

**BARIATRIC SURGERY: ITS EFFECTS FOR OBESE IN THE WORKPLACE**

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**ABSTRACT**

This descriptive exploratory research aims to analyze the effects of bariatric surgery in the lifestyle of people with class III obesity in the workplace, through individual interviews with patients undergoing gastric bypass in Y-Roux. Data collection was conducted in June and July, 2011, by means of individual interviews, yielding three Collective Subject Discourse: "More willingness to work," "Life without comorbidities" and "Other effects of bariatric surgery." 30 patients with mean age  $44 \pm 12$  years old, 24 (80%) female, 19 (63%) performed paid professional activities, 10 (34%) did not work and one (3.3%) students, 23 (96%) hypertension and eight (33%) with a diagnosis of diabetes mellitus were included in the study. Difficulty handling with physical appearance: 13 (43%) and the emotional aspect: 21 (70%). Bariatric surgery positively affected the lifestyle of obese at work, with reduction in comorbidities and physical and emotional problems, favoring social and professional reintegration of the individuals.

**Descriptors:** Obesity. Bariatric surgery. Work.

**RESUMO**

*Pesquisa descritivo-exploratória que objetivou conhecer as repercussões da cirurgia bariátrica na vida laboral do obeso grau III, com pacientes submetidos à gastroplastia em Y de Roux. A coleta de dados foi realizada de junho a julho de 2011, por meio de entrevista individual, originando três Discursos do Sujeito Coletivo: "Mais disposição para o trabalho", "A vida sem comorbidades" e "Outras repercussões da cirurgia bariátrica". Foram incluídos 30 pacientes com média de idade  $44 \pm 12$  anos, sendo 24 (80%) do sexo feminino, 19 (63%) que trabalhavam, 10 (34%) que não trabalhavam, um (3,3%) estudante, 23 (96%) hipertensos e oito (33%) com diagnóstico de Diabetes Mellitus. Constatou-se, também, que 13 (43%) tinham dificuldades no aspecto físico e que 21 (70%) as tinham no aspecto emocional. A cirurgia bariátrica repercutiu favoravelmente na vida laboral do obeso, uma vez que houve redução das comorbidades e das dificuldades físicas e emocionais, favorecendo a reinserção social e profissional do indivíduo.*

**Descritores:** Obesidade. Cirurgia bariátrica. Trabalho.

**Título:** Cirurgia bariátrica: repercussões na vida laboral do obeso.

**RESUMEN**

*Investigación descriptiva exploratoria con objeto de comprender los efectos de la cirugía bariátrica en obesidad clase III en la vida laboral, mediante entrevistas individuales con pacientes sometidos a bypass gástrico en Y-Roux. La recolección de datos se llevó a cabo entre junio y julio de 2011, por medio de entrevistas individuales, produciendo tres Discurso del Sujeto Colectivo: "Más disposición a trabajar", "La vida sin comorbidades" y "Otros efectos de la cirugía bariátrica". Se incluyeron 30 pacientes con edad promedio de  $44 \pm 12$  años, y 24 (80%) mujeres, 19 (63%) estaban trabajando y 10 (34%) no trabajaban y un (3%) estudiante, 23(96%) hipertensos y ocho (33%) con un diagnóstico de la diabetes mellitus. Dificultades en la apariencia física: 13 (43%) y el aspecto emocional: 21 (70%). La cirugía bariátrica repercutió favorablemente en la vida laboral de los obesos ya que hubo una reducción de comorbidades y las dificultades físicas y emocionales, lo que favorece la reinserción social y profesional de la persona.*

**Descritores:** Obesidad. Cirugía bariátrica. Trabajo.

**Título:** Cirugía Bariátrica: influencia en la vida laboral de obesos.

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## INTRODUCTION

Obesity is a serious health problem and its prevalence has increased in developed and developing countries. It is estimated that in the 21st century there will be a global epidemic of obesity. Individuals with a BMI equal or greater than 25 Kg/m<sup>2</sup> are considered overweight, and obese when the BMI is equal to or greater than 30 Kg/m<sup>2</sup>. Several complications may arise from obesity, especially those related to physical and emotional aspects<sup>(1)</sup>.

