Supplementary Table 1: Studies examining postoperative eating behaviour (n = 13)				
Study	Sample	Methods	Results	Weight loss / regain predictors
Beck et al.[24] Year: 2012 Location: Odense, Denmark	Out of an initial sample of 65 patients treated with Roux-en-Y gastric bypass, in 2008-2009, at the University Hospital of Odense, Denmark, 45 (69%) agreed to participate in the study. The final sample consisted of 37 women and eight men with an average age of 43.6 years ± 9.16 years.	The average follow-up interval after surgery was 23.2 months ± 4.35 months. • Preoperative age, sex, weight (Kg) and BMI (KG / m2) were obtained from medical databases, while the postoperative weight (2 years after surgery) was self-reported by the patient. • All 45 participants underwent two tests: - EDI2 (Eating Disorder Inventory-2), to assess the presence of any postoperative eating disorders. - A self-made questionnaire on binge eating disorder that asked patients to indicate if they had experienced at least twice a week in the last six months one or more symptoms, including eating more food than normally expected by patients treated with gastric bypass, lack of control over eating, feeling disgusted, depressed or guilty after overeating, continuing to eat despite feeling uncomfortable, eating alone because of embarrassment. - The EDI 2 results of the patients were compared with those obtained from two control groups: one consisting of the "normal" Danish population and another consisting of a Danish population with eating disorders.	Regarding weight, it emerged that two years after surgery: The mean BMI of patients decreased from 46.06 (preoperative BMI) to 35.3 (postoperative BMI), with a% EBMIL (per cent excess body mass index lost) = 35.43 ± 10.69. • The questionnaire on binge eating disorders showed that: 27% of patients experienced three or more binges, 42% ate larger portions of food than recommended, 36% dumped, 35% reported a lack of control when eating, 37% said they felt guilt and shame after eating, 7% continued to eat despite feeling uncomfortable, and 7% of participants reported eating alone at because of feelings of embarrassment. • From the EDI 2 questionnaire, it emerged that patients undergoing gastric bypass, compared to the "normal" control group, have: less impulse regulation, less interoceptive awareness, greater sense of ineffectiveness, greater social insecurity and a greater fear maturative. However, they did not exhibit eating disorder symptoms to the same extent as those found in the eating disorder population.	Ineffectiveness (feelings of inadequacy, insecurity and worthlessness) and postoperative binge eating disorder symptoms were significantly associated with a lower% EBMIL, two years after gastric bypass (respectively $\beta = -0.37$, $p \leq 0.05$ and $\beta = -0.29$, $p \leq 0.05$).
De Man Lapidoth et al. [16] Year: 2011 Location: Taby, Sweden	130 participants, 28 men and 102 women, with an average age of 40 ± 9.2 years, undergoing various types of bariatric surgery in 4 different Swedish surgical clinics: 100 gastric bypasses, 18 gastric bands, 7 banded gastroplasty vertical, 5 biliopancreatic diversions with duodenal switch.	• The average postoperative follow-up interval was 3 years. • Preoperative weight (Kg) and BMI (Kg / m2) were obtained from medical records, while the postoperative weight (3 years after surgery) was clinically evaluated or reported by the patient. • Before the intervention, all participants have self-filled in: - EDO (Eating Disorders in Obesity), a questionnaire that evaluates the presence of objective preoperative binges; - The SF-36 (Short Form-36), a questionnaire that evaluates the health-related quality of life (HRQL); - The CPRS-SA (Self-rating Scale for Affective Syndrome) for the evaluation of psychopathologies. • Three years after the surgery: - All 130 participants recompiled the SF-36 and the CPRS-SA; - 102 of the 130 participants completed the EDE-Q (Eating Disorder Examination Questionnaire) used to assess the presence of subjective and objective postoperative binges.	Regarding BMI: - Before surgery, the 130 participants had a mean BMI of 45.8 kg / m^2 that three years after treatment, decreased to 32.1 kg / m2. - The postoperative BMI (three years after treatment) did not show significant differences between participants: with and without preoperative binge eating, with and without postoperative binge eating, with only subjective postoperative bingeing and both subjective and objective postoperative bingeing. • From the EDO and EDE-Q it emerged that: - Before the intervention, 24 of the 130 participants presented objective binges. - After the intervention, 29 of the 102 participants (28.4%) who filled out the EDE-Q, reported subjective postoperative binges. Eighteen (17.6%) of these 29 participants reported preoperative objective binges. Thirteen of the 29 participants, in addition to subjective postoperative binges, also reported objective postoperative binges. • From SF-36 and CPRS-SA it emerged that subjects with postoperative binge eating, compared to those without binge-eating, have a lower HRQL and greater psychopathology.	The results show that pre and postoperative binge eating is not related to the BMI result three years after bariatric surgery. However, postoperative binge eating is associated with higher levels of psychopathology and lower HRQL.
De Zwaan et al. [17] Year: 2010 Location: Erlangen, Germany	59 participants, 50 women and 9 men with mean BMI of 51.3 ± 9Kg / m2 and mean age of 44.5 ± 9.9 years, underwent gastric bypass at the MeritCare Health System Surgery Department (Farg, ND). 71% of the participants were married and 86% worked full-time or part-time.	Patients were evaluated both before and after bariatric surgery. The mean postoperative follow-up time was 2 years (range 18-32 months). • Both before and after surgery, the weight and height of the patients were measured. General and nutrition-related psychopathology was also assessed through: - Three Factor Eating Questionnaire (TFEQ), which investigates cognitive containment, emotional nutrition, and uncontrolled eating behaviours; - Inventory of Depressive Symptoms (IDS-SR) which investigates depressive symptoms; - Rosenberg Self-Esteem Questionnaire (RSE) which assesses self-esteem; - Medical Outcomes Study 36 Health Status Survey (SF-36) which measures health-related quality of life. • Only before the surgery did the patients complete the Self-Report version of the Questionnaire on Eating and Weight Patterns (QEWP) for the identification of eating disorders, the results of which were compared with those obtained through a retrospective, postoperative analysis. performed with the EDE-BSV test. Only at the postoperative follow-up visit, patients were subjected to the Eating Disorder Examination-Bariatric Surgery Version (EDE-BSV) for the identification of currently present eating disorders.	Regarding preoperative eating disorders: - Using the QEWP, 14 patients (23.7%) met the diagnostic criteria for Binge Eating Disorder. - Using the retrospective analysis using the EDE-BSV, 15 patients met the diagnostic criteria for Binge Eating Disorder and 2 for Bulimia Nervosa. • Regarding postoperative eating disorders: - No patient reported objective bulimic episodes; - 2 patients met the diagnostic criteria for Binge Eating Disorder; - 19 patients reported nibbling; - 7 participants reported nocturnal eating; - 15 patients reported subjective bulimic episodes and of these 7 presented such episodes less than 1 time per week, 8 presented them with a greater frequency equal to 1 time per week and 4, in addition to these episodes, also presented related vomiting to weight. • Regarding postoperative weight loss: - At 2 years after surgery, the participants had lost on average 36.3% of their preoperative BMI and 73.9% of their excess BMI. Twenty reported that their current weight was their lowest weight and the remaining 39 reported having already regained some weight. - The frequency of subjective bulimic episodes was negatively associated with weight loss. % BMIL (per cent body mass index lost) was 37.5 ± 7.9% in participants without subjective bulimic episodes (n 44), 37.3 ± 8.4% in participants with less than one subjective bulimic episode per week (n 7) and 29.3 ± 9% in participants with one or more episodes per week (n 8).	Neither preoperative Binge Eating Disorder nor Bulimia Nervosa were associated with postoperative weight loss. • Neither nocturnal eating nor postoperative nibbling was associated with postoperative weight loss. The frequency of postoperative subjective bulimic episodes was negatively associated with weight loss 2 years after bariatric surgery.

