



The use of Personality Inventories in Pre-surgical Psychological Evaluation of Bariatric Patients

Corresponding Author:

Dr. Stephanie Cox,

Ph.D. , Department of Behavioral Medicine and Psychiatry, West Virginia University, 930 Chestnut Ridge Road, 26505 - United States of America

Submitting Author:

Dr. Stephanie Cox,

Ph.D. , Department of Behavioral Medicine and Psychiatry, West Virginia University, 930 Chestnut Ridge Road, 26505 - United States of America

Submitted on:01-Jul-2014, 07:23:25 AM GMT

Accepted on:01-Apr-2015, 10:42:30 AM GMT

Article ID: WMCPLS00454

Article Type: Review articles

Article URL: http://webmedcentralplus.com/article_view/454

Subject Categories:BARIATRIC AND METABOLIC SURGERY

Keywords:Bariatric Surgery, Psychological Evaluation, Personality Testing

How to cite the article:

Cox S.The use of Personality Inventories in Pre-surgical Psychological Evaluation of Bariatric Patients. WebmedCentral *plus* BARIATRIC AND METABOLIC SURGERY 1970;-39(1):WMCPLS00454

Source(s) of Funding:

None

Competing Interests:

None

The use of Personality Inventories in Pre-surgical Psychological Evaluation of Bariatric Patients

Author(s): Cox S

Abstract

Bariatric surgery has emerged as an effective treatment for long-term weight loss and associated co-morbidities of obesity. However, not every patient who is interested in bariatric surgery is an optimal candidate. Pre-surgical psychological evaluations attempt to identify patients at risk for sub-optimal outcomes following bariatric surgery. Because no consistent guidelines exist for what variables must be assessed during a pre-surgical psychosocial evaluation, many providers remain unsure of how to best identify patients that may be at risk. About half of practitioners include measures of personality in the psychological assessment, yet it is unclear if these measures represent useful tools in predicting surgical outcomes. The current article reviews the evidence regarding commonly used personality inventories in pre-surgical assessment. Literature suggests the MMPI and MMPI-2 demonstrate poor prognostic value in determining outcomes following surgery. The MMPI-2-RF and PAI can be considered possible options to include in assessment, although research has yet to confirm prognostic ability.

Personality Inventories in bariatric assessment

Review of Pre-Surgical Psychological Assessment
The prevalence of obesity in adults and adolescents in the United States is increasing at an alarming rate [1]. In 2010, The Centers for Disease Control and Prevention reported that more than one-third of U.S. adults were obese; it is projected that two-thirds of the population will be obese by 2020 [2]. Bariatric surgery has emerged as an effective treatment for long-term weight loss and associated co-morbidities of obesity [3]. As such, rates of bariatric surgery have increased seven-fold in the past several decades [4]. However, not every patient who is interested in bariatric surgery is considered a good candidate. Patients may demonstrate a number of pre-operative challenges, which put them at risk for poor outcomes. These challenges arise from a variety of sources including medical, nutritional, and/or psychological factors.

Moreover, an estimated 20% of patients who undergo bariatric surgery fail to lose the expected amount of weight or regain previously lost weight [5]. As such, efforts have been made to identify patients who may be at risk for sub-optimal or failed outcomes prior to surgery. Pre-operative psychological evaluations were put into practice following the recommendations of the 1991 National Institutes of Health (NIH) Consensus Panel, which recognized the role of psychological and behavioral factors in predicting outcome from bariatric surgery [6,7]. The NIH acknowledged that a patient's appropriateness for surgery is largely dependent on the individual's overall functioning and the extent to which they can sustain the necessary behavioral changes following surgery. It was hypothesized that a pre-surgical evaluation would be useful in identifying patients at risk for sub-optimal outcomes. This assumption was largely based on research that demonstrated a link between psychological/behavioral factors and weight loss outcomes in conventional weight loss programs [8]. Since the NIH recommendations, researchers have investigated psychosocial variables as possible indicators of outcomes following bariatric surgery. For example, variables such as the presence of Axis I disorders, including Mood, Anxiety, and Eating disorders, have been increasingly examined as possible predictors. Unfortunately, the research to date indicates that many psychosocial variables traditionally assumed to confer risk in conventional programs have no consistent predictive relationship to weight loss or other health outcomes following bariatric surgery [9,10,11,12,13,14].

