International Journal of Person Centered Medicine 2021 Vol 11 No 1 pp 29-44

COVID-19 VACCINATION AND HOMELESSNESS: THE NEED FOR A PERSON-CENTERED INTEGRATED APPROACH

Maria van den Muijsenbergh, MD, PhD[a,b,c]
and Tessa van Loenen, PhD[b,c]

ABSTRACT

Introduction: As homeless people in general suffer from poor health and are at elevated risk for COVID-19 infections they have an indication for receiving COVID-19 vaccination. However, several barriers in accessing vaccination can be identified. There is no information on the willingness of homeless people to receive the COVID-19 vaccination, nor on the experiences with the vaccination process of homeless people and professionals involved. Therefore, this qualitative study aims to provide insight into vaccination willingness among homeless people in the Netherlands, in the barriers and facilitators in accessing vaccination, and in the experiences of professionals involved in the vaccination process.
Methods: We performed semi-structured interviews with 53 homeless persons, 16 professionals involved in health care or shelter for homeless people as well as 7 public health professionals who were involved in the vaccination process for homeless people. Interviews were thematically analyzed.
Results: Homeless people experienced a lack of understandable and consistent information, which resulted in distrust and vaccination hesitancy. Mistrust in the government was common. However, approximately half of them were vaccinated at the end of the first vaccination campaign, sometimes because not being vaccinated would restrict their possibilities to access public places. Barriers to access vaccination included the complicated process and forms and difficulties accessing the vaccination venue. Especially difficult turned out to be the bureaucratic process of acquiring the Corona virus entry pass. Identified key-elements for a successful vaccination campaign for homeless people: a strong collaboration between all stakeholders, easy to understand information by trusted professionals, the possibility of vaccination at out-reach sites like homeless shelters.

---

[a] professor of health disparities
[b] Radboud University Medical Centre, Radboud Institute for Health Sciences, Department of Primary and Community Care, Nijmegen, Netherlands.
[c] Pharos, Centre of Expertise on Health Disparities, Utrecht, Netherlands.

3116-113341_Mezzich_IJPCM 11.1_Final.indd 29 27/12/22 5:23 PM

Conclusion: Although the vaccination rate among homeless people in the Netherlands is estimated to be lower than among the general public, successful vaccination campaigns are possible if trusted people provide easy to understand information, all stakeholders work together and vaccination takes place at easy to reach locations.

Corresponding Author: Maria van den Muijsenbergh, MD, PhD, Radboud University Medical Centre, Radboud Institute for Health Sciences, Department of Primary and Community Care, Nijmegen, Netherlands; Pharos, Centre of Expertise on Health Disparities, Utrecht, Netherlands.

E-mail: m.vandenmuijsenbergh@radboudumc.nl

INTRODUCTION

Homeless people, also in the Netherlands, experience poorer health compared to the general population and suffer from unmet health needs [1–3]. They are more at risk to contract infectious diseases like COVID-19, due to crowded shelters, poor hygiene facilities, and limited possibilities to comply with the preventive measures like distancing or staying at home [4, 5]. In the Netherlands, at least 32,000 persons [6] rely on shelters for the homeless or are sleeping rough—many more rely on friends and family for a temporary roof above their heads.

In the USA, people who are homeless and diagnosed with COVID-19 are far more likely to be hospitalized and to die [7]. Although in the Netherlands we did not find such elevated risks for worse outcomes in COVID-19 disease, homeless people are being considered a high-risk group for serious COVID-19 infection, and therefore are indicated as a priority group for COVID-19 vaccination, as was the case for influenza vaccination [8].

