 2011), other migrant categories are low skilled workers who will be paid less than non-migrant workers with similar skills, and highly trained workers who will practice in occupations with lower skill requirements, known as downward mobility (Massey, 2003).

For various reasons including deficient policies, and despite considerable benefits to their new countries, migrant subgroups could face complex challenges including discrimination, human rights abuses, exploitation, difficulties finding jobs, and working in more difficult conditions, for less money, and longer hours than non-migrants (UN 2017).

Barriers to the provision of migrant and refugee health care

Despite the numerous advantages related to migration (Abubakar, 2020), the ideological and political discourses on this topic are increasingly flooded by anti-migrant messages, particularly in Europe and North America, and especially after the 2000 and 2008 economic recessions (Nowicka, 2018). Consequently, this negative focus deters from the identification of constructive solutions to the multifaceted problems faced by migrants (Wickramage et al., 2019; Vearey et al., 2019; WHO 2017). More specifically, instead of trying to understand and address challenges to migrant integration, health, and well-being (Abubakar et al., 2018), the focus of debates is high jacked towards issues of illegal immigration or individuals exceeding their visa limits (Wickramage et al., 2019) and the misrepresentation of migrants as being violent, unlawful, a burden on social and health systems, or a threat to domestic jobs (Abubakar, 2020, Nowicka, 2018, Vearey et al., 2019). The lack of data accurately documenting the links between migration and health (Thomas, 2016, Abubakar et al., 2018,

Wickramage et al., 2018) is another factor hindering progress on the development of comprehensive migration policies that enable migrants' access to health services in destination countries (Thomas, 2016, Wickramage et al., 2019).

The WHO highlights several other obstacles preventing progress towards meeting the health care needs of refugees and migrants, including the lack of: (i) national legislation and structured policies to address migrants' rights to health, (ii) considerations for equity and human rights; (iii) equity, rights, and gender transformative health systems, (iv) accountability mechanisms, (v) standard procedures and implementation guidelines, and (vi) collaboration between government and healthcare systems in the provision of services (WHO 2017). Further obstacles include: (i) lack of financial resources, (ii) healthcare system structure deficiencies, (iii) insufficient capacity of HCWs and insufficient knowledge or training on ways to address the needs of migrants and refugees and the provision of safe and culturally sensitive care (Ahmed et al., 2016). Most of these barriers could be addressed through the adoption and implementation of inclusive policies that recognize migrants and refugees as integral members of societies, the allocation of adequate funding, and intersectoral collaboration. In turn, such strategies could accelerate progress on increasing the capacity of the health workforce (HW) to provide migrant and refugee care and facilitate the adoption of structured, operational initiatives to increase their training and specific skills to provide such care.

The intricate links between health systems, health professionals, and migrant health

Due to complex health system challenges encountered by countries affected by international migration, any effective and long-lasting solutions require both global and national health governance approaches that use multidisciplinary partnerships among international organizations, governments, private sector, civil societies, migrant advocacy groups, humanitarian agencies, researchers, and funding bodies (Vearey et al., 2019). For instance, several researchers suggest the adoption of a *Migration and Health in all Policies* approach that would tie together targeted and coordinated health governance approaches (Vearey et al., 2019), thus building on the concept of *Health in All Policies* (Shankardass et al., 2018). Such concerted action across governments and civil societies alike and across professions and professionals could facilitate the creation of health systems in which *no-one is left behind* and in which migrants everywhere would benefit from the security of universal health coverage (Legido-Quigley et al., 2019).

In addition, since health professionals are a key building block of health systems everywhere, any comprehensive strategy to strengthen health systems through increased coverage and access to health services, along with increased quality and safety, should pay close attention to the HW (WHO 2010). This means that strategies designed to improve migrant health should deliberately consider and clarify the role of health workers in this process, along with their relevant education and training requirements (Brandenberger et al., 2019). In addition, given ongoing shortages of health professionals (Thomas, 2016, Tam et al., 2016), if national health systems are to contribute successfully to improving the health of all citizens and provide *care for all* (Sen, 2015), including migrants and refugees (Villa and Raviglione, 2019, Tulloch et al., 2016), efforts must be directed towards increasing health systems' human resources capacity.

