Reviewer’s report

Title: Knowledge, perceptions and myths regarding infertility and its treatment among adults visiting tertiary care hospitals in Pakistan

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Reviewer: Ruth Dixon-Mueller

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Sumera Ali et al., Infertility in Pakistan

Major revisions: (These have to do with the focus of the study and may not be amenable to change at this point)

1. This paper addresses a very interesting topic, but it is biased toward “high tech” infertility treatments—ovulation induction and IVF--while paying less attention to more accessible treatments such as counseling couples about the fertile period and most optimal timing and frequency of intercourse, diagnosing and treating STIs (including PID), removing tubal scarring, overcoming low sperm counts (e.g., artificial insemination with processed semen), and other approaches.

It comes as no surprise, then, that the authors find low levels of knowledge about the high-tech solutions: indeed, this is the major conclusion, and is thus disappointing. There is likely to limited knowledge about the low-tech solutions as well, e.g., woman’s fertile period is during the monthly cycle (only 46% of the 70% who knew there was a fertile period—i.e., one-third—had the correct answer). In such a context, one would surely not expect respondents to know what the success rate is for ovulation induction and IVF per cycle, or the side effects (if any).

One wishes that the researchers had taken the opportunity to ask a broader range of questions, and in words that respondents might understand better. (A particularly grievous example of poor wording is in the last table in which respondents are asked how socially acceptable it is “to have a test-tube baby.”) Was the questionnaire pretested among lay people to ascertain their understanding and clarify the language? Was the questionnaire in English?

Asked about the definition of infertility, respondents cannot be expected to know the WHO definition of infertility as 2 years of unprotected sex. (Some scientific sources use other definitions, e.g., the chapter on “Impaired fertility” in the 18th revised edition of Robert A. Hatcher et al, Contraceptive Technology: “A couple is formally diagnosed as infertile if the man and woman have not conceived despite having had unprotected vaginal intercourse for 12 months…” (p. 652).) This is another example of expecting respondents to know things that are outside their normal range of information.
Minor essential revisions:

1. The use of the word “myths” in the title is a common misuse of this word. There are no “myths” in this paper, only misinformation or lack of correct information.

2. Abstract should mention that the infertility figure (“around 21.9%”) could read “around 22%, given the margin of error) includes both primary and secondary infertility. Also, add “its causes” to the sentence that includes “..knowledge about infertility, its causes, and the treatment options…” Abstract is not very informative, e.g., “limited knowledge.” What do respondents know, and what not? Conclusions: surely one has more to say than asking for further studies. Specific recommendations were made in paper, esp. public health campaigns that correct misinformation about effects of oral contraceptives and IUDs, that provide information about fertile period, and that prevent STIs.

3. The introduction could explain the differences and comment on the social/personal aspects of these different types of infertility in Pakistan: the “failure” to conceive at all, which is truly devastating, compared with the “failure” to have another child when desired, or a child of a given sex (especially sons). Would respondents answer differently about the causes and consequences (e.g., grounds for divorce?) of these somewhat different situations? Are women more likely to be blamed for the “failure” to have a son, as compared with having no children at all, or are they comparable?

4. Sample: What is an “attendant” of a patient in an outpatient clinic? Are these persons accompanying a patient? Please explain. Re. the sample, authors should avoid calling this a “baseline population study” (p. 6) since it is a convenience sample in 2 hospitals, and the educational level of respondents appears quite high (46% are “graduate level or higher”, but how many years of schooling is this?) How does this compare with the national population?

5. Causes of infertility: other possible causes were not mentioned, e.g., endometriosis, certain hormonal problems, consequences of diseases such as mumps (in men). Also, the text should comment on respondents’ knowledge of untreated STIs and tubal blockage, which was reported in the table. Prevention and early treatment of STIs is probably one of the most important messages to be conveyed to the public relating to prevention of infertility. Re. consulting a gynecologist, did anyone say that a man should consult a urologist?

6. There is much discussion of other studies later in the paper that would do better up front: setting up the issues, such that the analysis of the questionnaire results can be compared to these other studies.

7. The references are not all complete. Books need publishers; articles need journal names plus vol, no. and page numbers; non-published papers need complete URLs, etc.
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.