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Physical And Psychological Problems Among Patients Post Bariatric Surgery

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Abstract:

Background: *Bariatric surgery is currently considered the most effective treatment option for morbid obesity; it results in greater improvements in weight loss outcomes and obesity related co-morbidities but there are several complications that can arise from weeks to years after bariatric surgery.* ***Aim:*** *this study aimed to assess physical and psychological problems among patients post bariatric surgery.* ***Design:*** *A descriptive exploratory design was conducted in this study.* ***Setting:*** *This study was conducted at surgical unit and obesity clinic in Makkah Hospital.* ***Sample:*** *Convenient sample of 177 patients was obtained from surgical unit and obesity clinic in Makkah Hospitals.* ***Tools of data collection:*** *Physical and psychological problem questionnaire consisted of Beck depression inventory, body image acceptance and action questionnaire, Rosen[1]berg self-esteem scale and eating disorder questionnaire.* ***Results:*** *Physical problems less than three quarter of the studied patients had dumping syndrome, majority of the patients had nutritional deficiencies and steatorrhea and two thirds of them complained from sagging skin. Psychological problems, it was found that, depressive symptoms appeared on two fifth of the studied patients, less than three quarter of the studied patients not accept their body image, less than half of them had low self-esteem and less than three quarter of them weren't restraining their eating.* ***Conclusions:*** *Majority of the studied patients had nutritional complications and steatorrhea, two thirds of the studied patients complained from excess skin, less than three quarter of the studied patients not accept their body image, less than three quarter of them weren't restraining their eating* ***Recommendations:*** *Further study is recommended about lifestyle modification and cognitive behavioral therapy to patients post bariatric surgery. Further study is recommended to evaluate psychological assessment before and after the surgery.*

Key words: *Bariatric Surgery, Physical Problems & Psychological Problems.*

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Introduction:

One of the most common problems related to lifestyle today is being overweight. Severe overweight or obesity is a key risk factor in the development of many chronic diseases. Obesity is often defined simply as a condition of abnormal or excessive fat accumulation in the fat tissues of the body leading to health hazards **(World Health Organization, 2015).**

The treatment of obesity includes primary prevention, dietary measures, behavior modification, pharmacotherapy and bariatric surgery (BS). Bariatric describes the medical treatment of serious overweight that is, obesity. Bariatric surgery is only employed when other methods of weight loss have been tried and failed **(Mandal, 2014).**

Bariatric surgery techniques are applied in various types. There are four main types of bariatric surgery: the Roux-en-Y, adjustable gastric band, sleeve gastrectomy, and biliopancreatic diversion with duodenal switch **(Dambaugh & Ecklund, 2016).**

As with all medical procedures, postoperative complications will occur. These problems present both early and late in the postoperative course. Bariatric operations, in many instances, result in permanent alteration of a patient's anatomy, which can lead to complications at any time during the course of a patient's life as dumping syndrome, stenosis, nutritional deficiency and sagging skin **(Lim, Beekley, Johnson & Davis, 2018).**

While bariatric surgery has been shown to improve a number of metabolic conditions, some patients experience persisting disorder in psychological outcomes like depression, body image, self- esteem and eating disorders **(Jumbe, Hamlet & Meyrick, 2017).**

Aim of the study:

The present study was conducted to assess physical and psychological problems among patients post bariatric surgery.

Research Question:

What are physical and psychological problems among patient post bariatric surgery?

Subjects and Methods A-Research design:

A descriptive exploratory design was conducted to achieve the aim of this study.

B- Research Setting:

This study was conducted in surgical units and obesity clinic at Makkah hospitals.

Research Subject:

Convenient sample of 177 patients was obtained from surgical unit (77patients) and obesity clinic (100 patients) at Makkah hospitals.

D-Tools for data collection:

The study data was collected through the following tools:

- **Part (1):** Socio-demographic sheet:

The researcher developed this sheet to assess bariatric surgery patient's socio- demographic characteristics. It contains the following items: Age, gender, educational level, marital status, previous bariatric surgery, type of bariatric surgery and medical history.

