PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Experienced stigma and applied coping strategies during the COVID-19 pandemic in Germany - A mixed-methods study
AUTHORS	Peters, Lynn; Burkert, Sanne; Brenner, Cecilia; Grüner, Beate

VERSION 1 – REVIEW

REVIEWER	Werner, Perla University of Haifa
REVIEW RETURNED	06-Dec-2021

GENERAL COMMENTS	Thank you for giving me the opportunity to review this manuscript. Using mixed-methods methodology, the authors intended examine stigma among people who had been infected with COVID-19 in a high-income country. This is an important and timely topic of research. However, in my humble opinion, the study needs further elaboration, conceptually, methodologically, and in regards to its format. Overall comments: Conceptually, the manuscript has no Introduction section, thus, it is lacking a clear and elaborated rationale for the study. The authors mentioned the location of the study (a high-income country), as the main contribution of the study, and fail to summarize what has been found until today in the literature, and why and how will the study advance knowledge. Methodologically, the study is purely descriptive. The measures used are described poorly, and there is no information regarding their psychometric characteristics. The format of the manuscript is confusing, as mentioned it is lacking an Introduction section, several sections are superposed, figures are missing titles, etc. Specific comments Abstract: 1. Add mean age, gender, and education of the sample. 2. What do the authors mean by "different settings"? This expression is repeated along the manuscript without explanation. 3. Please explain to me where in the Results section is shown that there was a significant relationship with socio-economic factors. 4. The last two sentences are determinations without empirical basis stemming from the study.

	Objective: 5. As stated, this part should be expanded to fit the definition and expectations from the Introduction section in an original research paper. 6. The last sentence "… from other settings and implementations for policy makers…" is not clear. Methods: 7. Further information and details are needed regarding: how were the potential participants recruited, inclusion/exclusion criteria, response rate, reliability and validity of the stigma instrument, how were calculated the indices reflecting the different stigma dimensions, how long did the phone interviews lasted on average? 8. The scoring of the stigma items seems to be opposite (different direction) to the one presented in the Results section. 9. What does it mean that the analysis was conducted in English? 10. Do the authors mean "the interview guide" instead of "questionnaire" in Page 7, line 17. Results 11. Page 9, line 6: the group aged 30 – 39 was significantly different from what other age groups. The sentence in this line also needs some English editing. 12. Qualitative results: Add a short description of the 14 participants in this part, how similar or different were from the other ones? 13. I suggest to present first the themes and subthemes emerging from the data, and in the Discussion section to integrate them into the suggested framework. 14. I suggest omitting the last sentence in page 13. Discussion 15. The reasons for the difference with other studies should be explained. 16. I suggest to delete table 2 and to include the means in the text. 17. The sentence in page 14, lines 30 – 35, is not clear. 18. Page 15, lines 9 – 19. It is not clear whether this paragraph is derived from the study's empirical results or not. 19. Page 15, line50 – 51: where were these findings showed in the Results section. 20. Page 15, line 57: A recent study by Werner, Tur-Sinai, & Abo Jabel has demonstrated similar findings. Conclusions and implications 21. It is not clear how these are based on the study's results. Reflexivity and limitations 22. Page 16, lines 47 – 49. Was the researcher a physician? Otherwise, it is not clear. 23. Additional limitations include, a relatively small sample, a descriptive design. References 24. Several of the references do not follow any specific format. Please double check.

REVIEWER	Johnson, Graham Royal Derby Hospital, Emergency Department
REVIEW RETURNED	30-Jan-2022

