

Comments on “Stress, Anxiety, and Depression Before and Twelve Months After Bariatric Surgery: Repeated Cross-sectional Study”

Dear Editor,

ElBarazi presented a large Egyptian study that examined stress, anxiety, and depression in relation to bariatric surgery.¹ The study found that one year after surgery, subjects had significantly increased levels of stress and anxiety and significantly lower levels of depression. The study was discussed in detail, and many reservations were expressed about its conclusions. We present our concerns in this letter.

The author drew far-reaching conclusions based on scores from a single instrument that, at follow-up, was emailed to the study participants. Readers are not told whether the version of the instrument employed had been standardized for use in Egypt. It is debatable whether a single, self-rated instrument can capture important clinical information about complex mental health constructs such as stress, anxiety, and depression. In particular, for more valid conclusions about anxiety and depression, patients would ideally need to be rated in person by an experienced interviewer and diagnosed using formal diagnostic criteria and not assessed remotely using a self-administered instrument. Notably, is that clinical interviews and diagnoses were not done even at baseline.

The baseline assessments could have been biased by anxieties related to the anticipation of surgery.² The endpoint assessments are not comparable with the baseline assessments because they were

administered differently (by email and hence vulnerable to responder bias) and in a different environment.

Regarding the follow-up assessment, patients who responded to the email may have differed systematically from those who did not. In this context, the author did not examine whether at least baseline characteristics were similar in those who responded and those who did not.

Given the study design, the descriptions for statistical methods and sample size estimation did not seem appropriate. Given the pre-post assessments, a paired t-test was all that was necessary, and for this, to detect a medium effect size of 0.5, a sample size of 34 would have sufficed.³

The description of the results is incorrect. In table 2 in the published paper, the statistic of interest is the mean difference and not an incidence rate ratio. The findings in this table were probably statistically significant because of the large sample size for a paired t-test; the differences in pre- versus post-ratings were probably random (explaining why the depression scores moved in a different direction from the stress and anxiety scores) and too small to be clinically significant.

It is not possible to conclude from these study methods that bariatric surgery and not a host of other covariates explained the results. Data from a longitudinal study design such as this would need to be examined in the context of the success of the surgery, complications of the surgery, restrictions related to the surgery, comorbid conditions, presence of psychosocial support, interventions received, and a host of other confounds present at baseline or developing during follow-up.

As a final point, the correct description of the study design is that this was

not a repeated cross-sectional study but a cohort study with patients assessed at baseline and at a 1-year follow-up.

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ORCID iDs

Aditya Somani  <https://orcid.org/0000-0002-3283-0362>

Mirza Jahanzeb Beg  <https://orcid.org/0000-0002-6308-2678>

Gurvinder Pal Singh  <https://orcid.org/0000-0003-3323-1086>

Yugesh Rai  <https://orcid.org/0000-0001-8464-3879>

Vasudeo Paralikar  <https://orcid.org/0000-0001-9452-5585>

Chittaranjan Andrade  <https://orcid.org/0000-0003-1526-567X>

Aditya Somani¹, Bheemsain Tekkalaki², Mirza Jahanzeb Beg³, Gurvinder Pal Singh⁴, Yugesh Rai⁵, Vasudeo Paralikar⁶, Amal Jolly⁷ and Chittaranjan Andrade⁸

¹Dept. of Psychiatry, All India Institute of Medical Sciences, Raipur, Chhattisgarh, India. ²Dept. of Psychiatry, KAHER's J. N. Medical College, Belagavi, Karnataka, India. ³Dept. of Psychology, Lovely Professional University, Phagwara, Punjab, India. ⁴Dept. of Psychiatry, All India Institute of Medical Sciences, Bathinda, Punjab, India. ⁵Peter Bruff Mental Health Assessment Unit, Kingswood Centre, Essex Partnership University NHS Trust, Colchester, Essex, United Kingdom. ⁶Dept. of Psychiatry, KEM Hospital, KEM Hospital Research Centre, Pune, Maharashtra, India. ⁷Midlands Partnership Foundation Trust, Fuller House, Telford, United Kingdom. ⁸Dept. of Clinical Psychopharmacology and Neurotoxicology, National Institute of Mental Health and Neurosciences, Bangalore, Karnataka, India.

Address for correspondence:

Aditya Somani, Dept. of Psychiatry, All India Institute of Medical Sciences, Raipur, Chhattisgarh 492099, India.
E-mail: dr.adityasomani@gmail.com

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Reply to the Comments on “Stress, Anxiety, and Depression Before and 12 Months After Bariatric Surgery: Repeated Cross-sectional Study”

Dear commentators:

We interviewed each patient and administered the Depression Anxiety Stress Scale-21 (DASS-21), as mentioned in the “Procedure” section. The instrument used in our research was the DASS-21, standardized in Egypt.^{2,3} This scale has been validated for use in the Egyptian population and has demonstrated reliability and validity in measuring levels of depression, anxiety, and stress. The data collected from administering this instrument provided valuable insights into the mental health status of our participants. We formed our conclusions after interviewing each patient and administering the DASS-21, as mentioned in the “Procedure” section.

The clinical psychologist Dr. Amani ElBarazi conducted the clinical interviews. He assessed and evaluated each patient comprehensively, considering their medical history, symptoms, and personal background. Dr. ElBarazi tried to gain a holistic understanding of each patient’s mental health needs.

You pointed out that the baseline assessments may have been biased by anxieties related to the expectations of the surgery; however, if this is the case, how can we explain the participants’ increased anxiety following bariatric surgery? Anxiety experienced after surgery may be caused by a variety of circumstances, including changes in body image, the recovery process, or adjusting to new lifestyle choices. Further examination into these potential variables may shed further light on the individuals’ growing anxiety levels. However, future research might look at the possible impact of anxiety on baseline assessments in surgical settings to better understand its impact on outcomes. This might give useful information for enhancing preoperative treatment and patient outcomes.

You indicated that the endpoint assessments were carried out differently in different situations. That is correct. However, the same scale was utilized to compare it to the baseline evaluation. The change in the assessment environment does not imply a bias in the outcomes as long as the evaluation criteria and methods are consistent.

Regarding the follow-up assessment, the author confirmed that the patients who responded to the email were the same as those who completed the baseline evaluation in the clinic at assessment 1. This was accomplished by calling the patients (phone calls) after they had submitted the emails to confirm their replies

to the DASS-21 items. This strategy was adopted to guarantee that the study’s data were accurate and consistent.

We chose generalized estimating equations (GEEs) because they extend the generalized linear model, process repeat measurement data, require no parametric distribution assumption, provide robust inference for an incorrect description of subject internal correlation, and provide good within-subject correlations. Several important studies employed (GEEs) to analyze their data.⁴

The incidence rate ratio refers to the ratio of two different rates of anxiety, stress, and depression incidence regarding bariatric surgery. We calculated the incidence rate ratios using GEEs for two-time assessments. This statistical method allows for a more accurate estimation of the incidence rate ratios over time in the context of bariatric surgery.

The event being measured here is the ratio of anxiety, stress, and depression at time 1 compared to time 2.

We defined incidence of anxiety as anything more than 8 on the anxiety subscale, depression as anything more than 10 on the depression subscale, and stress as anything more than 15 on the stress subscale. Those cutoff scores for depression, anxiety, and stress were based on the study by SH Lovibond and PF Lovibond.⁵

In the “Findings” section, we presented the incidence rate ratios for anxiety,