In the Netherlands, COVID-19 vaccinations are free and accessible for all people, including those without health insurance as well as for immigrants without staying permission. Vaccination for these groups is being carried out by the municipal public health services. However, accessing vaccination is not easy for homeless people. Not only do they seldom receive the invitation letter, they often do not have a postal address either. If they do, they have to arrange an appointment online, to provide their citizen service-number (BSN) which for instance undocumented migrants do not possess, and to travel to a vaccination location outside town for which they lack the means. They often lack information on vaccination, consider vaccination a low priority, and may be reluctant to trust official healthcare organizations [9–11]. Studies on previous infection outbreaks indicated that, in comparison to the general population, people who are homeless

3116-113341_Mezzich_IJPCM 11.1_Final.indd 30 27/12/22 5:23 PM

have lower rates of vaccination [12], and in the USA the willingness of homeless people to get a COVID-19 vaccination is low [13]. Also in the Netherlands, the health authorities noticed that homeless people were difficult to reach for vaccination when only applying the strategies used for the general public [14]. In the Netherlands, in June 2022, 83% of eligible adults were vaccinated against COVID-19 [15]. There is no information on the number of homeless people who received the COVID-19 vaccination, nor on the experiences with the vaccination process of homeless people and professionals involved.

Therefore, this study aims to provide insight into vaccination willingness among homeless people in the Netherlands, in the barriers and facilitators in accessing vaccination, and in the experiences of professionals involved in the vaccination process.

METHODS

Design and Setting

For this qualitative study, we performed semi-structured interviews with homeless people, professionals working in shelters for the homeless or health care for the homeless (street doctors and nurses), and public healthcare professionals responsible for the implementation of the vaccination program for homeless people.

From mid-2020 until May 2022 we conducted the study "Corona and Homelessness" (financed by ZonMw, i.e., the Netherlands Organisation for Health Research and Development) on the prevalence of COVID-19 infection among homeless people in the Netherlands, the organization of COVID-19 preventive measures among them, and the impact of the pandemic on health and lives of homeless people. As part of this study, we performed three rounds of semi-structured interviews with homeless people and professionals working in shelters or health care for the homeless in 8 cities in the Netherlands. During the last round of interviews held between September 2021 and November 2021, we added questions related to vaccination.

In addition, between January and March 2022 we interviewed public health professionals responsible for the coordination of the COVID-19 vaccination in the homeless population.

Study Population

Respondents were recruited through purposive sampling in 6 different Dutch cities: the 3 big cities Rotterdam, Den Haag, and Utrecht as well as 3 smaller cities in the south, east, and middle of the Netherlands. The biggest Dutch city,

3116-113341_Mezzich_IJPCM 11.1_Final.indd 31 27/12/22 5:23 PM

Amsterdam, could not be included in this round of interviews due to staff shortage and other problems related to the COVID-19 infection wave at that moment.

For the recruitment of homeless people, trusted intermediaries and experts through experience approached people in homeless shelters and explained the study purpose and methods. Diversity was sought in age, sex, country of origin, and geographical location. After receiving informed consent, the homeless people were face-to-face interviewed in person by one of our seven researchers who had already performed two previous rounds of interviews. All researchers were women except for one and were trained and supervised by an experienced researcher (TvL).

Professionals working in shelters and street medicine practices were recruited through the networks of the research team. Diversity was strived for regarding age, sex, profession, and geographical location.

All 25 regional public healthcare organizations in the Netherlands were approached by letter and asked for collaboration, which yielded little response. In addition, the street doctors and nurses involved were asked to approach their local public healthcare organization. In the end, interviews took place with professionals of seven of the 25 regional organizations.

Data Collection and Analysis

The topic list for the different semi structured interviews was developed based on literature, Dutch official documents on vaccination strategy and uptake, and the personal experiences of the research team with homeless people and street medicine. The list contained questions on received information about vaccination, ideas about vaccination and vaccination willingness, experiences with vaccination in homeless people, and barriers, facilitators, and strategies to access and implement vaccination.

The face-to-face interviews with homeless people and professionals were conducted by one of the interviewers who had also performed the previous 2 interview rounds; the interviews with public healthcare professionals were conducted by telephone or zoom by a medical student.

