PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Infertility distress and clinical targets for psychotherapy: A qualitative study
AUTHORS	Dube, Loveness; Nkosi-Mafutha, Nokuthula; Balsom, Ashley; Gordon, Jennifer

VERSION 1 – REVIEW

REVIEWER	Faramarzi, Mahbobeh Babol University of Medical Science
REVIEW RETURNED	10-Apr-2021

GENERAL COMMENTS	Dear Authors The ration of the study is not clear. There are too papers about mental health of infertile couple from 20 years ago. Also, many RCTs and systematic reviews emphasized to psychotherapy for improvement of mental health of infertile couples. I could not find any new subject or novelty in your research.

REVIEWER	Purewal, Satvinder University of Wolverhampton
REVIEW RETURNED	07-May-2021

GENERAL COMMENTS	This paper reports a qualitative study on 21 infertile women and 14 mental health professionals (in the field of infertility) using semi-structured interviews + focus groups about the psychological challenges related to infertility. A total of five themes emerged from the data and these were developed into a model of infertility-related distress: (1) Anxiety, (2) Mood disturbance, (3) Threat to self-esteem, identity and purpose, (4) Deterioration of the couple, and (5) Weakened support network. I enjoyed reading this paper. It was interesting and generally well written. Further, the use of PPI in this study was sensible and effective. However, I observed some minor and major points below. Abstract needs to report the qualitative method used. The introduction is short, punchy and effective. Method Some more detail on the two groups eligibility criteria would be useful (for example, the length of their infertility or years specialising in the infertility discipline). One of the biggest concern I had is the merging of heterogeneous samples (1. Infertile women and health care practitioners; 2. focus

	groups and one-to-one interviews) in the data analysis. The authors need to justify why they merged these data sets. For example, were the data findings similar (did they perform separate data analysis on the different groups to decide that?). Was there a theoretical reason for this? Or a practical one? Normally we would expect data analysis (particularly qualitative) to be performed on homogenous samples – so I think the authors need to provide some justification why they made those decisions. If the justifications are not valid, I think the authors should consider presenting the infertile/health care practitioners/focus group data separately. More detail on the focus group methodology is needed. What technique was used? How long did the focus group run for? How did you actually decide saturation point was achieved (was there an agreement amongst authors etc)? I think more justification for the use of content analysis is needed. For me, with the rich data which could have been produced, why not use many of the other qualitative techniques available which are compatible with focus groups and one-to-one interviews (such as thematic analysis or IPA). Results/Discussion The results section was fine and generally rooted in the data. However, they observed findings which many other studies have also observed and published before. I was hoping for something new, particularly as one of the study aims was to suggest 'other components of psychological therapies that have not been used in the treatment of infertility-related distress'. I was expecting to find this in the results – I had assumed the participants would be asked about this. However, that does not appear to be the case and it was in the discussion that the authors reviewed previous treatments and suggested improvements based upon their findings. I think it was a missed opportunity for the authors not to ask the participants what type of treatment and component of treatment they feel would be beneficial. However, I believe the discussion section was probably the most informative and the authors could look to develop this further. Perhaps by using a table which allow them to go through the various treatments for infertile groups and use their study findings to help critique their methods and suggest improvements.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1	**Author response**
The ration of the study is not clear. There are too papers about mental health of infertile couple from 20 years ago. Also, many RCTs and systematic reviews emphasized to psychotherapy for improvement of mental	Thank you for this comment. Although it is true that many studies have assessed the effectiveness of psychological interventions, the most recent meta-analysis by Frederiksen et al. (2015)[1] found only small reductions in anxiety and, after adjusting for

[1] Frederiksen Y, Farver-Vestergaard I, Skovgard NG, et al. Efficacy of psychosocial interventions for psychological and pregnancy outcomes in infertile women and men: a systematic review and meta-analysis. *BMJ Open*. 2015;5(1):e006592.