Current Status of Practice Guidelines for Pre-Surgical Psychological Assessment

Since research has been unable to identify specific predictors, no consistent guidelines exist for what variables must be assessed during a pre-surgical psychosocial evaluation [15]. Sogg and Mori [16, p. 370] note that, "there is no currently used, standardized protocol for this type of assessment". As would be expected, many providers remain unsure of how to best identify patients that may be at risk for poor outcomes. In response, the American Society of Metabolic and Bariatric Surgery (ASMBS) attempted to aid mental health practitioners by publishing a set of recommendations, suggesting specific content areas

to consider when conducting pre-surgical bariatric evaluations [17]. These content areas include behavioral components (previous attempts at weight management, eating habits and dietary styles, physical activity); health related activity (history of impulsive/ compulsive behavior, compliance with medical regimes, legal history); cognitive and emotional components (cognitive functioning, knowledge of surgical interventions, health beliefs, coping skills, psychopathology); developmental history (current life situation, stressors, social support), and treatment expectations. Furthermore, researchers suggest moving away from psychiatric diagnoses and broad psychological constructs, such as personality, and to focus more on specific aspects of behavior. Specifically, recommendations include focusing on eating patterns, behavior change, compliance with recommendations, and motivation [18].

The Use of Clinical Measures and Personality Inventories in Pre-Surgical Assessment

Regarding specific psychological testing, a variety of psychological assessments may be useful to clinicians conducting pre-surgical bariatric evaluations. The ASMBS note that for each clinician, "test selection is based on the referral question, as well as on the psychologist's training, skill level in test interpretation, familiarity with the relevant literature, and personal preference" [17, p. 11]. Likewise, research indicates that assessments used by psychologists can vary widely [15, 16]. Fabricatore et al. [15] evaluated the assessment methods of mental health professionals and found that approximately two-thirds (68.6%) of practitioners include at least one symptom inventory in their assessment. Most commonly, practitioners tend to include measures of depression, such as the Beck Depression Inventory, (51.5%), eating disorders (36.1%), and anxiety disorders (18.0%). Additionally, 53.1% of practitioners included measures of personality such as the Minnesota Multiphasic Personality Inventory (MMPI, 42.8%), Personality Assessment Inventory (PAI, 9.3%), or Million Behavioral Medicine Diagnostic (MBMD, 16.0%) [15].

The Use of MMPI, MMPI-2, and MMPI-RF

In regards to the use of the MMPI or MMPI-2, research has demonstrated that profiles for pre-surgical patients are largely heterogeneous with few clinically significant elevations [20]. As such, the predictive potential of such testing is limited [10]. While lower rates of post surgical weight loss have been retrospectively observed in patients with personality disorders, personality variables, as assessed by the MMPI, have been shown to have no consistent ability to predict weight loss or other psychosocial outcomes [13, 21].

In a meta-analytic review, Herpertz et al. [21] examined all controlled and non-controlled trials of the predictive value of personality variables within the past 20 years, including studies with both retrospective and prospective designs (only one study included in their review did not utilize the MMPI). The authors found no predictive relationship between the clinical scales of the MMPI and postsurgical outcomes [22, 23, 24] with the exception of one study [25]. Barrash et al. [25] conducted a cluster analysis of MMPI profiles of 138 women who planned to undergo vertical banded gastroplasty (VBG) with weight loss outcomes at 12 months following surgery. This study found that MMPI types indicative of the most severe psychological disturbances did result in less weight loss. One additional study, completed after this meta-analysis, investigated the predictive validity of the MMPI-2 following Roux-en-Y gastric bypass (RYGBP) [26]. Tsushima, Bridenstine, & Balfour [26] analyzed patients one year following RYGBP and found that patients who lost less than 50% of their excess weight had significantly higher elevations on the F, Hysteria, Paranoia, and Hypochondriasis scales than those who lost more than 50% of their excess weight. Patients who lost less weight also had significantly lower elevations on the Masculinity-Femininity scale. However, the authors also suggest caution when interpreting these results given the small sample size of their study (N=52) inflating the possibility of Type II error and their arbitrary differentiation of weight loss groups.

As the MMPI and MMPI-2 have limited utility in predicting outcomes, researchers have recently examined the use of the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) [27] with bariatric populations. Tarescavage, Wygant, Boutacoff et al. [28] investigated the reliability and internal validity of the MMPI-2-RF in a sample of bariatric surgery candidates. Results of this study generally support the MMPI-2-RF as a psychometrically viable option, although more research will be necessary to determine its clinical utility in identifying at risk patients and outcomes from bariatric surgery.