All interviews were audio-recorded, transcribed, and processed with the software program Atlas-ti. Inductive coding was conducted by the researchers and the supervisor; at least 10% of the interviews were coded by two researchers independently and codes were compared and discussed until an agreement was reached. After inductive coding, axial coding was conducted to identify relationships among open codes. Eventually, selective coding was performed to structure codes in main themes. After data analysis, data were synthesized and summarized. Ethical approval was obtained from the Medical Ethical Committee of the Radboud university medical center (CMO Arnhem-Nijmegen, nr 2020 6428).

3116-113341_Mezzich_IJPCM 11.1_Final.indd 32 27/12/22 5:23 PM

RESULTS

Characteristics of Respondents

In total, 53 homeless persons, 10 women and 43 men, were interviewed in 6 different cities: 3 big (Rotterdam, Den Haag, Utrecht) and 3 smaller cities (Eindhoven, Nijmegen, Heerlen). Their age varied between 20 and 78 years (mean 44 years). The duration of being homeless differed from 7 weeks up to 37 years, with a mean duration of 4 years.

Thirteen respondents had suffered from a COVID-19 infection; 2 of them presumed an infection but were not tested. Nearly two-thirds of them ($N = 33$) had a positive attitude regarding the COVID-19 vaccination, and half of them ($N = 27$) had received a COVID-19 vaccination in the first vaccination campaign.

Sixteen professionals were interviewed: 8 women and 8 men, working in shelters for the homeless or street medicine practices in 7 different cities (Amsterdam, Den Haag, Eindhoven, Heerlen, Nijmegen, Rotterdam, and Utrecht).

The 7 interviewed Public Health Services were spread over the country, including the densely populated central and western urban parts as well as more agricultural parts in the east and the south.

Each region had estimated the number of homeless people in their region, based on information from homeless shelters and NGOs working with undocumented migrants; they registered all vaccinations within this group. Vaccination rates based on these estimations varied between 37% and 83%, and most were around 50%.

INFORMATION ABOUT VACCINATION

According to most respondents, much of the official COVID-19-related information was not clear or contradictory. This made it difficult for people to know what they had to do. They needed easy-to-understand information.

> *"Make things clear. Just plain information about what is going on […]. We are lucky to have google, so I google words I do not understand. But for most people who have limited proficiency of the Dutch language it really should be explained more clearly." (homeless woman, aged 36)*

Many homeless people mentioned they had wanted more information on the long-term effects of the vaccination.

> *"Yes, here just at the institution they were vaccinating like crazy. They said: 'Just do it.' But many people even did not know for what disease they were*

3116-113341_Mezzich_IJPCM 11.1_Final.indd 33 27/12/22 5:23 PM

being vaccinated, so little informed they were. There are also some who say 'I do not know why I did it' (the vaccination), they speak so little Dutch, they only heard 'Corona injection, just take it'." (homeless man, aged 50)

VACCINATION WILLINGNESS

In general, homeless people indicated that the pandemic had made them more conscious about their health and the need for hygiene and a healthy lifestyle. This often resulted in a positive attitude toward vaccination.

"I think we are more conscious of hygiene and the need for distancing. I think that this is positive that we are more aware of hygiene and of our body." (homeless woman, 31 years of age)

"During Corona, I find my health increasingly important. Many people say it is a disease, a pandemic, you have to get a vaccination; it is about your health and I started thinking more about this: whether or not it is just the flu, or it is yellow fever, or malaria for which you get vaccinated: it is still important." (homeless man, aged 38)

Part of the respondents thought that due to the pandemic the government gained more control over the population. They felt they lost their sense of control of their own life, which resulted in worse mental well-being.

The COVID-19 vaccination influenced their lives considerably: on one hand society was opening up due to the vaccination; on the other hand, access to activities and to, for instance, restaurants was only possible for people who were in possession of the QR code "coronavirus entry pass."

"Yes, that keeps you off activities. That you are obliged to show that you are tested or vaccinated. There is nowhere to go without that QR code. Yes, that restricts me in my activities as surely I am not going to get an injection in my body of which I do not know how it will affect me." (homeless woman, aged 31)

Opinions regarding vaccination differed among the homeless respondents. Some were motivated to get vaccinated as the vaccine created security. For others—mostly unvaccinated respondents—it created mistrust because they thought it was not been well tested on humans. Others thought that vaccination would not prevent infection. Overall, a substantial part of the respondents experienced social pressure especially from the government to get vaccinated.

