

Clinical profile, nursing diagnoses and nursing care for postoperative bariatric surgery patients



Perfil clínico, diagnósticos e cuidados de enfermagem para pacientes em pós-operatório de cirurgia bariátrica
Perfil clínico, diagnósticos y cuidados de enfermería para pacientes en el post-operatorio de la cirugía bariátrica

Nathalia Helene Steyer^a
 Magáli Costa Oliveira^b
 Mara Regina Ferreira Gouvêa^c
 Isabel Cristina Echer^{c,d}
 Amália de Fátima Lucena^d

How to cite this article:

Steyer NH, Oliveira MC, Gouvêa MRF, Echer IC, Lucena AF. Clinical profile, nursing diagnoses and nursing care for postoperative bariatric surgery patients. Rev Gaúcha Enferm. 2016 mar;37(1):e50170. doi: <http://dx.doi.org/10.1590/1983-1447.2016.01.50170>.

DOI: <http://dx.doi.org/10.1590/1983-1447.2016.01.50170>

ABSTRACT

Objective: To analyze the clinical profile, nursing diagnoses, and nursing care established for postoperative bariatric surgery patients.

Method: Cross-sectional study carried out in a hospital in southern Brazil with a sample of 143 patients. Data were collected retrospectively from electronic medical records between 2011 and 2012 and analyzed statistically.

Results: We found a predominance of adult female patients (84%) with class III obesity (59.4%) and hypertension (72%). Thirty-five nursing diagnoses were reported, among which the most frequent were: Acute Pain (99.3%), Risk for perioperative positioning injury (98.6%), and Impaired tissue integrity (93%). The most frequently prescribed nursing care were: to use protection mechanisms in the surgical patient positioning, to record pain as 5th vital sign, and to take vital signs. There was an association between age and comorbidities.

Conclusion: The nursing diagnoses supported the nursing care prescription, which enables the qualification of nursing assistance.

Keywords: Bariatric surgery. Nursing diagnosis. Nursing care.

RESUMO

Objetivo: Analisar o perfil clínico, os diagnósticos e os cuidados de enfermagem estabelecidos para pacientes em pós-operatório de cirurgia bariátrica.

Método: Estudo transversal realizado em um hospital do Sul do Brasil, com amostra de 143 pacientes. Os dados foram coletados retrospectivamente entre 2011-2012 no prontuário eletrônico dos pacientes, os quais foram analisados estatisticamente.

Resultados: Identificaram-se pacientes femininas adultas (84%) com obesidade grau III (59,4%) e hipertensas (72%), com 35 diagnósticos de enfermagem, sendo os mais frequentes: Dor aguda (99,3%), Risco de lesão pelo posicionamento perioperatório (98,6%) e Integridade tissular prejudicada (93%). Dentre os cuidados de enfermagem prescritos, os mais utilizados foram: usar mecanismos de proteção no posicionamento cirúrgico do paciente, registrar a dor como 5º sinal vital e verificar sinais vitais. Foi observada associação entre a idade e as comorbidades.

Conclusão: Os diagnósticos de enfermagem subsidiaram a prescrição de cuidados, possibilitando qualificar a assistência de enfermagem.

Palavras-chave: Cirurgia bariátrica. Diagnóstico de enfermagem. Cuidados de enfermagem.

RESUMEN

Objetivo: Analizar el perfil clínico, diagnósticos de enfermería y cuidados de enfermería establecidos para los pacientes en postoperatorio de cirugía bariátrica.

Método: Estudio transversal con la muestra de 143 pacientes. El estudio se realizó entre 2011-2012, en un hospital en el sur de Brasil. Los datos fueron recolectados retrospectivamente de los registros médicos electrónicos y analizados estadísticamente.

