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Social-Demographic and Behavioural Characteristics of a Morbid Obese Population Seeking Bariatric Surgery

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Abstract

Introduction: Bariatric surgery is proven to be the only successful and sustainable treatment of morbid obesity. Unfortunately there is a fair amount of patients that encounter a regain of weight after years. This is probably highly associated with psychological and behavioural aspects making them substantial factors in the decision making process to diminish the risk of weight regain after bariatric surgery.

Method: The purpose of this research was to describe the characteristics of morbid obese patients undergoing a preoperative screening for potential bariatric surgery, in order to improve information, pre-care, treatment and follow-up given to obese patients. In the Catharina Hospital in Eindhoven, the Netherlands, the self-reported screening questionnaires of 345 bariatric patients were reviewed.

Results: The results provided information about the patients' support system, the educational level, work situation, eating habits, eating disorders among others binge eating disorder, coping, the high prevalence of psychical disorders and limited substance abuse.

Conclusion: Further research is needed to investigate a possible gender difference. The factors relationships, family, work and coping styles in the bariatric population should be investigated more in depth, to obtain greater insight into the influence and to further personalize pre- and postoperative support of the bariatric surgery.

Keywords: Bariatric surgery; Morbid obesity; Screening; Social-demographic and Behavioral characteristics

Introduction

Bariatric surgery is proven to be the only successful and sustainable treatment of morbid obesity. Several techniques are available with different balances in safety and efficacy. Nevertheless, each surgical procedure is associated with a certain amount of failures. Regain of weight can be the result of technical errors, but are probably highly associated with psychological and behavioural aspects. To diminish this risk ahead, most of these aspect should be taken into account in the decision making process. Several psychological aspects such as eating disorders or mental health problems have already been studied as risks factors [1,2]. The purpose of this research was to describe these characteristics of morbid obese patients undergoing a preoperative screening for potential bariatric surgery.

Methods

The results of a questionnaire focusing on the social-demographic and behavioural aspects were reviewed. The setting was a bariatric center in the large teaching hospital Catharina Hospital in Eindhoven, The Netherlands. Since the end of 2011 the self-reporting screening questionnaire, the 'Pre-operative screening list bariatric surgery' of the Dutch workgroup bariatric psychology, version 24.03.2011 was added to the screening protocol.

The questionnaire included 96 questions in total. These consisted of 70 multiple-choice questions, 26 open questions, 10 questions in table format and 7 ten-points-scale questions. The multiple-choice option varied from 36 two-choice questions to 1 twenty-choice question. In 60 multiple-choice questions only one answer was allowed, and in the other 10 multiple-choice questions there was no limitation in the amount of answers. The questions in table format were two five-columns, one six-columns and seven seven-columns questions. In the five- and seven-columns questions there were no restrictions as regard to the amount of answers. For the multiple-choice and the columns questions the first 3 chosen options were looked at. The questionnaire contained questions about socio-demographics, eating habits, diets, physical activity and mental health.

This pre-visit questionnaire was send by mail to the patient and used for screening by a nurse specialized at obesity, psychologist and dietician. The results were discussed in a multidisciplinary team. Upon approval the patients were suggested for a preoperative track, gastric sleeve, bypass or a revision. The first 345 patients who completed the screening questionnaire were included in this research. The questionnaire was considered completed if more than 90% of the questions were answered. Data extraction of the questionnaires was performed retrospectively. Other included parameters were date of birth, gender and body mass index (BMI).

A descriptive analysis of the characteristics of morbid obese patients was performed. The SPSS package was used for the analysis using student–t and Chi square tests. P-value below 0.05 was considered significant.

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Results

Sociodemographic characteristics

Median age of the patients was 43 years (standard deviation (SD) 0.8; (19-67)). 82% was female. Most patients were cohabiting 49% were with a partner and children living at home and 26% with a partner and without children living at home (Figure 1). No distinction was made between cohabiting and married patients. Almost all patients received some kind of support by family or friends (98%), by one (15%), two (17%), three (24%) or four persons (42%) on a daily (60%) or weekly (35%) base. The majority of the patients had other obese family members (88%). In 69% of the cases it concerned their parents, in 42% their siblings and in 49% second-degree relatives. Distribution of highest level of completed education is presented in Figure 2. The majority (61%) had paid employment, with an average of 29 hours a week (SD 13.1; (3-90)). Of the remaining patients 15% were medically disapproved, 11% housewife/ houseman and 9% unemployed.

