

Predictive Limits of Psychological Screening in Adolescent Bariatric Surgery

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BACKGROUND

- Adolescent obesity continues to be a public health crisis in the U.S. with more than 1/3 adolescents classified as overweight or obese
- Metabolic and bariatric surgery (MBS) is a safe and effective treatment for adolescents with obesity
- Preoperative psychological assessments are commonly used to assess candidacy for MBS
- MBS improves multiple measures of physical health; however, studies have provided mixed results on mental health
- Quality of life and other psychological comorbidities has been shown to improve after MBS, but there is limited research on how psychological assessments predict MBS outcomes

CLINICAL QUESTION

Can preoperative psychological screen scores predict postoperative weight loss, follow-up adherence, or vitamin adherence in adolescents undergoing MBS?

METHODS

- Retrospective cohort study of adolescents 14-19 who underwent MBS 2018-2023
- Population: adolescents who at MUSC and had pre-operative psychological assessments and 6 month and/or 1-year follow-up with MBS team
- Measures:

Symptom Checklist 90 Revised (SCL-90-R): measures nine dimensions of psychological symptoms including depression, anxiety, somatization

The Body-Esteem Scale for Adolescents and Adults (BESAA): measures self-perception for appearance, weight, and others' opinions

Transition Readiness Assessment Questionnaire (TRAQ): assesses readiness with healthcare including managing meds, keeping appointments, communicating with providers

RESULTS

Table 1. Demographics of Adolescent Bariatric Surgery Patients at a Single Center

Variable	Overall Cohort N=80 n (%)
Age, median (IQR)	16.97 (15.9, 17.7)
Weight closest to surgery (kg), median (IQR) Range 90.7 – 261.7)	149 (128.6, 174.7)
BMI Closest to surgery, median (IQR) Range 37.9 – 90.4	51.5 (46.2, 57.3)
Female gender	54 (67.5%)
Race	
White	35 (43.8)
Black	44 (55.0)
Unknown	1 (1.2)
Hispanic ethnicity	5 (6.3)
Payor Status, n=56	
Medicaid	48 (85.7)
Other	1 (1.8)
Private	7 (12.5)

Table 2. Predictors of Clinically Significant Pre-operative Psychological and Body Image Scores in Adolescent Bariatric Surgery Patients

Variable	Patients with any clinical SCL-90 dimension	Lowest tertile of TRAQ Total	Lowest tertile of BESAA Appearance	Lowest tertile of BESAA Weight	Lowest tertile of BESAA Attribution
White Race	OR 6.67 [1.95,22.8] p=0.003	OR 1.01 [0.39,2.57] p=0.986	OR 2.52 [0.98,6.43] p=0.054	OR 2.82 [1.10,7.21] p=0.03	OR 1.29 [0.51,3.23] p=0.589
Female gender	OR 0.69 [0.23,2.07] p=0.512	OR 0.45 [0.16,1.19] p=0.107	OR 0.42 [0.16,1.10] p=0.079	OR 0.28 [0.11,0.75] p=0.011	OR 0.53 [0.20,1.40] p=0.204
Higher BMI	OR 1.05 [0.99,1.11] p=0.118	OR 1.06 [1.00,1.12] p=0.046	OR 1.07 [1.01,1.13] p=0.028	OR 1.05 [0.99,1.11] p=0.072	OR 1.03 [0.98,1.09] p=0.173
Older age	OR 0.75 [0.49,1.14] p=0.180	OR 0.61 [0.41,0.92] p=0.017	OR 0.80 [0.55,1.17] p=0.256	OR 0.61 [0.41,0.90] p=0.013	OR 0.89 [0.62,1.29] p=0.557

RESULTS

- SCL-90-R: Higher baseline BMI and white race were associated with clinically elevated scores
- TRAQ: Lower TRAQ total scores were linked to younger age and higher BMI
- BESAA: White, younger, and male patients were more likely to report lower BESAA weight sub scores
- No surveys were predictive of successful weight loss, follow-up adherence, or vitamin adherence

CONCLUSIONS

- These validated questionnaires do not predict success after MBS but may guide individualized interventions
- Strengths: Validated questionnaires
- Limitations: Single center, small sample size, limited follow-up weight data
- Future studies should look at longer term outcomes, larger sample size, and additional psychological surveys that may improve prognostication after MBS