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Without a Doubt, I would do it Again: A Study of Physical Quality of Life in Bariatric Surgery Adults

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Abstract

Background

Obese older adults who do not lose weight may be facing years of discomfort, lack of mobility, and chronic ill health. The aim of this study is to compare perceived energy level, mobility, sleep and overall health in bariatric patients across four adult age groups.

Methods

A 40-item questionnaire was mailed to 2520 patients of a Midwestern weight management center who were ≥18 months post-procedure. The 534 respondents were divided into four age groups in years: 18-49 (n=171), 50-59 (n=148), 60-69 (n=138) and ≥ 70 (n=77).

Results

All age groups lost weight after bariatric surgery, and all groups experienced some weight regain. Over 79% of all age groups reported being satisfied with weight loss since surgery. Perceived health, energy level, sleep and mobility improved significantly resulting improved quality of life among all age groups. The young group were less positive with their quality of life. Nevertheless, when participants were asked if they had to do it over again, most (86%) said, "Without a doubt I would do it again!"

Conclusion

This study indicates adults of all ages benefit from the weight loss after bariatric surgery. In addition to the decrease in BMI across all age groups, there is a significant improvement in quality of life.

Keywords

Older adults; Bariatric surgery; Quality of life; Perceived health

Introduction

The prevalence of obesity is one of the fastest growing diseases in older adults [1]. Between 2011 and 2012, the National Center for Health Statistics has estimated, more than one-third of adults (34.9%) were obese and another one-third of the US population is overweight [2-4]. Young adults with morbid obesity (100 pounds over normal weight) may lose 20 years of life expectancy if they do not lose weight [5]. On the other hand, if an obese older adult lives longer, the quality of life may be compromised [6]. Obese older adults may be facing years of discomfort, lack of mobility, and chronic ill health [7,8]. The increased prevalence of obesity is a public health threat which can be associated with related chronic diseases such as type II diabetes, hypertension, heart disease, certain types of cancers, metabolic syndrome, respiratory disease, sleep apnea, fatty liver disease, osteoarthritis, gall bladder disease, pulmonary embolism, gastro-esophageal reflux disease, urinary incontinence, chronic renal failure, gout, and depression [9]. These chronic diseases all contribute to a poorer quality of life.

Quality of life concerns due to obesity go beyond the medical and disease challenges. Many adults face physical, psychological, social, and economic chronic co-morbidities, and disabilities which decrease their quality of life [10]. Health-related quality of life (HRQL) refers to the impact that health conditions have on an individual's general life functioning and well-being. HRQL reflects the way that patients perceive and react to their health status, and the effect their health has on other aspects of their lives such as work, leisure time activities and social relationships [11]. HRQL is a particularly relevant construct in obesity and weight-loss research, because obesity has shown to exert significant negative consequences on HRQL, which seem to resolve with adequate weight loss [12]. Obesity creates many problems, not only for the obese person, but also for family members and society as a whole. For individuals, obesity increases psychological problems, reduces sleep quality, and reduces quality of life [13-15]. Obesity is also associated with increased mortality and reduced life expectancy as a result of increased medical risks [16 -19]. Many obese people may struggle with physical immobility as a result of their weight; these limitations may lead to increased psychological problems or reduced quality of life. These effects of obesity led researchers and healthcare professionals to search for effective weight loss treatments. Many diets and behavioral treatments resulted in initial weight loss, only to be followed by weight regain [20]. Healthcare providers turned to surgical treatments for obesity [21].

Quality of Life after Bariatric Surgery

Regardless of age, improved mobility, reduced co-morbidities, reduced pain and improved functioning led to improved quality of life enrichment in bariatric patients [22,23]. Improvements in urinary and fecal incontinence symptoms followed bariatric surgery [24]. Ten years after weight loss surgery, patients reported significantly better health perceptions and social interactions [12]. Fewer medications and improved mobility alone led many participants to experience improved quality of life. Regardless of whether all weight-loss goals were met, many would opt to have the surgery again [12,22,23,25].

Older patients who were wheelchair-bound were often fully ambulatory within month's post-surgery [26]. Even modest weight-loss, improved overall physical functioning of older adults [26]. For example, patients with lower extremity arthritis experienced reduced knee and hip pain [23,27]. Back pain symptoms decreased following bariatric surgery [28]. Patients reported the greatest improvement in cervical and lumbar spine, foot, and fibromyalgia syndrome pain [28]. Lower and upper extremity pain was also significantly improved [29]. Significant improvements in musculoskeletal concerns were reported following weight loss after bariatric surgery [29].