GENERAL COMMENTS	Thank you for this paper which is on an area that I had not really considered as a potential issue for those with covid-19, so has certainly raised my awareness. A mixed-methods approach is appropriate for this kind of topic and I found the results credible. I have one concerns regarding publication in BMJ Open and that is the length of the manuscript. I appreciate that mixed-methods requires a certain depth of explanation, but it could be a bit briefer. Other things that should be answered/clarified prior to publication: Methods: I'm not entirely clear from this section whether the patient sample was entirely those who were "outpatients" for the entirety of their covid-19 episode or if they had been inpatients too. It becomes clearer later but could do with "setting the scene at this stage. Something along the lines of "recruited participants had range of disease severities, some remained relatively well and at home, others requiring inpatient treatment. Page 6 line 29. "Upon receipt" rather than "reception" I cannot comment formally on the appropriateness of the "Social Impact Scale" for use, but it seems appropriate. One caveat would be that clearly HIV is a more chronic illness (in general) than covid. Page 8. There seems to be a formatting issue here. The label "Table 1 Post Covid-19 Symptoms" has drifted into the text of ‚Due to my illness'...". Equally, that should be speech quotations at the beginning, rather than the apostrophe before "Due". Similarly Figure 1 and Figure 2 are absent here, I'm not sure if that is on purpose. Line 42 unfair.’ (M = 0,81) should be a decimal Equally you say "'Financial insecurity’ (M = 1.17) played a minor role. However, this is a higher score than ‘I feel institutions and professionals (health authority, health care workers) treated me unfair.'. - is "unfair" a quote or mistranslation? Should be unfairly. Limitations: I had concerns around the term “continuous probing” to keep participants sharing their stories. Some further clarification would be good here, because there could be coercion etc if participants were being pushed to share things.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Comments to the Author:

Thank you for giving me the opportunity to review this manuscript. Using mixed-methods methodology, the authors intended examine stigma among people who had been infected with COVID-19 in a high-income country. This is an important and timely topic of research. However, in my humble opinion, the study needs further elaboration, conceptually, methodologically, and in regards to its format.

Overall comments:

Conceptually, the manuscript has no Introduction section, thus, it is lacking a clear and elaborated rationale for the study. The authors mentioned the location of the study (a high-income country), as the main contribution of the study, and fail to summarize what has been found until today in the literature, and why and how will the study advance knowledge.

Thank you for this suggestion. In our first draft, we tried to save space and discussed the current literature mainly in the discussion. However, the benefits of introducing the topic by presenting the current research as well as the knowledge gaps are evident. We, therefore, rewrote our introduction and included a rationale for this study.

Methodologically, the study is purely descriptive. The measures used are described poorly, and there is no information regarding their psychometric characteristics.

We are sorry that the reviewer thought of the methods as being not sufficiently described and elaborated further on them in the method section. We added information about the questionnaire used in the quantitative methods section. However, we were uncertain what the reviewer implies by ‘purely descriptive’ and discussed this point within our research team. The quantitative part contains descriptive but also inferential statistics to assess differences in experienced stigma between subgroups. From our point of view, qualitative analysis is a process that indeed starts with the description of the data, but ultimately goes beyond pure description by extracting latent, i.e. underlying concepts (subthemes and themes) from the data, just as we did. Although themes emerging in thematic analyses are usually indeed more abstract compared to content analysis, the latter is by no means purely descriptive. Since in our study, the emerging concepts reflect a subjective interpretation of the participants' lifeworld by the researchers, we don’t think that our findings in this regard are purely descriptive, implying objectivity.

The format of the manuscript is confusing, as mentioned it is lacking an Introduction section, several sections are superposed, figures are missing titles, etc.

We made respective changes regarding the format (e.g. reduce subheadings and remove bullet points) and hope this makes the manuscript more fluid to read. We changed the introduction section as addressed earlier. The figures’ legends were placed in the manuscript and figures were uploaded as separate files, according to the author's instructions of BMJ Open.

Specific comments

Abstract:
1. Add mean age, gender, and education of the sample.

We changed the abstract accordingly.

2. What do the authors mean by "different settings"? This expression is repeated along the manuscript without explanation.

We changed the entire abstract and this phrase is no longer in it.
We listed the different settings we refer to in the manuscript in the introduction (line 74-75).

3. Please explain to me where in the Results section is shown that there was a significant relationship with socio-economic factors.

We changed the entire abstract and this phrase is no longer in it.
We discuss the intersection between stigma and socio-economic factors in the discussion with regard to our own findings (difference in experienced stigma between age groups, but not regarding gender, education and occupational status etc.) and regarding international literature.

4. The last two sentences are determinations without empirical basis stemming from the study.

This comment refers to the following sentences from the abstract of the first draft:
'Stigma arises from misconceptions and ignorance which lead to stereotyping and discrimination. Providing accurate information and exposing misinformation on disease prevention and treatment is hence key to end COVID-19 related stigma.'. The first sentence was changed and included in the results, since it presents basic findings from our qualitative analysis (line 34-36).In the discussion, we have put these findings in context with previous research (line 495-496).

