PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Stigma, displacement stressors, and psychiatric morbidity among displaced Syrian men who have sex with men (MSM) and transgender women: A cross-sectional study in Lebanon
AUTHORS	Clark, Kirsty; Pachankis, John; Khoshnood, Kaveh; Branstrom, R.; Seal, David; Khoury, Danielle; Fouad, F; Barbour, Russell; Heimer, Robert

VERSION 1 – REVIEW

REVIEWER	Hubach, Randy Oklahoma State University, Rural Health
REVIEW RETURNED	31-Dec-2020

GENERAL COMMENTS	The authors present on an investigation of displaced Syrian MSM and transgender women residing in Lebanon to assess stigma, stressors, and psychiatric morbidity. Given the dual minority role of these participants and increased risk for negative health outcomes, the findings would be of interest to agencies and practitioners serving sexual and gender minority communities--specifically those who have been displaced. Overall the methodology is well reported and appears well executed. Pg. 6, Line 8: It would be beneficial to include a brief description on the legality of same-sex sexual acts within Lebanon and changes that may have occurred in the recent era. Similarly, any statues or court rulings related to gender identity and expression.

REVIEWER	Karamouzian, Mohammad University of British Columbia, Medicine
REVIEW RETURNED	14-Jan-2021

GENERAL COMMENTS	Thank you for the opportunity of reviewing this paper. I'd like to congratulate the authors on conducting this study. Data on people who are marginalized in MENA does not come by easily. I can imagine the difficulties you have faced in completing the study. I only have a few minor comments that might be of interest. INTRODUCTION 1. The Introduction reads well and is informative. One particular citation that might be of interest to bring up here is the recent Cochrane review entitled: An overview of systematic reviews on mental health promotion, prevention,

	and treatment of common mental disorders for refugees, asylum seekers, and internally displaced persons, available here: https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD013458.pub2/full METHODS 1. Could you please provide more info about the five local non-governmental organizations (NGOs) serving LGBTQ people? Where are they located? Beirut? Mainly in Christian areas? 2. Could you please provide some context about how and what services are provided to LGBTQ? 3. Was completing the mental health assessments part of the study or an additional step? 4. You mention "Neither patients nor the public was included in the design, conduct, reporting or dissemination plans of the research". What was the rationale? What about stakeholder involvement and community-oriented research? 5. Was any of the participants homeless or experienced episodes of recent homelessness? Was the history of encounters with law enforcement assessed? 6. Adding further info about handling missing data might be of interest. 7. How was the RDS nature of the study considered during the data analysis? Did you ignore this effect and treat the sample as a typical convenience sample? 8. More details about the RDS design and weighting approaches would be helpful (e.g., Differential social network sizes, Differential recruitment, etc). RESULTS 1. Assuming a poverty line of `420 USD/monthly in Lebanon, it seems that most participants had higher socio-economic backgrounds. How would that impact your findings? 2. Please provide more information about the RDS network structure, waves, etc. Maybe add a graph? DISCUSSION 1. This reads well. When talking about potential interventions, you could also discuss some of the findings of the Cochrane review I mentioned above.

REVIEWER	Guttmacher, Sally New York University
REVIEW RETURNED	28-Mar-2021

GENERAL COMMENTS	This is an interesting & well researched & written paper. It seems to me that all bases were covered. The results are not surprising, although I am curious why internalized Syrian stigma was not associated with depression.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1 Comments:
The authors present on an investigation of displaced Syrian MSM and transgender women residing in Lebanon to assess stigma, stressors, and psychiatric morbidity. Given the dual minority role of these participants and increased risk for negative health outcomes, the findings would be of interest to agencies and practitioners serving sexual and gender minority communities--specifically those who have been displaced. Overall the methodology is well reported and appears well executed.
We are grateful to the reviewer for their positive feedback on our manuscript.
1. Pg. 6, Line 8: It would be beneficial to include a brief description on the legality of same-sex sexual acts within Lebanon and changes that may have occurred in the recent era. Similarly, any statues or court rulings related to gender identity and expression.
We now include the following sentence in our introduction to contextualize the legality of same-sex sexual behavior and gender identity and expression in Lebanon: "The Lebanese penal code has been used to criminalize same-sex sexual behavior through Article 534 which condemns "sexual intercourse against nature" and gender expression and identity through Article 521 which prohibits men from "masquerading" as women. In 2018, a district appeals court in Lebanon ruled that consensual sex between people of the same sex is not unlawful; Article 534, however, has not been repealed."