Part (2): Physical problem questionnaire:

The researcher designed this tool after a thorough review of relevant literature of medical complications to assess physical problems post bariatric surgery. It was translated into Arabic by researcher and was revised by jury of seven expertise. It contained 18 items covering the main physical problems such as dumping syndrome, wound infections, stenosis, hemorrhage anastomotic leak, deep venous thrombosis and pulmonary embolism.

Scoring system

Each item had set of answers; chosen answer was given one mark. The total score equals 60. Low physical problems <30. Moderate physical problems [30-45]. High physical problems [46-60].

Part (3): Psychological problem questionnaire consisted of the following:

The Beck Depression Inventory-II (BDI-II): Created by Aaron Beck and was modified by researcher. It contains 16 items to assess relating symptoms of depression such as sadness, pessimism, past failure, loss of pleasure, guilty feeling, and punishment feeling and self-dislike.

Scoring system:

Each item has set of responses ranging in intensity. First response is 1, second response 2, third response 3, fourth response 4. Total score equals 50.

Mild depression [16 >24], Moderate depression [24-38] & Severe depression [>38–50].

Higher total scores indicate more severe depressive symptoms

Body image-Acceptance and action questionnaire:

Created By Emily, Sandoz & Kelly in 2006. It is modified by researcher. It contains 14 items on 5 points likaret scale to assess body image concerns, acceptance and dissatisfaction such as I get on with my life even when I feel bad about my body, Worrying about my weight makes it difficult for me to live a life that I value, I care too much about my weight and body shape, I care too much about my weight and body shape and How I feel about my body has very little to do with the daily choices I make.

Scoring system:

The responses for each item were never, seldom, sometimes, frequently and always. Scores for each response ranged from 1 to 5 as the following: Never =1,
seldom= 2, sometimes= 3, frequently= 4 and always= 5. Total score equals 70. Higher scores indicate more acceptances.

Rosenberg self-esteem scale:

Created by Morris Rosenberg in 1965, to assess level of self-esteem. It is a ten-item Likert-type scale with items answered on a four-point scale from strongly agrees to strongly disagree. Five of the items have positively worded statements and five have negatively worded ones. The scale measures state of self-esteem by asking the respondents to reflect on their current feeling such as on the whole, I am satisfied with myself, at times I think I am no good at all. I feel that I have a number of good qualities and I am able to do things as well as most other people.

For items 1, 2, 4, 6, and 7: Strongly agree = 3, Agree = 2, Disagree = 1& strongly disagree = 0.

For items 3, 5, 8, 9, and 10 (which are reversed in valence):

Strongly agree = 0.Agree = 1, Disagree = 2, strongly disagree = 3. Total score equals 30.

Eating disorders questionnaire:

The researcher designed this questionnaire after a thorough review of relevant literature to assess eating disorders post bariatric surgery. It was translated into Arabic by researcher. It contained 15 items covering the main items of eating disorders such as do you often feel hungry, do you eat any type of food, do you pay attention to type of food you eat, do you eat healthy food quantities, do you eat more frequent meal, do you count your food calories and do you eat and chew slowly.

Scoring system:

The answer for each item either yes or no, scoring as following: yes=1, no=0, the total score equals 15. Restrain [0-8], Not Restrain [9-15].

Tools validity and reliability:

To achieve the criteria of trustworthiness of the tools of data collection in this study, the tools were tested for its face and content .The required corrections and modifications were done. The items on which 85% or more of the experts had agreed were included in the proposed tool.

Testing reliability of proposed tools was assessed statistically through measuring their internal consistency by determining Cronbach's Alpha.

A pilot study was conducted to test clarity, applicability, efficiency and validity of the study tools and to estimate the required time to gather data. The pilot study was conducted over a period of one week starting from 22 of June 2022 to 29 of June 2022 on 10% (17 patients) of the expected study subjects, all participants in the pilot study were excluded later from the study sample. According to the pilot study results the necessary modifications were done some questions was restated in Arabic language on the study tool after pilot study.