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Study	Sample	Methods	Results	Weight loss / regain predictors
Kofman et al. [18] Year: 2010 Location: Bronx, New York	497 participants who underwent gastric bypass between 3 and 10 years prior to study participation.	The average follow-up interval after surgery was 4.2 years. 72% of the participants underwent bypass surgery between 3 and 5 years before the study. • All 497 participants self-completed a 100-question survey on the internet, designed to be completed in less than 15 minutes. The survey consisted of: - Demographic questions (age, sex, ethnicity, education, current weight, pre-surgical height and weight, weight loss after surgery). - Moorehead-Ardelt Quality of Life Questionnaire II, with the aim of investigating the self-perceived quality of life. - QEWP-R (Questionnaire on Eating and Weight Patterns Revised) aimed at identifying the possible presence of subjective binges and uncontrolled eating. Other questions have also been added to the QEWP-R in order to be able to identify the episodes of grignotage.	Demographic questions showed that: - The average age was 43.2 years (range 21-65); - The majority were women (96.5%) and white (90%); - 70% had a university education; - 80% were married or had a permanent partner and 11% lived alone. • The questions about weight showed that: - At the time of surgery, the average excess weight was 182 pounds, with a range of 73-446 pounds. - The maximum average excess weight lost, reported after the surgery was 81%; - In the post intervention 97% of the participants reached an EWL> 50%; - At the time of the study (mean 4.2 years post intervention) the participants had maintained a mean EWL of 70%; - 4.2 years after the surgery: 430 subjects recovered between 1 and 124 pounds, 55 did not report any regain and 11 reported further weight loss. • From the QEWP-R it emerged that: - 248 participants (49.9%) had episodes of loss of control in eating; - 135 subjects (27%) reported subjective binges and 87 of them (18%) met the DSM-IV criteria for binge eating disorder (BED); - 234 respondents (46.6%) reported that they often nibble continuously, over an extended period of time. Of these, 169 (34%) do it at least 2 days a week. Participants who met the criteria for BED regained more weight and had a lower overall EWL than those without BED. • From the Moorehead-Ardelt Quality of Life Questionnaire II, it was found that: - Participants who met the criteria for BED reported a lower HRQL than those who did not meet the criteria for BED; - Subjects who reported grignotage episodes more than twice a week had significantly worse HRQL than those who did not have grignotage.	The time elapsed since the intervention is not related to the total EWL%. There is, however, a significant correlation between surgery time and weight regain. • Uncontrolled eating (r = - 0.41, P <0.001), the frequency of subjective binge eating (r = - 0.21, P = 0.013) and the frequency of grignotage (r = - 0.27, P < 0.001) postoperative, are negatively correlated with% EWL 4.2 years postoperatively. • Uncontrolled eating (r = 0.36, P <0.001), the frequency of subjective binge eating (r = 0.24, P = 0.006) and the frequency of grignotage (r = 0.39, P <0.001) postoperative, are positively correlated with weight regain 4.2 years after surgery. Health-related quality of life correlates positively with% EWL (r = 0.39, P <0.001) and negatively with weight regain (r = - 0.35, P <0.001), 4.2 years after intervention.
Konttinen et al. [21] Year: 2015 Location: Helsinki, Finland	2 groups, aged 37 to 60, enrolled in 25 surgical departments and 480 different primary health care centers, Swedish: - 2010 subjects undergoing bariatric surgery (Non-adjustable or adjustable gastric band = 376; Vertical band gastroplasty = 1369; Gastric bypass = 265) - 1916 obese subjects (control group) not subjected to bariatric surgery but to a conventional, non-standardised treatment, which varied according to the local practices of the health center where they were being treated (lifestyle intervention, modification of eating habits, lack of specific treatment). In the course of the study 121 of these 1916 underwent bariatric surgery and were therefore excluded from the study.	For both samples, the follow-up was carried out through outpatient visits and postal questionnaires at 0 months, 5 months, 1, 2, 3, 4, 6, 8, 10 years after the start of treatment. • At each follow-up visit, both samples: - were subjected to weight measurement (using calibrated scales or electronic scales) and height; - filled out the TFEQ (Three-Factor Eating Questionnaire), which investigates cognitive containment (limitation of food intake to lose weight), emotional nutrition (eating in response to the emotional state) and uncontrolled eating behaviours.	Regarding weight In surgically treated patients: - at 1 year of follow-up, men lost 23.7% and women 25.4% of their initial weight. - at 10 years, the average weight loss was 15.5% for men and 17.8% for women. In conventionally treated patients: mean maximum weight loss was observed at 6 months of follow-up and was 0.9% for both sexes while weight gain of 2.9% for men and 1. , 7% for women occurred ten years after the start of the study. • Regarding the results of the TFEQ In surgically treated patients: - at 1 year of follow-up, there was an increase in cognitive containment (88% in men and 47% in women) and a decrease in uncontrolled eating behaviours (54% in men and 53% in women) and emotional hunger (62% in men and 58% in women). - at 10 years, emotional hunger and uncontrolled eating behaviours further decreased while the cognitive containment score remained the same as it had been at 1 year of follow-up. Patients undergoing gastric bandage experienced a reduction in uncontrolled eating behaviours and emotional hunger at 6 months and 1 year compared to patients undergoing vertical band gastroplasty and those undergoing gastric bypass. Furthermore, gastric banding and vertical band gastroplasty were correlated with higher postoperative cognitive containment scores than gastric bypass. In conventionally treated patients: - at 1 year of follow-up, small increases in cognitive containment (18% in men and 13% in women) and small decreases in uncontrolled eating behaviours (10% in both sexes) and in emotional hunger (20% in men and 14% in women).	At 6 months and at 1 year after surgery, lower levels of uncontrolled eating behaviours and emotional hunger were related to greater weight loss in the short and long term (2, 6 and 10 years after surgery).

Supplementary Table 1: Studies examining postoperative eating behaviour (n = 13)				
Study	Sample	Methods	Results	Weight loss / regain predictors
Monpellier et al.[25] Location: Maastricht Netherlands Year: 2018	4,568 patients, with an average age of 47.1 ± 10.7 years, 81.7% women and 18.3% men, undergoing gastric bypass.	Patients were evaluated before surgery and 12,15,24, 36 and 48 months after surgery. • At each visit, pre and postoperative: - body weight was detected; - through the DEBQ (Dutch Eating Behaviour Questionnaire) the presence of: emotional eating (eating in response to negative emotions), external nutrition (eating in response to external stimuli, such as seeing food) and limited nutrition (intention to eat less). Only in the preoperative visit, the height was measured.	• With regard to weight variations: - Before surgery, the mean BMI was 44.4 ± 5.7Kg / m2, after 1 year after surgery it was 30.7 ± 4.9 Kg / m2, after 15 months after surgery it was 30.4 ± 5 Kg / m2, after 24 months from the operation it was 30.3 ± 5.1 Kg / m2 and after 36 months it was 31.4 ± 5.3 Kg / m2. - The average percentage of postoperative weight loss was: 30.8 ± 7.2 after 12 months from surgery, 31.6 ± 7.7 at 15 months, 31.4 ± 8.6 at 24 months, 29, 2 ± 8.9 at 36 months and 27.3 ± 9.6 at 48 months. • With regard to emotional eating: the lowest average score was observed 15 months after the surgery (1.94 ± 0.77). Before surgery, the mean score was 2.43 ± 0.82, two years after surgery 2.09 ± 0.78, three years after surgery 2.27 ± 0.82 and four years after surgery 2.35 ± 0.86. • With regard to external power supply: the lowest average score was observed 15 months after the intervention (2.23 ± 0.56). Before surgery, the mean score was 2.84 ± 0.58, two years after surgery 2.35 ± 0.54, three years after surgery 2.43 ± 0.57 and four years after surgery 2 , 54 ± 0.59. With regard to limited nutrition: the lowest average score was observed 15 months after the intervention (2.49 ± 0.75). Before surgery, the mean score was 3.01 ± 0.60, two years after surgery 2.56 ± 0.75, three years after surgery 2.59 ± 0.70 and four years after surgery 2.58 ± 0.67.	• Postoperative emotional eating is negatively associated with weight loss at 12, 15, 24, 36 and 48 months of follow-up and positively with weight regain at 48 months of follow-up. • Moderate postoperative nutrition is positively correlated with weight regain at 36 months of follow-up and negatively with weight loss at 15, 24 and 36 months of follow-up. • External nutrition is negatively associated with weight loss at 24 months of follow-up..
