

## Review report

**Final title:** Depression, anxiety and stress assessment in women with polycystic ovary syndrome attending a tertiary care hospital in Bangladesh

**Title at submission:** Depression, anxiety and stress assessment in women with polycystic ovary syndrome attending a tertiary care hospital in Bangladesh

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**Reviewer A:** Masuda Mohsena, ORCID: [0000-0002-4963-8799](https://orcid.org/0000-0002-4963-8799)

### Overview

This mixed-methods study assessed the psychological impact of PCOS in 266 women at BSMMU using the DASS-21 scale, along with qualitative interviews. Results revealed high psychological distress, with 32% experiencing moderate depression, 68% extremely severe anxiety, and 45% severe stress. Predictors included menstrual irregularities, insomnia, and societal stigma. Unmarried women were worried about appearance, while married women delayed care due to infertility concerns, highlighting societal pressures around marriage and childbearing. The study highlights the critical need for mental health support and societal awareness. Overall, this is a robust and insightful exploration of PCOS's psychological and social dimensions in Bangladesh.

- Comment** In the Result section followings need to be clarified: 490 (Table 1)

**Response** In table 1 we have now specified the previous 'children,' as number of children of married women (n=134)
- Comment** In Table 1, there is a variable called 'children,' categorized as 'yes' and 'no.' However, it is unclear what this variable represents or indicates.  
In line 234, can menstrual problems be predicted as a factor for stress when the confidence interval (CI) overlaps the value 1?

**Response** We acknowledge that the lower bound of the confidence interval (1.0–3.4) is at the threshold of statistical significance. While the p-value remains <0.05, indicating a statistically significant association, the inclusion of 1.0 in the CI suggests that the effect may be marginal. To address this, we have revised our interpretation to more accurately reflect the strength of the association. Instead of stating that menstrual problems "significantly predict" stress, we now describe them as being "associated with increased stress, though the confidence interval suggests a marginal effect."
- Comment** In line 236, insomnia has been identified as a predictor. Should insomnia be considered a predictor, or is it more likely a consequence of anxiety and stress? 319-323

**Response** We acknowledge that the relationship between insomnia, anxiety, and stress may be bidirectional. While existing research suggests that insomnia can be a significant predictor of both anxiety and stress, we recognize that anxiety and stress may also contribute to the onset of insomnia. In our study, we present insomnia as a predictor based on the observed associations; however, given the cross-sectional design, causality cannot be definitively established. Future longitudinal studies would be needed to clarify the temporal direction of these relationships. We have explained this bidirectional nature in the discussion section.
- Comment** In line 258, it is stated that infertility was statistically associated with anxiety ( $p < 0.05$ ) with an odds ratio (OR) of 0.2 (95% CI: 0.1–1.0) (Table 3) suggesting that women with infertility face anxiety. Is this conclusion valid when the OR is less than 1?

**Response** Upon review, we recognize that the odds ratio of 0.2 suggests a lower likelihood of anxiety among women with infertility, rather than an increased risk. Additionally, as the confidence interval includes 1.0, the finding is not robust enough to draw strong conclusions. To maintain accuracy and avoid potential misinterpretation, we have removed this statement from the manuscript.

**Reviewer B:** Hurjahan Banu, ORCID: [0000-0002-8115-1761](https://orcid.org/0000-0002-8115-1761)

This is an innovative mixed-methods study that used the DASS-21 scale to measure stress, anxiety, and depression in women with PCOS. It combined a cross-sectional study with qualitative grounded theory. Between February and June of 2022, 266 PCOS women participated in the study, which was conducted at Bangabandhu Sheikh Mujib Medical University. Ten in-depth interviews with PCOS patients and six key informant interviews with mothers were conducted in addition to assessing the incidence of different clinical symptoms. Participants in the study reported severe psychological distress, but the study's power was only about 40%, and it's unclear how the sample size was decided upon for the qualitative portion.

- Comment** Participants in the study reported severe psychological distress, but the study's power was only about 40%, and it's unclear how the sample size was decided upon for the qualitative portion. line 120

**Response** We acknowledge the concern regarding the study's statistical power. The power of 40% suggests that the sample size may have been limited in detecting certain effects. This limitation is now explicitly mentioned in the discussion section, and we acknowledge that a larger sample would have provided greater statistical confidence. However, despite the lower power, we were still able to identify significant associations, which suggests that the observed effects warrant further investigation in larger studies.

The sample size for the qualitative portion was determined based on the principles of data saturation, where additional interviews or responses were not yielding new themes or insights. We have now clarified this in the methods section

6. **Comment** Abstract: Mean age/age range of the participants should be included with the diagnostic criteria used in the study.

**Response** Participants had a mean age of 24.2 years (SD=5.4) and were pre-diagnosed cases of PCOS. line 55-56

7. **Comment** Purposive sampling for the quantitative part had been mentioned, but what about the sampling method you used to choose the participants in the qualitative part? You mentioned once 267 samples and again 266 samples. Which one is correct? Are those 16 interview participants chosen from 267 or 266?

**Response** We have corrected the sample size inconsistency, ensuring that 266 participants were included in the survey. line 112

For the qualitative component, we used purposive sampling to select 16 participants separately from the quantitative sample. These qualitative participants were not drawn from the 266 surveyed women but were chosen independently to provide in-depth insights into their lived experiences with PCOS. We have now clarified this distinction in the methods section. line 116-117

8. **Comment** There are no inclusion or exclusion criteria; the process should make clearer how the participants were identified and enlisted. Patients who were recently diagnosed or receiving therapy should also be included, as this may have an impact on the study's outcome.