Field Work:

The researcher reviewed the recent, past, and local and international current related literature in the various aspects of medical psychiatric complications to be acquainted with in depth information in order to design the study tools. The actual field work for the process of the data collection has consumed six months started on beginning of July 2022 and was completed by the end of December 2022.

The researcher distributing the tools to the patients after explaining aim and objectives of the study to them. The patients filled in the sheet; it took about 20-30 minutes to complete it. The researcher collected the answered sheet from the patients.

Ethical consideration:

In order to conduct the study, the researcher obtained official permission was obtained from the authorities.

Statistical analysis:

Recorded data were analyzed using the statistical package for social sciences, version 20.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

Results:

Table (1): Showed that, 43.7% of the studied patients were in the age group 29 >40 years with a mean age of 38.44±4.23 and 73.7% of them were females. Regarding level of education, 32.5% of the studied patients were illiterate and 55.0% of those patients were married. Moreover, 66.3% of the studied patients never had previous bariatric surgery. As regard to type of bariatric surgery; 52.5% of the studied patients were performed sleeve gastrostomy and 56.3% of patient's medical history were obese.

Socio-Demographic Data	No.	%
Age (years)		
16 > 29 years	32	20.0%
29 >40 years	70	43.7%
40 > 50 years	36	22.5%
50 >55 years	22	13.8%
Mean±SD	38.44±4.23	
Gender		
Male	42	26.3%
Female	118	73.7%
Educational level		
Illiterate	52	32.5%
Primary	14	8.7%
Secondary	34	21.3%
University	46	28.7%
Post graduate	14	8.8%
Marital status		
Single	66	41.3%
Married	88	55.0%
Divorced	6	3.7%
Previous bariatric surgery		
Yes	54	33.7%
No	106	66.3%
type of bariatric surgery		
Adjustable gastric band	0	0.0%
Sleeve Gastrostomy	84	52.5%
Gastric bypass	70	43.7%
Biliopancreatic Diversion with Duodenal Switch	6	3.8%
Medical history:		
Diabetes millets(DM)	50	31.3%
Hypertension (HTN)	40	25.0%
Morbid obesity	90	56.3%

Table (2): Represented that, 72.5% of the studied patients had symptoms of dumping syndrome. Regarding vitamin B12 deficiency, 55.0% of the studied patients had symptoms of

depression, 87.5% of them had symptoms of iron deficiency, 78.8% of them had symptoms of vitamin A deficiency, 73.8% of them had symptoms of vitamin D deficiency, 72.5% of them had symptoms of zinc deficiency, 62.5% of them had symptoms of copper deficiency and 70.0% of them had symptoms of folate deficiency. Meanwhile, 90.0% of the studied patients had steatorrhea and 62.5% of them complained from sagging skin.