Nasirzadeh et al. [19] Year: 2018 Location: Toronto, Canada	844 participants, with an average age of 45 years (range: 18- 64 years), 80% women and 19% men, of which 760 undergoing gastric bypass and 84 with sleeve gastrectomy.	• Participants underwent preoperative evaluation and 3 postoperative follow-up visits: one at 1 year, one at 2 years and one at 3 years after the operation. Individuals lost to follow-up over 1 year were considered non-completers of the study: 544 participants completed the study while 300 did not. • Before surgery and at each postoperative follow-up visit: - the weight of the patients was detected; - EDE-Q (Eating Disorder Examination Questionnaire) was used to identify food pathologies; - BES (Binge Eating Scale) was used to assess the presence and frequency of binge eating; - EES (Emotional Eating Scale) was used to assess the presence of emotional eating; - NEQ (Night Eating Questionnaire) was used to measure the symptoms of Night Eating.	• Results related to the questionnaires: - During the first year after bariatric surgery, participants demonstrated significant decreases in eating pathology, including binge eating, loss of control over eating, nighttime eating, emotional eating, as well as overall EDE-Q scores. - Between the first and third year after surgery, there were significant increases in the mean scores of all dietary measures except the overall EDE-Q score: binge eating (0.85 ± 4.71; p = 0.002), emotional eating (2.00 ± 13.63; p = 0.033), loss of control over eating (1.11 ± 7.011; p <0.001). - Between 2 and 3 years after the surgery there was an increase in the scores relating to night eating (2.52 ± 8.00; p = 0.01). • Results related to weight: - Before surgery, the BMI was> 40 kg / m2 or ≥35 kg / m2 with at least one comorbidity related to obesity. - Significant weight reduction was observed during the first year after bariatric surgery (mean weight change ± SD = −47.11 ± 17.59 kg; p <0.001). - Significant weight gain was noted between the second and third postoperative year (4.28 ± 7.12 kg; p = 0.001). - 2 years after surgery: 21.9% of patients (n = 40) had regained more than 10% of the total weight lost in the first year, 11.5% (n = 21) had regained more than 15 % TWL and 4.9% of patients (n = 9) had regained more than 25%. The scores of BES, EES and EDE-Q, 1 year after surgery, were not significantly different between the groups with regain of TWL (total weight lost) greater than 10% and those without.	• A lower preoperative weight, male sex and a higher BES score, 1 year after surgery, were all predictors of a lower percentage of TWL (total weight lost), 2 years after surgery. • The BES score, the EES score, the EDE-Q global score and the loss of control over nutrition, 1 year after surgery, did not have a significant impact on weight regain, 2 years after surgery.
Nicolau et al. [27] Year: 2015 Location: Palma de Mallorca, Spain	60 participants, 47 women and 13 men, with an average age of 46.35 ± 9.9 years, of which 50 underwent gastric bypass and 10 under sleeve gastrectomy.	The mean follow-up after bariatric surgery was 46.28 ± 18.1 months. • For each patient the following were recorded: - The preoperative weight, obtained from the patients' medical records; - Information regarding psychiatric comorbidity before surgery, obtained retrospectively from the semi-structured interview performed by an experienced psychiatrist. • During the postoperative follow-up, the following were recorded: - clinical parameters (weight, height, pre and postoperative obesity-related diseases, common problems after bariatric surgery such as nausea / vomiting / constipation / dizziness); - biochemical parameters (blood samples were taken to evaluate the metabolic and nutritional profile); - psychological parameters (structured interview to assess the presence of grignotage, the Spanish version of the Beck Depression Inventory, to assess the presence and severity of depressive symptoms and the Spanish version of the Short Form-36, to investigate the quality of life).	Regarding weight and BMI: - The mean pre-surgical BMI was 48.35 ± 7.46 kg / m2; - 18 months after surgery, the average BMI had dropped to 33.67 ± 6.15 kg / m2. • Regarding the psychological parameters - 25 of the 60 participants (41.7%) met the criteria for grignotage and of these: 17 (68%) had a personal history of some pre-operative psychiatric disorder, 14 had a depressive disorder, 1 had bulimia nervosa, 1 binge eating disorder and 1 an eating disorder not otherwise specified. • In patients with grignotage, compared to those without grignotage, 18 months after surgery: - There was a higher percentage of weight regain (72% vs 11.7%; p <0.0001) and a lower percentage of excess weight loss (28.15 ± 6.96% vs 33.35 ± 11.9%; p = 0.05); - There were greater difficulties in following the standardised visits (56% vs 17.6%; p = 0.009); - Quality of life was lower (49.6 ± 22.7 vs 64.2 ± 23.3; p = 0.02).	There was a potential association between grignotage and a lower percentage of excess weight loss and between grignotage and weight regain, 18 months after bariatric surgery.

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Study	Sample	Methods	Results	Weight loss / regain predictors
Novelli et al.[26] Year: 2018 Location: Brasilia, Brazil	95 women, not pregnant and not taking drugs that can affect body weight, with an average age of 47.3 ± 9.8 years, who have undergone gastric bypass for at least 2 years at the Outpatient Clinic for Severe Obesity University Hospital of Brasilia.	The mean postoperative follow-up was 59.5 ± 21.2 months. • For all participants: - socio-demographic variables were studied (age, marital status, years of schooling, monthly income); - the clinical variables were collected (preoperative weight, current weight, height, date of surgery); - Cognitive containment (limitation of food intake to lose weight), emotional nutrition (eating in response to the emotional state) and uncontrolled eating behaviours were evaluated through the TFEQ-R21 (Three Factor Eating Questionnaire); - multivariate analysis was used to investigate the associations between the eating behaviour scores and the EWL.	Regarding the clinical variables: - 67 participants achieved a postoperative EWL ≥ 50% (successful group); - 28 participants achieved a postoperative EWL <50% (unsuccessful group). • Regarding socio-demographic data: - 59% of the participants had formal education between the ages of 8 and 12; - The unsuccessful group had a lower education level and a longer postoperative time (68.6 ± 21.9 months VS 55.7 ± 19.9 months) than the successful group. • The results of the TFEQ-R21 showed that: - in both the successful and unsuccessful group the highest score was for the domain of cognitive containment, followed by emotional and uncontrolled eating; - The unsuccessful group had significantly higher emotional eating (54 ± 29.3) and binge eating (34.8 ± 21) scores than the successful group (39.2 ± 32; P = 0.039 and 24, 7 ± 19.6; P = 0.029, respectively).	Emotional eating is negatively associated with the percentage of EWL (β = - 0.286; P = 0.033), regardless of age, level of education and postoperative time. The association between the percentage of EWL and binge eating ceased to be significant after the adjustment for the postoperative time variable (P = 0.081)
Pizato et al. [28] Year: 2017 Location: Brasilia, Brazil	994 subjects, mostly women.	Systemic review on the association between grignotage and weight regain after bariatric surgery. • The research was performed, in October 2017, on search engines: Medline, Embase, Cochrane, Lilacs, Scopus, Web of Sciences, Google Scholar, ProQuest Dissertation and Theses and on Open Gray. • As inclusion criteria were chosen: studies with patients undergoing any type of bariatric surgery and who examined postoperative grignotage and its relationship with postoperative weight regain. • The following were chosen as exclusion criteria: - weight loss procedures other than bariatric surgery; - patients with mental disorders or other conditions affecting body weight, such as pregnancy, endocrine and metabolic disorders; - reviews, abstracts, letters, personal opinions and books.	• Out of a total of 3764 articles, 5 documents [26, 27, 19, 23, 28] met the inclusion criteria (4 original articles and a thesis). • All 5 papers evaluated patients undergoing gastric bypass, three of these [26, 23, 28] also evaluated sleeve gastrectomy and two [27, 28] also evaluated laparoscopic adjustable gastric band. • The total sample size was 994 subjects, mostly women, and the follow-up period was between 6 months and 10 years after bariatric surgery. • The prevalence of grignotage ranged from 16.6% to 46.6% and the highest prevalence of significant weight regain was 47%. The association between grignotage and post bariatric weight regain was observed in 4 [26, 27, 19, 23] of the 5 studies evaluated but the author of the review suggested that the study that led to a different result [28] compared to the others he used, to evaluate the grignotage, a non-ideal tool.	A relationship is supported between grignotage and weight regain, post bariatric surgery, regardless of the type of surgery and the definition of grignotage given.
