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ORIGINAL CONTRIBUTIONS

Development of a Measure of Barriers to Laparoscopic Adjustable Gastric Banding (LAGB) Aftercare Attendance

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Abstract
Background Regular aftercare attendance following laparoscopic adjustable gastric banding (LAGB) is associated with greater weight loss and fewer post-surgical complications. Despite high reported rates of attrition from LAGB aftercare, the reasons for non-attendance have not been thoroughly explored. The aim of the current study was to describe the scale development, explore the factor structure and evaluate the psychometric properties of the Gastric Banding Aftercare Attendance Questionnaire (GBAAQ)—a tool that measures barriers to aftercare attendance in LAGB patients.
Methods One hundred and eighty-three participants completed the GBAAQ; 107 regular attendees and 76 non-attendees.
Results A factor analysis identified four factors (Treatment Approach, Time Constraints, Stress and Pressures, Uncomfortable Participating) that demonstrated good known-groups validity and internal consistency.
Conclusions Although further validation is needed, the results of the present study provide preliminary support for the validity of the GBAAQ. Knowledge about the barriers to LAGB aftercare attendance can be used to identify those most at risk of non-attendance and can inform strategies aimed at reducing non-attendance.

Keywords LAGB · Aftercare · Attrition · Perceived barriers · Compliance · Attendance · Complications · Follow-up · Measurement

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Introduction

Laparoscopic Adjustable Gastric Banding (LAGB) aftercare attendance is associated with greater excess weight loss and fewer post-operative complications [1–3]. However, non-attendance is common, with attrition rates between 2 and 41 % being reported [3–5]. Consequently, many patients do not receive the full benefits of surgical aftercare and are at risk of lesser weight loss and more late adverse events.

Past research on barriers to aftercare attendance has not yielded consistent findings. A recent systematic review by Moroshko, Brennan and O'Brien [6] identified only eight studies addressing factors associated with bariatric aftercare attendance. Four of the eight studies considered LAGB specifically. Two of these studies considered the impact of travel distance on attendance. Follow-up attendance was not significantly affected by travel distance in one study [7], while greater travel distance was associated with less follow-up visits in the other [3]. The other two studies considered the impact of mental health on attendance and found that narcissistic personality [1] and depression [2] were associated with poorer attendance, as was emotional eating for females and traumatic childhood for males [2]. These available studies

provide little guidance about attrition following bariatric surgery [6].

The majority of the literature considering dropout from obesity treatment has focused on attrition from non-surgical weight loss treatments [8]. Within this body of literature, both pre-treatment predictors and post- treatment reasons for attrition have been explored. Pre-treatment predictors of attrition (e.g. age, initial body weight and past dieting attempts) are patient variables collected prior to commencing treatment, which are later used to assess their ability to predict treatment completion or dropout [9]. Examination of pre-treatment predictors is the most common approach adopted by studies assessing attrition [8, 10], yet few consistent findings have emerged. Available findings suggest that age and education may serve as protective factors against attrition, while factors associated with poorer adjustment and functioning and practical issues may contribute to attrition [10, 11].

Post-treatment reasons for attrition (e.g. family problems, problems at work and lack of motivation) are self-reported reasons for attrition reported by the participant after dropout has occurred [12]. Research on participant-reported reasons for attrition has given insights into problems previously not anticipated by researchers [13] and provided a more holistic picture of attrition [8, 12]. Despite this, few studies have considered post-treatment reasons for attrition from weight loss treatment [12]. The limited available research has considered practical barriers (external pressures, e.g. logistics, family and work problems) [9, 10, 12, 14–19], programme/treatment-specific barriers (demands of research, unsatisfactory results and dissatisfaction with the treatment or staff and the duration of treatment) [9, 10, 12, 14–17, 20, 21] and individual barriers (internal pressures, e.g. illness, lack of motivation and self-confidence, feelings of abandonment and not being ready to make changes) [12, 14–16, 19].

A major flaw of much of the attrition research considering post-treatment reasons for attrition is the failure to address the validity of items when measures are used to assess reasons for attrition [8, 15, 16, 20–25]. Establishing content validity, which is achieved when experts confirm that all aspects of the construct being measured are covered, is an important part of the scale development process [26]. Using expert opinion and theoretical and empirical literature to inform and review items helps to establish content validity [26, 27].