Reviewer 2 Comments:

Thank you for the opportunity of reviewing this paper. I'd like to congratulate the authors on conducting this study. Data on people who are marginalized in MENA does not come by easily. I can imagine the difficulties you have faced in completing the study. I only have a few minor comments that might be of interest.
We thank the reviewer for their thoughtful consideration of our work and their helpful feedback which we believe has strengthened our manuscript.

1. The Introduction reads well and is informative. One particular citation that might be of interest to bring up here is the recent Cochrane review entitled: An overview of systematic reviews on mental health promotion, prevention, and treatment of common mental disorders for refugees, asylum seekers, and internally displaced persons, available here:
https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.cochranelibrary.com%2Fcdsr%2Fdoi%2F10.1002%2F14651858.CD013458.pub2%2Ffull&data=04%7C01%7Ckirsty.clark%40yale.edu%7Cbcfa646fc6a14171772e08d8f3981877%7Cdd8cbebb21394df8b4114e3e87abeb5c%7C0%7C0%7C637527181861877859%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=cUvBUGvDFx3YihMpbeDR%2BHNKCcogBycfm%2Bn8T7r%2B638%3D&reserved=0
We thank the reviewer for bringing our attention to this relevant Cochrane review. We now highlight some of the key findings of this review in our Discussion section (as requested in a later comment) as the review's findings help to support some of our proposed intervention implications: "A recent Cochrane review of mental health promotion, prevention, and treatment for displaced people including refugees and asylum seekers found that existing interventions focus primarily on PTSD and trauma-related symptoms rather than anxiety, depression or co-morbid mental health problems;

few assess cultural appropriateness or acceptability of mental health interventions for displaced populations[27]. For displaced Syrian MSM and transgender women, mental health interventions should be attuned to the unique intersections of sexual and/or gender minority and displacement status that include coping with stigma and trauma while increasing personal coping in the face of unchangeable stressors (e.g., stigmatizing societal attitudes) and uncertainty (e.g., regarding legal status)…"

METHODS

2. Could you please provide more info about the five local non-governmental organizations (NGOs) serving LGBTQ people? Where are they located? Beirut? Mainly in Christian areas?

We have added the following information to the Method section regarding the five NGOs: "Participants were recruited utilizing respondent-driven sampling[14] by one of five local non-governmental organizations (NGOs) that offer psychosocial health services, HIV/STI counseling and testing, basic needs (e.g., food banks), and legal advocacy for lesbian, gay, bisexual, transgender, and queer (LGBTQ) populations. These five NGOs represent the sites providing the most LGBTQ-related services in Lebanon; the NGOs are secular and based in Beirut, but have partnerships across Lebanon including within refugee camps, allowing for geographically diverse recruitment of MSM and transgender women."

3. Could you please provide some context about how and what services are provided to LGBTQ?

Please see our response to the previous comment where we have added additional context to the Method section regarding the five recruitment partner NGOs.

4. Was completing the mental health assessments part of the study or an additional step?

Completing mental health assessments were part of the study. As we outline in our Method section, participants completed a: "biobehavioral survey of socio-demographics, mental health, stigma experiences, and sexually transmitted infections (STI) focusing on HIV-risk and protective behaviors."

5. You mention "Neither patients nor the public was included in the design, conduct, reporting or dissemination plans of the research". What was the rationale? What about stakeholder involvement and community-oriented research?

We have removed this sentence from our manuscript and we now clarify that we did, in fact, involve LGBTQ stakeholders and community members in the design and conduct of our research. We have updated our Patient and Public Involvement Statement to state: "Stakeholders from local LGBTQ NGOs in greater Beirut, including service providers and MSM and transgender community members, were involved in study development including finalizing study measures and RDS seed participant recruitment."

6. Was any of the participants homeless or experienced episodes of recent homelessness? Was the history of encounters with law enforcement assessed?

Unfortunately, in this study we did not assess homelessness or history of encounters with law enforcement.

7. Adding further info about handling missing data might be of interest.

We now expand our discussion of handling of missing data and direct readers to Table 1 where we include all individual variable sample sizes (which also highlights the low proportion of missing data in this sample): "There were generally very little missing covariate data (see Table 1 for all individual variable sample sizes); nonetheless, missing data in regression models were handled via multiple imputation procedures with fully conditional specification, pooling results from five multiply imputed datasets[22]."