The specific role of health workers in providing care to migrants and refugees and their existing capacity and expertise to do so

The framework developed by the WHO to address migrant health stresses that each national healthcare system should build the capacity of its HCWs including nurses, physicians, and other allied health workers to provide fundamental health care to refugees and migrants. In addition, it lays out several key principles and priorities that HCWs and other

stakeholders should use to guide their efforts, including the safeguarding of refugees and migrants' right to equity and non-discrimination along with their right to equitable access to people-centered health systems that are sensitive to everyone's needs (WHO 2019).

The WHO's call for increased involvement by HCWs in improving refugee and migrant health is echoed by other large organizations. For instance, the International Council of Nurses (ICN) recognizes that nurse clinicians, researchers, educators, and policy advisors are vital to the provision of health services to refugees and migrants and suggests that nurse-led models of care could help avoid or decrease the proliferation of health disparities within healthcare systems (ICN 2018, ICN 2015). Similarly, national nursing and medical associations (American Nurses Association 2010, Canadian Nurses Association, 2012, Canadian Medical Association 2017, Walden et al., 2017) and social justice researchers alike highlight health professionals' role as advocates for this cause and endorse the need to actively engage them in efforts to increase access to health services for refugees and undocumented migrants (Abubakar et al., 2018, Walden et al., 2017, Biggerstaff and Skomra, 2020, Shaffer et al., 2019).

Various specific initiatives are recommended to support HCWs and other stakeholders' efforts to provide care to refugees and migrants (WHO Regional Office for Europe 2015, Chiarenza et al., 2019), including the creation of a repository of practices and policies currently adopted in different world regions to promote the health of refugees and migrants (WHO Regional Office for South-East Asia 2018). Some of the most common roles and responsibilities described in this repository are focused on the facilitation of access to healthcare facilities and support services, provision of referrals and case management, and delivery of health promotion initiatives to raise awareness on various diseases risks and available prevention strategies (WHO Regional Office for South-East Asia 2018).

The health problems experienced by health workers who become migrants or refugees and their resulting health needs

It is widely acknowledged that both the internal and external migration of health workers continue to increase (Afzal et al., 2012, Stilwell et al., 2004, Diallo, 2004). For instance, migrants represent 12 percent of the HW in UK and 17 percent in the US (H. Dempster and Smith, 2020). Although the lack of indicator standardization, consistency of reporting, and consolidation of migration statistics data discussed earlier also apply to HCW migration data, several sources of data collection exist. For instance, health professional registration bodies in destination countries keep track of health professionals who received their training outside the country of licencing (Diallo, 2004). Unfortunately, unregulated migrant HCWs do not need a formal licencing process and thus, their information is not necessarily tracked. Besides national licencing bodies, at a global level, the OECD collects data on HW migration, including percentages of foreign- or domestically-trained doctors and nurses by country of origin (D.S. OECD 2020). However, despite progress on data collection regarding certain categories of HCWs, there is much less information available on internationally educated allied health professionals (Covell et al., 2016).

Given the increase in HCW migration, in addition to the vital role played by HCWs as care providers to diverse populations, including migrants and refugees, they could themselves be migrants or refugees, who leave their birth countries to fill labor market shortages in destination countries (Wickramage et al., 2019, Afzal et al., 2012, Diallo, 2004, Stilwell et al., 2003) or who flee persecution in their native countries. Since the workers could belong to any migrant typology including 'permanent settlers', 'documented or undocumented labor migrants', 'asylum seekers', 'recognized refugees', and 'externally displaced persons' (Stilwell et al., 2003), the migrant HCWs could, in turn, experience any of the health problems affecting such migrants groups. More specifically, given challenges encountered by migrants or refugees while in transition or once in the destination country, they could experience gradual

or immediate declines in health status even in countries with universal access to health care (Thomas, 2016, Vearey et al., 2019, I.-H. Kim et al., 2013, Spitzer et al., 2019). In addition, given that HCWs are exposed to numerous physical and mental health stressors (WHO 2006), it is very probable that the same stressors, will also affect migrant HCWs, and thus, the health risk factors arising from the migration process will add to already existing risk factors affecting health workers.