Only a few studies have reported information regarding the generation of the item pool in the attrition measures used [10, 12, 14], meaning that in the majority of the research it is unclear whether the items used adequately reflected the contributing factors leading to treatment discontinuation [10, 12, 14].

Focusing on individuals lost to attrition and failing to ask treatment completers about their barriers to participation are also limitations of past research [10, 28]. If this research methodology is used, then it is not known whether treatment completers experience similar barriers to dropouts, yet are able to overcome them, or if dropouts experience different/more barriers to attendance [10]. There is a need for research to explore this further, in order to clarify similarities/differences in the barriers to participation experienced by both dropouts and completers.

The development of a standardised measure of barriers to aftercare attendance is needed to stimulate future research, improve the consistency of attrition research and identify opportunities for reducing attrition. The Gastric Banding Aftercare Attendance Questionnaire (GBAAQ) is a new measure directly assessing reported barriers to aftercare attendance in LAGB patients. The measure was developed based on best-practice scale development guidelines [26, 27, 29, 30]. The current study reports on the development of the scale, its factor structure and psychometric properties, in a sample of LAGB patients.

Method

Participants

The participants of the study were 183 (female n=138, males n=45) LAGB patients from a Melbourne bariatric surgery clinic, aged between 26 to 70 years (M=49.22 years, SD=10.11 years). Their current BMI ranged from 22.68 to 68.68 (M=34.69, SD=7.69). Patients were included if they were (i) aged 18–70 years and (ii) underwent a LAGB procedure at the bariatric surgery clinic between 2005 and 2010. They were excluded if they accessed LAGB aftercare from another service or they experienced childbirth, major illness (e.g. cancer), major surgery, a long hospital stay (≥2 weeks) or were living interstate or overseas in the past 12 months. Two groups of participants were included in the study. Attendees were defined as patients who had regularly attended LAGB surgical follow-up (between three and five sessions) for the past 12 months (n=107). Non-attendees were defined as patients who had not attended any LAGB surgical follow-up sessions for the past 12 months (n=76).

Tool Development

The Gastric Banding Aftercare Attrition Questionnaire is a new tool designed to directly assess the perceived barriers to attending LAGB aftercare.

Item Generation and Refinement Initially, 58 items were developed by the researchers based on a pre-existing obesity intervention attrition measures [31], literature reviews [6, 10] and qualitative research [32]. Input was then obtained from a panel of 26 bariatric, clinical and research experts comprising bariatric surgeons, general practitioners, psychologists and

nursing staff. A further 46 items were added by incorporating expert input. The draft 104-item measure was then submitted to the expert panel (surgeons, psychologists, nursing staff, researchers) for consideration and items were modified based on their feedback.

The final questionnaire comprises a list of 108 commonly perceived barriers to aftercare attendance. Respondents were then asked to rate how much they believed each item made it difficult for them to attend aftercare on a 5-point Likert scale ranging from 0 'not at all', to 4 'completely'.

Scale Administration Ethics approval was obtained from Monash University Human Research Ethics Committee. The clinic data manager identified eligible patients (i.e. those meeting the inclusion criteria outlined above) from medical records and forwarded an explanatory statement describing the purpose of the study. Patients were instructed to return the provided opt-out form to the clinic within 2 weeks if they did not want to participate. The contact information of patients who did not opt-out within 2 weeks was provided to researchers. Telephone interviews were completed in 2012. Two attempts were made to contact the patient by phone and invite them to participate in a 30-minute telephone survey. Verbal consent for participation was obtained at the time of the interview. With participant consent, demographic information such as age and height was obtained from electronic medical records and provided to the researcher.

