Author's response to reviews

Title: A cross-sectional observational study of unmet health needs among homeless and vulnerably housed adults in three Canadian cities

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Author's response to reviews: see over
Reviewer: Bernadette Pauly

Major Essential Revisions:
1. The authors mention in the beginning their interest in finding out if there are barriers to care in a universal health care system. However this is not reflected in the research question and I think this could be drawn out more explicitly in the discussion/conclusions that barrier to care still exist. There is a body of literature on barriers other than having a source of care and universal access that should at least be referenced in the discussion. For example, in one of the authors own work, they highlight the role of stigma and discrimination (e.g. Wen, C. K., Hudak, P. L., & Hwang, S. W. (2007). Homeless peoples perceptions of welcomeness and unwelcomeness in healthcare encounters. Journal of General Internal Medicine(22), 1011-1017. doi: 10.1007/s11606-007-0183-7). This is further complicated by various forms of stigma such as drug use. Also, there is several articles which refer to the problem of competing interests in accessing health care. For example, Gelberg, L., Gallagher, T., Andersen, R., & Koegel, P. (1997). Competing priorities as a barrier to medical care among homeless adults in Los Angeles. American Journal of Public Health, 87(2), 217
   - The following paragraph was added to the Discussion to address this: “Taken together, our findings suggest that, despite the universal provision of health insurance, barriers still exist to accessing health services, particularly among those individuals who have extremely poor health status and are most in need of health care. These barriers may be related to non-financial factors such as lack of knowledge about where to obtain care, lack of transportation, lack of child care, long waiting times, perceived discrimination in health care settings, and competing priorities for subsistence needs [13, 15, 36, 37]. Addressing the barriers to accessing health care in Canada will also require the creation of policies that acknowledge the social determinants of health, in particular the provision of stable housing [36].” This is supported by the addition of several new references.

2. Clearly, data was collected in Canada and there is a brief description of the universal health care system. Important to acknowledge that Canada has been routinely criticized for not integrating more fully the SDOH. See articles by Dennis Raphael and others. For example, Bryant, T., Raphael, D., Schrecker, T., & Labonte, R. (2011). Canada: A land of missed opportunity for addressing the social determinants of health. Health Policy, 101(1), 44-58. doi: 10.1016/j.healthpol.2010.08.022
   - The authors agree that some have criticized Canada for neglecting the importance of the social determinants of health in its health policy. However, this issue is the not the focus of this paper. We did not review or analyze government programs and policies in place to address social determinates of health and we do not feel our results provide a reasonable basis to include criticism of Canadian health policy.
   - The last sentence of the Discussion makes note of this: “Addressing potential barriers to accessing health care in Canada will also require the creation of policies that acknowledge the social determinants of health, in particular the provision of stable housing [36].”

3. Bottom of page 6 where it says that homeless individuals were recruited from shelters and meal programs. I presume this means homeless and at risk individuals? The Canadian definition of homelessness clearly lays this out and I think it is germane to your discussion/conclusions as
to whether or not you are talking about two different groups (homeless and vulnerably housed).
The way that these are defined is key to this. Given the definitions, were there really two groups:
those who are currently and predominantly homeless and those who are vulnerably housed or at
risk of homelessness? This is critical to establish first in order to support the conclusions of that
people transition in and out of housing as well as the fact that people who are homeless and
those who are vulnerably housed experience some of the same challenges in relation to health
and access to health care.

- The authors acknowledge that the two groups are in fact highly related and are in fact no
different in terms of their unmet needs for care; therefore, for the purposes of analysis,
the homeless and vulnerably housed samples were combined into a single analytic group.
This is noted in the conclusion section as a major result of this study. We have rephrased
this to reinforce this point.
- **In the Methods**, the following sentence was added to clarify that originally two separate
groups were recruited: “Participants were recruited as part of two discrete samples:
homeless adults and vulnerably housed adults.”
- **In the Discussion**: “As with the bivariate models, being vulnerably housed as opposed to
homeless at recruitment was not associated with having unmet needs for care in the
adjusted analyses; therefore, the two samples were combined into a single analytic
group.”
- **In the Conclusions**: “This study identified no differences in the likelihood of unmet
health care needs between homeless and vulnerably housed adults, highlighting that both
populations face significant challenges in accessing health care”.