8. How was the RDS nature of the study considered during the data analysis? Did you

ignore this effect and treat the sample as a typical convenience sample?
We treated the sample as a non-probability sample and the RDS nature of the sampling was not considered during data analysis. The RDS approach is highlighted as a strength of this study given that this sampling approach allowed us to recruit hard-to-reach populations of displaced Syrian MSM and transgender women.
9. More details about the RDS design and weighting approaches would be helpful (e.g., Differential social network sizes, Differential recruitment, etc).
The RDS design and network characteristics of this sample will be presented in a forthcoming manuscript that reports HIV/STI data. Participants' social and sexual network structures are especially relevant to HIV/STIs given known associations between network characteristics and infectious disease transmission risk. To avoid duplication, our presentation of results and participants' network characteristics were not a focus of the current investigation and we have chosen not to present RDS network characteristics in the current study. Instead, we highlight the RDS approach as a recruitment tool whose relative strength is the potential to recruit hard-to-reach populations of displaced Syrian MSM and transgender women.
RESULTS
10. Assuming a poverty line of `420 USD/monthly in Lebanon, it seems that most participants had higher socio-economic backgrounds. How would that impact your findings?
We thank this reviewer for raising this important point regarding participants' socio-economic backgrounds. As demonstrated in our study, there were strong income disparities between Lebanese and Syrian participants. We have now added the following sentence to our Results section to more clearly highlight this income disparity: "Notably, nearly two-thirds of Syrian participants reported a monthly income of $0-$500 USD compared to approximately one-third of Lebanese participants." In our bivariate and multivariable models, we also demonstrated a strong and consistent association between higher income and lower psychiatric morbidity across all mental health outcomes. Given the reviewer's observation that many participants in our sample were living above the Lebanese poverty line – especially the Lebanese participants – we can surmise that there may be even greater psychiatric morbidity present among more socio-economically marginalized MSM and transgender women.
11. Please provide more information about the RDS network structure, waves, etc. Maybe add a graph?
For the reasons outlined in response to previous comment #9, participants' network characteristics were not a focus of the current investigation; therefore, we do not present the RDS network structure in the current study. Since we are considering the sample as a non-probability sample, the network structure is not central to interpreting the findings presented in this manuscript.
DISCUSSION
12. This reads well. When talking about potential interventions, you could also discuss some of the findings of the Cochrane review I mentioned above.
As mentioned in response to an earlier comment, we now cite this review in the Discussion section and explain some of the relevant findings in the context of our results: "A recent Cochrane review of mental health promotion, prevention, and treatment for displaced people including refugees and asylum seekers found that existing interventions focus primarily on PTSD and trauma-related symptoms rather than anxiety, depression or co-morbid mental health problems; few assess cultural appropriateness or acceptability of mental health interventions for displaced populations[27]. For displaced Syrian MSM and transgender women, mental health

interventions should be attuned to the unique intersections of sexual and/or gender minority and displacement status that include coping with stigma and trauma while increasing personal coping in the face of unchangeable stressors (e.g., stigmatizing societal attitudes) and uncertainty (e.g., regarding legal status)…"
Reviewer: 3

This is an interesting & well researched & written paper. It seems to me that all bases were covered. The results are not surprising, although I am curious why internalized Syrian stigma was not associated with depression.
We thank this reviewer for their positive feedback on our manuscript. We, too, were curious as to why internalized sexual minority stigma was associated with greater depression while internalized Syrian stigma was not associated with greater depression. In our Discussion, we provided the following possible explanation grounded in psychological theories: "…the learned helplessness theory of depression posits that individuals who experience an aversive, uncontrollable event can become helpless due to feeling a lack of control over their circumstances[25]. Those who attribute the cause of such an aversive, uncontrollable event to internal (i.e., due to the person themselves), global (i.e., affecting the person's whole life), and stable (i.e., unchangeable) factors are most likely to become depressed[25]. Stigma-related stress events – including discrimination on the basis of minority or displacement status – can be viewed as uncontrollable and global[24]. When an individual believes themselves the cause of stigma-related stress events, they are more likely to develop depression. Among displaced Syrian MSM and transgender women in the current study, sexual minority-related discrimination and assault and internalized sexual minority stigma were associated with greater depression while internalized Syrian stigma was not associated with greater depression. Displaced Syrian MSM and transgender women might view their sexual or gender identity status as having an internal cause (i.e., being innate) versus their displaced Syrian status as having an external cause (i.e., war); MSM and transgender-related stigma might therefore be more strongly associated with depression than displacement-related stigma."

VERSION 2 – REVIEW

REVIEWER	Hubach, Randy Oklahoma State University, Rural Health
REVIEW RETURNED	15-Apr-2021

GENERAL COMMENTS	Thank you for the opportunity to re-review this manuscript. The authors have addressed all comments presented by the reviewers. As such, the manuscript is acceptable for publication.

REVIEWER	Karamouzian, Mohammad University of British Columbia, Medicine
REVIEW RETURNED	13-Apr-2021

GENERAL COMMENTS	Thanks so much for the revisions. This is looking great.