Objective:
5. As stated, this part should be expanded to fit the definition and expectations from the Introduction section in an original research paper.

We have changed the objective and included an introduction to the existing literature.

6. The last sentence "… from other settings and implementations for policy makers…" is not clear.

We changed the introduction and removed this phrase.

Methods:
7. Further information and details are needed regarding: how were the potential participants recruited, inclusion/exclusion criteria, response rate, reliability and validity of the stigma instrument, how were calculated the indices reflecting the different stigma dimensions, how long did the phone interviews lasted on average?

Thank you for this comment. We added the missing information to the manuscript, including a detailed description of the recruitment process, inclusion/exclusion criteria (line 95-99), response rate (line 164)and the psychometric properties as well as a more detailed description of the instrument used (line 108-115). Regarding the qualitative part, we added a table providing patients' characteristics and the length of the interviews (table 1).

8. The scoring of the stigma items seems to be opposite (different direction) to the one presented in the Results section.

We changed the wording, so it is coherent in both the method and result section.

9. What does it mean that the analysis was conducted in English?

We clarified this in the methods section: *'After transcription, the analysis was conducted in English, i.e. English codes were applied to the German transcripts. Translating the transcripts to English was avoided in order to remain close to the source data and avoid a loss of information.'*

10. Do the authors mean "the interview guide" instead of "questionnaire" in Page 7, line 17.
Results

Yes, that was a mistake, thank you for noting.

11. Page 9, line 6: the group aged 30 – 39 was significantly different from what other age groups. The sentence in this line also needs some English editing.

Thank you, we edited the sentence.

12. Qualitative results: Add a short description of the 14 participants in this part, how similar or different were from the other ones?

Since we were advised by the editor to avoid specific information about the participants to guarantee their anonymity, we could not provide a table with the individual characteristics of each participant. However, we created a table with the general information about the 14 interviewees (table 1).

13. I suggest to present first the themes and subthemes emerging from the data, and in the Discussion section to integrate them into the suggested framework.

Thank you for your suggestion. We rearranged the themes and subthemes and present the framework in the discussion. We hope this rearrangement clarifies and makes it easier to read the manuscript.

14. I suggest omitting the last sentence in page 13.

We have done accordingly.

Discussion
15. The reasons for the difference with other studies should be explained.

We edited the respective passage in the manuscript (line 365-368).

16. I suggest to delete table 2 and to include the means in the text.

We discussed this point in our team and prefer to keep the table, since it allows for comparing the results at a glance, which is harder when the means are located within the text.

17. The sentence in page 14, lines 30 – 35, is not clear.

We edited the sentence and the structure of the discussion to make it more fluid to read. Basically, the discussion is now built in the same way as the qualitative results are, starting with the inner and ending with the outer social level.

18. Page 15, lines 9 – 19. It is not clear whether this paragraph is derived from the study's empirical results or not.

This passage provides our interpretation of the data. This was clarified in the manuscript.

19. Page 15, line50 – 51: where were these findings showed in the Results section.

These findings are shown in line 185-187.

20. Page 15, line 57: A recent study by Werner, Tur-Sinai, & Abo Jabel has demonstrated similar findings.

Thank you very much for this interesting recommendation, we added the paper to our references.

Conclusions and implications
21. It is not clear how these are based on the study's results.

The conclusion is both based on our own findings and the review of current literature. However, we edited this passage to make this distinction clearer.

Reflexivity and limitations
22. Page 16, lines 47 – 49. Was the researcher a physician? Otherwise, it is not clear.

Yes, 3 of the 4 authors are physicians, including LP who conducted the interviews. We added this information to the respective section.