Sioka et al.[20] Year: 2013 Location: Larissa, Greece	110 patients who underwent sleeve gastrectomy.	• All patients were evaluated both before and after surgery through: - weight measurement; - compilation of the Suter questionnaire, for the evaluation of food satisfaction; - Compilation of the Questionnaire on Eating and Weight Patterns (QEWP) for the identification of eating patterns (normal, volume eaters, binge eaters, night eaters, snacker eaters, emotional eaters). • The 110 participants, based on when the postoperative evaluation was carried out, were divided into 5 groups: - Group 1, with follow-up before 3 postoperative months, consisting of 7 women and 3 men with an average age of 38.2 ± 10.7 years; - Group 2, with follow-up between 3 and 6 postoperative months, consisting of 11 women with an average age of 38 ± 9.96 years; - Group 3, with follow-up between 6 and 12 postoperative months, consisting of 7 women and 4 with an average age of 42.1 ± 10.9 years; - Group 4, with follow-up between 12 and 24 postoperative months, consisting of 31 women and 8 men with an average age of 39.56 ± 9.15 years; - Group 5, with follow-up between 24 and 36 postoperative months, consisting of 19 women and 4 men with an average age of 40.39 ± 9.68 years.	• Regarding the results of the Questionnaire on Eating and Weight Patterns, Before the intervention: - The incidence of eating patterns was, in descending order: snacker eaters (32 out of 110), volume eaters (30 out of 110), binge eaters (26 out of 110) and emotional eaters (16 out of 110). After the surgery: - 19 patients maintained the preoperative diet while 91 changed it. - The food model of the eaters volume was presented in only one patient, 3 years after surgery. - 17.27% of patients developed the sweet eaters diet model 6 months after surgery. - The snacker eaters food model was the most commonly maintained model and occurred in all groups (group 1,2,3,4 and 5). - In groups 1 and 2 a significant percentage of patients adopted the normal eating pattern, which slightly decreased in the following groups. • As regards the results of the Suter questionnaire: after the first postoperative year, an increase in overall patient satisfaction with the quality of nutrition was observed. • As regards postoperative EWL (Excess Weight Lost): - in group 1, % EWL = 31.7 ± 12.01 - in group 2, % EWL = 41.97 ± 8.97 - in group 3, % EWL = 59.43 ± 15.51 - in group 4, % EWL = 68.81 ± 19.3 - in group 5, % EWL = 62.73 ± 21.22	• No association was found between the preoperative eating pattern and the percentage of EWL. • The postoperative eating pattern was significantly associated with the percentage of EWL: - Patients with a normal eating pattern and snacker eaters achieved the best EWL (63.57 ± 21.32 and 60.73 ± 20.62, respectively). - Binge eaters and emotional eaters achieved the worst EWL (42.84 ± 29.42 and 34.55 ± 19.34, respectively).

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Study	Sample	Methods	Results	Weight loss / regain predictors
Smith et al.[22] Year: 2019 Location: Fargo, North Dakota	2,156 patients, 76% women and 24% men, with a mean age of 45.66 ± 11.32 years, of which: - 1640 undergoing gastric bypass; - 516 undergoing laparoscopic adjustable gastric band.	Patients were evaluated before bariatric surgery and then every year, or every two years, up to 7 years after the surgery. In the first year 1343 participants were evaluated, in the second 1193, in the third 1143, in the fourth 1128, in the fifth 1145, in the seventh 812. • At each check: - the presence of LOCE (Loss Of Control Eating) was evaluated, defined as the feeling of not being able to stop eating or to control how much one is eating. - the presence of BED (Binge Eating Disorder) was assessed according to the definition of the DSM (Diagnostic and Statistic Manual of Mental Disorder). - the symptoms of alcohol use (via AUDIT test, Alcohol use disorders identification test), depressive symptoms (via BDI, Beck Depression Inventory) and self-esteem (via IWQOL-Lite, Impact of weight on quality of life) were assessed -Quarrel)	Regarding LOCE (Loss Of Control Eating): - the preoperative percentage of LOCE was 35%; 1 year after surgery it was 24.6%; at 2 years of 30.2%; at 3 years of 31.7%; at 4 years of 31.5%; at 5 years of 30.6% and at 7 years of 26.4%. - 39.9% of patients never developed LOCE; 25.6% reported LOCE de novo; 25.4% reported recurrent LOCE and 9.7% reported LOCE in remission. • Regarding BED (Binge Eating Disorder): - the preoperative percentage of BED was 12.7%; 1 year after surgery it was 2.1%; at 2 years of 2.7%; at 3 years of 3.3%; at 4 years of 3.9%; at 5 years of 3.7% and at 7 years of 4%. - 82.2% of patients have never developed BED; 4.8% reported BED de novo; 3.8% reported recurrent BED and 9.2% reported BED in remission. • Regarding the weight: - Before surgery, the average BMI was 47.06 ± 7.36Kg / m2 - The postoperative percentage of weight lost was: 29.45% ± 11.04 after 1 year; 30.03% ± 12.06 after 2 years; 28.2% ± 12.08 after 3 years; 26.58% ± 12.25 after 3 years; 25.62% ± 12.22 after 5 years and 25.26% ± 12.42 after 7 years. • As regards the results of the AUDIT, the BDI and the IWQOL-Lite: - Higher BDI scores and higher self-esteem were correlated with a lower probability of LOCE while no correlation was found between AUDIT and LOCE scores.	There was a significant relationship between LOCE and postoperative per centweight loss. Participants in postoperative follow-up visits said they presented LOCE in the 6 months prior to the visit, at the subsequent checkup they recorded a percentage of weight loss, on average 1.7% lower than the subjects who did not report LOCE at the previous visit.
White et al.[23] Year: 2010 Location: New Haven, Connecticut	361 participants, 50 men and 311 women, underwent gastric bypass at two medical centers in the northeastern United States. The mean age was 43.7 years and the mean preoperative BMI was 51.1 ± 8.3Kg / m2. Participants: - 81.4% (294) were Caucasian; - 9.1% (33) were African American, - 7.2% (26) were American Hispanic; - 0.3% (1) were Asian; - 2.0% (7) were of other ethnicity or of unknown ethnicity. From an educational point of view: - 67.9% (245) of the participants had attended at least one college; - 26.3% (95) had completed high school.	• Participants underwent a preoperative evaluation and subsequent follow-up at 6 months, 12 months and 24 months after bariatric surgery. Of patients who completed preoperative evaluation (361): - 86.1% (311) completed the 6-month follow-up; - 81.4% (294) completed the 12-month follow-up; - 47.4% (171) completed the 24-month follow-up. Participants had to have completed at least one follow-up evaluation to be included in the study. • In the preoperative assessment and subsequent follow-ups, all patients were evaluated by: - registration of body weight and height; - BDI (Beck Depression Inventory) to assess the level and symptoms of depression; - SF-36 (Short Form-36 Health Survey) to assess the health-related quality of life (HRQL); - EDE-Q (Eating Disorder Examination Questionnaire) for the identification of episodes of loss of eating control (LOCE) defined as the presence of objective bulimic episodes (consumption of an objectively large amount of food accompanied by the feeling of loss of control) and / or subjective (taking a subjectively large amount of food accompanied by the feeling of loss of control).	• With regard to the results of the Eating Disorder Examination Questionnaire: - Prior to surgery, 42.4% (153) of patients reported LOCE for objective bulimic episodes, 40.2% (145) reported LOCE for subjective bulimic episodes, and 61.2% (221) reported General LOCE that is for both subjective and objective bulimic episodes. - After surgery, 31% (of 311 participants) reported general LOCE at 6 months of follow-up, 36% (of 294 participants) reported general LOCE at 12 months of follow-up, and 39% (of 171 participants) reported general LOCE at 24 months of follow-up • Regarding the results of the Beck Depression Inventory and the Short Form-36 Health Survey: patients with postoperative LOCE reported elevated depressive symptoms and lower quality of life • On the results concerning postoperative weight loss, we can say that: patients with postoperative LOCE lost significantly less weight at 12 months (34.6 vs 37.2% of BMI loss) and 24 months (35.8 % vs 39.1% loss of BMI) of follow-up. • With regard to postoperative weight regain, it was found that: - Of the patients who reported general LOCE at 12 months of follow-up, 44.2% regained 2 kg or more between 12 and 24 months of follow-up; - Of the patients who did not report LOCE at 12 months of follow-up, 26.8% regained 2 kg or more between 12 and 24 months of follow-up.	• The postoperative loss of control over nutrition (LOCE = Loss Of Control Eating) is a negative prognostic indicator of weight loss at 12 and 24 months of follow-up. • The presence of LOCE, 12 months after bariatric surgery is associated with a greater probability of weight regain between 12 and 24 months after surgery.

Supplementary Table 2: Studies examining postoperative adherence (n = 12)				
Study	Sample	Methods	Results	Weight loss / regain predictors
Compher et al.[38] Year 2012 Location: Philadelphia, Pennsylvania	60 patients undergoing gastric bypass and divided into two groups: - The "attender" group, made up of 32 participants, 7 men and 25 women, with an average age of 46.9 ± 10.1 years and an average preoperative BMI of 54.5 ± 10.2Kg / m2. - The "non attender" group made up of 28 participants, 10 men and 18 women, with an average age of 46.7 ± 10.9 years and an average preoperative BMI of 49.2 ± 9.4Kg / m^2.	• All the participants of the "attender" and "non attender" group underwent a preoperative visit and 4 postoperative checkups: one after 1.5 months from the operation, one after 6 months, another after 12 months and one last 24 months after surgery. Visits during which the patient's weight was taken. While the patients in the non-attendant group only attended the follow-up visits at 1.5 - 6 - 12 and 24 months, the patients in the group had to wait in addition to these visits, between one follow-up and another, had to undergo a minimum of two to a maximum of 5 outpatient visits.	• Before the intervention: the participants of the "non attender" group had an average weight of 142.7 ± 30.6Kg and those of the "attender" group of 155.1 ± 36.8Kg. • At the follow-up at 1.5 months: patients in the "non-attender" group had lost on average 15.0 ± 7.4Kg while those in the "attender" group 17.8 ± 7.9Kg. • At the 6-month follow-up: patients in the "non-attend" group had lost on average 26.9 ± 13.5Kg while those in the "attender" group 37.8 ± 19.1Kg. • At the 12-month follow-up: patients in the "non-attender" group had lost on average 31.8 ± 16.1Kg while those in the "attender" group 52.3 ± 19.2Kg • At the 24-month follow-up: patients in the "non-attend" group had lost an average of 37.1 ± 20.8Kg while those in the "attender" group 55.2 ± 20.8Kg.	Le probabilità di EWL (Excess Weight Lost) ≥ 50% erano 3,3 volte maggiori a 12 mesi e 2,8 volte maggiori a 24 mesi per ogni unità di aumento del numero di visite.