A total of 864 eligible patients were sent explanatory statements inviting them to participate in the study, of which 183 (21.18 %) completed the questionnaire. Of the remaining participants, 88 (10.19 %) returned the opt-out form; 348 (40.28 %) could not be contacted (275—no answer after two telephone call attempts, 58—incorrect number or number not connected, 15—explanatory statements 'returned to sender'); 158 (18.29 %) opted out of participating over the phone; 7 (0.81 %) did not finish the survey and were removed from the analyses; and 21 (2.43 %) were not able to participate within the time frame of the study. A brief eligibility screening was also conducted over the phone, and a further 53 (6.13 %) participants were found to be ineligible based on exclusion criteria during this process (15 lived interstate/overseas, 15 had major surgery/illness, 11 had their band removed, 8 accessed aftercare from another service and 4 experienced childbirth in the last 12 months). While patients in both groups were selected as they had bariatric surgery between 2005 and 2010, the interval between surgery and interview was greater for non-attendees (M=5.14, SD=1.44) than attendees (M=4.44, SD=1.60) who participated in the study (t(171.781)=3.06, p=0.003).

Results

Scale Refinement

Item Characteristics

Visual analysis of histograms revealed an absence of outliers and non-normal distribution, with the vast majority of items being positively skewed with 'not at all' being the modal response. Fifteen items with low variance (>90 %) were identified and removed from the scale as they did not discriminate among individuals [33].

Scale Evaluation

Suitability of the Data for Factor Analysis

Prior to performing exploratory factor analysis (EFA), the factorability of the remaining 93 items was assessed. Visual inspection of the correlation matrix revealed numerous correlations of at least 0.3, suggesting reasonable factorability [34]. Three pairs of highly correlated items (>0.8) were identified and one item from each pair was removed to avoid item redundancy [35]. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.84) and Bartlett's test of sphericity, x^2(4005)=13563.38, p<0.001, each indicate that the correlation matrix was appropriate for analysis [34]. Further, the sample met the recommended minimum item ratio of 2:1 [29]. Given these indicators, the data was deemed suitable for analysis and a factor analysis was conducted with the remaining 90 items.

Exploratory Factor Analysis

An exploratory factor analysis (EFA) was conducted to explore the underlying factor structure [29, 30]. Principal-axis factor was used as the data were non-normally distributed [29]. Eigenvalues and scree plots were examined in order to determine the number of factors to retain and rotate. The initial item communalities ranged from 0.60 to 0.94. Twenty-two factors with eigenvalues over 1.0 were extracted from the matrix. A four-factor solution was chosen as the final solution because it demonstrated the simplest structure, had the fewest cross-loadings and explained acceptable variance. Oblique rotation (direct oblimin) was used to allow for expected intercorrelations among factors [29, 30].

The pattern matrix was examined to interpret the factors. During several steps, a total of 37 items were removed from the EFA because they had factor loadings of <0.4 or cross-loadings of >0.32 [29, 34]. The factor loading threshold was set at 0.40 in the present analysis given the small sample size [34, 36]. A total of 53 items remained. The four factors (treatment approach, stress and pressure, time constraints,

uncomfortable participating) explained 55.58 % of the variance. Correlations among the factors indicated a significant relationship between factors; thus, oblique rotation was appropriate.

Item Analysis

Item analysis (i.e. Cronbach's coefficient alpha, corrected item-total correlation) was performed after the factor analysis procedure [37]. A number of items were removed with the aim of achieving Cronbach's alphas for each subscale within the 'very good' range (>0.80 but <0.90). Internal consistency was assessed using Cronbach's coefficient alphas. The factor analysis was then rerun to ensure the underlying factor structure had not changed.

Subscale item analyses were conducted to further refine the measure. Initial inspection revealed that two subscales had Cronbach's alphas >0.9 (treatment approach α=0.96, uncomfortable participating α=0.91), and all items within these two subscales demonstrated high item-total correlations (>0.8), suggesting item redundancies [26]. A number of items with content covered by other items were removed in an effort to reduce redundancy and produce a briefer and more usable measure. After completing this process, one subscale, Treatment Approach, still had an alpha above 0.9. However, items were retained to protect construct validity (i.e. all aspects of the construct being measured are covered by the items). A total of 22 items were removed during this process. The final number of items retained was 31. To ensure the construct validity of the GBAAQ remained intact after the removal of the 22 items, the EFA was rerun. Results of the analyses indicated that the underlying factor structure of the GBAAQ remained the same. The factor loading matrix for this final 31-item solution is presented in Table 1.

