Lessons Learned: COVID-19 and Individuals Experiencing Homelessness in the Global Context

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Abstract
The coronavirus disease (COVID-19) pandemic has affected all our lives but did not affect all parts of societies equally. This study uses a systematic literature review approach to examine the experiences of homeless populations during COVID-19. Our literature review identified lessons learned and promising practices from the field at a global level, and summarizes academic studies in order to promote future efforts to prepare homeless populations for potential extreme events in the future. Forty-one of 209 articles were selected to prepare this literature review. Following the academic database search, grey literature from various organizations were also identified to enrich the literature results and analysis. Findings from these articles were grouped under three main themes to better illustrate the results: (1) impact of COVID-19 on people experiencing homelessness (PEH), (2) support mechanisms, and (3) promising practices. A comparative approach also was used to examine how PEH responded during two previous pandemics (severe acute respiratory syndrome [SARS] in 2003 and Swine Flu 2009) compared to the COVID-19 pandemic. Findings showed that there was continuous improvement in the disaster preparedness for PEH during COVID-19 when compared to past pandemics. In addition, promising practices have emerged. However, ongoing issues, such as lack of personal protective equipment (PPE), staff shortages, and communication problems, still persist in the field. More research regarding PEH during pandemics is needed, and their voices should be included.

Keywords
Homelessness; pandemic; disaster relief; systematic literature review
Introduction

The coronavirus disease (COVID-19) pandemic has affected almost everyone; however, vulnerable and marginalized populations, such as women, older people, racialized communities, Indigenous populations, low-income groups, refugees, and homeless people have been disproportionately affected (Wu & Karabanow, 2020). This paper focuses on homeless populations given that when the public health restriction of “staying at home” was released, where could homeless people go when they have no stable home? Other issues, such as food insecurity, chronic illness, addiction and mental health challenges, as well as limited access to personal protective equipment (PPE) and social services have worsened homeless people’s existing vulnerable situation.

Globally, there are at least 150 million individuals experiencing homelessness (Farha, 2020a), and more than 1 billion people are living in informal settlements and encampments (Farha, 2020b). According to Canadian Observatory on Homeless (n.d.), homelessness is “the situation of an individual, family, or community without stable, safe, permanent, appropriate housing, or the immediate prospect means and ability of acquiring it” (para.1). Accordingly, scholars, civil rights activists, community-based service providers, emergency responders, and other stakeholders worldwide have been tirelessly advocating for basic social rights for homeless groups and pushing for related policy support and relevant interventions, especially during this pandemic. For example, the European Parliament sheltered homeless women during the pandemic (BBC, 2020). Local authorities in the United Kingdom provided emergency accommodation to ninety percent of rough sleepers (Rajagopal, 2020). Amazon (the American multinational technology company) operated the largest family shelter in Washington State of the United States of America (USA) (Bendix, 2020). Numerous initiatives were implemented by different layers of society (government, non-profit organizations, community groups, etc.), which guided the development of this manuscript.

Homeless People in the Global Context of Extreme Events

Research has consistently treated people experiencing homelessness (PEH) as one of the most vulnerable groups in both disaster and normal settings (Kaysin et al., 2020; Kelly et al., 2020; Tan & Chua 2020; Tsai & Wilson, 2020). Blaikie et al. (2003) define vulnerability as the inability to “anticipate, cope with, resist, and recover from the effects of extreme events” (p.11). The vast majority of literature has found that homeless populations experience high levels of trauma, physical, emotional and mental health struggles, alcoholism, and drug addiction (Deilamizade & Moghanibashi-Mansourieh, 2020; Honorato & Oliveira, 2020; Martin et al., 2020). In addition to these health and housing-related vulnerabilities, PEH are regularly marginalized and stigmatized by society (Karabanow, 2004; Karabanow et al., 2018). Furthermore, PEH rarely have adequate access to vital information; they rarely have the capacity to be prepared for the disaster; and they have significant challenges when interacting with social services and health systems designed to mitigate disaster effects and support recovery (Gaetz & Buccieri, 2016; Morris, 2020). As a result, PEH have higher morbidity and mortality rates compared to other groups in society (Aldridge et al., 2018).