**Response** We have now included the inclusion and exclusion criteria and clarified the participant selection process in the methods section. line 133-136

Participant Selection: The study included pre-diagnosed PCOS patients recruited from the PCOS clinic of the Department of Endocrinology and Metabolism at BSMMU.

Inclusion Criteria: Women aged 18–40 years, diagnosed with PCOS before the study period, and attending the clinic for consultation.

Exclusion Criteria: Patients with severe psychiatric conditions, chronic illnesses unrelated to PCOS, or unwilling to participate were excluded.

9. **Comment** You conducted a pilot test. What number of samples were used in the pilot test, and what kind of analysis was conducted? Were there any noteworthy changes since the pilot test?

**Response** We conducted a pre-test at a tertiary hospital with 10 patients to assess the clarity, feasibility, and reliability of the survey tools. A descriptive analysis was performed, and no significant changes were required based on the findings. This has now been clarified in the methods section. line 140-143

10. **Comment** What did you mean when you said children in Table 1? -Make this very clear. What did you mean when you mentioned hormonal and menstrual problems? These are incorrect terms. Did you perform any hormonal tests before their diagnosis?

**Response** In table 1 we have now specified the previous 'children,' as number of children of married women (n=134) Hormonal problems referred to pre-existing endocrine conditions such as hyperthyroidism, and hypothyroidism, while menstrual problems included menorrhagia, amenorrhea, and dysmenorrhea. Since all participants were pre-diagnosed PCOS patients, we did not conduct additional hormonal tests as part of this study. Instead, we relied on their existing medical records and self-reported histories. We have addressed the same in the table. line 409 (Table 1)

11. **Comment** The references style should be appropriately placed at the end of the sentence-line 303

**Response** Addressed

12. **Comment** The reference numbers 16 and 17 that are utilized in line 306 are unrelated to the lines' context.

**Response** Addressed with new reference 16 and 17

13. **Comment** 7 items for each subset of DASS-21 have been used in the study, but only depression comprises 7 items; anxiety and stress are assessed by 6 items, which is very much inadequate.

**Response** In the Results section, the psychological impact of PCOS was explained, where expression should be continuing with their previous lines, and patient ID numbers might be given. We acknowledge that there was an inconsistency in the anxiety and stress cut-off ranges and have corrected accordingly

We have revised the Results section to ensure a clear and structured presentation of both quantitative and qualitative findings.

We have now followed a logical flow, starting with the quantitative results to establish the overall trends, followed by qualitative insights to provide deeper context and personal experiences. Specifically:

1. Sociodemographic characteristics are presented first to set the participant profile.

2. Psychological impact of PCOS begins with quantitative prevalence rates (DASS-21 results) before transitioning into qualitative narratives that illustrate participants' lived experiences.
3. Stigma and social support follow, integrating survey data with in-depth interview quotes to highlight societal challenges.
4. Fertility-related anxiety and marital pressure are structured similarly, starting qualitative quotes to contextualize these patterns and then with statistical associations from the regression analysis
5. Healthcare access and family roles conclude the section, emphasizing participants' experiences with treatment and support systems.

Regarding the suggestion to include patient ID numbers, our study design ensured participant anonymity, and therefore, ID numbers were not assigned in the manuscript

14. **Comment** The sentence structure is inadequate, so the entire paper must be proofread. For example, page 7, line 145 states, "The survey tools, including the questionnaire and guidelines, were originally designed in English and then translated into." - What?

**Response** This has been addressed. The word missing was Bangla.

**Asst. Editor:** Tahniyah Haq, ORCID: [0000-0002-0863-0619](https://orcid.org/0000-0002-0863-0619)

15. **Comment** How was the Bengali questionnaire validated?

**Response** The DASS-21 questionnaire used in this study was a Bangla-validated version, previously validated in Bangladesh (Alim SAHM, Kibria SME, Islam MJ, Uddin MZ, Nessa M, Wahab MA, Islam MM. Translation of DASS 21 into Bangla and validation among medical students. *Bangladesh J Psychiatry*. 2017;28(2):67–70. doi:10.3329/bjpsy.v28i2.32740). Additionally, other questions were translated from English to Bangla and underwent pre-testing with 10 participants at a tertiary hospital to assess clarity and comprehension. No significant modifications were required. This has been clarified in the data collection tools section. Reference number 13

16. **Comment** In line 145, a word is missing.

**Response** This has been addressed. The word missing was Bangla.

**Comment** In line 258 of results, can an OR of 0.2 be considered increased risk?

**Response** Upon review, we recognize that the odds ratio of 0.2 suggests a lower likelihood of anxiety among women with infertility, rather than an increased risk. Additionally, as the confidence interval includes 1.0, the finding is not robust enough to draw strong conclusions. To maintain accuracy and avoid potential misinterpretation, we have removed this statement from the manuscript.

17. **Comment** It will be good to summarize the main finding in the beginning of the discussion, so we can get an idea of the main findings of the study.

**Response** Addressed, line 299-306

18. **Comment** Just a suggestion, have you considered taking 2 factors together as an independent variable? For example, "marriage and infertility" or "acne and hirsutism" to see if a constellation of problems increase risk of anxiety, stress or depression?

**Response** We did analyze the combination of factors such as "marriage and infertility" and "acne and hirsutism" as independent variables to assess whether a constellation of these factors would increase the risk of anxiety, stress, or depression. However, our analysis did not reveal any significant associations between these combined factors and psychological distress.