The PE conditions experienced by both migrant and non-migrant health workers

PE refers to a multidimensional construct that includes employment insecurity, inadequate income, and lack of employee rights and protections, which could affect both formal and informal workers (Kreshpaj et al., 2020, Muntaner et al., 2020). PE is a key determinant of population health and health inequities and, due to significant increase in PE in recent years (Muntaner, 2016, ILO 2016), this emerging concept is receiving increased attention (Benach et al., 2014). Within the healthcare field, PE is a common occurrence, for a variety of reasons including the (i) undervaluing and underpayment of care work; (ii) gendering of the workforce; (iii) constant funding cuts leading to a continuing deterioration of working conditions as well as a high proportion of part-time, self-employed, on-call, and agency workers; (iv) nature of the work which involves shifts and weekends; and (v) the mix of public-private ownership (Armstrong and Armstrong, 2009). The increase in PE within healthcare systems has been further accelerated by austerity-related funding cuts during the 2008 recession that led to major underfunding of public health and healthcare facilities (Reeves et al., 2014, Kerasidou et al., 2016) and by the current COVID-19 epidemic (García-Basteiro et al., 2020, El Bcheraoui et al., 2020).

Various studies in high-income countries, including a range of welfare states regimes (Navarro et al., 2006), such as the US, Spain, South Korea or Finland, show that PE is quite common among HCWs (Han et al., 2009, C. Muntaner et al., 2006, Fité-Serra et al., 2019). Research examining specific healthcare sectors and type of work, suggest several determinants of PE and their association with a range of poor health outcomes. For instance, research from the US indicates that precariously employed long-term care nurse assistants working in private organizations present very high rates of depression (C. Muntaner et al., 2006, Geiger-Brown et al., 2004, Muntaner et al., 2004, C. Muntaner et al., 2006). This is consistent with findings from Spain, where the highest levels of job insecurity were seen among nurse assistants working in private nursing homes (Fité-Serra et al., 2019). Additional congruent evidence shows that for-profit chain and investor-owned nursing homes exhibit more deficiencies in the provision of resident care and less nurse staffing hours than government facilities, with negative implications for nurses' working conditions and resident health outcomes (Harrington et al., 2012). In addition, not surprisingly, self-employed nurses have also been found to experience high levels of employment precariousness (Wall, 2015).

Several explanations exist regarding the links between PE and health outcomes (ILO 2016, Muntaner et al., 2010). For instance, in addition to high job demands not matched by similar levels of job control (Azevedo et al., 2019), the increased severity of occupational-related injuries for workers in PE was linked to the unavailability of health insurance and timely treatment (Sakurai et al., 2003). The lack of access to health services is another major concern with PE (Muntaner et al., 2010). In addition, precariously employed workers have a higher risk of discrimination, harassment, bullying, workplace abuse, exploitation, and violence due to their temporary employment status, lower hierarchical position, and low socioeconomic status within the organization and society (Thomas, 2016, Matilla-Santander et al., 2019, Tsuno et al., 2015, Okechukwu et al., 2014).

In turn, the effects of PE on workers' health can be diverse and complex. For instance, various aspects of PE have been linked to an increased risk of musculoskeletal conditions (Matilla-Santander et al., 2019), poor

self-rated health and decreased well-being (M.-H. Kim et al., 2008), occupational injuries (Thomas, 2016, Bodin et al., 2019, Benavides et al., 2006), mental illness and suicide (Matilla-Santander et al., 2019, Inoue et al., 2013, S.-S. Kim et al., 2013), cardiovascular (Seon et al., 2017), kidney (Wesseling et al., 2020), and liver disorders (I.-H. Kim et al., 2008), infectious diseases, allergies, respiratory problems (Matilla-Santander et al., 2019), cancer (Hogstedt et al., 2013), and destructive health behaviours (I.-H. Kim et al., 2008).

PE is unevenly distributed among workers, intersecting with other categories of socially created vulnerabilities linked to race, gender, age, income, class, citizenship, and disability (Muntaner et al., 2020, I.-H. Kim et al., 2008, Borrell et al., 2004), which means that certain groups of workers have higher risks of developing unfavorable outcomes related to their employment. In addition, given that migration status is tied to additional disadvantages for migrant workers (Baron et al., 2014, Lewchuk et al., 2018, Ahonen and Benavides, 2016), the PE conditions experienced by non-migrant HCWs, can be further exacerbated for migrant HCWs. For instance, given that licenced health professionals must have their credentials accepted by the host country before being allowed to practice their profession, the process can be long and filled with barriers and, during this time, they have little choice but accept any work that allows them to survive (Covell et al., 2016, Khan-Gökkaya et al., 2019).