One out of four (23%) stated they smoked of which more than halve smoked more than 10 cigarettes a day. Merely 94% of the patients did not drink any alcohol or less than one glass a day. 41% occasionally used more. In total 24 patients had been drinking excessive amounts of alcohol in the past. Of the 345 patients only one patient admitted to using drugs at the time of the screening and 6 patients had used drugs excessively in the past

Pre-operative motivation

Mean BMI was 43 kg/m^2 (SD 5.7; (26.3-65.5)). The most important reasons for losing weight was to prevent future physical problems (21%) or addressing current health issues like joint pain, diabetes, hypertension, sleep apnoea, subfertility and other health issues (70%). The most important reason for their obesity, according to patients themselves were; too large quantities of food (21%), predisposition/ heredity (19%) and irregular eating patron (15%). With 12% eating unhealthy food came in fourth place. The majority expected to need post-operative professional help (91%) (Figure 3).

Diet habits

The majority of the patients had 3 meals a day (69%), which they considered elaborate (55%), fatty (74%) and rich in calories (70%). Almost all patients added snacks, of which 29% ate 3 or more. 29% mentioned that they ate fast. 41% did not eat consciously, and 16% did not sit at a table while eating. 45% of the patients experienced a craving for food often to very often and 80% an occasional to frequent feeling of appetite. In contrast, 47% of the patients rarely (17%) to occasionally (30%) had a feeling of fullness. 86% admitted eating more with moments. This was mainly when patients where alone (13%), in the evenings (12%), at party's (10%) and while watching television (9%). The following reasons were primarily given by the patients for eating more at these moments; appetite (23%), sociability (17%) and by force of habit (10%). 138 patients (40%) reported binge eating. In the questionnaire binge eating was defined as eating a lot of food in a short amount of time. In addition, 96 (28.1%) subjects experienced a subjective feeling of loss of control at that moment. In contrast, 75% of the patients stated that they also had moments where they ate less. Especially when they felt ill (14%), were busy (13%) or were in the company of a lot of people (9%).

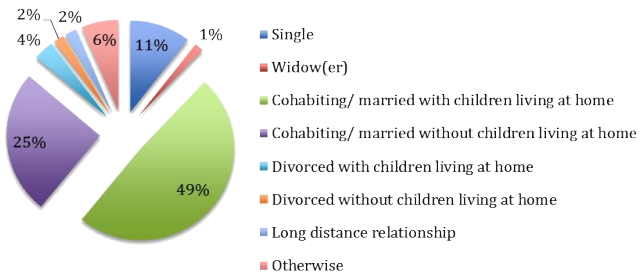

Figure 1: Family structure.

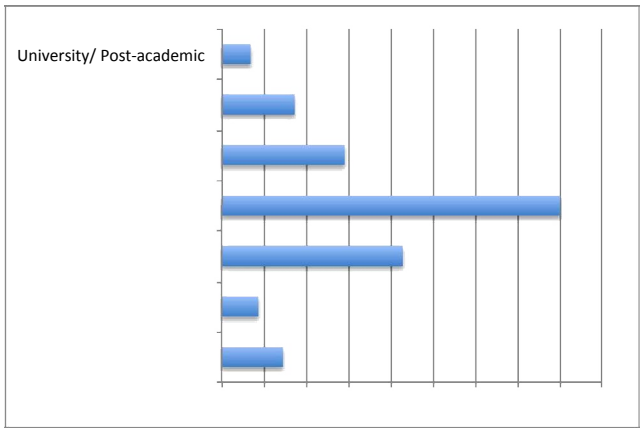

Figure 2: Education.

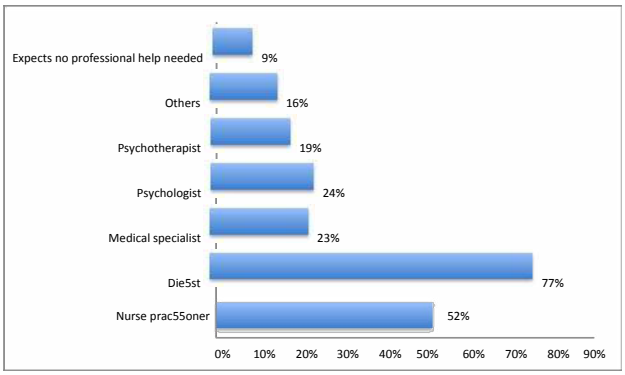

Figure 3: Expectations postoperative help.