Physical problems post bariatric surgery	**Yes**		**No**	
	No.	**%**	**No.**	**%**
1. Dumping syndrome:				
Nausea	94	58.7%	66	41.3%
Vomiting	102	63.7%	58	36.3%
Diarrhea	62	38.7%	98	61.3%
Weakness	58	36.2%	102	63.8%
No symptoms	44	27.5%	116	72.5%
2. Vit B12 deficiency:				
Depression	88	55.0%	72	45.0%
Neuropathy	16	10.0%	144	90.0%
Pernicious anemia	4	2.5%	156	97.5%
No symptoms	66	41.3%	94	58.7%
3. Iron deficiency:				
General malaise	118	73.7%	42	26.3%
Anemia	104	65.0%	56	35.0%
Pale skin and nails	88	55.0%	72	45.0%
Dizziness/lightheadedness	128	80.0%	32	20.0%
No symptoms	20	12.5%	140	87.5%
4. Vit A deficiency:				
Decreased vision	18	11.3%	142	88.7%
Night vision difficulty	65	40.6%	95	59.4%
Itching	8	5.0%	152	95.0%
Dry hair	114	71.2%	46	28.8%
No symptoms	34	21.2%	126	78.8%
5. Vit D deficiency:				
Osteopenia	4	2.5%	156	97.5%
Osteoporosis	8	5.0%	152	95.0%
Bone aches	106	66.3%	54	33.7%
No symptoms	42	26.2%	118	73.8%
6. Zinc deficiency:				
Nail dystrophy	14	8.8%	146	91.2%
Skin eruptions	18	11.3%	142	88.7%
Poor wound healing	66	41.3%	94	58.7%
Hair loss	116	72.5%	44	27.5%
No symptoms	44	27.5%	116	72.5%
7. Copper deficiency:				
Anemia	60	37.5%	100	62.5%
Unexplained bleeding under skin	4	2.5%	156	97.5 %
Fatigue	4	2.5%	156	97.5%
Difficulty learning and remembering	56	35.0%	104	65.0%
No symptoms	60	37.5%	100	62.5%

8. Folate deficiency:				
Sore tongue and redness	44	27.5%	116	72.5%
General weakness	112	70.0%	48	30.0%
Anemia	104	65.0%	56	35.0%
No symptoms	48	30.0%	112	70.0%
9. Steatorrhea.	144	90.0%	16	10.0%
10. Sagging skin.	100	62.5%	60	37.5%

Figure (1): displayed that, two fifth of the studied patients (40.0%) had moderate depression.

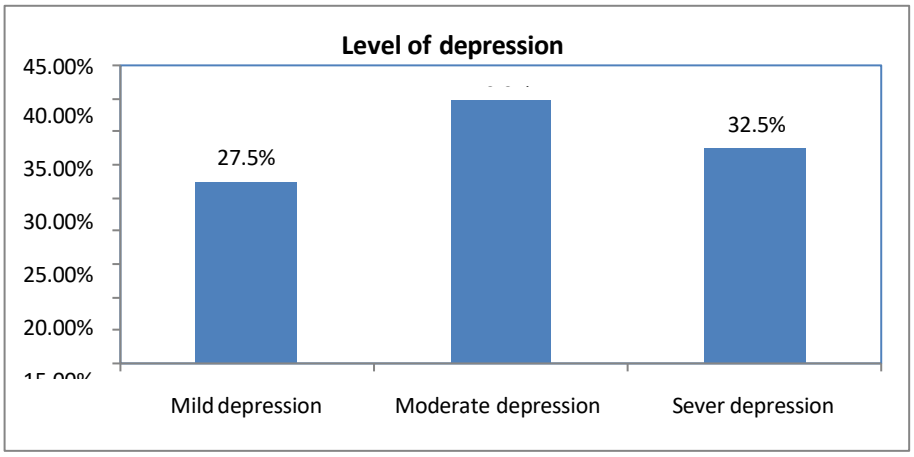


Figure (2): clarified that, less than three quarter of the studied patients (73.8%) not accept their body image.

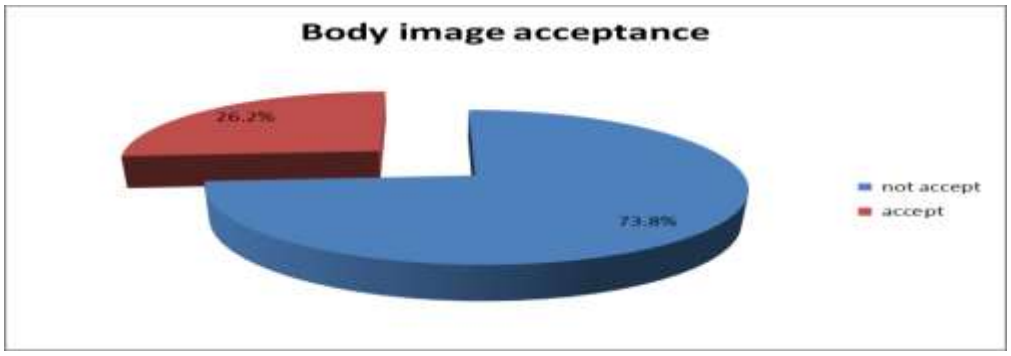


Figure (3): evidenced that, less than half of the studied patients had low self-esteem.