Why Is It Worth Examining COVID-19’s Impact on the Homeless Population?

There has been a plethora of articles, blogs, and news reports exploring how the COVID-19 pandemic has intensively changed our lives; however, there has been a lack of comprehensive academic studies concerning the impact of this disaster on one of the most vulnerable populations – PEH. Focusing on homeless populations during COVID-19 is vital to build an understanding of their lived experiences and, as such, to better prepare entire communities for potential extreme events (Hutchins et al., 2009).

During the past two decades, two major pandemics, severe acute respiratory syndrome (SARS) in 2003 and Swine Flu in 2009 were faced on a global scale. During SARS, the homeless sector was found to be less prepared to contain the
spread. According to Leung and colleagues (2008), service providers had inadequate preparation and response to the pandemic as well as difficulties accessing guidance and assistance from authorities. Although homeless populations were not infected during this pandemic, after interviewing service providers, Leung et al. (2008) identified problems and areas needing development: communication, infection control, isolation, and quarantine. These areas for improvement will be discussed in detail in the results section. Following the SARS pandemic and then the Swine Flu in 2009, and with the increased awareness about pandemics, pandemic preparedness became an important topic in disaster management for the government, institutions, and service providers in Canada (Gaetz & Buccieri, 2016). However, Gaetz and Buccieri (2016) further note that federal, provincial, and municipal emergency (pandemic) response plans were lacking knowledge and preparation for vulnerable populations, including those who were homeless. In the current context of COVID-19, studying homeless populations will enlighten the lessons learned and progress made from the previous pandemics that will enable researchers to bring forward in-depth knowledge to enhance preparedness efforts for future disasters.

To date, one of the core arguments has been that PEH cannot follow the basic COVID-19 health protocols of staying home and self-isolating, washing hands, and social distancing (Karabanow, 2021). It is critical to understand these experiences and identify support mechanisms and promising practices to ensure better preparedness during potential future disasters. Thus, the following three questions guided this systematic literature review: (1) What have been the experiences of PEH during COVID-19? (2) What lessons have been gained from the field in supporting PEH during the global COVID-19 pandemic? (3) What has worked and what has not?, and (4) How can we use existing lessons to improve our interventions in the future?

### Method

The systematic literature review approach used in this study, which is supported by Arksey and O'Malley's (2005) framework, consists of four steps: searching, selecting, analyzing, and reporting. The detailed search strategies include the following two steps: Initial search and further screening by applying inclusion and exclusion criteria.

#### Step 1: Initial Search

The initial search aims to identify relevant literature through scanning the existing literature. During this stage, databases and keywords were established to set the boundaries by concentrating on academic literature. Since COVID-19 is a new subject, an efficient strategy of combining general databases and a disciplinary-specific focus (social work) was established. The following databases were engaged in this initial search: Research Library, Academic Search Premier, Web of Science Citation, Scopus, Google Scholar, EBSCOhost, ProQuest, Social Services Abstracts, Social Work Abstracts, PsycINFO, CINAHL Full Text, and PubMed.

#### Initial search results

| Database               | Search results | # of articles added to the library |
|------------------------|----------------|-----------------------------------|
| Research Library       | 91             | 48                                |
| Academic Search Premier| 34             | 17                                |
| Web of Science Citation | 43            | 23                                |
| Scopus                 | 58             | 39                                |
| Google Scholar         | 3970           | *88                               |
| EBSCOhost              | 64             | 20                                |
| ProQuest               | 442            | 88                                |
To be as comprehensive as possible during our initial search, we used keyword search on a full-text basis rather than subject or abstract searching. The keywords identified were "covid*" AND "homeless*" without specifying geographical scopes. We included peer-reviewed English articles with a time framework from March 2020 to December 2020. At this stage, the number of search results hit 4845 in these databases. Our research team conducted a title screening to identify relevant articles that specifically addressed the intersection of homeless populations in the context of COVID-19. As a result of this initial screening, the number of articles selected was reduced to 422 (Table 1). The initial screen yielded 209 publications (as shown in Figure 1) by eliminating duplicates.