Resultados: Se identificaron pacientes femininas adultas (84%), con obesidad clase III (59,4%), hipertensión (72%) y con 35 diagnósticos de enfermería, siendo los más frecuentes: el Dolor agudo (99,3%), Riesgo de lesión perioperatoria de posicionamiento (98,6%) y la Integridad del tejido deteriorado (93%). Entre los cuidados de enfermería prescritos los más utilizados fueron: utilizar los mecanismos de protección en el posicionamiento quirúrgico del paciente, registrar el dolor como quinto signo vital y verificar los signos vitales. Se observó una asociación entre la edad y las comorbilidades.

Conclusión: Los diagnósticos de enfermería apoyaron la prescripción de los cuidados de enfermería, lo que permite calificar la asistencia de enfermería.

Palabras clave: Cirugía bariátrica. Diagnóstico de enfermería. Atención de enfermería.

^a Complexo Hospitalar Santa Casa de Misericórdia de Porto Alegre. Porto Alegre, Rio Grande do Sul, Brasil.

^b Novartis Biociências S/A. Porto Alegre, Rio Grande do Sul, Brasil.

^c Hospital de Clínicas de Porto Alegre (HCPA). Porto Alegre, Rio Grande do Sul, Brasil.

^d Universidade Federal do Rio Grande do Sul (UFRGS), Escola de Enfermagem. Porto Alegre, Rio Grande do Sul, Brasil.

■ INTRODUCTION

Obesity is an abnormal or excessive fat accumulation that may impair health and is directly associated with the presence of comorbidities. In 2008, 35% of the adults above 20 years of age were diagnosed with overweight worldwide; additionally, 10% of men and 14% of women had a body mass index (BMI) greater than 30 Kg/m²(¹). In Brazil, the rates of obesity have also increased from 11.4% in 2006 to 17.4% in 2012. Moreover, 51% of the Brazilian population are overweight(²).

Bariatric surgery has been an option for the prophylaxis and treatment of complications resulting from class III obesity. Patients eligible for the procedure should be assessed by specialized physicians and meet the following criteria: BMI greater than 40 Kg/m² (or greater than 35Kg/m² in the presence of severe comorbidities) and failure to lose weight with non-surgical techniques(³).

In the hospital where this study was performed, patients eligible for bariatric surgery are referred to a group of pre-surgical patients for multidisciplinary evaluation, and the procedure is performed via the Brazilian Unified Health System using the open surgery technique and gastric bypass. Patients receive follow-up care at the outpatient clinic for 2 years after surgery, in order to help them to acquire healthy habits.

In the middle postoperative period starting 24 hours after surgery and ending with hospital discharge(⁴), patients require special care, in which nurses play a key role. To perform this task, they need to have knowledge and technical and interpersonal skills that allow them to think critically and make a clinical judgment for decision making by establishing nursing diagnoses (NDs) and appropriate interventions to achieve positive results.

With this purpose, the nursing process (NP) and systems to classify nursing practice have been used in the hospital where the present study was performed. In this institution, the NP is based on Horta's theory associated with the diagnostic terminology of NANDA-International (NANDA-I)(⁵⁻⁶). The nursing care prescribed is grounded in the literature and in the Nursing Interventions Classification (NIC)(⁷).

However, studies on nursing care to bariatric surgery patients remain little explored in our institution, since this surgical procedure is relatively recent. In addition, few publications have addressed this topic in the field of nursing(⁸⁻⁹), which reveals that there is a knowledge gap on NDs and appropriate care to these patients. Hence, the leading question of the present study was: who are the patients undergoing bariatric surgery and which NDs and nursing care are established in clinical practice?

Thus, the aim of this study was to analyze the clinical profile and the NDs of bariatric surgery patients, as well as nursing care to bariatric surgery patients in the postoperative period, in order to contribute to knowledge on the procedure and qualify nursing care for this population.

■ METHODS

This is a cross-sectional study(¹⁰) carried out in a university hospital in southern Brazil with a sample of 143 patients who underwent bariatric surgery from November/2008 to August/2011, the period when bariatric surgeries started to be performed in the hospital. Data were collected retrospectively from electronic medical records between September/2011 and March/2012. The data collection instrument was built on Microsoft Excel for Windows and included: patient name; medical record number; BMI(¹) (as defined by the World Health Organization); gender; age; date of admission, surgery, and discharge; smoking status; comorbidities; NDs and nursing care in the middle postoperative period. Statistical data analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 18.0. Continuous variables were analyzed with tests for comparison of means or medians (t-test of Mann-Whitney test) and categorical variables were analyzed with the chi-square test; the significance level was set at $p \geq 0.05$.