Most of the patients tried multiple diets. 88% tried a diet in the last ten months. The longest diet attempt had an average of 45 weeks (SD 0-520 weeks). In addition, an average of 26 kilograms (SD 0-115 kg) weight loss was accomplished. Nevertheless, patients often were gaining weight over time after a diet attempt.

Mental health

71% of the patients had experienced one or more stressful life-events that also at the time of the screening produced tension. Most frequent stressing life-events were death of a loved one (12%), illness of a loved one (6%) or of the patient himself (5%) and troubles in the (parental) home (5%). As a reaction to these life-events 14% of the patients increased the amount of food they ate. 18% confessed to eating more unhealthy or irregular as a response to stress. The most reported coping strategy was seeking support (16%), asking advice

of others (14%) and actively seeking a solution (11%). 51% of the patients received professional help of a psychologist (23%), social worker (13%) or psychiatrist (4%) either currently or in the past. 23% patients had received medication to treat psychological psychiatric symptoms in the past, in contrast to 16% patients who currently received medication. A total of 59 patients took or were (still) taking psychopharmaca.

Discussion

Social environment

In the study, the standard patient was a middle-aged female, cohabiting with a partner. Consistent with other studies, around 75-80% of the study population is female. Despite the fact that obesity occurs more in women (13.9%) than in men (11.3%), the gender difference in the population is far greater [3]. Stroh, et al. already demonstrated that male bariatric patients have a higher weight, BMI and age when turning to bariatric surgery. A possible explanation is the greater social acceptability for obese men than for women. However, male candidates have a higher number of postoperative complications and lose less weight in comparison to the female participants [2,4,5]. As the current research mainly represented the female part of the bariatric population and as there is evidence of a gender difference, the question rises whether a gender difference in pre- and/or post-operative guidance is in place. Further research focused on the male bariatric population is indicated. In agreement with previous reports of bariatric populations, the majority was cohabiting regardless of their marital status [6,7]. A stabile home situation, like cohabiting, is found to be important to weather the post-operative changes patients have to make [2,8,9]. However, Lutfi, et al. discovered that married patients had a 2.6 times greater odds ratio of failing to achieve successful weight loss compared to single patients (P = .04). This may be due to less time for regular physical exercise and less considerations with dietary needs of others. Remarkably, in the same study parenthood wasn't an factor of influence [10]. Nevertheless, Burke, et al. revealed a significant relationship between the BMI of parents and the BMI of their offspring [11]. The conflicting evidence points to a lack of depth with regard to the quality of social support within a marriage/ partnership and family. As children are part of the immediate environment, not only parents influence their children, but also vice versa. A family oriented approach seems sensible. This concept is supported by the limited literature [12].

Weight and eating habits

In the study the mean BMI was 43 kg/m^2 (SD 5.7). Preoperative weight seems irrelevant, since patients will lose a significant amount of weight after surgery. However, studies have shown that patients with a preoperative lower BMI are more successful in losing weight postoperatively. A prospective study should demonstrate if patients with a high BMI, who lose a significant amount of weight preoperatively, will lose even more weight postoperatively [13-15]. The specific pre-operative eating habits in the morbidly obese population are relatively unknown in the literature. In our study most patients of the population have tried multiple diets without long lasting success. In addition, the current eating habits of more than half of the patients (55-74%) were unhealthy, varying from eating too fast, too extensive, fat or high-calorie food and/ or too many (unhealthy) snacks. In addition, participants admitted eating more at specific moments by force of habit or sociability. The lack of control on their eating habits can prevent patients from making permanent lifestyle changes including eating habits postoperatively [6,14,16,17]. This has already been proven for alcohol use postoperative and eating disorders (mainly BED) in the (morbidly) obese population. Current literature shows conflicting evidence of BED causing more or less postoperative weight loss, or no effect at all [18-21]. This ambiguous relation arises because patients are still capable of losing almost 40% of their weight. However, it remains to be seen whether weight maintenance will be accomplished in the long run [18,22]. As both changes in eating behavior as in other aspects of their lives are required, a multidisciplinary approach pre- and postoperatively is needed. A nurse practitioner specialized in obesity would be an addition to the team. Nevertheless, researching eating behavior remains difficult due to the risk of interviewer bias and the retrospective aspect of surveys, which entail the risk of recall bias. Also, other methodological limitations were noticed in several studies [6,23].