Discussion - Evidence gaps and the rationale for addressing them

Despite the availability of numerous studies on health human resources (HHRs), given that they represent the building blocks of health systems everywhere, being vital to the development of strategies for health system strengthening, it is not surprising that significant gaps on HHRs research continue to exist. In this discussion section, building on the currently available evidence summarized in the previous sections, we draw attention to several evidence gaps related to HCWs and their potential relationship to migrant health, while also highlighting the rationales for addressing these gaps.

The specific role of health workers in providing care to migrants and refugees and their existing capacity and expertise to do so

Any systematic assessment of HCWs' capacity and expertise to provide care to migrants and refugees requires access to reliable information about their availability at global, country, or regional levels and the training and skills they possess that enable them to address the health needs of heterogeneous migrant and refugee population subgroups. Consequently, the lack of such information is an added challenge to the development of effective strategies to improve the provision of health care to migrants and refugees.

For instance, currently, there are only a few databases supplying comparative data about HCWs density and, given a lack of standardized indicators, taking stock of available national and global HHRs and conducting comparative analyses to facilitate future planning is often challenging. The existing HW databases are hosted by large organizations such as the OECD, UN, and the WHO, and typically, the information they provide is limited to only a few categories of health workers including doctors, nurses/midwives, dentists, and pharmacists (OECD 2019, UN 2020, WHO 2018). To address such known limitations regarding HW data, in 2017, the WHO created an online platform to facilitate annual reporting of HCW information by member states—known as the *National Health Workforce Accounts* (NHWA)—along with a system to improve the availability, quality, and use of such data (WHO 2018, WHO 2017). This initiative is part of WHO's larger global strategy on HHRs (I.-H. WHO 2016), having the potential to progressively solve existing data gaps and improve the availability of such information, however, it is contingent on member nations having the necessary infrastructure and capacity to adhere to regular and accurate reporting.

In addition, given widespread shortages of HCWs, the ethical problems raised by their migration are becoming a major concern for practitioners and policy makers alike (Afzal et al., 2012, Diallo, 2004, Stilwell et al., 2003). However, without proper data to capture this process and track the movement of health personnel, it is not possible to plan, implement, and evaluate policies. Among these longstanding limitations of current data are lack of completeness, comparability, validity, timeliness, and consistent quality of data sources (Diallo, 2004). Other concerns include the lack of standardization of migration statistics, inconsistent basic constructs and migration definitions, as well as difficulties ensuring that the indicators of interest capture the movements of the workforce consistently across the source, transit, and destination countries (Diallo, 2004, Stilwell et al., 2003).

Some other challenges to accurate global HW prediction estimates and comparative research include the lack of standardized indicators and significant variation with regard to education prerequisites, nomenclature and classes of health professionals, roles and responsibilities, scopes of practice, and mandatory licencing requirements (WHO 2006, WHO 2017, Ertl et al., 2020, Anand and Bärnighausen, 2012, IOM 2011, Malgieri et al., 2015, V. Gunn et al., 2019). These existing data gaps pose direct challenges for the development of regional, national, and global strategies to ensure universal health coverage and other global commitments such as improved migrant and refugee health. For this reason, future research and strategies are needed to continue to standardize and collect HHRs indicators (WHO 2017) and harmonize education and practice requirements (Frenk et al., 2010, Koff, 2017, Palese et al., 2014). Other significant challenges are a limited understanding of macro-level factors, including gender inequalities, affecting the development of HHRs, which could pose further challenges to accurate HW forecasting and planning strategies (V. Gunn et al., 2019, George et al., 2017, V. Gunn et al., 2019, V. Gunn et al., 2019, Newman, 2014, Squires et al., 2016).

