Author’s response to reviews

Title: Attitudes of sperm, egg and embryo donors and recipients towards genetic information and screening of donors

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Response to reviewer comments

Attitudes of sperm, egg and embryo donors and recipients towards genetic information and screening of donors David Amor; Annabelle Kerr; Nandini Somanathan; Alison McEwen; Marianne Tome; Sharon Lewis Reproductive Health

Reviewer 1

1. page 3 line 1-3: I am not clear about the difference between sperm, egg and embryo donors.

We have clarified in the introduction, and throughout, that donors and recipients each comprise three separate and independent categories: egg donors/recipient, sperm donor/recipient and embryo donor/recipient. We have also clarified that donated embryos are surplus embryos from couples who have undergone IVF treatment.
2. The authors write "In this study we conducted in depth intervals (should this word be interviews) with sperm, egg and embryo donors.

Thank you for noting this typographical error which has been corrected.

3. Are there separate embryo donors? If there are not than I am not sure why this is a separate category throughout this paper. For the recipients interviewed they could receive embryos and this would be a separate category. Is it the case that in this IVF clinic donors are recruited for gamete use only or as separate and that other donors are recruited to be part a donor to create full embryos (or genetically not related to the recipient? ) This needs to be clarified for a non-medical and non-Australian readership. Page 7, Line 59: Similarly in the questions: "why the participant had required a gamete or embryo donor”.

As noted at point 1 (above) we have clarified that embryo donors are a separate category from sperm and egg donors. We have also expanded the description of the Melbourne IVF donor program in Materials and Methods to clarify this point.

4. Participant recruitment, methodology, interviewing protocol Please clarify who the participants are. Right now the text tells exclusions (not this or that). Are they people who have already undergo treatment and donor selection? The quotes in latter sections make me think this is the case. Same with donors: Are these individuals already in the pool of donors? I would want to know this as a reader to assess the answers qualitatively. People who are already in the pool or have already selected donors have experience with the process and are not concerned that they would not be "chosen". It might strengthen the findings. [I think it is mentioned later on in the paper but it belongs in the methods section.]

We have expanded the description of the Melbourne IVF Donor Program and the description of Participants to clarify that who the participants are. Specifically, donors are all people who have donated sperm/eggs/embryos in the past, and recipients have all received treatment using donated sperm/eggs/embryo. To preserve confidentiality, we have not recorded whether or not the treatment was successful (that is, if a child was born as a result of the treatment).

5. What is the definition of "designer baby?" This is critical to the paper and since this is a qualitative in-depth study the authors should clarify this question and also how the respondents understood this idea. Is this simply equated with another level of genetic screening? Usually this means a genetic modification to a human embryo. The authors are not asking donors if they care if their genes are modified. They are asking about a lay definition that assumes more genetic information will somehow lead to "gene selection" of some kind. What understanding of "designer baby" did the respondents have? Qualitative interviews should have tapped their understanding.
We agree that the term “designer baby”, as used by our research participants, is somewhat ambiguous, and that this term is sometimes used to imply genetic manipulation of the embryo. We have reviewed the interview transcripts and the contexts in which the term “designer baby” was used, and found that term designer baby was used to denote genetic selectivity rather than genetic manipulation. We have clarified this in the text, both in relation to the interview quotes and the discussion.

6. Themes are interesting. Make this a figure. A table usually had some variability or something going on. This is just straight up answers. [NOTE: I like the figure on page 29 it is more interesting and easy to follow] a. I would consider listing the themes in A and B from ALL to some. I also think having numbers (such as 4 donors and than in other places ALL, MANY, MOST or SOME is confusing). Be consistent with the responses and maybe RANK them or at least start with from ALL Said to SOME said. Think about a way to present this to a reader instead of a laundry list which is hard to make sense of without the authors' interpretation.

As a result of the comments of reviewers 1 and 2 we have removed the results table and modified the mind-map (Figure 1) to include some additional information. In relation quantitation of responses as all/many/most/some, we have sought further advice from experts in qualitative research. Their response was that this type of quantitation was not appropriate, as by definition, the themes are based on a majority of responses. We have therefore removed the quantifying comments. We considered whether to try and rank the responses, but again, our advice was that this is not appropriate for qualitative research.

7. Both Sections: Existing Genetic information and Screening And Future Genetic Screening Are important. Donors find it difficult to answer the medical histories presently. Additional information from their family medical history might be difficult for donors to give and could lead to misinformation [or a turn off to donors].

We have noted the importance of this point and have expanded our Discussion on this topic.

8. I like the comment on nature versus nurture it does not work here. Maybe make it about the entire process of donation. However, intending parents are not choosing a marital partner they are getting a product unknown to them (whether it is an altruistic donation or in the US and UK a commercial product). Selecting a donor is different.

We have removed the reference or Nature vs Nurture, and re-framed this concept as the relative contributions of genetic and environmental factors to child health. This concept has also been added to Figure 1.