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In general, a person's quality of life comes from a sense of well–being [30]. In the healthcare field, quality of life is often negatively affected, by having a debilitating weakness due to disease [10]. Dymek and colleagues measured health related quality of life after gastric bypass surgery and found positive changes in only six months after surgery [31]. Being obese can affect every aspect of a person's quality of life, from embarrassing situations of not fitting in standard size airplane seats to being passed over for job promotions to dealing with chronic diseases that frequently come with obesity.

Purpose of Research

Literature is limited on the long term success of older adults and bariatric surgery. Moreover, there is a dearth of published research that examines the outcomes of older bariatric patients and their satisfaction with the surgery. Generally speaking, patients who have had bariatric surgery report improvements such as reductions in medication, better blood pressure, and other co-morbidities and mobility. Nevertheless, no studies have addressed the differences in HRQL among age groups. Therefore the purpose of this study is to assess differences in HRQL concerns including energy level, mobility, sleep and overall health.

Methods

The research design for this study was a survey method, using a cross-sectional, self-reported questionnaire. This study was approved by the university's Institutional Review Board (IRB). After an exhaustive search, the researchers found no existing bariatric questionnaire that met their needs. The researchers therefore, developed a bariatric questionnaire addressing the needs of participants and their possible HRQL concerns for those who were at least 18 months post-bariatric procedure. The questionnaire included demographic information such as age, height, four milestone weights, date, and type of surgery. The 4 milestone weights were highest weight before surgery, weight on surgery day, lowest weight after surgery and current weight. The questions were designed using a 5-point Likert scale, which focused on satisfaction with surgery and quality of life outcomes. The questionnaire was reviewed by education and health professionals for content and readability. The instrument was revised and pilot tested with a sample of 12 bariatric patients to test clarity with no further changes made.

Bariatric patients were recruited from a Midwestern weight management center in the US which specializes in bariatric surgery. Inclusion criteria included patients who were 18 years of age and older and were at least 18 months post-procedure. The weight management center personnel mailed the paper questionnaires which were returned anonymously to the researchers. The questionnaires were then coded and entered into Qualtrics (Survey software, Provo, UT, version 60,114). Approximately 12 weeks after the questionnaires were mailed, the data collection stopped.

The data was analyzed using SAS (Statistical Analysis Software, Cary, NC, version 10.3). Analyses included frequency and ANOVA. BMI was calculated using the 4 milestone weights and height.

Results

A total of 2520 surveys were mailed, with 178 returned as undeliverable. Overall, 534 surveys were completed and returned, a 22.8% response rate. As seen in Table 1, the respondents were divided into four age groups in years: 18-49, 50-59, 60-69 and ≥ 70. The majority were female and married. The majority had some college or a college degree. Employment status varied with age with those who were older being retired. Almost all of the participants underwent gastric bypass surgery rather than the gastric sleeve or gastric band or another alternative.

Body Mass Index (BMI)

All age groups lost weight after bariatric surgery and all groups experienced some weight regain. The older and oldest age categories were as successful at losing weight and keeping off as the young and midlife age groups. As seen in Table 2, the young adults had a larger highest BMI with a mean > 50 kg/m^2 compared to a mean BMI of 46.3 kg/m^2 for the oldest group. Although not significant, each mean milestone BMI was larger for the young group and progressed

Table 1: Demographic characteristics overall and by age group.

	Overall N=534	Young n=171	Midlife n=148	Older n=138	Oldest n=77
Characteristic	**Number (%)**	**Number (%)**	**Number (%)**	**Number (%)**	**Number (%)**
Gender					
Woman	442 (82.8)	153 (89.4)	123 (83.1)	103 (74.6)	63 (81.8)
Man	92 (17.2)	18 (10.5)	25 (16.9)	35 (25.4)	14 (18.2)
Education					
< High School	8* (1.5)	0	2 (1.4)	3 (2.2)	3 (3.9)
High School/GED	131 (24.6)	30 (17.5)	32 (21.8)	38 (27.5)	31 (40.3)
Some College	252 (47.3)	91 (53.2)	64 (43.5)	63 (45.7)	34 (44.2)
College Degree	142 (26.4)	50 (29.2)	49 (33.3)	34 (24.6)	9 (11.7)
Marital Status					
Single / Never Married	48 (9.0)	30 (17.5)	13 (8.8)	4 (2.9)	1 (1.3)
Married	350 (65.7)	100 (58.5)	105 (71.0)	92 (67.2)	53 (68.8)
Domestic Partnership	5 (0.9)	2 (1.2)	1 (0.7)	1 (0.7)	1 (1.3)
Separated	6 (1.1)	5 (2.9)	0	0	1 (1.3)
Divorced	86 (16.1)	32 (18.7)	27 (18.2)	24 (17.5)	3 (3.9)
Widowed	38 (7.1)	2 (1.2)	2 (1.4)	16 (11.7)	18 (23.4)
Employment Status					
Caregiver at Home	22 (4.1)	13 (7.7)	7 (4.8)	1 (0.7)	1 (1.3)
Work Part-Time	254 (47.7)	119 (70.0)	94 (63.5)	40 (29.0)	1 (1.3)
Work Full-Time	66 (12.4)	22 (12.9)	17 (11.5)	22 (15.9)	5 (6.6)
Retired	160 (30.1)	1 (0.6)	19 (12.8)	72 (52.2)	68 (89.5)
Other	30 (5.6)	15 (8.8)	11 (7.4)	3 (2.2)	1 (1.3)
Surgery Type					
Gastric By-Pass	511 (96.2)	162 (94.7)	143 (98.0	132 (96.4)	74 (96.1)
Gastric Sleeve	4 (0.8)	3 (1.8)	0	1 (0.7)	0
Gastric Band	15 (2.8)	6 (3.5)	2 (1.4)	4 (2.92)	3 (3.9)
Biliopancreatric Diversion	1 (<0.01)	0	1 (0.7)	0	0