In addition to knowing how many HCPs are available, it is vital to know if they possess the needed skills to respond to the health needs of migrants and refugees, not only at country level but across regions, since the distribution and competency level of HCPs could vary significantly across geographical areas (Simpson, 2018). Thus, given that the delivery of essential health interventions is often limited by the availability of skilled health professionals (Liu et al., 2017), we need to strengthen research efforts towards the development of evidence-informed solutions that address not only HCWs' shortages but their education and training requirements (George et al., 2017, Buchan, 2010, McPake et al., 2015, Sermeus et al., 2011, Tomblin Murphy et al., 2016, I.-H. WHO 2016). Given that migrants are diverse in both migration reasons and unique identity factors such as age, gender, income, education, and ethnicity, health professionals should be not only cognisant of such factors but also trained to provide inclusive care that adequately addresses their specific physical and mental health needs (WHO 2017, Walden et al., 2017, Spitzer et al., 2019, Matlin et al., 2018). Acknowledging this need, several areas in which HCWs require specialized professional training have been identified, including screening, provision of comprehensive primary, emergency (Walden et al., 2017) and mental health care (WHO Regional Office for South-East Asia 2018, Mental Health Commission of Canada 2016).

Other areas requiring further research are related to the development and implementation of strategies to: (i) increase the diversity of the workforce (WHO 2017, Spitzer et al., 2019); (ii) add migration, anti-racism, and equity specific topics to the health education curricula; and (iii) design practical training on the provision of intercultural care and skills required to overcome language barriers (WHO 2017, Abubakar et al., 2018, Brandenberger et al., 2019, Walden et al., 2017). In addition, although various toolkits have been designed to develop HCWs' capacity to provide culturally appropriate mental health care to refugees and immigrants in order to decrease the need of hospitalization and costly interventions (Mental Health Commission of Canada 2016), further research is needed to develop evidence-informed strategies to

increase their competencies to care for migrants and refugees and eliminate barriers to the provision of integrated, inclusive, and culturally sensitive care (WHO 2017, Matlin et al., 2018, Ahmed et al., 2016).

The health problems experienced by health workers who become migrants or refugees and their resulting health needs

Given that migration is a determinant of health and that migrants have unique vulnerabilities to poor health outcomes (Tulloch et al., 2016), it is discouraging that, despite significant health implications, little consideration is currently given to assessing or improving the health of migrant HCWs and, in some cases, almost the opposite is true. For instance, in some countries, despite the health system's reliance on migrant HCWs to support its functioning, due to anti-immigration policies inspired by xenophobia, migrant workers who lack citizenship status may be denied access to that same health system they serve (Shahvisi, 2018).

In keeping with calls to make the health of migrants and refugees a priority (WHO 2017, Legido-Quigley et al., 2019, Villa and Raviglione, 2019, WHO 2019, ICN 2018, Spitzer et al., 2019), it is important to remember that the health of migrant HCWs deserves special attention since they are essential to the delivery of health services to individuals and populations, including refugees and migrants. Being able to assess the physical and mental health of migrant HCWs would facilitate an understanding of their specific health needs so that adequate solutions could be developed and implemented. Otherwise, if migrant HCWs experience poor health and adverse health outcomes that could interfere with their ability to provide care for others in the destination country and thus, limit their capacity to solve health professional shortages and increase health system sustainability. The potential of HCWs to minimize HW shortages is further affected by policies that enable the recruitment of highly skilled health professionals into non-health occupations requiring less skills (e.g. live-in-home-care-programs), thus, calling for the reformation of such policies. Another significant benefit of conducting research focused on this target population is that, given migrant HCWs' proximity to the health care system, they could have a better sense of existing barriers and structural problems that make it difficult for migrants to access or benefit from health services, which could enrich the research findings.

In addition, since the dearth of specific data related to HCWs migration persists (Stilwell et al., 2003) and existing data focuses mostly on doctors and nurses (Walton-Roberts et al., 2017), it is vital that this gap is addressed. Given that the WHO's *Global Code of Practice on the International Recruitment of Health Personnel* promotes voluntary reporting on aspects related to HW migration and specific measures adopted to implement the code (I.-H. WHO 2016), each individual country's close adherence to the code's recommendations represents one option to start addressing this knowledge gap. Such information would add to findings from existing research focused on the negative implications of *brain drain* and *unethical* recruitment strategies on the health systems of countries that lose the health professionals (Afzal et al., 2012, Diallo, 2004, Stilwell et al., 2003, Buchan, 2006, Crisp and Chen, 2014).