The four factors explained 59.38 % of the variance. The 'Treatment Approach' factor included 10 items related to the barriers associated with aftercare program itself (e.g. the aftercare programme was not helpful to you) and accounted for 34.71 % of the variance (eigenvalue=10.76). The second factor, 'Time Constraints', accounted for 9.20 % of the variance (eigenvalue=2.85) and consisted of six items related to time constraints (e.g. attending aftercare took too much time). The third factor, 'Stress and Pressures', comprised seven items related to personal stressors and pressures (e.g. there were too many pressures going on around you) and accounted for 8.51 % of the variance (eigenvalue=2.64). The fourth factor, 'Uncomfortable Participating', comprised eight items and accounted for 4.81 % of the variance (eigenvalue=2.55). This factor related to feelings of worry and embarrassment associated with attending aftercare (e.g. you were too embarrassed or ashamed to attend appointments). Correlations among the factors indicated a significant relationship between factors 1

Table 1 Factor loadings for exploratory factor analysis with oblimin rotation for each of final GBAAQ items

Items	Factor 1 treatment approach	Factor 2 stress	Factor 3 time	Factor 4 uncomfortable participating
The surgeon/physician didn't understand what drives you to eat	*0.79*	−0.04	0.11	−0.13
The aftercare program was not helpful to you	*0.79*	−0.04	0.07	−0.04
When you told the surgeon/physician about the reasons or situations that lead you to eat they did not address it	*0.74*	0.03	0.06	0.06
You would have liked more opportunity to discuss your experience	*0.71*	−0.02	0.00	−0.12
The aftercare program did not deal with your psychological/emotional factors	*0.70*	−0.03	−0.15	−0.17
The surgeon/physician focused on what to do rather than how to do it	*0.63*	0.19	−0.19	0.05
The aftercare program did not deal with your behavioural factors	*0.62*	0.01	−0.02	−0.17
The surgeon/physician seemed to be acting like it was your fault	*0.59*	−0.06	−0.22	−0.02
You were not adequately prepared for the impact the band had on your life	*0.50*	0.16	0.06	−0.09
You did not know what you were supposed to do longer term after surgery	*0.48*	0.07	−0.08	0.10
Your work schedule interfered with coming to CBS	−0.08	*0.85*	0.13	−0.16
You had too much work to do	0.01	*0.77*	−0.04	−0.04
You had other priorities that were more important than aftercare	−0.13	*0.64*	−0.22	0.03
Attending aftercare took too much time	0.17	*0.59*	−0.01	−0.08
Appointment times were not convenient	0.09	*0.58*	0.04	−0.08
The location of the clinic was not convenient	0.15	*0.55*	0.02	0.03
You had other mental health issues that interfered with attending appointments	0.04	−0.16	*−0.83*	−0.14
You were feeling too depressed or unhappy to attend appointments	0.19	−0.13	*−0.69*	−0.24
You/your family had too many other problems occurring at the same time	−0.03	0.13	*−0.66*	0.03
There were too many pressures going on around you	0.04	0.33	*−0.60*	0.02

Table 1 (continued)

Items	Factor 1 treatment approach	Factor 2 stress	Factor 3 time	Factor 4 uncomfortable participating
You were feeling too stressed to attend appointments	0.08	0.06	*−0.60*	−0.26
Your health made it difficult to attend appointments	−0.13	0.07	*−0.59*	−0.15
You/your family were having financial problems	0.19	0.02	*−0.52*	0.16
You were worried about or afraid of being weighed	0.06	0.04	−0.03	*−0.86*
You were too embarrassed or ashamed to attend appointments	0.03	−0.12	−0.12	*−0.81*
You were waiting to lose weight before your next appointment	−0.07	0.07	0.09	*−0.70*
You were worried that the surgeon/physician was going to criticise you	0.07	0.01	−0.11	*−0.68*
You did not feel that you could be honest about your eating	0.22	0.12	0.13	*−0.60*
You were nervous or frightened about attending aftercare	−0.01	0.06	−0.22	*−0.55*
You gained weight	0.23	0.05	−0.05	*−0.53*
You were not ready to deal with issues raised during appointments	0.12	0.10	−0.26	*−0.43*

Factor loadings >0.40 are in italics

and 2, r=0.32, factors 1 and 3, r=0.32, and factors 1 and 4, r=−0.45, confirming that oblique rotation was appropriate.