**Step 2: Further Screening by Applying Inclusion and Exclusion Criteria**

In the second step, we assigned one member of our team to conduct a full-text review. The following inclusion and exclusion criteria were developed by our full team, enabling the assigned researcher to further screen the results obtained from Step 1 of 209 publications. Inclusion criteria involved articles containing, or referring to, our research questions: the impact of COVID-19 on PEH, support mechanisms for the PEH, promising, and not so promising, practices from the field, and using existing lessons to improve our interventions in the future.
After finishing the academic literature search, our research team reviewed related grey literature. The grey literature was screened by applying the same keywords (“covid*” AND “homeless*”) into Google search to identify related information resources by focusing on the following major pandemic-specific and PEH-focused information sources, including the World Health Organization (WHO), Homeless Hub, European Federation of National Organisations Working with the Homeless (Feantsa, the major European network that focuses exclusively on homelessness at the European level), and the National Alliance to End Homelessness (NAEH), were reviewed to support our literature review. After selecting these organizations, the same keywords were used to the website-based search function to recognize the related web page-based materials (e.g., publications, news, policy papers, information brochures) in line with our research questions. A total of 12 web-based materials were added to our research database.

Our research team also conducted a brief literature search from previous pandemics to understand the current context. As such, the literature on SARS in 2003 and Swine Flu in 2009 pandemics was reviewed. The team used the pandemic-related keywords (e.g., SARS, pandemic*, Swine Flu/ H1N1) and their intersection with “homeless*” on Ebscohost and Proquest databases. This search yielded 146…
Moreover, recent literature has focused upon the substances (Kar et al., 2020; Wood et al., 2020), and among these 18 publications, two unique publications; an edited book (with four different chapters used in this review), and an article were given special attention, in order to provide some evidence-based strategies to develop recommendations for handling the current pandemic.

Combining all these citations from different datasets, our team conducted a literature review on sixty-one different articles. As illustrated in Figure 1, forty-one articles from the academic database search, twelve articles from the grey literature search through websites, and two articles through the past pandemic search were selected for contextualizing this literature review. An additional six articles were found in the references of the previously found article.

Results

After selecting articles in line with the inclusion criteria, findings were extracted to illustrate the results in line with the three questions defined in our inclusion criteria: impact of COVID-19 on PEH; support mechanisms for PEH; and charting of promising practices. As the last theme, two previous pandemics were examined briefly to illustrate the disaster preparedness of the last two decades.

Impact of COVID-19 on PEH

The majority of these articles identified the impact of COVID-19 as a deteriorating factor in the quality of life and well-being of PEH. Regardless of the existence of COVID-19, PEH experience many challenges. PEH have difficulties accessing health care (Coughlin et al., 2020; Martin et al., 2020; Perri et al., 2020, Tan & Chua, 2020; Tsai & Wilson, 2020) and experience higher health risks because of underlying chronic conditions, such as respiratory disease (Albon et al., 2020; Lewer et al., 2020, Miller et al., 2020; Schiff et al., 2020; Wood et al., 2020), poor immunity (Albon et al., 2020; Banerjee & Bhattacharya, 2020), heart disease (Albon et al., 2020; Baggett et al. 2020; Lewer et al., 2020; Perri et al., 2020), accelerated aging (Baggett et al., 2020), as well as mental health and/or harmful use of substances (Kar et al., 2020; Wood et al., 2020). Moreover, recent literature has focused upon the over-representation and racial discrimination of Black, Indigenous, and Latinx groups within the homeless populations (Moses, 2020; NAEH, 2020a). PEH are even more stigmatized and seen as a threat to national health by spreading the virus in the current pandemic context within some regions of the world (Wasilewska-Ostrowska 2020).