23. Additional limitations include, a relatively small sample, a descriptive design.

We elaborated on the study design and its limitations, as well as our sample size. Regarding the latter, we indeed noticed a low response rate regarding the questionnaires (41%) which we explained with the sensitive nature of the topic. We included this and the resulting comparatively small sample size to our limitations. It should be noted that the results are still valid based on a post-hoc power calculation. For example, the subgroup analysis regarding stigma experience among different age groups yielded a power level of 85%.
Regarding qualitative research, there is no strict limit regarding the number of interviews needed to answer a research question. Guest et al. (2006) argue that 12 interviews of a homogenous group are sufficient to reach saturation. Indeed, we reached knowledge saturation after the 11th interview. In comparison with the qualitative literature assessing stigma in COVID-19 patients, Gopichandran *et al*. (2021) interviewed 12 COVID-19 survivors, Bhandari *et al.* (2021) interviewed 13 COVID-19-survivors, Moradi *et al*. (2029) conducted 14 interviews and Chew *et al.* (2021) interviewed 18 COVID-19 survivors but also their family members. We therefore assume that our qualitative sample size should suffice to answer the research question.

References

24. Several of the references do not follow any specific format. Please double check.

Thank you, we edited the respective references.

Reviewer: 2
Comments to the Author:
Thank you for this paper which is on an area that I had not really considered as a potential issue for those with covid-19, so has certainly raised my awareness.

A mixed-methods approach is appropriate for this kind of topic and I found the results credible. I have one concerns regarding publication in BMJ Open and that is the length of the manuscript. I appreciate that mixed-methods requires a certain depth of explanation, but it could be a bit briefer.

Thank you for this remark, which we agree with. We shortened the manuscript, i.e. reduced the text, changed parts of the text to tables and changed the format in some sections. However, our possibilities were limited since the co-reviewer encouraged us to provide more detailed information regarding the introduction and the methods.

Other things that should be answered/clarified prior to publication:

Methods: I'm not entirely clear from this section whether the patient sample was entirely those who were "outpatients" for the entirety of their covid-19 episode or if they had been inpatients too. It becomes clearer later but could do with "setting the scene at this stage. Something along the lines of "recruited participants had range of disease severities, some remained relatively well and at home, others requiring inpatient treatment.

Thank you, we agree that this is not clear. We changed the information about the recruitment of patients (line 95 - 99).

Page 6 line 29. "Upon receipt" rather than "reception"

Thank you, we changed the wording in the manuscript.

I cannot comment formally on the appropriateness of the "Social Impact Scale" for use, but it seems appropriate. One caveat would be that clearly HIV is a more chronic illness (in general) than covid.

We had similar concerns, but after evaluating different questionnaires, the SIS seemed the most appropriate to us. Most questionnaires addressing stigma are designed for people with mental health disorders or cancer. We chose the SIS because it was also designed for HIV/AIDS as an infectious disease, knowing that of course, the disease characteristics are very different. We addressed this concern in the limitations.

Page 8. There seems to be a formatting issue here. The label "Table 1 Post Covid-19 Symptoms" has drifted into the text of ‚Due to my illness'...". Equally, that should be speech quotations at the beginning, rather than the apostrophe before "Due".

Thank you, we edited the format of this section.

Similarly Figure 1 and Figure 2 are absent here, I'm not sure if that is on purpose.

We understood from the author's instructions that figures needed to be uploaded separately and are sorry if they were not accessible.

Line 42 unfair.’ (M = 0,81) should be a decimal

Thank you, we made the required change.

Equally you say "‘Financial insecurity’ (M = 1.17) played a minor role. However, this is a higher score than ‘I feel institutions and professionals (health authority, health care workers) treated me unfair.'.
- is "unfair" a quote or mistranslation? Should be unfairly.

Thank you very much for this essential remark. We initially rated the items from 0-3, but later changed to 1-4 when calculating the stigma dimensions without adapting the means of the individual items in the text. We recalculated and double-checked the statistics, which are coherent now.

Thank you, that was our mistake, we corrected it to ’unfairly’.

Limitations:

I had concerns around the term “continuous probing” to keep participants sharing their stories. Some further clarification would be good here, because there could be coercion etc if participants were being pushed to share things.

Thank you, we admit that the respective sentence in the manuscript might be misleading. Probing aims to reflect the interviewer’s interest in what the interviewee is saying and aims to encourage the interviewee to continue his/her story or provide more details. For probing, a muttered sound such as ‘mhm’ or a phrase such as ‘Could you elaborate?’ can be used. It should by no means create an atmosphere of coercion. We changed the respective sentence in the manuscript.