The study was approved by the institutional Research Ethics Committee (Protocol n° 11-0613) and a term of commitment for use of data was signed by the authors, according to Resolution 466/12 from the Brazilian National Health Council.

■ RESULTS

As for the clinical profile of the sample, there was a majority of women (84%), non-smokers (83.2), and cases of class III obesity (59.4%) and hypertension (72%) (Table 1). Mean age was 39.9 years (± 10.1).

The association between BMI and comorbidities was not statistically significant ($p > 0.05$). However, there was an association between age and comorbidities, i.e., older patients showed a higher prevalence of hypertension, diabetes, anxiety/depression, and dyslipidemia ($p < 0.05$). Osteoarticular disorders were also associated with age ($p = 0.06$).

As for smoking status, smokers were more likely to have ventilatory disorders than non-smokers and abstinent smokers ($p < 0.05$). Moreover, smoking status was associated with anxiety/depression ($p = 0.05$).

Thirty-five different NDs were found in the study sample, with 48 different etiologies. Table 2 shows the ten most

Table 1 – Clinical profile of patients undergoing bariatric surgery. Porto Alegre, 2014

Characteristics	F (%) n (143)
Age (years) *	39.9 ± 10.1
Gender (female)	120 (84)
Length of stay (pre- and postoperative period in days) *	6.3 ± 1.6
Body mass index (Kg/m ²)	
Class III obesity (> 40)	85 (59.4)
Class I and II obesity (30-39.9)	45 (31.5)
Overweight (25-29.9)	6 (4.2)
Normal weight (< 24.9)	7 (4.9)
Smoking status	
Non-smoker	119 (83.2)
Smoker	13 (9.1)
Abstinent smoker	11 (7.7)
Comorbidities	
Hypertension	103 (72)
Osteoarticular disorders	43 (30)
Anxiety and/or depression	38 (26.5)
Diabetes mellitus	34 (23.7)
Ventilatory disorders	33 (23)
Dyslipidemia	26 (18.1)
Biliary lithiasis	22 (15)

Source: Study data, 2014.

F = frequency; % = percentage

* Continuous variables = mean ± standard deviation

frequent NDs, six of which were actual diagnoses and four were risk diagnoses.

Fifty-one different nursing care were prescribed for patients with actual NDs⁽⁵⁾ and 31 to patients with risk NDs⁽⁵⁾.

Table 3 shows the nursing care prescribed for patients with actual NDs

Table 4 shows nursing care prescribed for patients with risk NDs.

■ DISCUSSION

Patients' clinical profile was mainly characterized by adult women with class III obesity and associated comorbidities. Hypertension was the most frequent comorbidity, followed by osteoarticular disorders. Brazilian studies with similar populations also found a predominance of young

females with class III obesity and comorbidities, especially hypertension⁽⁸⁻⁹⁾.

It should be highlighted that, in the present study, 85 (59.4%) of patients had a BMI above 40Kg/m², with high levels of morbid obesity. However, bariatric surgery is beneficial for cases of class I and II obesity and even overweight when there are associated comorbidities. This is reinforced by investigations on the metabolic effects of bariatric surgery in patients with BMI above 35Kg/m² and type 2 diabetes mellitus revealing that the surgical option is an important therapeutic modality for the control of this disease⁽¹¹⁾.

The mean length of hospital stay of our patients was 6.3 days. Two other studies, one of which with sleeve gastrectomy patients and another with patients treated with adjustable gastric banding, found shorter lengths of stay^(3,12). However, it is important to consider the differences in the procedures, because open surgery requires a longer patient's recovery period.