Work

Being (morbidly) obese does also have an impact on their professional life. Consistent with the literature we found about 60% paid employment, 15% occupational disability and 9% unemployment. These numbers indicate that the bariatric population is doing considerably worse in the labor market compared to the general population [6,7,24,25]. Obesity is a risk factor for quitting paid employment and going to disability pension. In the study of Velcu, et al. 27 of the 41 participants were unemployed pre-operatively, of which 25 participants gave reasons attributed to morbid obesity. Despite the improvement in quality of life postoperatively, only 4 of the 27 patients were gainfully employed after 1 and 5 years. However, postoperatively the reason for unemployment partly changed to non-related morbid obesity problems [26-28]. The mean BMI of the people who were unemployed was not significantly higher, despite successful weight loss. An important limitation of the study is the small number of participants. Future research should clarify a possible effect of weight loss on the employment rate and number of hours of work.

Psychical health

With half of the research group receiving professional psychical help currently or in the past, the study affirms yet again the association and statistics between (morbid) obesity and psychiatric comorbidity [19,29]. When coping with life-events or negative feelings only 14-18% of the participants reported an increase in eating, suggesting emotional eating to regulate negative emotional state [30]. The study of Wood & Ogden 2015, found that if patients did not change their coping postoperatively, they wouldn't be successful in losing weight [31]. Patients, who tried to change, replaced their habits for weight gaining methods like sitting activities or oral-related activities, instead of weight losing methods like physical exercise [32]. Patients should be taught preferably preoperatively new coping strategies, in order not to relapse into emotional eating with the occurrence of a life-event. Only 2% (n=7) participants use or have a history of excessive drugs use. Addiction other than food can still be relevant, since Lent and Swencionis revealed that an addictive personality is associated with maladaptive eating behavior. In our study no information was gathered regarding gambling or addiction to medication. However, if there is a food addiction the success rates for weight losing are lower [30,31,33]. Remarkably, only 7% of the research group thinks psychological support postoperatively is needed. This discrepancy may be due to patients believing their psychological problems will reduce when losing weight. Da Silva, et al. found that patients saw themselves as a passive element in the treatment process. In addition, they saw the operation as a miracle, which would solve all their problems [30]. These thoughts reflect a lack of realistic expectations and understanding of the postoperative course. This image needs to change pre-operatively, because the necessary lifestyle changes require an active attitude of the patient.

Despite the large amount of literature on this subtopic, the methodological limitations must be taken into account. One limitation is the way some studies identify psychiatric disorders, namely by using unspecified clinical interviews. Second, there is a lack of consensus concerning which instruments should be used for preoperative screening and their validity [19,23]. Third, bariatric surgery patients present themselves favorably during the psychological evaluation, by reporting less psychological problems [34].

A drawback of the study is the use of a not validated questionnaire. Although scarce evidence is available about screening programs a validation is not expected soon. Furthermore, the evaluated results were subject to reporting and recall bias. This may be due to a number of factors such as limited knowledge of the Dutch language, lack of motivation, giving socially desirable answers, or filling in the questionnaire with or by another person. Interviews could produce more accurate and truthful answers. The answers from the questionnaire were not checked (yet) with information given during the interviews in the screening. Another drawback is the sample size. There was no specific primary endpoint planned in advance providing a base to define a minimum set of data. Nevertheless, reviewing these social-demographic and behavioral characteristics of a morbid obese population provided practical information about convalescence, involvement of possibly overweight family members, mental health problems, possible adjustments in psychotropic medication; level the information to the education level, advice on healthy eating patterns and search for appropriate physical activity. The next steps in investigating the value of the screening questionnaire should take into account the information gathered during interviews and results of a multidisciplinary discussion. Further research is needed to determine the impact of the distinctive characteristics on the results of bariatric surgery.

Conclusions

Reviewing the results, a broad overview of the psychosocial and demographic characteristics of the pre-operative bariatric population was given. Further studies are necessary to investigate a possible gender difference. The factors relationships, family, work and coping styles in the bariatric population should be investigated more in depth, to obtain greater insight into their influence and to further personalize pre- and postoperative support.

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