health of infertile couples. I could not find any new subject or novelty in your research.	publication bias, psychological interventions were not found to improve depressive symptoms, infertility distress or marital functioning. We would therefore argue that there is a need to improve our understanding of the unique challenges related to infertility that would need to be addressed in order to improve the efficacy of future interventions, which the current study aims to do. One unique aspect of the current investigation was its inclusion of mental health professionals. To our knowledge, no other study has asked mental health professionals specializing in infertility about their perceptions of the challenges that their patients face. Since the initial version, we have added information about the psychological interventions that mental health professionals reported using when treating this population. We believe this adds to the novelty of our study.
Reviewer 2	
Abstract needs to report the qualitative method used.	We have added the following to the "Design" section in the abstract: Thematic analysis was used to identify patterns and themes emerging from the data.
Methods Some more detail on the two groups eligibility criteria would be useful (for example, the length of their infertility or years specializing in the infertility discipline).	In consultation with our patient advisors, we decided that we wanted to avoid being unnecessarily exclusive in choosing who would be eligible for our study so as not to insinuate that woman with less than X years of infertility would not truly understand the emotional hardships of infertility. Thus, women with any experience with infertility were eligible. For mental health professionals, our only inclusion criteria were: 1) at least a master's degree in a related mental health field (psychology, social work, counselling) and 2) self-reported specialization in the area of infertility-related distress. The number of mental health professionals meeting these criteria is quite small – we therefore did not want to further limit our pool of eligible individuals by setting a threshold for number of years of experience. However, all professionals had at least two years of

	experience with this population and 75% had at least five years. This last detail has been modified on page 8.
One of the biggest concerns I had is the merging of heterogeneous samples (1. Infertile women and health care practitioners; 2. focus groups and one-to-one interviews) in the data analysis. The authors need to justify why they merged these data sets. For example, were the data findings similar (did they perform separate data analysis on the different groups to decide that?). Was there a theoretical reason for this? Or a practical one? Normally we would expect, data analysis (particularly qualitative) to be performed on homogenous samples – so I think the authors need to provide some justification why they made those decisions. If the justifications are not valid, I think the authors should consider presenting the infertile/health care practitioners/focus group data separately.	This is a fair point – we recognize that we did not sufficiently explain our decisions to merge the groups. In fact, we did analyze the women and the mental health professionals' transcripts separately. However, our analysis revealed very similar themes and subthemes across both groups and it seemed redundant to keep the results separate. For this reason, it was decided that we would merge them but highlight when a theme/subtheme was more commonly mentioned by one group versus the other (such as in the case of narrowed focus on fertility related activities). The following text has therefore been added to the "Methods" section under data analysis (Page 7): "Interview transcripts for women and for mental health professionals were analysed separately before comparing the emerging themes from the two groups." The following was added to the "Results" section (Page 9): "Although data were analyzed separately for women and health professionals, the themes and subthemes emerging from both groups relating to the psychological experiences of women proved to be very similar and are presented together." With regards to our rationale for using different methods of interviewing (individual versus focus group), it was primarily driven by our desire to ensure that participants were comfortable with disclosing personal information. We did analyse data separately for focus groups and individual interviews but here, too, found that results were very similar across the two interview formats. We have therefore added the following text specifying this on page 8 (Data analysis): "Although we used different data sources (women and professionals) and data collection techniques (individual versus focus group interview), the same themes related to women's experiences emerged in

	the analysis. It was therefore decided that the results from both data sources and data collection methods would be merged, where applicable". However, it is true that one small difference emerged between individual interviews conducted over the phone versus in-person (individual and focus groups) that we did not highlight in the previous version of the manuscript. Specifically, the theme of anxiety came out more strongly in the face-to-face interviews relative to the phone interviews. The following text has therefore been added under the anxiety theme on page 12: "Anxiety as a theme was more prominent in focus groups and face-to-face interviews when compared to interviews conducted over the phone. We hypothesize that perhaps researchers were better able to build rapport in face-to-face interactions, allowing women to feel more comfortable sharing their challenges." Given that data was analysed separately for the different methods of data collection and sources of information, we would tend to argue that using these multiple methods of data collection and sources of information is a strength of the current study. We have therefore added the following sentence on page 3 (Strengths and limitations of this study): "The study used different methods of triangulation in data collection (interviews and focus groups) and in sources of data (women and mental health professionals), which contributed to enrich the data."
More detail on the focus group methodology is needed. What technique was used? How long did the focus group run for?	Thank you for this comment. We have added the following to the "Methods" section (page 7): "Focus group interviews lasted 2 hours and individual interviews (face-to-face and telephone) lasted between 40 and 60 minutes. Two moderators were present during focus group interviews, one facilitating the discussion, and the other as an observer and note taker. LD conducted all individual interviews with women."