3116-113341_Mezzich_IJPCM 11.1_Final.indd 34 27/12/22 5:23 PM

"I really did not want it (the vaccination); I had my doubts. I think, why must everybody, must, must. This is my body and I really did not like it. But I felt, that if I do not take the vaccine, I will not be able to do certain new things or enter certain places. That was my fear and it has become true from what I see on television. I do not watch the news any longer, as it makes me ill. If you are not vaccinated, you no longer count, that is my feeling." (homeless man, aged 61)

Three homeless respondents were afraid that the QR code would be used in the future for many purposes, for instance, to be allowed to enter the shelter, or to rent a house.

Their fears concerning the Coronavirus entry pass and the pressure to feel obliged to take the vaccination appeared to stem from a general feeling of mistrust in the government and other official institutions like health care and the legal system. This feeling existed in many of them, due to previous experiences of not being heard or helped. Also contradicting information on COVID-19 measures and the vaccine further fed this mistrust.

"Well, with these measures. The racing festival at Zandvoort can be visited by many people, but the pub is not allowed to open. To get a drink you need this piece of paper. We do not live in a police state yet, but we are getting there more and more. The more measures, the more you need to obey and the more fear people experience." (homeless man, 70 years of age)

"One moment they say this, the other that, so I do not think that is trustworthy." (homeless woman, aged 36)

Public health professionals also had difficulty providing information, as official guidelines on what group could be vaccinated with which vaccine changed a few times at the beginning of the pandemic.

According to the professionals, the vaccination rate was especially low among people sleeping rough and young homeless people. The causes for this, i.e., fear, distrust, and not seeing the need for vaccination, all partly resulted from a lack of knowledge. Besides COVID-19 was not a very important issue for them, compared to all their other problems.

BARRIERS TO ACCESSING AND PROVIDING VACCINATION

Public health professionals mentioned that putting together the vaccination team was a challenge. The team had to consist of one doctor, one or two experienced vaccinators, and one or two experienced ICT people. Ideally, they had prior

3116-113341_Mezzich_IJPCM 11.1_Final.indd 35 27/12/22 5:23 PM

experience with the target group, but at least they needed to have an affinity with the target group. The recruitment of the right staff was challenging.

> *"We experienced high pressure. Our national public health organisation gets the assignment to arrange vaccination for this group and they seem to think: we send an email with this instruction to all local public health organisation and wish them good luck. They seem to be panicking. All was new, there were no previous plans. So, you cannot expect all to go well the first time." (local public health vaccination coordinator)*

Just arriving with a "prikbus" (a driving vaccination facility) was not enough. The knowledge about and accessibility of the location where vaccination took place was often a problem, and also the vaccination process was unclear for many homeless people. Health professionals noticed that filling in the obligatory forms on health information before the vaccination was too difficult for most homeless people, even if the form was in their language.

> *"Do you suffer from allergies? 'Yes, I don't like bananas.' The questions are too difficult." (vaccination team member)*

And then people answered all questions with "no". Therefore, the forms had to be filled out with the help of the vaccination team. It was difficult for the public healthcare workers to get oversight of who was vaccinated and who was not, and to arrange the necessary proof of vaccination with the Coronavirus entry pass.

BARRIERS TO RECEIVING THE QR CODE AFTER VACCINATION

It appeared to be very difficult for homeless people to obtain the QR code as proof of vaccination and the Corona virus entry pass, necessary for access to public places.