9. Future genetic screening: I think this is the most interesting part of the paper. Donors will be willing to undergo testing but they do not necessary want to know the results. The
The donor cannot really change his or her potential illness (and its diagnosis) so why worry about this and allow genetic testing to be a "crystal ball" for them. If they have to undergo further genetic screening it would create an ethical dilemma, as the medical profession would have information about a person they would not have. But the recipient who is receiving this product (that is in lieu of partner's gametes) might want more information to make a better informed decision (or choose between donors). -- Even if the respondents say they don't need more genetic information and they look to the "essay side" or whatever more humanistic material is provided.

We agree that the fact that donors are willing to undergo testing but do not wish to know results is of interest. We have expanded the discussion on this point and also added the theme to Figure 1.

10. I gather from this discussion section indirectly that what exactly is genetic and what further kinds of genetic testing [which seems to be about more extensive testing ] is not well-understood or perhaps vague. Put differently, exactly what were the respondents told.

We agree that in our initial manuscript it was not clear what the participants were told. We have now added the interview schedule (new Table 1) which we hope clarifies this issue.

11. The authors write "sperm donors ranked health information as the second most important form of donor information, behind donor physical characteristics (lines 44-49 page 18) Physical traits are not purely genetic (such as height). Not to be nitpicking.

We agree that the term ‘genetic information’ could be taken to include both health related information and non-health-related genetic information (e.g. appearance, personality). We have clarified this by referring specifically to health-related and non health-related information (according to the context).

12. What exactly do the respondents and donors understood "designer babies" to mean? And perhaps mention what is understood by these two parties about genetics overall. See point 5, above.

Reviewer 2

13. How was the sample size determined?

Sample size calculation is not used in qualitative research. For this study, participants were recruited and interviewed until thematic saturation was reached. This has been added to Materials and Methods under Participants. More generally, from the reviewer comments we
have taken on board that more detail was required regarding the qualitative research methodology that was used. As a result, we have re-written and expanded the Materials and Methods Section, including additional methodological references.

14. How were disagreements over codes resolved?

The coding and categorizing of data were confirmed through co-coding by two of the authors who were not involved in the interviews (SL and AM). This has been added to the Materials and Methods under Analysis.

15. How were respondents different from non-respondents?

Unfortunately due to privacy constraints and requirements of our research ethics approval we were not able to collect demographic data from respondents or non-respondents.

16. Table 2 seems duplicative with text in Results and does not add to the manuscript.

As noted earlier, Table 2 has been removed from the revised manuscript, and Figure 1 has been enhanced.

17. I would suggest demographic variables to help readers understand the population assessed. Adding names of participants/couples with their roles seems to provide potentially identifying information.

As noted earlier, we were not able to collect demographic data from our individual participants. However in the revised manuscript, we have included descriptive information about the donor and recipients populations, Under Materials and Methods (Study setting and Participants). We have also highlighted that all names used are pseudonyms.

18. I'm uncertain on how the Figure was derived. This aspect would benefit from more explanation. For example, there were various quotes to support the theme that genetic information was not as important as non-genetic information. Would this theme belong in the tree? Similarly, there were several quotes from recipients on adverse effect on donors' well-being. Does that belong in the Figure? Also, uncertain what "Take the risk", "Bit more of a chance" refer to. The stems would benefit from being more clear.

We agree that the derivation of the Figure 1 and use of abbreviated quotes was unclear. We have included a revised Figure 1 which includes themes that map directly to the themes included in the Results sections. We have omitted the abbreviated quotes and also added a Figure legend.

Reviewer 3
19. While balancing the need for patients' confidentiality and privacy, it would still be helpful to describe the overall population. Specifically, the authors should describe their donor and recipient populations as it would be helpful for the readers to know whether the study population represent a single sociodemographic group or a more diverse one.

See response to 17, above.

20. On the third page of results, lines 19-29, the following quote "the chances of getting someone with a perfectly clean medical history is just negligible we are all going to die from something whether it be a stroke, cancer, heart disease, so let's face it, when you put it on paper and it looks scary but that is the reality for all of us" was attributed to the observation that "The majority of recipients were satisfied with the amount of donor genetic information they received". At first glance, this does not seem appropriate; rather, the quote seems more indicative of the previous observation that some recipients "used donors who had a significant genetic or family history, and felt the information was helpful but did not influence their choice of donor". If possible, the authors need to clarify how the quote is indicative of satisfaction.

We have reviewed the context of this quote in the original transcript and as a result, have revised the stem of the quote to “Recipients acknowledged that no donor was likely to be free of any genetic risk, and were satisfied with the amount of donor genetic information they received”

21. In order to assess the responses of study participants, it is necessary to learn more about the interview "script" or questionnaire(s). Specifically, it would help if the authors were to include, as an appendix or other supplemental material, the specific question(s) or script(s) used to assess the study participants' attitudes towards genetic screening.

As noted earlier, the interview schedule is now included as new Table 1.

22. It should be noted that the participation rates in both groups are not particularly high and represents an opportunity for bias.

This is mentioned as a limitation in the discussion (in addition to the discussion of the small sample size). Participation rate has now been added as a limitation.