*Some characteristics may not add to total sample size due to non-response by some participants.

in chronological order with the oldest age group having the lowest milestone BMIs in all four areas.

Bariatric Surgery Satisfaction

Participant perceptions regarding their current level of satisfaction with bariatric surgery are found on Table 3. Over 75% of all participants reported being satisfied with weight loss since surgery, with no significant differences between age groups. Moreover, over 75% of all participants reported feeling healthier. When it comes to the question, "If you had to do it over again, would you still have bariatric surgery?" over 85% of all participants said they would likely/very likely have the surgery again. The oldest groups were very much in support of the surgery with the older group being a close second and the midlife group strongly agreeing. The young group was over 10% lower than the midlife group. See Table 3 for more details on satisfaction level by overall and by age groups.

Quality of Life Changes after Bariatric Surgery

Participant perceptions regarding their quality of life after bariatric surgery are found on Table 4. Overall 80% reported energy level much improved or improved, with 75% of the young group reporting much better energy level compared to 87% of the oldest reporting much better energy level. Overall mobility improvements were reported by almost 90% of the respondents with no significant differences between the groups. Almost half of participants reported sleep as being about the same and almost half stated that it was better/much better; this was quite uniform among age groups. Overall health was reported by over 85% as being better/much better with the older group being the highest.

Discussion

This study is unique in that it compared four age groups as it relates to weight loss, regain and satisfaction with bariatric surgery to assist with the weight loss. All age groups lost weight after bariatric surgery and all groups experienced some weight regain as indicated by increased current BMI. As expected others found a similar drop of 15 in BMI post-surgery after at least one year [12,22,28,32]. The older and oldest age groups were as successful at losing weight and keeping off as the young and midlife age group, which is similar to the findings of others [26,33].

There were significant improvements in perceived quality of life among all age groups. Overall, most participants in our study were satisfied with weight loss after surgery. Sawer et al. [34] reported improved perception of body image; moreover, Nadalini et al reported improved levels of satisfaction with changes in BMI post-surgery [35]. As in other reports, mobility improved post-surgery [23,26-28]. Participants in our study did not report changes in sleeping patterns compared to the findings of others [13,14,32]. Overall, most of the participants in our study reported feeling healthier now than they did pre-surgery, which is consistent with findings by others who used the SF-36 Health Survey [28,32,34-37].

While all the age groups improved greatly in our study, the young age group (ages 18-49) perceptions seemed less positive than the other three age groups which were all 50 years old and older. It was interesting to note that the oldest age group, those ages 70 or greater were the most satisfied with the weight loss (82.2%). The midlife (ages 50-59) and older (ages 60-69) groups were very similar on most questions and were either closely ahead or behind the oldest age group. But the young group seemed to be to report lower levels of HRQL for each of the questions. Insight as to why the younger age groups were somewhat less happy or less satisfied were indicated on an open-ended question where participants had the opportunity to express anything else about their bariatric surgery experience. It appears that the younger group had higher expectations of what the surgery could accomplish. Some expressed displeasure with the excess skin they now had. Others complained that the surgery was only a

Table 2: Mean BMI milestones overall and by age group.

BMI Milestone	Overall N=534 Mean ± SD*	Young n=171 Mean ± SD	Midlife n=148 Mean ± SD	Older n=138 Mean ± SD	Oldest n=77 Mean ± SD	*p* value
Highest	48.4 ± 8.2	50.5 ± 8.7	49.1 ± 8.5	47.8 ± 7.5	46.3 ± 8.0	0.03
Surgery Day	46.9 ± 7.7	48.7 ± 7.4	47.5 ± 8.3	46.3 ± 7.0	44.9 ± 8.0	0.28
Lowest	26.5 ± 5.1	26.9 ± 5.4	26.8 ± 5.5	26.6 ± 5.1	25.8 ± 4.2	0.93
Current	30.2 ± 6.1	31.2 ± 6.2	30.7 ± 6.1	30.2 ± 6.1	28.8 ± 5.8	0.51

* Standard Deviation

Table 3: Satisfaction with bariatric surgery overall and by age group.