Obesity can be understood as a multifactorial damage involving biological, historical, economic, social, cultural and political aspects. This damage favors the occurrence of cardiovascular disorders and diabetes mellitus (DM), increasing the risk of death in these individuals. It is important to stress that overweight alone does not trigger such disorders, and factors such as age, weight fluctuations and smoking should be considered<sup>(2)</sup>.

In addition to the risk for developing comorbidities, the obese individual has difficulty performing even simple daily activities such as caring for personal hygiene and household chores, as well as work duties<sup>(3)</sup>.

Work is a basic right and is considered today a source of identity, of human self-realization, and being a necessary condition to freedom<sup>(4)</sup>.

Besides being a source of livelihood, work also favors contacts and interpersonal relationships, creating in the individual the sensation of being part of a group or community, of having an occupation and a goal to be achieved in life, which contributes to personal growth and improving their self-esteem and self-image<sup>(5)</sup>.

The way individuals perceive their work directly influences the way they perform their work activities and their productivity within the organization. Therefore, the professional life of the obese individual who suffers discrimination and prejudice is affected, and, consequently, self-realization will not be positive, leading to social isolation and poor self-esteem<sup>(6)</sup>.

The difficulty in performing work activities entails for the obese individual the stigma of failing to perform such activities due to decreased mobility and agility required in the workplace, generating stress and causing the individual to feel less valuable as a person<sup>(7)</sup>.

Conventional treatment of obesity through medication, diet and physical activity often fails, causing distress to the individual. Bariatric surgery is a permanent and safe treatment, with the potential to cure several comorbidities and significantly improve the quality of life of obese individuals. Surgical treatment consists of techniques that are constantly improving and becoming less invasive, ensuring fast recovery. The surgical techniques are divided in restrictive, disabsorptive and mixed procedures. Restrictive techniques involve decrease in food intake, but a feeling of fullness and satisfaction with smaller portions of food is promoted. In disabsorptive techniques there is decreased absorption of calories, proteins and other nutrients, and the mixed technique is a combination of the two previous techniques<sup>(8)</sup>.

Careful patient assessment should be performed prior to making the decision on the most appropriate surgical procedure, and a BMI greater than 40 Kg/m<sup>2</sup> or 35 Kg/m<sup>2</sup> associated to the presence of comorbidities should be considered. The treatment benefits obese patients by promoting weight loss, reducing depression, anxiety and dissatisfaction with self-image<sup>(9)</sup>.

Based on the above information and on observations of the everyday life of obese individuals by nurses in their daily practice some questions were raised about the difficulties faced by people with class III obesity in the workplace and the impact of surgical treatment on this dimension of one's life. Therefore, the aim of this study was to investigate the effects of bariatric surgery in the working life of obese individuals regarding their ability to perform professional duties, their feelings and the needs for workplace adjustments or changes.

## METHODS

Quali/quantitative and exploratory study performed in a hospital of Vale do Paraíba. Of the 65 patients registered in the bariatric surgery program at the hospital, a non-probabilistic sample with 30 patients who had complete medical records and agreed to participate in the study was included in the period of June/July 2011.

For sample selection, patients of both sexes aged 18 years or older and who have undergone bariatric surgery, performed according to the Roux-en-Y

gastric bypass 12 months ago or more and given follow-up care at the outpatient service of the university hospital were included.

The research data were collected through individual interviews, following medical and/or nurse consultation at the health service or in the participant's home. At that time, participants were asked to answer a questionnaire on social demographic characteristics such as gender, age, marital status, occupation, date of surgery, weight, as well as information on the associated comorbidities (first part), and the second part contained eight mixed questions on data related to the topic of the study, including one guiding question: how do you feel today regarding your performance in the workplace?

Objective data were plotted using Microsoft Excel 2010 version and Windows 7 operating system and were shown in absolute numbers and percentages in tables.

The subjective data related to the guiding question were recorded on digital media, fully transcribed and analyzed using the Collective Subject Discourse (CSD), a research technique that gathers all participants' narratives into a single collective

discourse, which is elaborated based on key fragments or expressions drawn from the participant's narratives. The following CSDs were created: I- More willingness to work; II- Life without comorbidities; III- Other effects of bariatric surgery. Subsequently, both data were discussed in the light of the theoretical framework on the issue<sup>(10)</sup>. The project was approved by the Ethics Committee in Research of Universidade de Taubaté (CEP/UNITAU n° 037/11).