As for smoking status, smokers were found to be more likely to have ventilatory disorders than non-smokers and abstinent smokers (p<0.05). An association between smoking status and anxiety/depression was also observed in the present study, since these comorbidities were more frequent in smokers than in nonsmokers and abstinent smokers (p=0.05). Smoking is known to have several harmful effects, such as ventilatory disorders that include sleep obstructive sleep apnea-hypopnea syndrome, which are frequent in individuals with class III obesity⁽¹³⁻¹⁴⁾. Therefore, the prevention of smoking initiation and smoking cessation are beneficial in the reduction of comorbidities, complications, and mortality, and health care professionals are responsible for detecting, guiding, and treating patients at risk for smoking-related diseases.

There is a scarcity of studies on which to base the analysis of the ten NDs more frequently established for bariatric surgery patients. However, available studies showed results similar to those of the present study, especially investigations on the ND Acute pain, which is one of the most established for surgical patients^(8,15-16).

The ND Acute pain⁽⁵⁾ was established for 99.3% of patients in our study and have been investigated in several practice scenarios for nurses, who are responsible for diagnosing accurately, intervening appropriately and reassess the results obtained at a later time. The most prevalent care interventions for this ND was to record pain as the 5th vital sign, which is essential for the evaluation of the presence or absence of pain caused by tissue injury and by activation of nociceptive transducers at the site of the surgical injury. This care requires attention from nurses, who should ask patients whether they are in pain and observe their facial

Table 2 – Nursing diagnoses and its etiologies for postoperative bariatric surgery patients. Porto Alegre, 2014

Nursing Diagnoses	F	%	Related Factor / Risk Factor	F	%
Acute pain	142	99.3	Trauma*	142	100
Risk for perioperative positioning injury	141	98.6	Situational vulnerability*	141	100
Impaired tissue integrity	133	93	Mechanical trauma*	133	100
Risk for infection	127	88.8	Invasive procedure	127	100
Imbalanced nutrition: more than body requirements	87	60.8	Emotional and/or psychiatric changes	85	97.7
			Deficient knowledge	2	2.3
Risk for imbalanced nutrition: more than body requirements	85	59.4	Dietary habits	85	100
Impaired physical mobility	82	58	Obesity	47	56.6
			Trauma	25	30.1
			Pain	8	9.6
			Neuromuscular/musculoskeletal impairment	2	2.4
Impaired comfort	75	52.4	Postoperative period	48	64
			Decreased peristalsis	26	34.7
			Aerophagy	1	1.3
Risk for imbalanced fluid volume	25	17.5	Drug therapy	24	96
			Changes in the gastrointestinal tract	1	4
Bathing/hygiene self-care deficit**	20	14	Wound pain	11	55
			Trauma	6	30
			Restrictive therapies	2	10
			Neuromuscular/musculoskeletal impairment	1	5

Source: Study data, 2014.

F = frequency; % = percentage

* Related or risk factors available in the hospital's computer-based system, based on NANDA-I.

** Diagnostic category available in the hospital's computer-based system, based on NANDA-I, which combines the NDs Bathing self-care deficit and Intimate hygiene self-care deficit.

Table 3 – Nursing care prescribed for postoperative bariatric surgery patients with actual NDs. Porto Alegre, 2014 (continue)

Actual NDs	Nursing care	F	%
Acute pain (n=142)	To record pain as the 5th vital sign	83	58.5
	To request assessment	26	18.3
	To calm down the patient	20	14.1
	To take vital signs	10	7
	To request the presence of a family member	2	1.4
	To assess pain using the intensity scale	1	0.7
Impaired tissue integrity (n=133)	To rotate the site of subcutaneous injections	65	48.9
	To perform dressings	22	16.5
	To sit patients on the chair	13	9.8
	To protect the skin of bony prominences	7	5.3
	To rotate the site of capillary glucose monitoring	7	5.3
	To monitor bleeding	6	4.5
	To observe puncture site and sites of catheter insertion	3	2.3
	To maintain specialty mattress, as appropriate	2	1.5
	To observe signs of infection	2	1.5
	To perform a compressive dressing	2	1.5