> *"Such an app for entry code seems easy, but one needs to have a functioning cellphone, and one's papers in order which is not always easy for homeless people." (public health professional)*

> *"It is already such a problem for homeless people to get official papers like a Digi-D (digital code needed to access information of the government like your tax bill). I see that is a problem for many people here. So, it is even harder to*

3116-113341_Mezzich_IJPCM 11.1_Final.indd 36 27/12/22 5:23 PM

make an appointment for the vaccination." (Expert by experience working in a shelter home)

Also, the public health professionals had difficulties arranging this QRcode after the vaccination, even in the first round of vaccinations when only the Janssen vaccine was used in this population, of which only 1 injection was needed for full coverage. Many homeless people appeared to be invisible in the national database where all vaccinations were registered. Often the database contained wrong information on addresses, and undocumented migrants who don't possess the official citizen service number (BSN) could not be found anyhow. As a solution after a few months, the address of the vaccination location was used instead, but it remained very difficult. This led to a lot of frustration, for the homeless people and staff involved but also for the public health professionals.

"Every person in the Netherlands with an address can get help to receive his QRcode. But if you are homeless, you have to find a house first before you can get this code. I find this unbelievable, crazy." (public health professional)

"Now it is more difficult to enter places as I do not have such a code. I am vaccinated. I have the proof on paper. But I seem not to be able to get the QR code. I do not understand why not. I think they also said it was difficult. But I do not know why. Here came a mobile vaccination crew from the ministry (note of researcher: these teams were from the local public health authorities). They were here! One would think I should also get the QR code from them." (homeless man, aged 54)

EFFECTIVE STRATEGIES FOR IMPLEMENTATION AND ACCESSING VACCINATION

A clear regional plan with the flexibility to adapt to the local situation

Each Public Health Service (GGD) region in the Netherlands, in total 25, received a regional plan from the national public healthcare organization (GGD-GHOR) with 16 points to consider when creating a vaccination strategy. All participating public healthcare professionals (N = 7) appreciated having this format. The format was considered convenient, easy to use, and offered a good organizational structure. Although the framework was clear and all steps of the process were well defined, the plan was not complete. It was up to the regions to fill in these frameworks according to their insights, as many issues were determined by region-specific

3116-113341_Mezzich_IJPCM 11.1_Final.indd 37 27/12/22 5:23 PM

matters. These included how to approach the target group, which location would be used for vaccination, and who would provide the information. This degree of flexibility was considered positive by four coordinators, but there must be a limit to this freedom. Two persons mentioned that a centrally organized plan in times of crisis is important for follow-up.

> *"I believe in a combination. There are 25 safety regions in the Netherlands. It would be a waste to have them all reinvent the wheel." (vaccination coordinator)*

Good collaboration and communication with all key organizations are crucial

Each region had a contact person (the coordinator himself or someone who was brought in) who knew all the organizations active in care for homeless people or other vulnerable groups in the region. This ensured good cooperation with the GGD and those organizations. It was deemed important that every organization has one contact person who would take responsibility for the vaccination campaign. This ensured a short line of communication between the GGD and the relevant organization. Practical issues were more easily arranged.

> *"The social domain is huge. Everybody is meddling with everything. You have to have them on board too if you want to set up a project like this. Having a good network is a prerequisite for setting up a project like this." (vaccination coordinator)*

Easy to reach vaccination sites with known staff

Respondents were generally satisfied with the homeless vaccination strategy when the Public Health Service staff came to the shelter to vaccinate. The majority of homeless people there were well informed about the vaccination. As for some homeless respondents, who had been vaccinated outside the shelter, it had been difficult to travel to this more distant vaccination location they also suggested offering the vaccination in the shelter locations.

> *"I do think it's important for people who are homeless that at the shelter where they may have a place to sleep they can also get that vaccination. [...] as a homeless. yes, you have very little to spend or sometimes nothing at all. Then to also go and arrange public transportation or whatever is needed to get to a certain location." (homeless man, aged 43)*

In order to reach homeless people out on the streets or sleeping rough or with friends, three GGD's used other well-known locations like a church during several open walk-in vaccination day(s).

> *"The open clinic was very successful. The turnout was better than we expected." (Public health professional)*

Clear information

The information communicated changed frequently and rapidly. For example, at first, it was only allowed to use the Janssen vaccine, later-on other vaccines were permitted too. Respondents were concerned that they would lose their target group because of these changes.