Moreover, there also are issues triggered by the spread of COVID-19. PEH face shelter eviction risks due to social distancing measures, reduced capacity in shelters, and sometimes even shelter shutdowns (Conway et al., 2020; Coughlin et al., 2020; Karabanow, 2021; NAEH, 2020b; Tobolowsky et al., 2020). Access to vital services such as detoxification centers, harm reduction, and safe supply, in addition to hygiene facilities and community buildings have been restricted or reduced (Karabanow 2021; Shi et al., 2020; Wasilewska-Ostrowska 2020, Wu & Karabanow, 2020). Globally, the homeless population throughout COVID-19 has struggled with access to handwashing-water-hygiene toilet facilities, soap, sanitizers, and masks (Baggett et al. 2020; Conway et al., 2020; Coughlin et al., 2020, Deilamizade & Moghanibashi-Mansourieh, 2020; Gowda et al., 2020; Kar, et al., 2020; Tsai & Wilson, 2020; Wasilewska-Ostrowska 2020); as well as difficulties reaching health facilities, and finding safe supplies (Deilamizade & Moghanibashi-Mansourieh, 2020).

Due to the pandemic’s impact on the global economy (e.g., in terms of recessions, job losses, and reduced income) (Rajagopal, 2020), the number of PEH is expected to increase, which will worsen the existing risks. First reports from the field confirm an increase in people living on the streets in the USA (United States Interagency Council on Homelessness, 2020). Life in homeless encampments and shelters are also difficult for homeless populations. Poor accommodation and social isolation within congregated settings is a common challenge and almost impossible to overcome (Banerjee & Bhattacharya, 2020; Benavides & Nukpezah 2020; Conway et al., 2020; Coughlin et al., 2020; Dorney-Smith et al., 2020; Dotson et al., 2020; Shi et al., 2020; Wasilewska-Ostrowska, 2020). Congregated settings rarely provide for the ability to physically distance, which, in turn, can create health risks (Baggett et al., 2020; Duber et al., 2020; Gowda et al., 2020; Lewer et al., 2020). Indeed, a number of cases of
COVID-19 outbreaks have been reported within homeless shelters and encampments (Baggett et al., 2020; Benavides & Nukpezah, 2020; Tobolowsky et al., 2020).

A new phenomenon during COVID-19 was the way in which homeless people were seen as potential spreaders of the disease due to their transient nature (Kar et al., 2020; Perri 2020). As a result, despite the United Nations (UN) and the US Center for Disease Control (CDC) recommending otherwise, some US cities disbanded homeless encampments for this reason (Fenley, 2020), as did many other sites across the globe, thus forcing evictions (Rajagopal, 2020).

What are PEH living through during this pandemic? Studies have noted the loss of support networks in general (Dorney-Smith 2020) and that there has been very little information on COVID-19 for the homeless (Banerjee & Bhattacharya, 2020). As Fenley (2020) argues, their everyday sense of citizenship is compromised, and their sense of belonging to society is damaged.

Our research team found very little academic literature concentrating on the lived experiences of PEH throughout our search. Only two articles spoke to the experiences of PEH. Tucker et al. (2020) studied the use of health services during the pandemic with ninety homeless participants, and highlighted their struggles: meeting basic needs, accessing behavioral health services, and increased use of substances. Dotson et al. (2020) examined the psychiatric services in Boston Hope Field Hospital, and found that homeless people’s psychological challenges during the pandemic included anxiety, followed by depression, post-traumatic stress disorder, and psychosis.

Finally, literature focusing on the service provider point of view noted a number of challenges, including: a delayed response, lack of timely and ongoing communications from the health authorities, supply shortages in the early stages of the pandemic, and staff shortages (Karabanow, 2021; Rice et al., 2020). Several studies in the United States identified common themes such as increased staff stress levels, staff fears of being sick, and staff exhaustion due to long working hours and worker shortages (Moses, 2020; Rice et al., 2020).