	Overall Percent	Young Percent	Midlife Percent	Older Percent	Oldest Percent	*P* value
Satisfied with weight loss since surgery?	N = 516	n = 167	n = 144	n = 132	n = 73	.143
Very dissatisfied /dissatisfied	12.4	10.8	10.4	14.4	16.4	
Neutral	7.8	11.4	8.3	6.1	1.4	
Satisfied/very satisfied	79.8	77.8	81.3	79.5	82.2	
Do you feel healthier?	N = 531	n = 173	n - 152	n = 146	n = 75	.015
Never/rarely	5.5	8.7	7.2	8.2	8.0	
Sometimes	18.1	24.9	13.2	15.1	14.7	
Often /all the time	76.5	66.5	79.6	76.7	77.3	
Still have bariatric surgery?	N = 532	n = 171	n = 148	n = 136	n = 77	.024
Very unlikely/unlikely	7.1	12.3	5.4	5.1	2.6	
Undecided	6.2	8.8	5.4	4.4	5.2	
Likely/very likely	86.7	78.9	89.2	90.4	92.2	

*The p values are chi-square values and are comparisons of age groups for all three responses.

Table 4: Quality of life after bariatric surgery overall and by age group.

	Overall Percent	Young Percent	Midlife Percent	Older Percent	Oldest Percent	*p*-value*
Energy level	N=529	n = 171	n = 147	n = 137	n = 74	.21
Worse/much worse	6.4	9.4	6.8	4.4	2.7	
About the same	12.5	15.8	10.9	10.9	10.8	
Better/much better	81.1	74.9	82.3	84.7	86.5	
Mobility	N = 526	n = 170	n = 146	n = 136	n = 74	.81
Worse/much worse	2.1	2.9	1.4	1.5	2.7	
About the same	8.0	10.0	6.8	6.6	8.1	
Better/much better	89.9	87.1	91.8	91.9	89.2	
Sleep	N = 532	n = 171	n = 148	n = 136	n = 77	.89
Worse/much worse	10.2	11.1	8.1	11.0	10.4	
About the same	44.9	47.4	45.9	41.2	44.2	
Better/much better	44.9	41.5	45.9	47.8	45.5	
Overall Health	N = 430	n = 171	n = 147	n = 137	n = 75	.45
Worse/much worse	5.3	7.0	4.1	2.2	2.7	
About the same	9.5	8.8	7.5	6.6	8.0	
Better/much better	85.1	84.2	88.4	91.2	89.3	

*The p values are chi-square values and are comparisons of age groups for all three responses.

tool and they still had to keep exercising and follow the eating plan. Conversely, the older adults seemed to embrace the surgery as a tool and take things in stride, recognizing the need for continued exercise and food intake management. The older groups seemed happier about their perceived improved health and were less worried about actual appearance. These differing viewpoints could be the years of experience that the older adults have had with life's disappointments and a realization that few things in life are all positive or all negative. There were significant improvements in quality of life among all age groups and asked if they would have the surgery again, if they had to do it over, most said, "Without a doubt I would do it again!"

Limitations

There are several limitations to this study. The participants self-reported their feelings of current HRQL which may not be based on medical facts. Nevertheless, perceived health is important to overall quality of life and happiness of a patient. An additional limitation is the sample was from only one Midwestern weight management center in the United States; therefore, ethnic diversity is limited. As such, generalizability could be affected; nevertheless, this limitation reduced possible statistical error within this population. Even though the questionnaire was piloted and reviewed by content experts, reliability and validity of the results may be limited. Since this weight management center generally completed only one kind of bariatric surgery, the gastric by-pass, the patient perception of quality of life as a result of gastric by-pass may not be generalizable to other kinds of bariatric surgery.

As with all postal questionnaires, the data was self-reported, which can lead to bias. While the response rates were norms for survey research [38], it is unclear if these outcomes necessarily represent the entire sample. Perhaps participants who did not have as good of outcomes as those reported here failed to return the survey.

Conclusion

Bariatric patients of all age groups reported many positive outcomes in this study. Obese adults of all ages seemed to benefit from the weight loss that accompanies bariatric surgery. Besides the obvious decrease in BMI across all age groups, there were significant improvements in quality of life. Improved energy level, mobility, and sleep all add up to improvements in overall health. Compared to midlife and young age groups, outcomes for weight loss and quality of life do not appear to be any worse for older and oldest adults. Bariatric surgery should be considered for older adults for disease management and for improvement in of quality of life as much as it is for younger adults.

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