> *"I noticed myself that I found it very annoying. Because the key to working with this target group is: if you say something, stick to it. You do what you say and what you promise. Now I have to turn it around. Personally, I find that very difficult." (street doctor)*

A familiar face builds trust and positively affects the willingness to be vaccinated

The use of street doctors, street nurses, and other people who were familiar with the target group was considered to be a very stimulating factor. A familiar face gives confidence and as such influences the homeless population positively. These persons were often also known to the staff of the shelter organizations which ensured better cooperation and greater commitment.

> *"There is often distrust, and when there is someone they know, you see that they calm down a bit." (public health professional)*

Care providers had good experiences in talking to homeless people to motivate them and allay their fears, especially during one-on-one conversations. This was considered to be labor-intensive, but it was most informative and any concerns could be addressed or alleviated.

Often people with an affinity for the target group and who were familiar faces within the shelter were used.

> *"Our nurses have persuaded quite a few people to do it anyway with verbal explanations. I think that actually works best to engage with people and*

3116-113341_Mezzich_IJPCM 11.1_Final.indd 39 27/12/22 5:23 PM

discuss their thoughts about the vaccination. That and possibly dispelling conspiracy theories and fears by talking about it." (street doctor)

The Janssen vaccine was a shot and done

There was uncertainty for a long time about which vaccine would be used for the homeless group. All had doubts about how this group should be vaccinated for a second time. This dilemma disappeared when it was decided nationally that the one-shot-only vaccine had to be used. In general, GGD coordinators were very much in favor of one shot. There were also opposing opinions, that everyone deserves a choice. Especially some homeless respondents thought they could decide for themselves whether they wanted two shots on different days or one.

"The whole campaign was focused on Janssen, but everyone else got Pfizer. It didn't feel right to force Janssen on them and not give them a choice. In the end, it was no discussion at all, because most of them wanted Janssen. A small group went to the regular vaccination site to be vaccinated with Pfizer." (street nurse involved in vaccinations)

DISCUSSION

Main Findings

Information on vaccination was often contradictory and unclear, causing worries among homeless people and negatively affecting their vaccination willingness. Regular vaccination sites were difficult to access, and the vaccination process was too complicated for many homeless people. Vaccination strategies specifically targeted to this population were however successful and resulted in an estimated 50% of homeless people being vaccinated. The most important success factors are one-to-one information by trusted professionals, a collaboration of Public Health Service with organizations that know the population, vaccination at shelters for homeless people and other well-known, easy to reach and trusted places like churches; support for filling out medical forms and for acquiring vaccination proof and the Coronavirus entry pass. Although the use of the one-shot-only vaccine was very practical, homeless people should be given the same choice for a vaccine as the general public.

Comparison with Previous Studies

With an estimated half of the homeless population vaccinated, the vaccination rate in this population seems to be lower than that of the general adult population in the

3116-113341_Mezzich_IJPCM 11.1_Final.indd 40 27/12/22 5:23 PM

Netherlands (83%) [15]. This is in line with studies on previous infection outbreaks [12]. As in previous studies in France [16] as well as in the USA [13], COVID-19 vaccination hesitancy was quite prevalent among our homeless population, still, the majority was willing to get vaccinated [17]. The association between vaccination hesitance and low health literacy [16] or low educational level [13] was not studied by us but would be in line with our finding that hesitancy and mistrust often were associated with a lack of understandable information. Although many highly educated people were satisfied with the official Dutch information on COVID-19 [18], also other studies documented that people with limited health literacy complained that this information was too difficult to understand [19–21]. The need for clear, consistent, and understandable information, tailored to the needs of the population, is also emphasized in other studies [17].

We agree with Longchamps et al [16] that dissemination of information on vaccine risks and benefits needs to be adapted to the population at hand. We share Rogers [13] recommendation to adapt an intersectional, person-centered approach by public health authorities planning vaccination campaigns in shelters.