Conceicao et al.[41] Year: 2020 Location: Braga, Portugal	130 patients divided into two samples: one sample included 65 candidates for bariatric surgery, the other sample 65 patients undergoing bariatric surgery in the previous 18/36 months. In the postoperative sample: 37% of patients had undergone sleeve gastrectomy and the remaining 64% had gastric bypass.	• Candidates for bariatric surgery were enrolled in the study on the day of their first preoperative appointment while patients who had undergone bariatric surgery were enrolled during one of their follow-up visits 18/32 months after surgery (mean follow-up = 26.12 ± 7.97 months). • During the enrollment visit, patients in both groups were evaluated by a professional from the multidisciplinary bariatric surgery team (researcher with a PhD or Masters in Clinical Psychology) who: - recorded their current height and weight and, for patients already undergoing surgery, obtained the preoperative weight from the medical record. - subjected patients to a structured, face-to-face clinical interview that included questions regarding age, gender, educational level, marital status and operative status. - subjected patients to 5 different self-assessment questionnaires: 1) Multidimensional Scale of Perceived Social Support (MSPSS) to evaluate the social support from friends, family and other significant people for the patient; 2) Repetitive eating questionnaire (Rep (eat) -Q) for the evaluation of grignotage; 3) Eating Disorder Examination-Questionnaire V17 (EDE-Q) to evaluate moderation in eating and concern for physical fitness - for body weight - for nutrition; 4) Three-Factor Eating Questionnaire-Revised 21 (TFEQ-R21) for the evaluation of emotional eating, uncontrolled eating and cognitive containment; 5) Depression Anxiety Stress Scale (DASS-21-Dep) to evaluate depressive symptoms	• As regards socio-demographic variables: • Of the 130 study participants, aged 20 to 67, 144 were women and 16 men. Most (88) were married or lived with their partner. One hundred patients reported having children. A minority (4) did not complete any level of education, 30 completed primary school, 37 secondary school, 24 high school, 35 university. Seventy-four participants worked, 39 were unemployed and 17 were retired. • Regarding the weight: - The mean BMI for the preoperative group was 44.03 ± 5.48 and for the postoperative group it was 28.64 ± 5.12. - In the postoperative group the mean percentage of TWL (total weight lost) was 33.34% ± 9.56 and WR (weight regain) of 28.5%. • The MSPSS mean postoperative scores were lower than the preoperative scores for all types of social support (support from friends, family and important people). • Regarding the mean EDE-Q scores, the postoperative group, compared to the preoperative group, scored significantly lower in all subscales (moderation in eating, concern for fitness, concern for body weight and for power). • Regarding the TFEQ-R21 scores, with the exception of the cognitive containment subscale, the postoperative group scored significantly lower than the preoperative group in all subscales (binge eating and emotional eating). • In both DASS-21-Dep and Rep (eat) -Q, the postoperative group scored lower than the pre-operative group.	• Pre- and postoperative perception of social support was found to be significantly inversely correlated with depression, emotional eating, and preoccupation with body weight and fitness. • In the postoperative period, a greater perception of social support by the family and significant persons for the patient was associated with a higher% TWL (total weight lost). Support from family members was also associated with less weight gain. Support from friends was not associated with any weight results.
Forbush et al. [35] Year: 2011 Location: Conway, Arkansas	265 patients, 229 women and 36 men, with a mean age of 48.2 ± 10.2 years, of which: 46 underwent gastric bypass a year earlier, 57 two years earlier, 74 three years earlier, 62 four years earlier and 26 five years before the start of the study.	• All 265 patients were asked to fill out two questionnaires online: - the Arizona Activity Frequency Questionnaire which investigated the daily hours spent in physical activity, the daily energy expenditure for physical activity and the total daily energy expenditure in the 12 months prior to the interview; - the Arizona Food Frequency Questionnaire which investigated the frequency of consumption of 175 different foods in the 12 months preceding the interview. • Preoperative weight and height and subsequent BMIs were derived from patients' medical records.	As regards the daily hours spent in physical activity: - 163 patients practiced less than 0.5h/day with%EWL of 78.10 ± 23.80; - 90 patients practiced between 0.5 and 1h / day with% EWL of 85.28 ± 24.86; - 12 patients practiced more than 1h / day with% EWL of 93.48 ± 30.46. • As regards the energy spent on physical activity: - 118 patients consumed less than 300kj / day with a% EWL of 79.32 ± 24.44; - 129 patients consumed between 300 and 3000kj / day with% EWL of 81.5 ± 24.15; - 18 patients consumed more than 3000kj / day with% EWL of 91.93 ± 29.56. • As regards the total daily energy expenditure, in the 12 months prior to the interview, it was found that: - 80 patients consumed less than 2000kj / day with% EWL of 84.53 ± 24.52; - 108 patients consumed between 2000 and 10,000kj / day with% EWL of 83.23 ± 27.52; - 77 patients consumed more than 10,000kj / day with% EWL of 80.12 ± 26.81.	The hours and energy spent daily in physical activity are positively correlated with the percentage of EWL that occurs in the following 12 months and with its maintenance. Total daily energy consumption did not significantly affect the EWL percentage.

Supplementary Table 2: Studies examining postoperative adherence (n = 12)				
Study	Sample	Methods	Results	Weight loss / regain predictors
Gradaschi et al.[32] Year: 2020 Location: Genoa, Italy	176 patients, divided into 2 groups: - the "CO" group made up of 88 people, 16 men and 72 women, with an average age of 41.5 ± 11.6 years of which 59 underwent gastric bypass and 29 with sleeve gastrectomy - the "DIET" group made up of 88 people, 15 men and 73 women, with an average age of 43.1 ± 11.8 years of which 56 underwent gastric bypass and 32 with sleeve gastrectomy.	• A standard follow-up was provided for the "CO" group: patients underwent a purely surgical visit at 1, 6, 12 and 24 months after surgery. • In the "DIET" group, unlike the "CO" group, in all the follow-up visits the surgeon was supported by a dietician whose work was aimed at improving adherence to the diet, regulating protein intake, promoting reducing the intake of sugars and fats, decreasing the incidence of grignotage and avoiding the intake of energy drinks. Patients in the "DIET" group, unlike those in the "CO" group, could also request one or more additional dietary / behavioural visits.	• During the two postoperative years, within the "DIET" group, 24 patients received additional dietary / behavioural sessions and only 4 patients required more than 3 additional sessions. • At the 24-month follow-up visit, 50 patients from the "CO" group and 22 from the "DIET" group did not show up, whose weight was therefore asked by telephone. • Regarding the BMI (Body Mass Index): - In the "CO" group, the average preoperative BMI was 44.8 ± 5.3Kg / m2 while 2 years after surgery it was 33.1 ± 8 Kg / m2 - In the "DIET" group, the average preoperative BMI was 46.3 ± 7.4Kg / m2 while 2 years after surgery it was 31.5 ± 8.1Kg / m2 • Regarding the weight: - In the "CO" group the average preoperative weight was 120 ± 20Kg while 2 years after surgery it was 86.8 ± 23.2 Kg. - In the "DIET" group, the average preoperative weight was 122 ± 19.6Kg while 2 years after surgery it was 82.7 ± 16.1Kg.	The postoperative dietary / behavioural sessions provided at the request of the patient do not affect weight loss 2 years after surgery. The dietary intervention promotes adherence to the bariatric program and prevents the loss of postoperative follow-up.