Support Mechanisms

There have been numerous initiatives taken by different sectors of civil society to support PEH. Governments at the state (provincial) and federal (national) levels tend to set overall policies and allocate necessary budget funds to support local governments and non-government/community organizations to address people in need. Two examples of such budget allocation included giving short-term financial assistance to people facing the risk of being homeless in the USA (Rajagopal, 2020) and emergency funds such as the one given to rough sleepers in the UK (Kirby 2020). At the state level, examples included the creation of flexibility in particular government regulations, such as lengthening pharmaceutical prescription durations from thirty days to ninety days in the US (Bartels et al., 2020), and a moratorium on forced evictions from housing in many countries around the world (Rajagopal, 2020).

Health authorities throughout the globe established the most basic precautionary policies/practices, including physical distancing, hand hygiene, and respiratory hygiene. There are numerous examples of countries using these evidence-based precautionary measures that have been supported by local governments all over the world. For example, throughout Canada, to ensure physical distancing, the capacities of shelters were reduced, and temporary (“pop-ups”) shelters were developed to accommodate others in need. Specific examples of temporary shelters included setups in parking lots, convention centers, local gyms, libraries, empty hotel rooms, and unoccupied residences (Benavides & Nukpezah, 2020; Gowda et al., 2020; Karabanow, 2021; Wu & Karabanow, 2020). According to the NAEH, 76% of Continuums of Care (CoC, grants coordinating agencies in the USA) ranked the hotel/motel model as the first priority to be used when they received new funds, instead of creating permanent housing or purchasing new PPE (Rice et al., 2020).

Employing temporary shelters, the United Kingdom seemed to be successful in providing emergency accommodation to ninety percent of rough sleepers (Kirby, 2020). Developing and/or using temporary shelters was the most widespread model we could find in our review.

Additional mechanisms for precautionary measures included setting up handwashing stations, portable hygiene facilities, and (non-
alcohol-based) disinfectant stations in encampments and shelters (Benavides & Nukpezah, 2020; Conway et al., 2020; DiGuiseppi et al., 2020). These stations and facilities were sometimes financed by local governments and sometimes installed as a community-based reaction to contain the virus spread.

In such challenging times as COVID-19, shelters also were redesigned to slow down the spread of the virus and protect from possible outbreaks. Sleeping capacity was reduced in many shelters; temporary shelters were opened, areas for isolation or quarantine were developed, and areas designed for recovery were opened (Perri et al., 2020). Alternative care sites also were used to ensure quarantine and isolation. Many cities in the US (Kaysin, et al., 2020) and Canada (Karabanow, 2021; Perri et al., 2020; Wu & Karabanow, 2020) used hotels or “pop-up” shelters to create alternative care sites. Temporary field hospitals were built in order to house and treat those who could not otherwise self-isolate (Baggett et al., 2020). Usage of recreational vehicles and trailers for quarantine spaces in the US (Benavides & Nukpezah 2020) was another creative example from the field. As a different approach, the United Kingdom employed a centralized method to fight the spread amongst homeless people by establishing two different types of facilities: COVID-CARE (quarantine) and COVID-PROTECT (isolation); however, COVID-CARE facilities were later closed due to the small number of cases among the homeless population (Lewer et al., 2020).

During pandemic-driven emergency management, some shelters also implemented practices to minimize spread and prevent a possible outbreak. These processes included front door symptom screening for cough, shortness of breath, fever, and COVID-19 testing, if required (Karabanow, 2021). Expedited and mass COVID-19 testing also was helpful to tackle asymptomatic cases. Shelters used infection prevention measures such as disinfection, frequent cleaning, and ventilation (Karabanow 2021). Services that did not require physical interactions, such as medical, psychiatric, and addiction-oriented care, were converted to virtual consulting apparatuses by using telehealth approaches (Baggett et al., 2020).

A study by Wasilewska-Ostrowska (2020) in Poland noted several initiatives to support basic needs of homeless populations, including engaging volunteers to sew masks for those living on the street; mobile counseling/treatment (with the use of an ambulance); and a bus named “SOS” that provided essential goods (such as food, cleaning products, computers, gloves, disinfectants) to people in need.