The PE conditions experienced by both native and migrant health workers

Given that PE is common within the health care field (Armstrong and Armstrong, 2009), we need more studies that examine its specific impacts on various categories of health workers operating within different types of health organizations. In addition to focusing on employment and working conditions, such studies should also consider the unique vulnerabilities experienced by different subgroups of workers, based on unique identifiers such as age, gender, race, education, class, citizenship, disability, and migration status. For this reason, the aggregation of analyses should be avoided as to not blur or underestimate the differential effects of PE on subgroups of workers (Muntaner et al., 2020). In addition, future research on this topic must employ PE definitions

(Kreshpaj et al., 2020) and measurement tools (Lewchuk et al., 2018, Lewchuk, 2017, Vives et al., 2010) that facilitate comparisons and address existing methodological challenges (Benach et al., 2014). Similarly, the research should employ longitudinal design approaches to enable the study of the direction of the relationship between exposure and outcomes. Furthermore, given that workers do not experience PE in a static way at one point in time, but rather may periodically move in and out of such unfavorable work arrangements (Kim et al., 2012), the use of employment trajectories will paint a much clearer picture of the ways in which ongoing funding cuts and restructuring in health care may impact health workers. The findings from PE research focused on HCWs would increase understanding of their problems and related needs, so that we could start developing and implementing solutions. Currently, the knowledge regarding initiatives well-suited to counteract PE and its damaging effects on health and well-being is quite limited.

The difficult employment conditions of HCWs in the 21st century, both migrant and non-migrant, and including nurses, have been considered a major problem by several health care leaders, HW researchers, and global organizations (WHO 2019, Stilwell et al., 2004, Anand and Bärnighausen, 2012). Eliminating, improving, or mitigating PE among health professionals require well-coordinated efforts among a range of stakeholders including licencing bodies, professional associations, researchers, research funding agencies, policy makers, and labor regulatory bodies. Findings from research studies examining the impact of PE on the health of HCWs would support and inform such efforts.

COVID-19 considerations and research implications

The coronavirus pandemic has significant implications for both migrants and migrant HWs. First, as a result of overcrowded living accommodations, limited employment opportunities, or precarious working conditions, which make compliance with basic preventive measures difficult, if not impossible, migrants and refugees face a higher risk of becoming infected with the COVID-19 virus than the general population (International Federation of Red Cross and Red Crescent Societies 2020, WHO 2020, Bahar Özvarış et al., 2020, Orcutt et al., 2020, Al Munajed and Ekren, 2020, Hayward et al., 2021). Besides, they are often not a priority group for vaccinations and, once infected, they may encounter difficulties accessing health services for treatment (International Federation of Red Cross and Red Crescent Societies 2020, WHO 2020, Zambrano-Barragán et al., 2021). As a result, their overall disease progression and recovery are aggravated, especially since, in some cases, their immune systems have been weakened by prolonged exposure to stress, poor diets, and unsanitary living conditions. In turn, the migrant and refugees' defencelessness in the face of the COVID-19 virus places additional pressures on already stretched health systems and constitutes an added threat to public health (WHO 2020, Orcutt et al., 2020), thus, requiring immediate intervention by both health authorities and governments (Orcutt et al., 2020, Doyle, 2020).

While in some countries, specific legislation has been adopted to provide migrants, including undocumented ones, asylum seekers, and refugees with access to COVID-19 related services, they continue to be at a disadvantage in the fight against COVID-19 due to factors such as housing deficiencies, lack of proximity to health services, lack of identity documents, fear of authorities and deportation, social isolation, and cultural and communication barriers (Bahar Özvarış et al., 2020, Medact 2020, Tuyisenge and Goldenberg, 2021, Moawad and Andres, 2020). Despite an increased need for medical attention, the shortages of health professionals, both amplified and brought to light by the present pandemic, along with lockdowns and other control measures adopted to stop or slow down the spread of the virus, make it even more difficult for migrants and refugees to access regular health care services or benefit from health services delivered within their compounds. While planned international migration has slowed down in many countries during the COVID-19 pandemic, as related to the total or partial closing of international borders, both internal and international migration

due to conflicts, poverty, or natural disasters continued, thus adding to the number of people who find themselves in these vulnerable situations (International Federation of Red Cross and Red Crescent Societies 2020).