Josbeno et al. [36] Year: 2011 Location: Pittsburgh, Pennsylvania	40 subjects, with an average age of 50.6 ± 9.8 years, 90% women, of which: - 13 who underwent gastric bypass 2 years before the start of the study - 17 who underwent gastric bypass 3 years before the start of the study - 15 who underwent gastric bypass 4 years before the start of the study - 5 who underwent gastric bypass 5 years before the start of the study	All patients: - have undergone a one-off assessment of postoperative body weight and height (the preoperative weight was obtained from the medical record) - they had to wear for seven consecutive days, except during sleep, shower, bath and swimming, the SWPro armband capable of providing feedback on the duration, frequency and intensity of their physical activity - had to complete the Food Frequency Questionnaire, which investigated the frequency of consumption of 175 different foods in the previous 12 months - have filled in the subscale of the 36- Item Short Form Health Survey instrument (SF-36PF) for the assessment of their physical mobility	• Regarding the weight: - the mean preoperative BMI was 48.8 ± 7.1kg / m2 while that reported at the time of study enrollment was 32.6 ± 7.9 kg / m2 - the mean% EWL (excess weight lost) was 62.7 ± 19.7%, with a range of 24.9-92.1% • Regarding the results of the Food Frequency Questionnaire: - the average daily calorie intake was 1,279.8 ± 446.4Kcal • The Body Media Sense Wear Pro (SWPro) arm band found that: - the mean physical activity of intensity ≥3 MET (metabolic equivalents) and duration ≥ 1 minute was 212.8 ± 141 minutes / week; - the mean physical activity of intensity ≥3 MET (metabolic equivalents) and duration ≥ 10 minutes was 49.3 ± 68.9 minutes / week; - weight loss was greater in participants with physical activity ≥ 150 minutes / week than in those with physical activity <150 minutes / week.	The data showed a significant positive relationship between physical activity and weight loss and between physical mobility and weight loss 2-5 years after gastric bypass surgery. Physical activity was found not to be related to physical mobility.
Kaiser et al.[40] Year: 2011 Location: Birmingham, Alabama	102 patients, 88.2% women, with a mean age of 45.6 ± 11.3 years, underwent a laparoscopic gastric band.	• Height, sex, date of birth, date of surgery, preoperative weight and weight 12 months after the surgery, were recorded in the medical record. • All 102 participants were offered to participate, in the 12 months following the surgery, in a free, weekly, professional-led bariatric support group (one week by a licensed professional consultant and the next by a licensed clinical psychologist).	• Regarding support groups: - Patients began taking part in support groups on average 109.8 ± 130.7 days after bariatric surgery (range 4-365 days). - The average number of meetings in which each participant took part was 0.8 ± 1.9 meetings (range 0-10 meetings). - 28.4% of participants attended at least one support group meeting. • Regarding the weight: - The mean preoperative BMI was 46.3 ± 8.8 kg / m2 (range 30.4-74.8 kg / m2). - One year after surgery, the average percentage of EWL (excess weight lost) was 41.8 ± 25.7% (range 26.6 ± 97.8%)	The data showed a significant, positive relationship between the frequency of participation in the support group and the percentage of EWL one year after gastric band surgery.
Kim et al. [39] Year: 2014 Location: Darlinghurst, Australia	365 subjects, aged between 18 and 65 years, underwent gastric bypass	• Systemic review on the association between patient compliance at follow-up and weight loss. • The search was performed in July 2013 on Medline and Embase search engines using as inclusion criteria studies that followed adult patients (18-65 years) after gastric bypass surgery for a minimum of 12 months	• Out of a total of 3551 articles, 4 prospective cohort studies [32, 39, 40, 41] met the inclusion criteria. Two of these studies [53, 54] had a follow-up of 12 months, one [32] of 24 months and another [39] of 36-48 months. • All the studies included in the review, except one [40], reported that there were no statistically significant differences (p> 0.05) in% EWL (excess weight lost) between those who, during the 12 months following the gastric bypass surgery, who showed up at all follow-up visits and who skipped a few. Studies that followed gastric bypass patients for more than 12 months [32, 39] both agreed that patients who presented at all follow-up visits after gastric bypass surgery had 24, 36, 48 months after surgery, a higher% EWL compared to those who missed one or more follow-up visits during the 24, 36, 48 postoperative months	The data showed a significant positive relationship between the number of postoperative follow-up visits and% EWL at 24.36 and 48 months post gastric bypass surgery but not at 12 postoperative months.

Supplementary Table 2: Studies examining postoperative adherence (n = 12)				
Study	Sample	Methods	Results	Weight loss / regain predictors
Kruseman et al. [33] Year: 2010 Location: Carauge, Switzerland	Initial sample: 141 patients, 131 women and 10 men, with a mean age of 40 ± 10 years, who underwent gastric bypass, between January 1997 and March 2002, at the university hospitals of Geneva Sample after one year of follow-up: 135 patients Sample after 8 years of follow-up: 80 patients, all women	• Before surgery, one year after surgery and 8 years after surgery, patients: - they were weighed and subjected to bioimpedance analysis and measurement of the hips and waist circumference; - they had to fill in a food diary for 4 days in which to write what they ate during the day, when and in what quantity; - had to fill in the EDI-II questionnaire (Eating Disorder Inventory) for the evaluation of eating disorders. • During the last visit, 8 years after the surgery, patients had to bring a sheet with, recorded by them, the steps taken every day, in the 5 days prior to the visit, measured by a pedometer.	• Regarding the weight: - The average weight and average BMI, before surgery, one year after surgery and 8 years after surgery were respectively: 122.8 ± 20.5Kg and 46 ± 7 kg / m2; 84.1 ± 17.3Kg and 31.6 ± 6.2kg / m2; 93.7 ± 18.9Kg and 34.5 ± 6.2kg / m2 - 8 years after surgery 47 patients had obtained an EWL (excess weight lost)> 50% and 33 patients an EWL <50% • With regard to dietary intake: - Before surgery, the average energy intake of all 141 patients was 2,355 ± 775Kcal with 41% of energy from carbohydrates, 41% from fats and 15% from proteins. - One year after surgery the average energy intake, the percentage of energy provided by carbohydrates, the percentage of energy provided by lipids and the grams of protein per kg of body weight in patients with EWL> 50%, compared to those with EWL <50% was respectively: 1448 ± 353Kcal vs 1505 ± 380KCal; 41 ± 7% vs 40 ± 8%; 42 ± 6% vs 43 ± 8%; 0.7 ± 0.2 g / kg body weight vs 0.7 ± 0.2 g / kg body weight. - Eight years after surgery the average energy intake, the percentage of energy provided by carbohydrates, the percentage of energy provided by lipids and the grams of protein per kg of body weight in patients with EWL> 50%, compared to those with EWL < 50%, was respectively: 1,634 ± 526Kcal vs 1934 ± 501KCal; 45 ± 9% vs 44 ± 9%; 37 ± 8% vs 37 ± 7%; 0.8 ± 0.3 g / kg body weight vs 0.7 ± 0.2 g / kg body weight. • Regarding the number of steps per day: - the mean in patients with EWL> 50% was 6,103 ± 3,628 steps / day vs 5,040 ± 2,928 steps / day in patients with EWL <50%	• The lower calorie intake provided by the diet was positively associated with an EWL> 50% after 8 years from gastric bypass surgery but not after one year. • Patients who reported 7,166 or more steps / day had, compared to the others, a 4 times greater chance of obtaining 50% EWL, 8 years after gastric bypass surgery
Livhits et al.[42] Year: 2011 Location: Los Angeles, USA	735 patients with a mean age between 34 and 47 years, mostly women.	• Systemic review on the impact of support groups and other forms of social support on weight loss after bariatric surgery • The search was performed in April 2009 on the Medline search engine using as inclusion criteria studies published in English that had study samples of no less than 10 people, adults (> 18 years), undergoing bariatric surgery and followed for at least one year after surgery.	• Ten studies met the inclusion criteria. Two studies were from the same research group and included the same sample of patients with different follow-up lengths, so they were analyzed together as a single study [44, 45]. Four studies [44 + 45, 46, 48, 49] focused on the association between support groups and surgical outcomes, while the remaining five [47, 50, 51, 52, 53] looked at other aspects of social support such as perceived family support or number of confidants. • Of the four studies with support groups: one [44 + 45] had a support group consisting of a nurse, a nutritionist, a surgeon and a personal trainer; one [46] by a surgeon and a nurse or nutritionist; one [49] from a psychiatrist and one [48] had a support group of unspecified composition. Of the 10 studies reviewed: four [44, 45, 50, 53] included patients undergoing a laparoscopic gastric band; four [46, 49, 51, 52] included patients undergoing gastric bypass, one [47] patients undergoing laparoscopic gastric band or vertical band gastroplasty, and one [48] patients undergoing gastric bypass or vertical band gastroplasty or gastric band laparoscopic.	All the studies that have investigated the impact of support groups on weight loss after bariatric surgery have reported a positive association between support group frequency and the degree of postoperative weight loss. Weight loss between patients who attended support groups and those who did not was similar up to 6 months after surgery, but within 9 months this difference became significant and was maintained even at 12 months. Of the studies that investigated the impact of social support on weight loss after bariatric surgery, only one [92] found a positive association between the two, particularly between marital status (not being single) and weight loss.