Additional Personality Inventories in Pre-surgical Assessment

In addition to the MMPI, research has examined other personality assessments such as the Millon Behavioral Medicine Diagnostic (MBMD) and Personality Assessment Inventory (PAI). Although the authors of the MBMD attempted to provide adjusted norms for bariatric populations, the methods used to develop these norms were never published [29]. Additionally,

to date, no additional studies have been published that have established the MBMD as valid or reliable for use in predicting outcome from bariatric surgery. Consequently, practitioners have been unable to verify the test's psychometric properties in order to establish adequate reliability with pre-surgical bariatric patients. Thus, researchers have advised clinicians to use caution when considering the MBMD in the presurgical assessment of bariatric candidates [30]. Alternatively, the PAI has been demonstrated to be psychometrically sound for use with bariatric populations [31]. The PAI also provides information regarding a patient's interpersonal style, perception of stress and social support, and attitudes toward treatment, which may be useful for clinicians conducting pre-surgical assessments. No research, however, has yet examined the ability of the PAI to predict post-surgical bariatric outcomes.

Conclusion

In summary, at this time, there is no consensus regarding what variables must be included in pre-operative psychological evaluations. The paucity of evidence for psychosocial predictors of bariatric surgery outcomes as well as the lack of consistent practice guidelines contribute to significant confusion within the field. The MMPI and MMPI-2 demonstrate poor prognostic value in determining outcomes following surgery. There is also a lack of available norms for the MBMD. As such, these instruments may not represent optimal assessment strategies. The MMPI-2-RF and PAI can be considered possible options to include in assessment, although research has yet to confirm prognostic ability. It is clear that further examination will be needed to determine the most effective pre-operative assessment methods. More research will also be necessary to identify predictors of post-operative results. Currently, the ASMBS and the extant literature provide recommendations, which include assessment of specific areas, such as eating and physical activity patterns, cognitive/emotional components, treatment expectations, and motivation. Overall, it remains the responsibility of the practitioner to determine what assessment practices and methods to utilize, based upon available research, personal preference, and patient populations.

References

1. Kuczmarski R. J., Flegal K. M., Campbell S. M.,

Johnson C. L. (1994). Increasing Prevalence of Overweight Among US Adults: The National Health and Nutrition Examination Surveys, 1960 to 1991. *JAMA*, 272(3), 205-211. doi:10.1001/jama.1994.03520030047027.

2. Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2012). Prevalence of obesity in the United States, 2009–2010. NCHS data brief, no 82. Retrieved from: <http://www.cdc.gov/nchs/data/databriefs/db82.pdf>

3. Buchwald, H., Avidor, Y., Braunwald, E., Jensen, M. D., Pories, W., Fahrbach, K., & Schoelles, K. (2004). Bariatric surgery: A systematic review and meta-analysis. *JAMA*, 292(14), 1724-1737. doi:10.1001/jama.292.14.1724.

4. Livingston, E. H. (2010). The incidence of bariatric surgery has plateaued in the U.S. *American Journal of Surgery*, 200(3), 378-85. doi: 10.1016/j.amjsurg.2009.11.007.

5. Christou, N. V., Look, D., & Maclean, L. D. (2006). Weight gain after short- and long-limb gastric bypass in patients followed for longer than 10 years. *Annals of Surgery*, 244, 734-740.

6. Buchwald, H. (2005). Consensus conference statement bariatric surgery for morbid obesity: health implications for patients, health professionals, and third-party payers. *Surgery for Obesity & Related Disorders*, 1, 371-381.

7. NIH Consensus Panel (1991). *Gastrointestinal Surgery for Severe Obesity*. In Consensus Development Conference (pp. 1-20).

8. Bauchowitz, A. U., Gonder-Frederick, L. A., Olbrisch, M. E., Azarbad, L., Ryee, M. Y., Woodson, M., Miller, A., & Schirmer, B. (2005). Psychosocial evaluation of bariatric surgery candidates: A survey of present practices. *Psychosomatic Medicine*, 67, 825-832.

9. Franks, S. F. & Kaiser, K. A. (2008). Predictive factors in bariatric surgery outcomes: What is the role of the preoperative psychological evaluation? *Primary Psychiatry*, 15, 74-83.

10. Franks, S. F. & Kaiser, K. A. (2012). Rethinking the preoperative psychological evaluation – A new paradigm for improved outcomes and predictive power. In C. Huang (Ed.), *Advanced Bariatric and Metabolic Surgery*, InTech. Retrieved from <http://www.intechopen.com/books/advanced-bariatric-and-metabolic-surgery/rethinking-the-preoperative-psychological-evaluation-a-new-paradigm-for-improved-outcomes-and-predict>