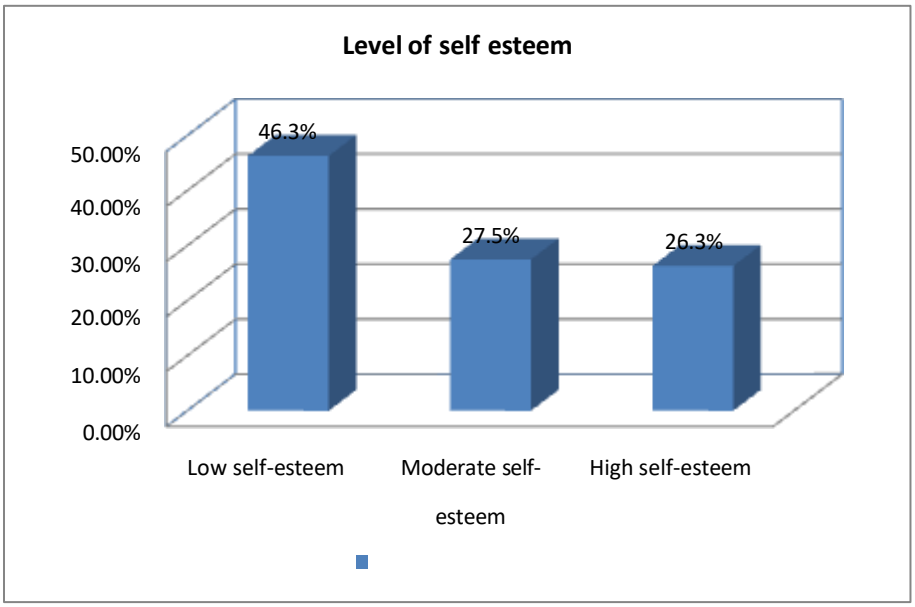
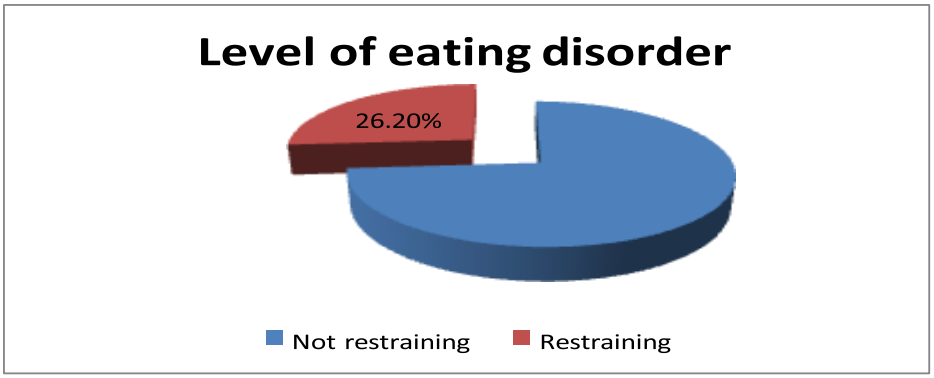


Figure (4): illustrated that, less than three quarter of the studied patients (73.8%) weren't restraining in their eating.



Discussion:

Concerning the demographic characteristics of the studied patients: The results of the present study revealed that, less than half of the study patient's ages were 29 to less than 40 years. According to researcher point of view this may be due to selection criteria of pre-operative patients. This finding is consistent with a study done by **Contreras, Santander, Court & Bravo, (2013)** who stated that, patients younger than 45 years lose greater amount of excess BMI than older patients after bariatric surgery.