In light of such complex health challenges, governments and health authorities must take inclusive action to ensure that migrants and refugees are not omitted from screening, prevention, protection, contact tracing, treatment, response, and economic recovery efforts (International Federation of Red Cross and Red Crescent Societies 2020, WHO 2020, Orcutt et al., 2020). Targeted research investments are needed to inform these efforts through increasing understanding of the ways in which the COVID-19 pandemic affects the provision of health services to migrants and refugees, especially in light of an acute shortage of health professionals. Thus, close attention by the research community is required to document the impact of HW shortages on migrants and refugees' health. Similarly, any implemented pandemic related health interventions targeting migrants and refugees should be closely evaluated so that promising initiatives can be shared and duplicated quickly. In addition, health and social researchers, working alongside human rights activists, charity organizations and other civil society stakeholders (Medact 2020, Tuyisenge and Goldenberg, 2021) should monitor and flag increases in racism and stigmatizing practices that could worsen the isolation already experienced by the migrant population and reverse the modest progress made after decades of efforts against racism and discrimination.

In addition to its impact on migrants, the COVID-19 pandemic is also affecting the migrant HWs, who are on the frontlines of this health crisis. While both migrant and non-migrant HWs are exposed to high risks of contracting the virus in the line of duty, as shown by the significant proportion of infections affecting health professionals (e.g. 15% in Wuhan, 14% in Spain, and 10% in Italy) (H. Dempster and Smith, 2020), migrant workers are disproportionately affected by it (H. Dempster and Smith, 2020, Eyre et al., 2020, Karlsson and Fraenkel, 2020, Mbiba et al., 2020). This increased vulnerability of migrant workers stems from a combination of factors including their disproportionately high representation in (i) front-line and entry-level jobs, (ii) precarious employment that involves low pay and several casual or part-time jobs at multiple health institutions, and (iii) health sectors—such as long-term care—that are severely affected by the pandemic due to years of neglect, chronic health provider shortages, understaffing, lack of investments in staff training, and shortages of protection equipment (H. Dempster and Smith, 2020, Mbiba et al., 2020, Stoichet, 2020, Canadian Nurses Association, 2020, Ghazal et al., 2019). Moreover, gender inequalities and care ethics affecting the overall health care workforce (V. Gunn et al., 2019, Rossiter and Godderis, 2020, Tronto, 2015) engaged in the pandemic response efforts also affect migrant health care workers, who are in majority women, further complicating their employment situation. Not surprisingly, migrant HWs experience higher rates of coronavirus infections and worse health outcomes (D.S. Dempster and Smith, 2020, Stoichet, 2020, Tayaben and Younas, 2020) than other HWs, while at the same time, they may experience discrimination and lower levels of financial and social recognition (Mbiba et al., 2020, Tayaben and Younas, 2020).

Given the ongoing nature of this pandemic and the rapid mobilization of HWs around the world to help deal with it, learning more about the health status of migrant HCWs is a research topic requiring immediate attention to facilitate the identification of solutions tailored to these workers' specific health needs. In addition, since the pandemic influences the migration patterns of the global health workforce, research efforts must be directed towards understanding the ways in which changes in workforce supply and mobility affect not only the workforce but health systems around the world (D.S. OECD 2020, ICN 2020). Such research has health policy and labor market implications and is needed to inform both national and global response strategies planned in response to the amplified HHRs shortages (D.S. OECD 2020, ICN 2020).

Conclusion

In this article, we discuss some pressing research issues related to migrant and refugee health, with a focus on health workers, the key building blocks of health systems everywhere, while also incorporating several relevant COVID-19 pandemic considerations and research implications. Given that health workers are essential to the delivery of health services to individuals and populations, including refugees and migrants, we propose that the research agenda on migration and health should include a deliberate focus on gathering evidence on the specific role they play in providing care to migrants and refugees and their existing expertise and capacity to do so. In addition, since both migrant and non-migrant health workers exposed to PE could experience poor health outcomes, which would interfere with their ability to provide care for others, we suggest that further research is needed on these topics. A better understanding of the ways in which both migration and PE affect the health and well-being of health workers could help the development and planning of solutions that address their unique health needs, thus contributing to health system sustainability. Expanding the focus of research studies on migration and health could not only enhance the results of current strategies by supplying more information to support their implementation but also spearhead the development of new solutions to the migrant health problem. Furthermore, in light of the complex challenges posed by the COVID-19 pandemic to health systems around the world and the related health needs of migrants and refugees, targeted research investments and efforts are required. Such research is needed to inform both global and national response strategies aimed at alleviating heightened health workforce shortages and changes in workforce supply and mobility.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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