Reliability

Internal Consistency

Cronbach's coefficient alphas (α) Treatment Approach (10 items), Time Constraints (6 items), Stress and Pressures (7 items), and Uncomfortable Participating (8 items) ranged from 0.85 to 0.94 indicating adequate internal consistency [37] (see Table 2).

Validity

Content Validity

Content validity is achieved when experts confirm that all aspects of the construct being measured are covered. Although the judgement of content validity is somewhat subjective, the procedures used in the current study are consistent with ensuring high content validity [26].

Construct Validity

Known-groups validation was used to establish preliminary construct validity. Non-attendees reported significantly more barriers to attendance than attendees on all four subscales (p<0.05), demonstrating preliminary evidence for the construct validity of the scale (Table 2).

Discussion

The purpose of this report was to describe the development of the GBAAQ and to examine its factor structure and psychometric characteristics. Four factors were extracted: Treatment Approach (10 items), Time Constraints (6 items), Stress and Pressures (7 items) and Uncomfortable Participating (8 items). All four factors demonstrated good internal consistency. Correlational analyses revealed significant relationships between factors. Content validity was established by ensuring that the item pool adequately captured the barriers to attendance experienced by LAGB patients. All GBAAQ factors demonstrated the ability to differentiate between attendees and non-attendees for all subscales, thus demonstrating construct validity.

The first factor, 'Treatment Approach', relates to the perception of the aftercare programme itself. The items comprising this factor relate to the surgeon/physician's behaviour (e.g. when you told the surgeon/physician about the reasons or situations that lead you to eat, they did not address it), the perceived unhelpfulness of the program (e.g. the aftercare program was not helpful to you) and dissatisfaction with what is covered in the aftercare program (e.g. the aftercare program did not deal with your behavioural factors). Thus, various aspects of the treatment relating to both the surgeon/physician and the aftercare programme itself appear to be barriers. This factor reflects the findings of past research, where treatment/program-specific barriers (e.g. disagreement with treatment plan) were commonly reported reasons for attrition by participants [9, 10, 12, 14–17, 20, 21].

The second factor, 'Time Constraints', comprises items relating to the time attending aftercare takes (e.g. attending aftercare took too much time), the suitability of appointment times (e.g. appointment times were not convenient) and the time pressures individuals experience in their own lives (e.g. you had too much work to do). Time has been reported as a barrier to participation in a range of obesity interventions [9, 10, 12, 15, 16, 18]. However, in studies using a measure to assess reasons for attrition, items relating to time are usually incorporated into a group of items relating to practical barriers [12, 18] or program-related barriers [10]. The fact that time

Table 2 Means, standard deviations and reliability analyses for each of the GBAAQ factors

Factor	Number of items	Reliability analysis Internal consistency (α)	Total sample (n=183) M (SD)	Attendees (n=107) M (SD)	Non-attendees (n=76) M (SD)	t	p value
Treatment approach	10	0.90	0.78 (0.85)	0.60 (0.85)	1.03 (0.90)	−3.25	0.001*
Time constraints	6	0.85	1.37 (1.06)	1.08 (0.99)	1.76 (1.04)	−4.42	<0.001*
Stress and pressures	7	0.87	0.50 (1.80)	0.36 (0.61)	0.70 (0.97)	−2.71	0.008*
Uncomfortable participating	8	0.89	0.63 (1.85)	0.46 (0.68)	0.87 (0.99)	−3.10	0.002*

*p<.05

has been grouped alone as a factor in the GBAAQ suggests that time-related issues are distinct from other practical or program-related barriers faced by an LAGB population and should be considered separately in future research.

The third factor, 'Stress and Pressures', relates to personal barriers to attendance. This includes health pressures (e.g. your health made it difficult for you to attend), feelings that affect attendance (e.g. you were feeling too stressed to attend appointments) and problems and pressures from the surrounding environment (e.g. you had to many pressures going on around you). Health problems have previously been reported as a barrier to attendance [12, 18, 38]. Only one past study has addressed issues relating to stress and pressures, and this study found these to be commonly reported barriers to participation [10].