Related to gender, less than three quarter of studied patients were females. This may be as females are more interested in their shape and may be related to social issues as chance for marriage also increased obesity in females than males in Egypt 26.4% of men and 48.4% of women are obese as reported by **Elrazek, Elbanna & Bilasy (2014).**

This result on the same line with the study done by **Hans Fuchs, Broderick, Harnsberger, Chang, Bryan, Sandler, Jacobsen & Horgan (2015)** who stated that, Women seem to be more aware of the problems obesity brings to health. They are much more willing to look at surgical weight loss earlier in life, whereas men tend to wait until they have more

co- morbidity (adverse health conditions). Regarding marital status, the present study clarified that, more than half of studied patient were married. This may be related to social factors as unsatisfactory relationship with partner. This finding is in congruence with a study done by **De zwaan& Mitchell (2012)** who assured that pre surgical patient report frequently unsatisfactory marital relationship and difficulties in sexual relation.

Related to Type of bariatric surgery, the present study clarified that, slightly more than half of the studied patients had performed Sleeve Gastrostomy. This finding may be due to that Sleeve gastrectomy has fewer complications than other procedure. The finding of the present study is the same line with the study done by **Angrisani, Santonicola, Iovino, Formisano, Buchwald & Scopinaro (2017)** who assured that, the most commonly performed procedure in the world was sleeve gastrectomy (SG) that reached 45.9%, followed by Roux-en-Y gastric bypass (RYGB) 39.6%, in Egypt 1500 patient has Roux-en-Y gastric bypass (RYGB) and 31 00 have sleeve gastrectomy (SG).

Concerning assessment of the physical problems post bariatric surgery. **The present study finding indicated that, less than three quarter of the studied patients complain of Dumping syndrome (DS). There is agreement with Ahmed, Kornrich, Krasner, Braslow, Broggelwirth & Eckardt (2017) who assured that, patients underwent SG complain of signs of DS. Of those patients 73.2% of LSG reported symptoms of early DS this compares with LRYGB 79.5% of patents reported early symptoms of DS.**

Regarding to vitamin B12 deficiency, the present study clarified that, more than half of the studied patients complain from symptoms of B12deficiency. This finding is on the same line with a study done by **Carvalho, Loscalzo, Freitas, Jordão, & Friano (2012)** who assured that, it was seen a reduction in vitamin B12 in 47,2% patients.

The current study revealed that, the majority of the studied patients had symptoms of iron deficiency. This finding is contradicting with study done by **Ben- Porat, Elazary, Yuval, Wieder, Khalaileh, & Weiss (2015)** who stated that, one year post surgery, deficiencies of iron was 28% of patients. In addition, **Alexandrou, Armeni, Kouskouni, Tsoka, Diamantis & Lambrinoudaki (2014)** Concluded that, iron deficiency was 30% versus 36.4%in patients with RYGB compared with SG.

Concerning Vit A deficiency, the current study clarified that, prevalence of Vit A deficiency was slightly more than three quarter of the studied patients. This is contradicting with a study done by **Eckert, Perry, Sohn, Boden, Martin, Rush & Steele (2010)** who assured that A low vitamin A level was identified in 11.0% of RYBG patients.

Regarding Vit D deficiency the present study showed that, less than three quarter of the studied patients present with Vit D deficiency. This finding goes on the same line with a study done by **Pellitero, Martínez, Puig, Leis, Zavala, Granada, Pastor, Moreno, Tarascó, Balibrea & Puig-Domingo (2017)** who displayed that, Vitamin D deficiency is the most prevalent long-term nutritional deficiency after SG as vitamin D prevalence was 73% of the subjects in his study.

Concerning Zinc deficiency, the current study proposed that, slightly less than three quarter of studied patients had symptoms of Zinc deficiency. This is contradicting with **Belfiore, Cataldi, Minichini, Aiello, Trio, Rossetti & Guida (2015)** who reported that 36 % of patients developed zinc deficiency.