## RESULTS

30 people with average age  $44 \pm 12$  years, mostly married, who have undergone bariatric surgery, participated in the study. Other data related to baseline characteristics of the sample are described in table 1.

Among the paid professionals, six (20%) worked in healthcare, three (10%) in the administrative area, two (6.7%) in accounting, two (6.7%) were teachers, one (3.3%) was an audit and quality inspector, one (3.3%) was a state civil servant, one (3.3%) was a kitchen assistant, one (3.3%) was a production manager, one (3.3%) worked with

**Table 1** – Baseline characteristics of the sample. Taubaté, SP, 2011.

Characteristics	n= 30
<b>Age*</b>	44 ± 12
<b>Female</b>	24 (80)
<b>Married or living with partner</b>	23 (77)
Women	17 (57)
Men	6 (20)
<b>Work activity</b>	
Paid	19 (63)
Unpaid	11 (37)
<b>Preoperative weight (total, men and women)*</b>	130.3 ± 22.8
<b>Average surgery time, years*</b>	5.7 ± 1.3
<b>Comorbidities before surgery</b>	
High blood pressure (hypertension)	23 (96)
DM	8 (33)
Dyslipidemia	9 (38)
Others**	5 (21)

\*Variable expressed as mean ± standard deviation, other variables expressed as n (%). \*\*Others: Elevation of uric acid, liver cirrhosis, arrhythmias, sleep apnea, hypothyroidism).

advertising and one (3.3%) was a storekeeper. The other participants were not paid, but reported doing housework. The length of professional experience ranged from one week to 35 years, the average being 14 years.

After surgery, the average loss of weight was  $44 \pm 13.8$  Kg for women and  $47 \pm 16.3$  Kg for men, and the percentage of weight loss was 36% for both genders.

Table 2 contains data on the main physical, emotional and work-related difficulties reported by the participants in the interviews for the periods before and after the surgical procedure.

Before surgery, 22 (73%) participants reported working 40 hours per week, and eight (27%) were busy in household chores, and most participants reported facing physical and emotional difficulties to perform their duties, at work or in daily life.

After surgery, 13 (43%) participants who worked, continued to perform the same activities, five (17%) quit their jobs, four (13%) changed jobs. Of those who performed household chores, two (7%) reported having returned to the formal labor market. Of the total, five (17%) participants who quit work after surgery, only two (7%) associated this fact to the bariatric surgery, because of postoperative complications, the three other participants (10%) reported they voluntarily quit their jobs. All the participants who changed jobs said this decision was a consequence of bariatric surgery that allowed them to have better work opportunities, and two (7%) participants who entered the labor market associated this decision to the benefits provided by the surgery that favored their integration in the labor market.

In the second part of the interview the participants were asked the guiding question: “how do you feel today regarding your performance in the workplace?” Three collective discourses were elaborated based on the participants’ reports:

**CSD I: More willingness to work**

*Before surgery, due to excess weight I was very sleepy, felt unwell, tired, could not perform household chores, had difficulty walking up the stairs, bending down, got tired much easier, did not like to talk to anyone, did not want anyone to see me, was embarrassed to go out in the street and became isolated. After surgery, with weight reduction, I experienced a very important change in my life: thanks to a better image and the greater ability to perform different activities, I can perform my duties much better than before, feel very good, more confident and secure, with higher self-esteem, willingness to work, go out and do different things, more encouraged to do the housework, I can move around more quickly and with less fatigue and without trouble breathing, willing to do everything [...] I do everything with pleasure because my body is lighter. I feel well accepted in my workplace, with better interaction with my peers, and feeling more psychologically healthy, not feeling discriminated [...] and I produce the same amount of work as any other person, which did not happen before [...] I feel ready to work the whole week without complaining, I am a different person now, I have my professional career, I am socially redeemed, feel happier in my personal, family and professional life, everything has changed and improved 100%, /I live a full life now. (CSD I)*

**CSD II: life without comorbidities**

*Before surgery, I faced difficulties because of obesity, I got out of bed tired, my body aching, with pain in the*

**Table 2** - Distribution of major physical and emotional difficulties related to working life reported by the participants. Taubaté, SP, 2011.