4. The next sentence on the bottom of page six, says that individuals who did not use shelter were
recruited at meal programs. I think I know why but this needs to be explained a bit. Was it to find
people that were currently homeless or people who were chronically homeless? The initial part
of the paper sets up the reader to believe that homeless and vulnerably housed are two groups
that are going to be compared. This is confusing as in the end everyone is put into one group. It
needs to be made clear from the beginning based on the definitions of homeless or vulnerably
housed participants whether there are one group or two. For example, the definition of
homelessness is that someone was homeless for the last seven days. In this study it would be hard
to establish that the homeless group and the vulnerably housed group are not one and the same
as someone may be homeless for the first time if it is homeless for seven days. I think that
work on trajectories and typologies of homelessness would really help here and the importance
of determining whether there is really one group or two. See for example, McAllister, W., Kuang,
approaches to conceptualizing homelessness. Social Service Review, 84(2), 225-255 and Nooe

- The revisions highlighting the recruitment process in response to Reviewer number 2
have also clarified the use of meal program recruitment for the two groups. This is also
clarified again under the revision for Major Essential Revisions, comment 3 above.
- A pilot study done by members of this group which demonstrated that there is a subset of
homeless individuals who use meal programs but not shelters is now cited.
- Full rational for the recruitment strategy in this study has been previously reported and is
cited here: ‘Hwang SW, Aubry T, Palepu A, Farrell S, Nisenbaum R, Hubley AM,
Klodawsky F, Gogosis E, Hay E, Pidlubny S, et al: The health and housing in

5. The definition of the vulnerably housed group is much better because it highlights that someone needed to be housed with 2 or more moves in the past year. Clearly, this is a more predominantly housed group. So, if the homeless group was assessed as being predominantly homeless such as four or more episodes of homeless in the past year that would make it much clearer that these are two different groups being compared. However, in the definition of vulnerably housed there is a need to incorporate the type of housing that is of focus here. It seems from the description of the low quality housing given by the authors on top of page 6 under setting that the definition should include hostels, rooming houses and SRO’s to be specific that vulnerably housed in this context is referring to a specific type of housing that is often deficient on one or more dimensions of core housing need (as defined by CMHC). While this type of housing is often affordable, it may not meet public health and safety standards and may be overcrowded or unsuitable in other ways. This needs to be clarified. Many people (e.g. students, single young professionals) live in a room in someone’s house but I don’t think this is the group you are referring to.

- The introduction notes that “vulnerably housed refers to persons living in poor-quality, temporary or precarious housing such as single room occupancy (SRO) hotels or rooming houses [5]”, while we later define vulnerably housed participants as having been homeless or having experiences 2 or more moves over the previous 12 months.
- The second paragraph of the discussion section was rephrased to better reflect this as wells: “Our findings highlight the importance of ensuring access to stable, secure, not overcrowded, affordable housing with appropriate supports to both homeless and vulnerably housed populations”

6. On page 10 the homeless group is referred to as the reference group. This is problematic in that based on the definitions used it is not clear that the homeless group is a reference group. In order to support conclusions that they are the same in terms of unmet health care needs it is critical to clarify the definition of homelessness being used to establish if there are differences on their housing trajectories and unmet health care needs. On page 9 they are treated as one group when the authors report that the average lifetime duration of homelessness was 5.1 years. So, how was the homeless group established as a reference group? AS outlined above, did they have a different trajectory/history of homelessness?

- Revisions based on the recommendations above (particularly major essential revision 3 by this reviewer) now clarify that the two recruitment samples were combined into a single analytic sample as there were no statistically significant differences in their unmet needs for health care. This further highlights the dynamic nature of these two intersecting groups.
7. On page 11, it is stated that vulnerably housed was not associated with lower likelihood of unmet needs. Since it is not clear that there are two distinct groups (homeless and vulnerably housed) this conclusion is not supported by the analysis. I think the authors are quite right when they say that homeless and vulnerably housed populations are intersecting and dynamic populations. However, more attention is needed to establishing similarities or differences of the two groups in the way that they were defined in the sample to support this conclusion. My concern is that the homeless group could include those with a first episode of homelessness that are in fact no different than a vulnerably housed population. Thus, this conclusion arises from the way the sample was defined. It is really important, I think, to establish whether or not there really are two different groups based on housing history in the data to determine that there are no differences in unmet needs for health and then determine if this kind of statement can be supported. Again the statements on the bottom of page 13 suggest that the two groups were different on their housing/homelessness histories but this has not been established.

- The sampling strategy and reasoning of the vulnerably housed and homeless populations has been clarified as noted in response to other revisions to explain that the two recruited groups were analyzed together as there were no significant differences between their ability to access to care. The authors believe that this is now clear to the reader. Please see responses to major essential revisions 3 and 6.

Minor Essential Revisions:

1. In the literature review/background, has there been any studies of barriers to accessing health care among vulnerably housed persons previously? This study contributes significantly to that knowledge base but would be good to know if there had been any previous investigation. Adding a statement to this effect would be helpful.

- Vulnerably housed groups are overall underrepresented in the literature, highlighting the need for this study and other future studies like it.
- The background section notes that vulnerably housed individuals are more likely to visit emergency rooms, which can be used as an indicator or unmet needs for care, particularly in primary care. Reference 17 (Kushel et al) notes that housing instability and food insecurity may be considered as “risk factors for poor access to care and high use of acute-care services. This is reflected in the introduction.