How did you actually decide saturation point was achieved (was there an agreement amongst authors etc)?	We have modified the "Data analysis" section (page 7): "Preliminary data analysis was concurrent with data collection and was conducted independently by LD and NNM. This analysis provided a means of determining data saturation through consensus from both authors."
I think more justification for the use of content analysis is needed. For me, with the rich data which could have been produced, why not use many of the other qualitative techniques available which are compatible with focus groups and one-to-one interviews (such as thematic analysis or IPA).	We appreciate this comment. We have modified the "Data analysis" section (page 7): "We adapted the phases of theme development as described by Vaismoradi (2016) to enable us to do a thematic analysis that also resonates well with the steps of qualitative content analysis (16). The thematic analysis was conducted in 4 phases including…"
Results/Discussion The results section was fine and generally rooted in the data. However, they observed findings which many other studies have also observed and published before. I was hoping for something new, particularly as one of the study aims was to suggest 'other components of psychological therapies that have not been used in the treatment of infertility-related distress'. I was expecting to find this in the results – I had assumed the participants would be asked about this. However, that does not appear to be the case and it was in the discussion that the authors reviewed previous treatments and suggested improvements based upon their findings. I think it was a missed opportunity for the authors not to ask the participants what type of treatment and component of treatment they feel would be beneficial. However, I believe the discussion section was probably the most informative and the authors could look to develop this further. Perhaps by using a table which allow them to go through the various treatments for infertile groups and use their study findings to help critique their methods and suggest improvements.	This is a good point. Although we did not ask women which techniques they preferred, we did ask mental health professionals which techniques they tended to use in this population. We had omitted it as it seemed perhaps too much information to combine into one manuscript; however, we have now added the results of this question in the manuscript on page 21. We have also added a discussion of these findings to the "Discussion section". We believe the manuscript is greatly improved as a result and thank you for your comment.

VERSION 2 – REVIEW

REVIEWER	Purewal, Satvinder University of Wolverhampton
REVIEW RETURNED	24-Aug-2021

GENERAL COMMENTS	This is a much improved paper and the authors have done a good job in addressing comments/questions/suggested revisions. I think the justification reported to explain methodological choices in the study make sense and are sensible. A few issues are reported below. In strengths and limitations section- I would remove the statement that triangulation method was used in data collection. I don't think that is true because the findings were not formally triangulated. Introduction/abstract – I think the authors should really sell the point that this is the first study that has asked mental health professionals specializing in infertility about their perceptions of the challenges that their patients face. Method – reads well to me and I appreciate the included information. Result – the result section also reads better. I think perhaps the Therapeutic techniques used by mental health professionals could come first in the result section (this is the more novel part of your findings). So you describe what type of treatment takes place first and then the second segment can describe women's experiences/psychological issues faced by these women and explored in treatment. I think the authors could see whether this draft works – if not, keep the structure the same. This is just a suggestion, nothing more. Further, non-mental health experts may not be familiar with treatment terminology (e.g., cognitive behavioural therapy (CBT), dialectical behavioural therapy (DBT), acceptance and commitment therapy (ACT)) and perhaps some description may be needed for them (in the introduction?). Discussion – This reads very well to me and I found the application of your findings to critique existing treatments very useful and novel. I think this paper would add to the current research literature.

VERSION 2 – AUTHOR RESPONSE

Response to reviewers bmjopen-2021-050373.R1 - "Infertility distress and clinical targets for psychotherapy: A qualitative study"

Reviewer comments	Author response
Reviewer 2	

In strengths and limitations section- I would remove the statement that triangulation method was used in data collection. I don't think that is true because the findings were not formally triangulated.	We have removed the statement that triangulation was used.
Introduction/abstract – I think the authors should really sell the point that this is the first study that has asked mental health professionals specializing in infertility about their perceptions of the challenges that their patients face.	We have added the following text at the end of the introduction: "To our knowledge, this study is the first of its kind to explore the unique psychological challenges faced by women struggling with infertility through the eyes of the mental health professionals who specialise in this field. Furthermore, it is the first to explore the current therapies applied by mental health professionals in treating infertility-related distress." We have also added something to this effect in the abstract.
Result – the result section also reads better. I think perhaps the Therapeutic techniques used by mental health professionals could come first in the result section (this is the more novel part of your findings). So you describe what type of treatment takes place first and then the second segment can describe women's experiences/psychological issues faced by these women and explored in treatment. I think the authors could see whether this draft works – if not, keep the structure the same. This is just a suggestion, nothing more.	We appreciate the suggestion and tried changing the order in the Results section but found that it did not work well. We concluded that the readers need to first understand women's experiences before they can engage in how the problems are addressed and have therefore chosen to leave it as is.
Non-mental health experts may not be familiar with treatment terminology (e.g., cognitive behavioural therapy (CBT), dialectical behavioural therapy (DBT), acceptance and commitment therapy (ACT)) and perhaps some description may be needed for them (in the introduction?).	We appreciate this suggestion. We have added a new Table 3 with a short description of these therapies in the Results section where these therapeutic approaches are discussed (page 23). Each therapy is also accompanied by a reference so that readers can read more about that particular therapy if they wish.