**Promising Practices from the Field**

PEH are a diverse population with different needs, which require tailor-made solutions. In our literature review, we came across a diversity of promising practices to support a diversity of needs, including the following: (1) university-community partnerships; (2) preventing the outbreak; (3) seven measures from Feantsa (from grey literature; 4) containing the spread; and 5) collaboration during the spread.

**University-community partnerships**

A very simple hygiene measure, to wash our hands regularly, maybe a real challenge for people living on the streets. For this problem, a creative solution was implemented in the Skid Row region of Los Angeles. Los Angeles City had initially installed handwashing stations and hand sanitizing products in the streets, but community members raised concerns when the city did not attend to these stations properly, leaving the stations out of water and soap. As a community response, the University of Southern California and Los Angeles Community Action Network (LA CAN) collaborated with artists, residents, and do-it-yourself (DIY) producers to create a DIY handwashing station in the neighborhood. This partnership started with prototypes, followed by a Facebook campaign, resulting in fundraising of $10,000 in two weeks and the installment of 18 DIY handwashing stations. This campaign was later followed by 24 stations funded by Skid Row Housing Trust. Besides building the hygiene infrastructure, the partnership also succeeded in hiring station attendants and a creative website that mapped outstation needs (DiGuiseppi et al., 2020), demonstrating community response and collaboration to overcome a particular problem in the field.

**Preventing the outbreak**

One of the main challenges of homeless shelters during the pandemic crisis was preventing possible outbreaks in their facilities. In the first
peak of the pandemic, three shelters in Eastern Europe that serve senior homeless populations remained COVID-19 free: implementing semi-quarantine spaces to prevent guests from going out in the first month of their stay, and providing attractive incentives such as free cigarettes and food, inhouse activities, free medicine, and inhouse medical visits by the healthcare professionals. Free inhouse media services, like TV and computer, were considered one of the main reasons for this success (Gombita et al., 2020). This best practice gives us some insights about motivating shelter guests to “stay in the shelter” in order to prevent them from getting infected on the streets.

Seven measures from Feantsa (from grey literature)

The European Federation of National Organisations Working with the Homeless (FEANTSA) highlight critical steps to protect homeless people from COVID-19. The statement was meant as a call to action for public authorities to involve important practices, such as house those living on the street; test homeless people; create safe homeless services; provide access to healthcare; provide access to food and hygiene; stop the number of homeless people from growing; and prevent possible fines for not following “stay at home” health protocols (FEANTSA, 2020).

Containing the spread

After the first outbreak, shelters in Hamilton, Ontario, Canada, implemented a mitigating strategy to prevent the spread of COVID-19. All of the residents and the staff who failed the daily screening were tested, and with the collaboration of the regional laboratory, the tests were performed very rapidly. The shelters improved physical distancing in the congregated setting by adding three hotel sites, a temporary shelter, increased bed capacity, and efficiently implemented the isolation and quarantine protocols. Consequently, the number of newly infected cases diminished to zero (O'Shea et al., 2020).

Collaboration during the spread

In the U.S., Boston Health Care for the Homeless Program (BHCHP) achieved an effective collaborative model by partnering with public health agencies, municipal leaders, and homeless service providers. This model clearly identified the protocols to be followed at each step, from the entrance to shelters to quarantine, isolation, hospitalization, and discharge. The city constructed many venues and adapted existing buildings to support the needs of homeless people. Elements of this model included initial screening at shelters, expedited testings on-site, in addition to creating different venues for isolation (either constructed or adapted from other buildings), quarantine, and hospitalization (Baggett et al., 2020).

Pandemics and People Experiencing Homelessness

PEH are one of the most vulnerable populations experiencing extreme events because they do not have a permanent “roof” to protect themselves. As a final step in our literature review, we expanded our search to include other past pandemics and their impacts on PEH in order to deeply understand their vulnerabilities and provide effective interventions. This material was helpful for contextualizing the current COVID-10 environment: identifying areas that have, and have not, improved since previous disasters. To understand the practices and improvements, and compare with the current literature, we will concentrate on two previous pandemics, SARS and the Swine Flu.