2. A sentence or two explaining the two stage method of recruitment would be very helpful.

- The sentence noting the use of the two stage method was updated to provide more clarity: The two-stage sampling method, where recruitment locations were first sampled and then participants were sampled within the individual locations was adapted from Ardilil and Le Blanc (2001) and was further validated in Marpsat and Razafindratsima (2010) [25, 26].
Reviewer: Anton Kunst

Major compulsory revisions
1. The detailed results for mental health, presented in table 3, are presented only for a bivariate regression model. According the last row of table 2, the results for mental health could dramatically change after adjustment for other factors in a multivariate model. I therefore suggest including in table 3 the results of a multivariate analysis.

- The analysis presented in Table 3 was meant to be an exploratory analysis. This has been clarified in the Methods and Results sections relevant to Table 3.
- These results are not central to our study and the number of participants with a given diagnosis is small. We did not feel it would be appropriate to include these specific diagnoses in our multivariate model. When included, these results do not alter the significance of other variables in the model (results were not discussed in the study).
- The authors acknowledge that further studies and analysis are required to study the role of mental health in the likelihood of having unmet needs for healthcare. This has been noted in the limitations section: “Further studies and analysis is required to effectively assess the role of mental health and specific mental health disorders in unmet needs for health care.”

Minor essential revisions
2. At page 6-7, the recruitment of the participants may need to be described in more detail. As some homeless people and vulnerably housed people were recruited from meal programs, I wonder whether they could be clearly distinguished at these places. Furthermore, it seems that, by recruiting some of the vulnerably housed people at community health centres, this might perhaps have overrepresented those whose health care needs are met. Related to this, the authors may discuss in more detail the potential for bias noted at page 13 (last rows).

- Participants from both groups were also recruited at meal programs via an interview process described in the Methods. Participants were classified into homeless vs. vulnerably housed groups based on the definition noted in the Methods.
- A sentence was added to page 7 to clarify recruitment: “Although recruitment of both homeless and vulnerably housed participants took place in meal programs, participants were classified into the two groups based on the above definitions.”
- Recognition of the potential bias of health program recruitment was noted in the limitations section of the Discussion: “Recruitment of some vulnerably housed participants from locations that provide health services (e.g., CHCs) may introduce some bias such that vulnerably housed individuals who are better able to access care may be over-represented in our sample.”
- The following sentence was moved to the Participants section: “Detailed sampling and recruitment methods used for this study have been published previously and are briefly described here.”

3. Chronic conditions to be reported by respondents had to last six months or more, and had to be diagnosed by a health professional (page 8, row 3-4). The latter criteria may lead to underreporting of chronic conditions by those with unmet health care needs. Could this have biased the results presented in table 2?

• This is acknowledged as a limitation of the study as participants who may suffer from issues accessing health care are likely to have undiagnosed chronic health conditions. The following sentence was added to the limitation section to address this issue: “Self-reported chronic health conditions were required to be diagnosed by a health professional, which may result in an under-reporting of chronic health conditions in participants who were unable to access care.”

• However, despite this potential bias towards the null hypothesis, we detected a significant association where participants with more self reported chronic conditions had a higher odds of reporting unmet needs for health care.

4. At page12, row 13-15, the results for ‘provincial health insurance number’ are not correctly interpreted. The authors suggest no relationship with unmet health care needs. However, the Odds Ratios in table 2 of 0.68 suggest an about 30 percent lower prevalence of unmet needs among those with a provincial health insurance number. The lack of statistical significance could be due to lack of power. Thus, the authors should be aware of drawing a ‘false negative’ conclusion.

• Text was added/ altered to reflect this: “Having a provincial health insurance number is essential to accessing most medically necessary services in Canada. Although there was a tendency for participants without a provincial health insurance number to report unmet needs for care, the trend was not statistically significant. The majority (86.9%) of participants in our study reported having a provincial health insurance number, either in their possession or on record at a health care site (e.g., doctor’s office, hospital). It is also possible that participants may be accessing health care through low-barrier sites such as shelter-based clinics or community health centers, which typically do not require clients to present proof of health insurance.”

• Nonetheless, we feel that n=1181 provides sufficient power to detect associations here and we feel that it is unlikely a type II error was made.

5. At page 13, row 12, it is unclear which causal relationships are meant under the ‘possible causative association’. The possible relationships could be discussed in a bit more detail.

• The sentence was deleted to eliminate confusion. The final sentence of the limitation section notes that lack of ability to identify longitudinal relationships within this study and acknowledges the need for further research.
6. At page 12, last rows, some results are repeated without further discussion. Such sentences may be deleted.
   - Sentences were deleted and further discussion was added to the role of a primary care provider in accessing health care resources.

7. Related to this, the heading “multivariate analysis” at page 12 might be omitted.
   - Heading was deleted.

8. In the Discussion of table 2, the authors may point to the consistent and large differences (although not statistically significant) in unmet health care needs according to age. Furthermore, they may note that –surprisingly- the relationship with educational level is nonlinear in the multivariate analysis
   - Due to the large sample size recruited for this study, we did not comment on relationships that are not statistically significant to avoid type I errors.