Our study identified the elements for a successful vaccination strategy among homeless people. In line with McCosker's review of strategies [17] all respondents agreed on the importance of the use of "non-traditional" sites—where staff travel to people who are homeless, in areas convenient to them, like shelters. Another key recommendation in line with our findings is to use nurses or other professionals who are acquainted with the population, or receive training to work effectively with people who are homeless to avoid stereotyped views and improve trust [17]. Besides, using accelerated vaccination schedules for multi-dose vaccines is recommended as well as vaccinating a person at their first appointment, regardless of if their vaccination history or serological status are known, if clinically safe. Of course, all these strategies can only be effective as long as, as is the case in the Netherlands, vaccines are free for people who are homeless—and where this is not the case, cost is a barrier to uptake [17]. In line with our study, collaboration between stakeholders is identified as vital to the success of vaccination strategies [17]. Collaboration should go beyond service providers, however: research shows that people who are homeless themselves value the opportunity to become involved in activities related to vaccination [17].

Limitations

The strength of our study was that we were able to get the views of three different groups involved, among whom a substantial group of homeless people with different backgrounds. The estimation of the number of homeless people who were vaccinated is very rough and cannot be verified as the total number of eligible homeless people, including undocumented persons, is unknown.

Recommendations

We recommend national Public Health Organizations and the Ministry of Health to provide easy to understand information on COVID-19 and vaccination in different languages, and simplify the process of acquiring vaccination proof. We recommend local Public Health Services to keep warm relations with local organizations who know the population, and to keep detailed vaccination plans up to date for future use. We recommend outreach vaccination strategies in which local professionals and volunteers are involved who are trusted by the homeless population.

CONCLUSION

As in general, health care has to be person-centered in order to be effective, also in the case of COVID-19 vaccination among homeless people, a person-centered, integrated approach is needed with strategies that are responsive to the context in which they operate, and to the particular homeless population they serve.

ACKNOWLEDGMENTS

We want to thank the following persons who have contributed to this study as an interviewer or in the analysis of results: Rabia Çinar, David van Eijs, Mieke de Klein, Maria Kloosterman, Jeyna Sow, Emma de Wijk, Liesbeth Hunik, and Laura Guldemeester.

REFERENCES

1. Nusselder WJ, Slockers MT, Krol L, Slockers CT, Looman CW, van Beeck EF. Mortality and life expectancy in homeless men and women in Rotterdam: 2001–2010. *PLoS ONE* 2013;8(10):e73979.
2. Aldridge RW, Story A, Hwang SW, Nordentoft M, Luchenski SA, Hartwell G, et al. Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: A systematic review and meta-analysis. *Lancet (London, England)* 2018;391(10117):241–250.
3. Verheul M, Van Laere I, Van Genugten W, Van den Muijsenbergh M. Self-perceived health problems and unmet care needs of homeless people in the Netherlands: The need for pro-active integrated care. *Journal of Social Intervention: Theory and Practice* 2020;1(29):1–20.
4. Kuehn BM. Homeless shelters face high COVID-19 risks. *JAMA* 2020; 323(22):2240.