Table 3 – Nursing care prescribed for postoperative bariatric surgery patients with actual NDs. Porto Alegre, 2014 (conclusion)

Impaired tissue integrity (n=133)	To implement care with venipuncture	1	0.8
	To observe perineal status	1	0.8
	To change patient's position in bed	1	0.8
	To take vital signs	1	0.8
Imbalanced nutrition: more than body requirements (n=87)	To take vital signs	75	86.2
	To take patient's weight	9	10.3
	To stimulate the patient to walk	1	1.1
	To guide the patient	1	1.1
	To provide health education and performing referrals	1	1.1
Impaired physical mobility (n=83)	To sit patients on the chair	20	24.1
	To stimulate the patient to walk	18	21.7
	To maintain specialty mattress, as appropriate	8	9.6
	To take vital signs	7	8.4
	To stimulate the patient to leave the bed	5	6
	To keep the bell within reach of patients	5	6
	To keep the head of the bed elevated	3	3.6
	To keep the bed rails	3	3.6
	To hydrate patient's skin	2	2.4
	To provide a comfortable position to the patient	2	2.4
	To change patient's position in bed	2	2.4
	To evaluate circulatory status	1	1.2
	To report changes in limbs	1	1.2
	To stimulate active movements	1	1.2
	To give pain medication before the procedures	1	1.2
	To guide patients and family members on changes in lifestyle	1	1.2
To make patient's body hygiene in the shower	1	1.2	
To record pain as the 5th vital sign	1	1.2	
To calm down the patient	1	1.2	
Impaired comfort (n=73)	To measure waist circumference	23	30.7
	To provide safety and comfort	18	24
	To report abdominal distension	17	22.7
	To keep the bell within reach of patients	10	13.3
	To provide a comfortable position to the patient	3	4
To stimulate respiratory exercises	2	2.7	
Bathing/hygiene self-care deficit (n=20)	To stimulate oral hygiene	4	20
	To make patient's bodily hygiene in the shower	3	15
	To take the patient to the shower	2	10
	To give pain medication before the procedures	2	10
	To perform oral hygiene	2	10
	To assist in showering	1	5
	To assist the patient in performing oral hygiene	1	5
	To stimulate self-care	1	5
	To keep the perineum clean and dry	1	5
	To comb patient's hair	1	5
To perform a bed bath	1	5	
To take vital signs	1	5	

Source: Study data, 2014.

F = frequency; % = percentage

* Some nursing care interventions were repeated in NDs, e.g., to take vital signs.

Table 4 – Nursing care prescribed for postoperative bariatric surgery patients with risk NDs. Porto Alegre, 2014

Risk NDs	Nursing care	F	%
Risk for perioperative positioning injury (n=141)	To use protective mechanisms in the surgical patient positioning	115	81.5
	To use protective boots for malleolus and calcaneus	19	13.5
	To use safety cushions and protective strips in surgical positioning	6	4.2
	To remove excess detergent fluid	1	0.7
Risk for infection (n=127)	To take vital signs	28	22
	To perform dressings	21	16.5
	To observe signs of infection	17	13.3
	To implement care with venipuncture	16	12.6
	To implement care for the prevention of infection according to CCIH** guidelines	15	11.8
	To implement care with serotherapy	8	6.3
	To instruct the patient on the importance of body hygiene	5	3.9
	To guide the patient on self-care	3	2.4
	To implement care with delayed vesical probe	2	1.6
	To observe puncture site and sites of catheter insertion	2	1.6
	To record the appearance of the lesion	2	1.6
	To implement care by administering medication	1	0.8
	To implement care with serotherapy	1	0.8
	To implement care in changing dressings of central venous catheter	1	0.8
	To implement care in the handling of central venous catheter	1	0.8
	To observe suture status	1	0.8
	To guide patient / family members	1	0.8
To perform a medium dressing	1	0.8	
To calm down the patient	1	0.8	
Risk for imbalanced nutrition: more than body requirements (n=85)	To take vital signs	75	88.2
	To take patient's weight	9	10.6
	To stimulate the patient to walk	1	1.2
	To guide the patient	1	1.2
	To provide health education and perform referrals	1	1.2
Risk for imbalanced fluid volume (n=25)	To measure urine output	7	28
	To take vital signs	5	20
	To implement care with serotherapy	4	16
	To control the drip of intravenous infusions in the infusion pump	3	12
	To perform total water balance	3	12
	To monitor bleeding	2	8
To take patient's weight	1	4	