Based on the results of the current study, it was found that, Folate deficiency was found in less than three quarter of the studied patients. Conversely, **Alexandrou et al. (2014)** concluded

that At 4-year follow-up more Folate deficiency frequently detected after SG than RYGB (20.0% versus 18.4%). The current study revealed that, the majority of the studied patients complain from steatorrhea. There is an agreement with **O'Keefe, Rakitt, Ou, El Hajj, Blaney, Vipperla, Holst & Rehlfeld (2017)** who concluded that, result showed that all patients had some fat mal absorption, 80%, indicative of steatorrhea.

The present study reported that, nearly two thirds of the studied patients complain from excess skin. This finding had an agreement with **Baillot, Brais- Dussault, Bastin, Cyr, Brunet, Aimé, Romain, Langlois, Bouchard, Tchernof, Lhoret, Garneau & Bernard (2017)** who concluded that, although bariatric surgery (BS) improves health among adults with severe obesity, it results in excess skin in more than 70% of adults.

Concerning the third part: Assessment of psychological problems of the patients post bariatric surgery. Regarding depression, the current study indicated that, two fifth of the studied patients presented with moderate depressive symptoms. This finding had agreement from Ivezaj, Barnes & Grilo. (2016) who assumed that, based on a BDI cut-off score of >15, 41.9% (n=52) were categorized as High-BDI and 58.1% (n=72) as Low-BDI. In addition, Faria, Faria, Cardeal, de Novaes, Marques & Feitosa (2016) proposed that, depression Post- surgery was 58.8%.

Regarding body image the present study finding illustrated that, less than three quarter of the studied patients not accept their body image. This finding on the same line with a study done by **Sarwer, Dilks & West-Smith (2011),** assured that, more than 66% of post-bariatric surgery patients reported body image dissatisfaction, this dissatisfaction considered the development of excess skin to be a negative consequence of surgery and **Biörserud, Shams, Elander & Olsen (2018),** proposed that, self-image is lower among those who experience a high degree of discomfort of excess skin after bariatric surgery.

The present study demonstrated that, less than half of studied patients present with low self-esteem. This finding is contradicting with a study done by **Aldaqal & Sehlo (2013)** who stated that, Self- esteem significantly improved 1 year after surgery. In addition, **Ghanbari, Lotfi, Pazouki, Mazaheri, Soheilipour & Jesmi (2016)** clarified that, no significant difference was found between self-esteem before and after the surgery (P = 0.321). Conclusions Weight loss after bariatric surgery did not improve self-esteem.

The current study revealed that, less than three quarter of the studied patients are'not restraining in their eating. This finding goes on the same line with **Sioka, Tzovaras Oikonomou, Katsogridaki, Zachari Papamargaritis (2013)** explained that, eating disorder and emotional patterns had the worst Excessive Weight Loss (42.84 ± 29.42 and 34.55 ± 19.34,
respectively). While **Kofman, Lent & Swencionis (2010)** reported that, (49.9%) of subject experiencing times when they could not stop eating or control how much they were eating. Also **Colles, Dixon & O'brien (2008)** noted that, BED, uncontrolled eating, and NES occurred after surgery in 3.1%, 22.5%, and 7.8%, Grazing was prevalent after surgery (38.0%).

Conclusion:

Physical problems less than three quarter of the studied patients had dumping syndrome, majority of those patients had nutritional deficiency, majority of them had steatorrhea and more than half of them complained from excess skin.

Psychological problems, it was found that, depressive symptoms presented on two fifth of the studied patients, less than three quarter of them not accept their body image, less than half of

them had low self-esteem and less than three quarter of them weren't restraining their eating.

Recommendations:

- Replication of the current study on large sample and different hospitals settings to be able to generalize the results.

- Further study is recommended to evaluate psychological assessment before and after the surgery.

- Further study is recommended about lifestyle modification and cognitive behavioral therapy to patients post bariatric surgery.

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