The fourth factor, 'Uncomfortable Participating', relates to psychological barriers to attendance. Items relate to worry and nervousness surrounding aftercare (e.g. you were worried or afraid of being weighed), feelings of shame or embarrassment (e.g. you were too embarrassed or ashamed to attend aftercare) and not being ready to deal with issues (e.g. you were not ready to deal with issues raised during appointments). Little past research has considered the impact of these issues on attrition. Most of the attrition research considering psychological reasons for dropout has focused on barriers such as lack of motivation and self-confidence [12, 16, 19]. One study found that not being ready to make changes was a barrier reported by participants [15], reflecting similar content to the item 'you were not ready to deal with the issues raised during appointment'.

A number of findings in regard to the GBAAQ's reliability and validity warrant comment. Firstly, the 53-item measure had item redundancy and parsimony in reducing the number of items to 31 did not sacrifice precision. Also, a shorter measure is more user friendly and time efficient to administer [26]. Secondly, it was found that non-attendees experienced significantly more barriers to attendance on all four subscales. This demonstrates that the four subscales had the necessary ability to differentiate between attendees and non-attendees, indicating good construct validity. This finding was expected given that past research in a weight loss intervention found that non-attendees experience more barriers to attendance than attendees [10, 28].

The biggest strength of this study is the development of a standard measure that can be used in an area where a reliable and valid tool is currently unavailable. Developing such a measure overcomes many of the limitations in past research, as a standard measure will allow for the systematic exploration of the factors contributing to non-attendance. Other strengths of the current study include the administration of the scale to both attendees and non-attendees (allowing for comparison between the two groups to be made), the use of independent assessors to administer the scale and the extensive list of items contained in the initial scale. Extensive efforts were made to develop a measure with strong content validity. The item pool was informed by a prior measure of barriers to attendance [10], theoretical and empirical literature [6, 10] and expert input and review.

Despite these strengths, the study also has some limitations. There is the possibility of memory bias for the non-attendees group, as the barriers to attendance were investigated retrospectively. This is a common limitation in research exploring reasons for attrition after dropout has occurred [12]. In light of this, inclusion for current study was based on attendance/non-attendance for the past 12 months. It was hoped that the impact of memory bias would be minimised by asking participants about what barriers to attendance they have experienced in the last 12 months (as opposed to asking about the barriers experienced at the time of dropout). There is also a possible bias in the participants who agreed to take part in the present study. It is unknown whether participants were truly reflective of the population or whether certain participants (e.g. unemployed or retired) were more likely to agree to take part. Further, due to self-selection and eligibility requirements, the interval between surgery and interview was greater for non-attendees than attendees who participated in the study. Therefore, it is possible that the time between surgery and interview contributed to group differences in addition to attendee/non-attendee status.

This paper represents a first step in the development of the GBAAQ. Further testing with a larger sample will help to overcome the abovementioned limitations and establish greater confidence in the results reported here. It will also help to gain a better understanding of the psychometric properties of the GBAAQ, as scale validation is a cumulative, ongoing process that is not completely established during initial scale development [26]. Specifically, criterion and divergent validity should be considered in future research. In addition, future research should include greater exploration of how the GBAAQ subscales are related to non-attendance and the predictive relationship of subscale scores on future non-attendance (i.e. are the subscale scores obtained from individuals while attending predictive of who eventually drops out). Furthermore, an exploration of the ability of a modified version of the GBAAQ (e.g. changing item from 'You were not adequately prepared for the impact the band had on your life' to 'You were not adequately prepared for the impact bariatric surgery had on your life') to assess reported barriers to aftercare attendance in bariatric patients who receive surgical procedures different from gastric banding would be useful to determine if wider use is possible.

In summary, the current study contributed significantly to the small body of literature considering attrition following bariatric surgery, as reviewed by Moroshko et al. [6]. The GBAAQ captures four primary factors (Treatment Approach, Time Constraints, Stress and Pressures, Uncomfortable Participating), and preliminary analysis provides evidence for good psychometric properties. While there is need for further research, the results of the current study are encouraging and suggest that the GBAAQ may be a viable measure for systematically assessing barriers to attendance in LAGB patients.