Physical, emotional and work-related effects	Before	After
	n(%)	n(%)
<b>Physical</b> (fatigue, body aches, shortness of breath, sleepiness and difficulty moving)	21(70)	4(13)
<b>Emotional</b> (poor self-esteem, prejudice and discrimination, feeling of inferiority, fear of not being able to complete the activities, shame, poor peer relationships, does not want to live home, depression)	13(43)	7(23)
<b>Work-related effects</b>		
40 hour work week	22(73)	19(63)
Household chores	8(27)	11(37)

*legs, feet, column, my blood pressure rose rapidly [...] I do not feel arrhythmia and palpitations anymore, I no longer have diabetes and hypertension, don't need to take medication for the nerves, which is a very important aspect in healthcare. (CSD II)*

### CSD III: Other effects of bariatric surgery

*After surgery, I still feel a little tired, have undergone two knee surgeries, I cannot squat, have migraines, I work 15 minutes and have to sit down, but I lost 40 Kg, if I didn't [...] I guess I would not be here now. (CSD III)*

## DISCUSSION

Obesity is a complex disease that affects the world population, irrespective of gender, but seems to be more prevalent in the female population, especially after the age of 40<sup>(2)</sup>. This corroborates our study.

There is a higher rate of bariatric surgery among women. This is explained by the fact that women are more concerned with their external appearance, favoring the demand for aesthetic treatments, and bariatric surgery is a way to fit the standards of beauty imposed by the media. Such data corroborate the findings of this study<sup>(11)</sup>.

Most participants lived with a partner and reported the support of the partner for bariatric surgery, indicating that the excess weight did not negatively affect the relationship.

The data showed that obesity was present in the population, among various professional categories, constituting a serious and complex health issue that needs to be considered by health care programs and policies in Brazil.

CSD I has shown that fatigue, sleepiness, malaise and social isolation were the most commonly elements cited by the participants, indicating that obesity causes difficulties in the daily life of the obese person. The decrease in agility and physical resistance due to excess weight associated to the presence of comorbidities impact the daily life of obese individuals, and many restrict social life, with isolation and withdrawal from labor, social and leisure activities being common, favoring a feeling of social exclusion<sup>(6)</sup>.

In CSD II it has been found that the main comorbidities associated to obesity were high

blood pressure and DM, which disappeared after surgical treatment.

Regarding the comorbidities associated to high blood pressure, the main comorbidity associated to obesity and which directly interfered with the quality of life of the individuals who reported difficulties performing daily and work activities due to this pathology. Such condition overburdens the body, which cannot maintain alert wakefulness. Thus, the central nervous system is overactivated, leading to loss of the ability to concentrate, with anxiety and stress followed by difficulty understanding and processing information, lack of capacity for decision and action, leading to a behavior that does not allow for adaptation and the full development of their abilities. This generates job dissatisfaction, problems and even unemployment, characterizing forms of occupational stress that may be correlated to high levels of blood pressure and/or cardiovascular disorders<sup>(12)</sup>.

Another comorbidity prevalent in the study population is DM, a metabolic disorder characterized by hyperglycemia and which is associated to complications, malfunctions and failure of various organs, especially the eyes, kidneys, nerves, brain, heart and blood vessels. It is a global epidemic, with significant loss in quality of life, being one of the main causes of mortality, renal failure, lower limb amputation, blindness and cardiovascular disease, and obesity is an important factor for the development of this disease, mainly due to changes in eating habits, especially increased consumption of high-calorie foods, meats, milk, and dairy products rich in saturated fats and sugars in the diet and reduced consumption of fiber-rich foods such as cereals, fruits and vegetables, associated with physical inactivity<sup>(13)</sup>.

The risk of developing DM occurs as the individual fattens, because the fat tissue increases the demand for insulin in obese people, creating insulin resistance, which increases blood glucose, causing hyperinsulinemia. Therefore, the obese worker experiences the consequences of obesity twice, because on one hand the excess weight impairs mobility and agility in the performance of work tasks, and on the other hand, the association with hypertension and DM causes complications such as stroke and acute myocardial infarction, as well as chronic kidney disease, with psychosocial

and economic impact on the professional life of the individual<sup>(14)</sup>.