Severe acute respiratory syndrome in 2003

There have been two major pandemics during the last two decades, SARS in 2003 and Swine Flu (also known as H1N1) in 2009. The SARS pandemic originated in China and spread to 29 countries (Lee & Mckibbin, 2004). Although there was an outbreak in Toronto, it was contained quickly, and there was no spread among PEH. This outbreak created an awareness of the need to develop an outbreak preparedness plan that includes specific challenges related to homeless populations (Leung et al., 2008). After the pandemic, Leung et al. (2008) identified the core challenges experienced by homeless people and service stakeholders under four themes: communication problems, infection controls, isolation and quarantine, and resource allocation. In our comparison, we used these four themes as metrics to illustrate the major challenges with the past two pandemics. To
overcome these difficulties in the field, specific actions were identified, including a commitment to: improving communication systems between service providers and health officials; increasing supplies and training for service providers; being prepared for shelter closures due to staff shortages; and ensuring advanced planning for isolation and quarantine sites (Leung et al., 2008).

Swine Flu in 2009
The second pandemic, the swine flu, first discovered in North America in 2009, spread to 214 countries and resulted in over 18,449 deaths (WHO, 2010). As a result of the increased awareness from the previous pandemic, disaster management and preparation for H1N1 became the focus of government and related organizations. Specifically, Schiff (2016) summarized the key learnings, which included: the vulnerability of PEH compared to other groups, the difficulty of accessing health systems and information systems, the need for collaboration between cross-sectoral organizations, the need for effective delivery of vaccination and supplies by the government and health authorities, the need for education and awareness initiatives, and the need for new service infrastructure that has appropriate construction and design. Many health protocols evident during COVID-19, such as the focus on hygiene, social distancing, and extra space requirements in the shelters, were employed in the containment of the Swine Flu.

The following main challenges, experienced by PEH and service providers, were identified from existing research during these two previous pandemics:

- **Communication challenges:** Communication problems were identified as one of the critical issues in both pandemics. Communication problems included inadequate communication; along with a lack of training to ensure the transfer of critical information from government agencies to homeless shelters and the PEH. In the SARS pandemic, the lack of information and directives given to service providers along with the delay in sending communication (Leung et al., 2008) were seen as the main problems. Although improved over time, the speed of risk communication still remained an issue during the Swine Flu pandemic (Schiff, 2016).

- **Infection control:** Although there was not a shelter spread during SARS, a lack of PPE, hand sanitizers, and guidelines for basic infection controls were reported (Leung et al., 2008). Congregated settings were seen as high-risk environments, and shelters were not prepared to contain the spread (Buccieri, 2016). As noted in the literature, there was simply not enough space for initial screening, isolation, or quarantine of shelter residents. Possible staff shortages (due to sick staff or staff unwilling to work in risky environments) were reported as a potential problem for future pandemics (Leung et al., 2008).

- **Isolation and quarantine:** These problems included difficulties in working with homeless populations along with isolation/quarantine protocols and capacity issues. Because of their transient behavior, difficulty in finding the individuals who needed to quarantine or isolate was reported as a problem for the future in both pandemics (Gaetz & Buccieri, 2016; Leung et al., 2008). It was also noted that individuals might reject the treatment or tests (Leung et al., 2008). While shelters, or other service sites, could help find individuals who wanted to take the tests or have the treatment, it was not clear how to create quarantine or isolation sites in terms of staff and cost issues (Leung et al., 2008; Schiff, 2016).

- **Resource allocation:** Because of insufficient resources, pandemic preparedness was not seen as a priority during the SARS pandemic (Leung et al., 2008). Lacking access to health systems among homeless people was seen as another problem that could disrupt the preparedness plans for the homeless sector. Clearly, more funds are required to cover the costs related to the preparedness of the homeless sector (Leung et al., 2008; Schiff, 2016). In addition to these four themes, Gaetz and Buccieri (2016) note that there was a lack of disaster preparedness planning for service providers during both pandemics, and any existing plans were seen as rather reactive. This may well be due to a lack of staff and budget limitations. For the planning process, there needs to be a critical connection between the authorities and the homelessness sector (Gaetz & Buccieri, 2016).