Monpellier et al. [25] Year: 2018 Location: Maastricht Netherlands	4568 patients, with an average age of 47.1 ± 10.7 years, 81.7% women and 18.3% men, undergoing gastric bypass.	• Patients were evaluated before surgery and 12, 15, 24, 36 and 48 months after surgery. • At each visit, pre and postoperative: - body weight was detected; - Physical activity was assessed using the Baecke questionnaire in which a higher score indicates a higher level of physical activity. • Only in the preoperative visit, the height was measured	• Regarding weight variations: - The mean percentage of postoperative weight loss was: 30.8 ± 7.2 after 12 months from surgery, 31.6 ± 7.7 at 15 months, 31.4 ± 8.6 at 24 months, 29, 2 ± 8.9 at 36 months and 27.3 ± 9.6 at 48 months. - The mean BMI: before surgery it was 44.4 ± 5.7Kg / m2, after 1 year after surgery it was 30.7 ± 4.9 Kg / m2, after 15 months after surgery it was 30.4 ± 5 Kg / m2, after 24 months from surgery it was 30.3 ± 5.1 Kg / m2 and after 36 months it was 31.4 ± 5.3 Kg / m2 • Regarding physical activity: the lowest Baecke scores were recorded before surgery (8.12 ± 1.39) while the highest ones 15 months after surgery (8.66 ± 1.29). At 24 months the mean score was 8.54 ± 1.31, at 36 months it was 8.38 ± 1.34 and at 48 months 8.29 ± 1.28	Postoperative physical activity is positively associated with weight loss at 15, 36 and 48 months of follow-up, that is: patients who engaged in greater physical activity had a weight loss at 15, 36 and 48 months greater than baseline (maximum weight loss achieved in the 2 postoperative years).
Rosenberg et al.[37] Year: 2011 Location: West Haven, Connecticut	131 patients, 15 men and 116 women, with an average age of 42.9 ± 9 years, of which 72.5% Caucasian, 14.5% African American and 11.5% Hispanic, undergoing gastric bypass.	• Patients were evaluated before surgery and 12 months after surgery by measuring weight and height and: - the Godin Leisure Time Questionnaire (GLTQ) which assesses the weekly frequency of light, moderate and strenuous physical activity with a minimum duration of 15 minutes; - the Beck depression Inventory (BDI) for the evaluation of depression - the Medical Outcome Study Short Form-36 Health survey (SF-36) for the assessment of health-related quality of life.	• As regards the BMI (Body mass index): the average preoperative BMI was 51.6 ± 82kg / m2 while 12 months after surgery it was 33.42 ± 6.4kg / m2 • As regards the average scores of the BDI: they showed an improvement from preoperative times to those 12 months after surgery (13.8 ± 8.4 vs 4.9 ± 5.5 points) • As regards the average scores of the SF-36: they showed an improvement from preoperative times to those 12 months after surgery (32.2 ± 10.5 vs 51 ± 9.1 points) • Regarding the levels of physical activity: before the intervention, 37.4% of the participants (49 participants) declared that they had not undertaken any physical activity, while 12 months after the intervention only 7.6% (10 participants). The intensity and frequency of physical activity increased from 32.9% of participants who scored at least one episode of moderate or intense physical activity in the preoperative period to 74.8% at the 12-month postoperative follow-up.	Both the frequency and intensity of physical activity episodes increased significantly from preoperative to 12-month postoperative evaluations. While both the frequency and intensity of physical activity were significantly associated with depression and health-related quality of life at the 12-month postoperative follow-up; only the intensity and not the frequency of physical activity was significantly associated with postoperative weight loss at 12 months of follow-up.

Supplementary Table 2: Studies examining postoperative adherence (n = 12)				
Study	Sample	Methods	Results	Weight loss / regain predictors
Sarwer et al.[34] Year 2012 Location: Philadelphia, Pennsylvania	84 individuals, 53 women and 31 men with an average age of 42 ± 9.9 years, 60% European-American, 18% African-American and the rest of other ethnic origin, divided into two groups: - "dietary counseling" group made up of 41 participants, of whom 33 had undergone gastric bypass and 8 had laparoscopic gastric band; - "standard care" group made up of 43 participants of which 29 had undergone gastric bypass and 14 laparoscopic gastric band.	• Before the intervention, the participants of both groups were recorded: weight, height, years, race, occupation and level of education. • 4, 6, 12, 18 and 24 months after surgery, the patients of both groups had to fill in the Eating Inventory (51-item self-report questionnaire that assesses cognitive moderation, disinhibition and hunger) and the Block 98 Food Frequency Questionnaire (provides information on patient nutrition) Patients in the "dietary counseling" group, unlike those in the "standard care" group, for the first 4 months after surgery, every two weeks, could take advantage of a dietary counseling by telephone, or face-to-face, for a total of 8 consultations.	• Of the participants in the "diet counseling" group: 13 did not participate in any diet counseling, 12 participated in 1 to 3 counseling, 14 participated in 4 or more counseling and 2 participated in all 8 counseling. • As regards weight: the percentage of weight loss, in the "dietary counseling" group, at 4-6-12-18 and 24 months after bariatric surgery was respectively 20.7 ± 1.1%; 26.1 ± 1.5%; 32.3 ± 2%; 33.5 ± 2.5% and 32.4 ± 2.4% while in the "standard care" group it was 18.5 ± 1.1% respectively; 23.5 ± 1.5%; 32.4 ± 2%; 34.7 ± 2.5% and 33.6 ± 2.5% • With regard to the results of the eating inventory, the patients in the "dietary counseling" group, compared to those in the "standard care" group, reported: - 6, 12 and 18 months after surgery, a greater increase in cognitive containment; - 6,12,18 and 24 months after surgery, a greater reduction in disinhibition; - 4 months after surgery, a greater reduction in hunger.	Patients who in the 4 months following bariatric surgery received dietary consultations, up to 12 months after the operation, reported greater weight loss than those who did not. However, from the twelfth month after the surgery, this difference between the two groups was nullified.

Supplementary Table 3: Studies examining postoperative psychological disorders (n = 6)				
Study	Sample	Methods	Results	Weight loss / regain predictors
Beck et al.[24] Year: 2012 Location: Odense, Denmark	Out of an initial sample of 65 patients treated with Roux-en-Y gastric bypass in 2008-2009 at the University Hospital of Odense, Denmark, 45 patients (69%) agreed to take part in the study. The final sample consisted of 37 women and 8 men with an average age of 43.6 years ± 9.16 years.	• The average follow-up interval after surgery was 23.2 months ± 4.35 months. • Age, sex, pre-operative weight (Kg) and BMI (KG / m2) were obtained from the medical databases, while the postoperative weight was self-reported by the patient. • All 45 participants underwent the Hospital Anxiety and Depression Scale (HADS) questionnaire, a test consisting of a scale for anxiety (HADS-A) and one for depression (HADS-D), in each of which, a score of 8-10 points is associated with a high level of anxiety or depression symptoms, while a score above 11 points is indicative of an anxiety or depression disorder	• Regarding weight, it emerged that both in patients with anxiety and / or depressive disorder and in those without anxiety and / or depressive disorder, 2 years after surgery: The average BMI decreased from 46.06Kg / m2 preoperative at 35.3Kg / m2, with a% EBMIL (per cent excess body mass index lost) of 35.43 ± 10.69% • Regarding the HADS questionnaire: - On the anxiety scale (HADS-A) 20% of respondents scored nine points or more and 9% 12 or more points. - In the depression scale (HADS-D) no participant scored higher than 11 points, only 2 patients scored 8-10 points.	Symptoms of postoperative anxiety and depression (HADS score of 8-10 points) did not make a significant statistical contribution to% EBMIL, two years after gastric bypass
De Zwaan et al. [43] Year: 2011 Location: Erlangen, Germany	107 patients, 32 men and 75 women, with a mean age of 37.5 ± 9.7 years, underwent gastric bandage (n = 76) or gastric bypass (n = 31) at the Department of Surgery of the University Hospital of Erlangen in Bavaria.	• Before surgery, 6-12 months after surgery and 24-36 months after surgery: – three psychologists and a graduate student in psychology evaluated the patients through the German version of the structured clinical interview for DSM-IV (SCID-I) in order to identify any anxiety or depressive disorders. – each patient's weight and BMI were recorded. • Of the 107 study participants, interviewed before the surgery, only 85 (79.4%) showed up for the 6-12 months follow-up and 84 (78.5%) for the 24-36 months follow-up.	• Before surgery, 6-12 months after surgery and 24-36 months after surgery, the punctual prevalence of depressive disorders was respectively: 32.7% (35 out of 107 people); 16.5% (14 out of 85 people) and 14.3% (12 out of 84 people) while that of anxiety disorders was respectively: 16.8% (18 out of 107 people); 15.3% (13 of 85 people) and 14.3% (12 of 84 people). • 6-12 months after surgery: 3 patients developed an anxiety disorder for the first time and 2 a depressive disorder. • 24-36 months after surgery: one patient developed an anxiety disorder for the first time and 2 a depressive disorder. • The mean weight loss rate 6-12 months and 24-36 months postoperatively in patients with anxiety disorder versus those without anxiety disorder was 23.1 ± 11.2% vs. 22.7 ± 12.4% and 26.7 ± 13.1% vs 26.0 ± 11.5% while in patients with depressive disorder compared to those without depressive disorder it was respectively 22.7 ± 16.5 % vs 22.8 ± 11.3% and 17.9 ± 11.6% vs 27.4 ± 11.2%	Postoperative anxiety disorder was not associated with the degree of weight loss at any point in the follow-up; however, postoperative depressive disorder was negatively associated with weight loss at 24-36 months.