Obesity is one of the main risk factors for the development of hypertension and DM. Moreover, it is responsible for the increased cardiovascular mortality, favors the onset of joint and airway diseases, is often associated to emotional problems, impairs the quality of life and self-esteem, contributing to the increased mortality rates in the general population. In this context, bariatric surgery is a consistent resource in cases of class III obesity, leading to reduction in mortality levels and improvement of clinical comorbidities as shown in the present study<sup>(1,15)</sup>.

After surgery, 25 (83%) people who participated in the study reported having no longer the comorbidities associated to obesity, and four (13%) still had hypertension, and only one person (3%) reported that after surgery she started presenting hypertension, abnormal menstrual cycle and labyrinthitis. In this study, an improvement in the comorbidities for most participants was observed, and, consequently, in the execution of daily and professional activities of these individuals.

The surgical treatment of obesity, besides improving cardiovascular function, sleep apnea, DM and hypertension, can further reduce weight in the long term. Surgical complications should be identified early by the multidisciplinary team, as well as psychological and nutritional complications to prevent unfavorable development regarding weight loss<sup>(16)</sup>.

In Brazil, the most commonly used procedure is Roux-en-Y gastric bypass, Fobi and Capella, because it favors weight loss of 40% of initial weight, which is maintained in the long term, and also reduces the occurrence of important nutritional and metabolic changes, providing a better quality of life for the individual, both in the physical and emotional aspects. These weight loss values are very close to those obtained in the present study<sup>(17)</sup>.

Regarding the physical difficulties, the greater the degree of obesity, the greater resistance and mobility limitations that interfere with the execution of daily and professional activities of the obese individual, besides favoring increased levels of pain, and sometimes chronic pain syndromes, contributing to increase the rates of mortality and morbidity, and failure of conventional treatments<sup>(16)</sup>.

Regarding the emotional aspect, the development of mental health disorders is not directly related to obesity. However, this condition may favor the development of low self-esteem due to the change of body image, social isolation and even depression, since obese individuals are more prone to economic, social and psychological problems, generating feelings of discrimination in the personal and professional life. Thus, the obese eventually feels unsuited to the social life, which leads to social or professional isolation<sup>(16)</sup>.

Obesity promotes the social exclusion of the obese worker, either by prejudice or discrimination. The impact in terms of prejudice in the life of the obese individual can be seen in two dimensions, as follows: the prejudice or dissatisfaction of the obese individual with his/her appearance and towards other obese individuals and the prejudice (discrimination) experienced in the workplace and in interpersonal relationships<sup>(6)</sup>.

Bariatric surgery has proved effective in the treatment of obesity. However, in CSD III some patients failed to achieve treatment objectives, either because of poor adherence to treatment in the postoperative period or because of psychological unpreparedness.

In general, after bariatric surgery there was decrease in comorbidities associated to obesity, and with regard to the previously reported physical and emotional difficulties. These difficulties were reduced, which led to greater willingness, agility and physical resistance for performing professional tasks, with consequent improvement in the quality of life for most participants and reintegration in the labor market.

Bariatric surgery promotes weight loss and decrease of associated comorbidities, as well as recovery of the self-esteem in family, social and professional relationships of obese individuals who also rediscover their potentialities and quality of life<sup>(18)</sup>. These data corroborate those obtained in the present study.

## CONCLUSIONS

It is concluded that bariatric surgery favored the improvement of the quality of life of the individuals, both with respect to health, with decrease in the comorbidities associated to obesity such as hypertension and DM, and of physical and emotional difficulties,

facilitating the performance of work tasks, favoring social and professional reinsertion of the individual, with a positive impact in the professional life.

It should be emphasized, however, that pre and postoperative follow-up by a multidisciplinary team is essential for the success of obesity treatment. Therefore, health professionals who integrate such teams should consider the information obtained from patients relevant to treatment, and bear in mind that the social dimension of work is an important aspect of life and should be included in the care to the obese person.

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This article was based on my Undergraduate Term Paper in the field of Nursing.

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Received: 17.09.2012  
Approved: 11.06.2013