Discussion
Applications from the Literature Review

Homelessness is a well-studied social phenomenon, and the vulnerabilities of this population have been well explored. It is abundantly clear that those experiencing homelessness exhibit higher morbidity and mortality rates. Homeless people’s lives were already difficult before the pandemic, and COVID-19 became another challenge to their existing problems. Living in congregated settings, such as shelters and street encampments, makes it almost impossible to follow the most basic health measures.

Compared to other pandemics, service providers for the homeless population have been better prepared during COVID-19 and there are many promising practices and creative solutions in the field to support meaningful care for those living on the street. However, the literature on best practice also has raised important concerns such as scarcity of products needed (e.g., PPE and hygiene materials) both during the pandemic's initial stages and moving forward. Staff shortages during a pandemic are still a problem, particularly as the pandemic continues (Rice et al., 2020). There have been thoughtful issues raised in the literature concerning disaster preparedness that need to be taken into account to better situate both those providing front-line care as well as those experiencing homelessness.

PEH are very diverse, with many different challenges. Instead of top-down orders, tailor-made community-oriented and locally developed solutions seem to work more efficiently, as observed in the DIY handwashing stations in Los Angeles, presented above. This reality should not offset the funding needs of local service providers and the importance of cross-sectoral collaboration. A roadmap that highlights ways to communicate risk issues and engage collaboration between the key stakeholders (including those experiencing homelessness) is imperative for disaster preparedness. In addition, understanding the lived experiences of PEH at the local level is a key asset to better preparedness for other potential disasters.

The need for future research

Surprisingly, the number of studies examining the experiences of homeless populations within disaster environments is quite limited. As a first topic to be addressed, future researchers should include the voices of people living on the streets; we need to better understand their lived experiences. Moreover, research should include service stakeholders from a variety of sectors such as different levels of government, housing and public health, non-government organizations, community groups, service providers, and housing/poverty activists. Our research team is currently engaged in such research in Halifax, Nova Scotia, Canada.

Case examples in the field demonstrate a rather reactive, crisis-oriented response to the pandemic; the most popular initiative seems to be the hotel/motel model. While this model is an immediate and dignified way to provide a healthy space for those without any home, it may not be financially sustainable in the long run. Even if the world returns to ‘normal’, the probability of a future pandemic is very high. Consequently, the economic cost, along with the benefits, of governments providing a permanent roof for homeless populations need to be evaluated. Supportive, social and affordable housing has long been the call by housing activists and scholars for a more sustainable and compassionate way to solve the homeless crisis. Shelters are crisis-bent ‘band-aids’ and, as such, the capacities and other infrastructural needs of shelters must be addressed. Critically important is the need for a commitment to the development and implementation of holistic creative housing policies regarding long-term, and permanent solutions to the homelessness problem. This long-lasting pandemic of COVID-19 could be a major step to rethink ways to solve homelessness.

Clearly, the impacts of COVID-19 on homeless populations are numerous. Exploring the experiences of a vulnerable and marginalized community can shed light upon ways in which our societies need to provide more comprehensive and robust support mechanisms. However, future research also will need to explore the prevalence and intensity of homelessness as we learn more about the intersectional impacts of the pandemic on economic, political, and social infrastructures across the globe. For example, what will happen to housing prices, employment availability/loss and the availability of government benefits in the coming years?

Conclusion
The COVID-19 pandemic has affected all our lives and most parts of civil society in a global manner. However, this change did not affect all parts of society equally. Further, there has been little academic attention placed on the impact of the pandemic on one of the most vulnerable and marginalized groups, PEH. This lack of research may be a result of timing constraints; the world is somewhere in between the response and recovery stages of the COVID-19 disaster. It is expected that our literature review will be one of the many studies exploring homelessness during pandemics. In order to shed light upon how we can be better prepared in the future, this systematic review shared the common threads from global research that explored the experiences of being homeless during COVID-19 and promising approaches to support this population.

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