3116-113341_Mezzich_IJPCM 11.1_Final.indd 42 27/12/22 5:23 PM

5. Wood LJ, Davies AP, Khan Z. COVID-19 precautions: Easier said than done when patients are homeless. *The Medical Journal of Australia* 2020;212(8): 384-.e1.
6. Statistics Netherlands (CBS): https://www.cbs.nl/nl-nl/cijfers/detail/84990NED?q=aantal%20daklozen [accessed June 11, 2022].
7. Richard L, Booth R, Rayner J, Clemens K, ForchukC, Shariff S. Testing, infection and complication rates of COVID-19 among people with a recent history of homelessness in Ontario, Canada: A retrospective cohort study. *Canadian Medical Association Journal Open* 2021;11(9):1–9. https://doi.org/10.9778/ cmajo.20200287
8. Buccieri K, Gaetz S. Ethical vaccine distribution planning for pandemic influenza: Prioritizing homeless and hard-to-reach populations. *Public Health Ethics* 2013;6(2):185–196. https://doi.org/10.1093/phe/pht005
9. Doroshenko A, Hatchette J, Halperin SA, MacDonald NE, Graham JE. Challenges to immunization: The experiences of homeless youth. *BMC Public Health* 2012;12:338. https://doi.org/10.1186/471-2458-12-338
10. Omerov P, Craftman A, Mattsson E, Klarare A. Homeless persons' experiences of health and social care: A systematic integrative review. *Health and Social Care in the Community* 2019;28(1):1–11.
11. Shariff SZ, Richard L, Hwang SW, Kwong JC, Forchuk C, Dosani N, Booth R. COVID-19 vaccine coverage and factors associated with vaccine uptake among 23 247 adults with a recent history of homelessness in Ontario, Canada: A population-based cohort study. *The Lancet Public Health* 2022;7.4: e366–e377.
12. Wood SP. Vaccination programs among urban homeless populations: A literature review. *Journal of Vaccines and Vaccination* 2012:104172/2157-75601000156.
13. Rogers JH, Cox SN, Hughes JP, et al. Trends in COVID-19 vaccination intent and factors associated with deliberation and reluctance among adult homeless shelter residents and staff, 1 November 2020 to 28 February 2021—King County, Washington. *Vaccine* 2022;40(1):122–132.
14. National Institute for Public Health and the Environment. *Ministry of Health, Welfare and Sport* (RIVM). Nota aanpak vaccinatie bij moeilijk bereikbare groepen 10-02-2021. (paper on vaccination among hard-to-reach groups)—on June 11th 2022 no longer online available.
15. Dutch Government website "corona dashboard." https://coronadashboard.rijksoverheid.nl/ [accessed June 11, 2022].
16. Longchamps C, Ducarroz S, Crouzet L, Vignier N, Pourtau L, Allaire C, Colleville AC, El Aarbaoui T, Melchior M, ECHO study group. COVID-19 vaccine hesitancy among persons living in homeless shelters in France. *Vaccine* 2021;39(25):3315–3318. doi:10.1016/j.vaccine.2021.05.012

3116-113341_Mezzich_IJPCM 11.1_Final.indd 43 27/12/22 5:23 PM

17. McCosker LK, El-Heneidy A, Seale H, Ware RS, Downes MJ. Strategies to improve vaccination rates in people who are homeless: A systematic review. *Vaccine* 2022;40(23):3109–3126. doi:10.1016/j.vaccine.2022.04.022
18. Meier K, Glatz T, Guijt MC, et al. Public perspectives on protective measures during the COVID-19 pandemic in the Netherlands, Germany and Italy: A survey study. *PLoS ONE* 2020;15(8):e0236917. https://doi.org/10.1371/journal.pone.0236917
19. Van den Muijsenbergh M, Torensma M, Skowronek N, de Lange T, Stronks K. Undocumented domestic workers and coronavirus disease 2019: A qualitative study on the impact of preventive measures. Frontiers in Communication 2022;7:736148. doi:10.3389/fcomm.2022.736148
20. Van den Muijsenbergh ME, Gingnagel D, Duijnhoven T, Dees MK. Ik weet niet wat lock-down betekent. Moeite met lezen en schrijven in tijden van corona. [I do not know what lock-down means; Difficulty with reading and writing in times of Corona. in Dutch]. *Huisarts Wet* 2020;63:46–48. doi:10.1007/s12445-020-0783-6
21. Van Loenen T, Denktaş S, Merkelbach I, van den Muijsenbergh M. Corona gedragsmaatregelen. Kennis, naleving en gevolgen van de Corona gedragsmaatregelen voor sociaal kwetsbare groepen en mensen met een migratieachtergrond. Rapport van een studie in opdracht van Rijks Instituut voor Volksgezondheid en Milieu RIVM. [Knowledge, compliance and impact of Corona behavioral measures for socially vulnerable groups and people with migration background. Report of a study assigned by the Dutch National Institute for Public Health and the Environment RIVM]. Pharos/Radboudumc/Erasmus University Rotterdam, 2020.

3116-113341_Mezzich_IJPCM 11.1_Final.indd 44 27/12/22 5:23 PM