Conflict of Interest The Centre for Obesity Research and Education (CORE) receives a grant from Allergan for research support. The grant is not tied to any specified research projects, and Allergan have no control of the protocol, analysis and reporting of any studies. CORE also receives a grant from Applied Medical towards the educational programmes.

Dr. Paul O'Brien reported having written a patient information book entitled 'The LAP-BAND Solution: A Partnership for Weight Loss' which was published by Melbourne University Publishing in 2007. Most copies are given to patients without charge, but he reports that he derives a financial benefit from the copies that are sold. He also reports receiving compensation as the national medical director of the American Institute of Gastric Banding, a multicentre facility, based in Dallas, Texas, that treats obesity predominantly by gastric banding.

No other authors reported disclosures.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Appendix A: The Gastric Banding Aftercare Questionnaire

I would like to ask you about the things that you feel have made it difficult for you to attend aftercare at CBS. Some of them might stop you from coming altogether; others might just make it more difficult for you to attend.

What has made it difficult for you to attend aftercare?

Now I will run through a list of things people commonly say make it difficult to attend aftercare to see if any are relevant to you. Do you have any questions before I start?

As I go through the list I will ask you on the same 5-point scale as before how much each factor has made it difficult for you to attend aftercare. We are asking everyone the same questions so some will not be relevant to you and some may be very relevant.

	How much did this factor make it difficult for you to attend aftercare?	Not at all	A little	A moderate amount	A lot	Completely
1	You did not know what you were supposed to do longer term after surgery. (CS)	0	1	2	3	4
2	You/your family were having financial problems. (IFD)	0	1	2	3	4
3	Attending aftercare took too much time. (PCS)	0	1	2	3	4
4	The location of the clinic was not convenient. (CS)	0	1	2	3	4
5	You had too much work to do. (PB)	0	1	2	3	4
6	You did not feel that you could be honest about your eating. (UP)	0	1	2	3	4
7	You were worried that the surgeon/physician was going to criticise you. (SPF)	0	1	2	3	4
8	You had other priorities that were more important than aftercare. (PB)	0	1	2	3	4

(continued)

9	You were nervous or frightened about attending aftercare. (UP)	0	1	2	3	4
10	You were not ready to deal with issues raised during appointments. (HW)	0	1	2	3	4
11	You gained weight. (WS)	0	1	2	3	4
12	The surgeon/physician focused on what to do rather than how to do it. (SPF)	0	1	2	3	4
13	The aftercare program did not deal with your behavioural factors. (TA)	0	1	2	3	4
14	You would have liked more opportunity to discuss your experience. (CS)	0	1	2	3	4
15	When you told the surgeon/physician about the reasons or situations that lead you to eat they did not address it. (SPF)	0	1	2	3	4
16	Your health made it difficult to attend appointments. (HW)	0	1	2	3	4
17	You were waiting to lose weight before your next appointment. (WS)	0	1	2	3	4
18	Your work schedule interfered with coming to CBS. (PB)	0	1	2	3	4
19	You were not adequately prepared for the impact the band had on your life. (CS)	0	1	2	3	4
20	Appointment times were not convenient. (PB)	0	1	2	3	4
21	The aftercare program did not deal with your psychological/ emotional factors. (TA)	0	1	2	3	4
22	There were too many pressures going on around you. (IFD)	0	1	2	3	4
23	The aftercare program was not helpful to you. (TA)	0	1	2	3	4
24	You were feeling too stressed to attend appointments. (HW)	0	1	2	3	4
25	The surgeon/physician seemed to be acting like it was your fault. (SPF)	0	1	2	3	4
26	You were too embarrassed or ashamed to attend appointments. (UP)	0	1	2	3	4
27	You were feeling too depressed or unhappy to attend appointments. (HW)	0	1	2	3	4
28	The surgeon/physician didn't understand what drives you to eat. (SPF)	0	1	2	3	4
29	You had other mental health issues that interfered with attending appointments. (HW)	0	1	2	3	4
30	You/your family had too many other problems occurring at the same time. (IFD)	0	1	2	3	4
31	You were worried about or afraid of being weighed. (UP)	0	1	2	3	4

Do you have any other feedback or suggestions?

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