11. Greenberg, I. (2003). Psychological aspects of bariatric surgery. *Nutrition in Clinical Practice*, 18, 124-130.

12. Greenberg, I., Sogg, S., & Perna, M. (2009). Behavioral and psychological care in weight loss surgery: best practice update. *Obesity*, 17, 880-884.
13. Grothe, K. B., Dubbert, P. M., & O'jile, J. R. (2006). Psychological assessment and management of the weight loss surgery patient. *American Journal of the Medical Sciences*, 331, 201-206.
14. van Hout, G. C., Verschure, S. K., & van Heck, G. L. (2005). Psychosocial predictors of success following bariatric surgery. *Obesity Surgery*, 15, 552-560.
15. Fabricatore, A. N., Crerand, C. E., Wadden, T. A., Sarwer, D. B., & Krasucki, J. L. (2006). How do mental health professionals evaluate candidates for bariatric surgery? Survey results. *Obesity Surgery*, 16, 567-573.
16. Sogg, S. & Mori, D. L. (2004). The Boston interview for gastric bypass: Determining the psychological suitability of surgical candidates. *Obesity Surgery*, 14, 370-380.
17. LeMont, D., Moorehead, M. K., Parish, M. S., Reto, C. S., & Ritz, S. J. (2004). Suggestions for the pre-surgical psychological assessment of bariatric surgery candidates. Retrieved from <http://s3.amazonaws.com/publicASMB/ GuidelinesStatements/Guidelines/PsychPreSurgicalAssessment.pdf>.
18. Pontiroli, A. E., Fossati, A., Vedani, P., Fiorilli, M., Folli, F., Paganelli, M., Marchi, M., Maffei, C. (2007). Post-surgery adherence to scheduled visits and compliance, more than personality disorders, predict outcome of bariatric restrictive surgery in morbidly obese patients. *Obesity Surgery*, 17(11), 1492-7.
19. Walfish, S., Vance, D., & Fabricatore, A. N. (2007). Psychological evaluation of bariatric surgery applicants: procedures and reasons for delay or denial of surgery. *Obesity Surgery*, 17(12), 1578-83.
20. Wampler, R. S., Lauer, J. B., Lantz, J. B., Wampler, K. S., Evens, M. G., M., & James, A. (1980). Psychological effects of intestinal bypass surgery. *Journal of Counseling Psychology*, 27(5), 492-499. doi: 10.1037/0022-0167.27.5.492
21. Herpertz, S., Kielmann, R., Wolf, A. M., Hebebrand, J., & Senf, W. (2004). Do psychosocial variables predict weight loss or mental health after obesity surgery? A systematic review. *Obesity Research*, 12, 1554-1569.
22. Gentry, K., Halverson, J. D., Heisler, S. (1984) Psychologic assessment of morbidly obese patients undergoing gastric bypass: a comparison of preoperative and post-operative adjustment. *Surgery*, 95, 215-220.
23. Larsen, F., Torgersen, S. (1989) Personality changes after gastric banding surgery for morbid obesity: a prospective study. *Journal of Psychosomatic Research*, 33, 323-334.
24. Valley, V., Grace, D. M. (1987) Psychosocial risk factors in gastric surgery for obesity: identifying guidelines for screening. *International Journal of Obesity*, 11, 105-113.
25. Barrash, J., Rodriguez, E. M., Scott, D. H., Mason, E. E., Sines, J. O. (1987) The utility of MMPI subtypes for the prediction of weight loss after bariatric surgery: Minnesota Multiphasic Personality Inventory. *International Journal of Obesity*, 115-128.
26. Tsushima, W. T., Bridenstine, M. P., & Balfour, J. F. (2004). MMPI-2 Scores in the Outcome Prediction of Gastric Bypass Surgery. *Obesity Surgery*, 14(4), 528-532
27. Ben-Porath, Y. S., & Tellegen, A. (2011). MMPI-2-RF (Minnesota Multiphasic Personality Inventory-2 Restructured Form): Manual for administration, scoring, and interpretation. Minneapolis, MN: University of Minnesota Press.
28. Tarescavage, A. M., Wygant, D. B., Boutacoff, L. I., & Ben-Porath, Y.S. (2013). Reliability, Validity, and Utility of the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) in Assessments of Bariatric Surgery Candidates. *Psychological Assessment*, Epub ahead of print.
29. Millon, T., Antoni, M. H., Millon, C., Minor, S., & Grossman, S. (2007). MBMD manual supplement: Bariatric report. Minneapolis, MN: Pearson Assessments.
30. Walfish, S., Wise, E. A., & Streiner, D. L. (2008). Limitations of the Millon Behavioral Medicine Diagnostic (MBMD) with bariatric surgical candidates. *Obesity Surgery*, 18, 1318-22. Corsica, J. A., Azarbad, L., McGill, K., Wool, L., & Hood, M. (2010). The Personality Assessment Inventory: Clinical utility, psychometric properties, and normative data for bariatric surgery candidates. *Obesity Surgery*, 20, 722-731.