Odom et al. [44] Year: 2010 Location: Oakland, Michigan	203 patients, 147 women and 42 men, with a mean age of 50.6 ± 9.8 years, underwent gastric bypass. The mean preoperative weight was 134.1 ± 23.6Kg for women and 170.0 ± 29.1Kg for men.	• Both before the surgery and one year after the surgery (28.1 ± 18.9 months), the participants received a questionnaire by post to be filled out and returned to the sender. In addition to questions on weight (preoperative weight, current weight, minimum weight achieved after surgery, any pounds gained after surgery) there were also questions on stress, quality of life and alcohol consumption (if consumption postoperative, compared to pre-operative, it increased, decreased, remained the same or was completely suspended; if any friends / family / health professionals had expressed concern about their alcohol consumption)	• Regarding the consumption of alcohol, 28.1 ± 18.9 months after the operation: 9.1% of the 203 respondents said they had increased their consumption; 19.1% of having reduced consumption; 30.1% of consuming the same amount of it as they took before the surgery and 41.7% of never having used it after the surgery. • Of the subjects who after the surgery declared that they continued to consume alcohol (58.3% of 203 people), 79% reported weight regain. Among those who reported weight regain, those who reported having someone (friends / family / doctors / psychologists) who expressed concern about their alcohol consumption, i.e. 15%, recovered 15% or more of the total weight lost after surgery (odd ratio = 12.74; 95% confidence interval 1.73-93.8; p value = 0.01)	The presence of third parties who express concern about the patient's postoperative alcohol consumption is a predictor of significant weight gain (≥15%), 28.1 ± 18.9 months after gastric bypass surgery.

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Kruseman et al. [33] Year: 2010 Location: Carauge, Switzerland	• Initial sample: 141 patients, 131 women and 10 men, with an average age of 40 ± 10 years, who underwent gastric bypass between January 1997 and March 2002, at the university hospitals of Geneva. • Sample after one year of follow-up: 135 patients. • Sample after 8 years of follow-up: 80 patients, all women.	• Before the surgery, one year after the surgery and 8 years after the surgery, the patients were weighed and subjected to bioimpedance and measurement of the hip and waist circumference. • Before the surgery and 8 years after the surgery, patients had to answer the questions of the Hospital Anxiety and Depression Scale for the evaluation of anxiety and depression. • During the last visit, 8 years after the surgery, they had to answer the questions of the French version of the Nottingham Health Profile for the assessment of the quality of life.	• Regarding the weight: - The average weight and average BMI, before surgery, one year after surgery and 8 years after surgery were respectively: 122.8 ± 20.5Kg and 46 ± 7 kg / m2; 84.1 ± 17.3Kg and 31.6 ± 6.2kg / m2; 93.7 ± 18.9Kg and 34.5 ± 6.2kg / m2 - 8 years after surgery 47 patients had obtained an EWL (excess weight lost)> 50% and 33 patients an EWL <50% • Regarding the depression scores, it was found that: - before surgery, patients who would have achieved an EWL> 50% had a score of 7 ± 3.8 while those who would have achieved an EWL <50% had a score of 6.3 ± 3.7 - eight years after surgery, patients with EWL> 50% had a score of 4.6 ± 3.9 while those with EWL <50% had a score of 6.7 ± 5.1 • As regards the anxiety scores, it has been seen that: - before surgery, patients who would have achieved an EWL> 50% had a score of 8.4 ± 3.3 while those who would have achieved an EWL <50% had a score of 8.9 ± 3.7 - eight years after surgery, patients with EWL> 50% had a score of 8.9 ± 4.5 while those with EWL <50% had a score of 8.5 ± 4.9	Eight years after gastric bypass surgery, patients with EWL> 50%, compared with those with EWL <50%, had significantly improved depression questionnaire scores while anxiety and quality of life scores remained roughly the same to preoperative ones.
Raebel et al. [45] Year:2013 Location: Denver, Colorado	11,719 patients, 9,538 women and 2,181 men, with an average age of 47 years (range 29-63 years), mostly (60%) of white race, who underwent bariatric surgery between 2005 and 2009. 76% underwent gastric bypass, 15% laparoscopic adjustable gastric band and 9% sleeve gastrectomy	• Through the pharmacy dispensing documents, for all 11,719 patients, the consumption of opioids was investigated both one year before and one year after bariatric surgery. Opioid use was defined as: - chronic when there were 10 or more opioid dispensations over 90 days or more, or, at least 120 days of opioid supply during the year; - partial when there were from 1 to 9 opioid dispensations over 90 or more days, or, from 1 to 119 days of opioid supply during the year - absent when opioids have not been dispensed. • The use of opioids during the 29 postoperative days was excluded from the calculation of the level of opioids taken because the opioids taken in these days were potentially associated with postoperative skin pain treatment.	• During the year prior to bariatric surgery: 36% of patients did not use opioids; 56% made partial use of it and 8% chronic use. • In the year following the surgery, among the individuals who used chronic opioids before the surgery (8% of 11,719 people, or 933 patients): 20% switched to partial use, 3% completely stopped taking them and 77% continued chronic opioid use, increasing their intake from an average of 45mg / day preoperative to an average of 51.9mg / day postoperative. • In the group that did, both before and after the intervention, chronic opioid use: the variation in the equivalents of morphine taken before and after the intervention did not differ between individuals with% EBMIL (per cent excess body mass index lost)> 50% compared to those with% EBMIL ≤ 50%	No significant relationship was found between the change in the equivalent of morphine taken in the year prior to and the year following the bariatric surgery and% EBMIL> or ≤ 50%, one year after the surgery.
Suzuki et al. [46] Year: 2010 Place: Boston	• 51 patients, 44 women and 7 men, with a mean age of 51.3 years (range 33-68 years), underwent bariatric surgery between 2004 and 2007. • Of the 51 study participants, 23 underwent laparoscopic adjustable gastric bandage and 28 underwent gastric bypass.	• The study investigated the incidence of alcohol use disorder (AUD = alcohol use disorder) before bariatric surgery and 2 to 5 years after the latter. • Preoperative AUD was determined by a physician experienced in bariatric surgery by retrospectively reviewing patients' clinical psychiatric assessments. • The postoperative AUD (43.4 ± 6.8 months after surgery) was determined by means of the AUDIT-C test (Alcohol Use Disorder Identification Test Consumption Questions) sent by post to patients and through a subsequent diagnostic interview between patient and psychiatrist (structured clinical interview for DSM-IV).	• Regarding the AUD: - No participant met the criteria for AUD at the time of surgery. Six of the patients undergoing RYGB reported AUD postoperative, 83.3% of them had a history of pre-operative AUD with remission to surgery. People with a life history of AUD may, therefore, be more at risk of relapsing from alcohol use after surgery. • Regarding the weight: - The average weight before surgery was 296.1 ± 56.1 pounds. - The average weight loss 43.4 ± 6.8 months after surgery was 100.1 ± 47.6 pounds.	Weight loss as a continuous variable following bariatric surgery was not associated with the diagnosis of AUD 43.4 ± 6.8 months after surgery.