Source: Study data, 2014.

F = frequency; % = percentage

* Some nursing care interventions were repeated in NDs, e.g., take vital signs.

** CCIH – Hospital Infection Control Committee (Comissão de Controle de Infecção Hospitalar).

expression, movements, and positioning, in order to better characterize, locate, and assess the intensity of pain⁽¹⁷⁾.

The second most frequent ND was Risk for perioperative positioning injury, which requires preventive interventions, especially when the patient is in the operating room. Since bariatric surgery patients have large body dimensions, they are more likely to experience injuries related to

the procedure are at greater surgical and anesthetic risk⁽¹⁸⁾. Nursing care for this ND includes the appropriate use of body protection equipment to prevent injuries, especially skin and tissue injuries.

Impaired tissue integrity and Risk for infection were respectively the third and fourth more frequent NDs for the patients analyzed. These NDs, which were also pointed out

in a study of surgical patients⁽¹⁶⁾, are a consequence of tissue injury and the risk for infection resulting from the invasive procedure. Therefore, the care for these NDs evidenced the importance of monitoring bleeding and observing signs of infection when changing dressings.

Imbalanced nutrition: more than body requirements⁽⁵⁾ was the fifth more frequent ND, although bariatric surgery was the reason for admission of these patients. It can be inferred that this ND was not established by some nurses because they believed that postoperative patients did not have this ND anymore, since they did not receive nutrition above their body requirements. However, it is important to consider that one of the factors that led the patient to undergo bariatric surgery was exactly overconsumption of food.

Nursing care prescribed for this ND, including taking patients' weight, stimulating patients to walk, and instructing them about their new diet, was considered important for surgical recovery. It is worth highlighting that guidance about changes in lifestyle, especially about a diet balanced with body requirements, is essential to operated patients.

Risk for imbalanced nutrition: more than body requirements was the sixth more frequent ND, although it was not described in another investigation⁽⁸⁾ with bariatric surgery patients. Nonetheless, this ND is considered accurate, because these patients remain vulnerable to the excess consumption of nutrients after surgery. Nursing care prescribed for this ND involved health education about a new lifestyle and the need for an adequate diet to complement the success of the surgical procedure and thus the improvement in patient's health.

Impaired physical mobility, the seventh more frequent ND, was related to excess weight and comorbidities such as osteoarthritis. Additionally, common postoperative findings such as musculoskeletal impairment, reluctance to initiate movements, and pain⁽⁵⁾ may hamper patient's locomotion, mobility, and rehabilitation, indicating interventions directed to control pain and facilitate gradual movements associated with exercise and exiting bed early.

Impaired comfort was the eighth more frequent ND and the most used etiology in the postoperative period. Hospitals cause feelings of fear and insecurity and bring people close to disease, feelings that affect postoperative patients as well. Hence, the nursing staff should calm down these patients so as to promote safety and comfort and make the hospitalization period the least painful as possible both physically and emotionally.

Risk for imbalanced fluid volume was the ninth more frequent ND and require nursing care related to hydration and hemodynamic balance, such as monitoring of fluid in-

take and output and control of vital signs, as corroborated by the literature⁽¹⁹⁾.

Bathing/hygiene self-care deficit, the tenth more frequent ND, required nursing care for daily activities such as bathing and performing oral hygiene, since the ability of self-care and mobilization is limited in patients with this ND.

An analysis of the association between comorbidities and NDs showed that all patients had at least one comorbidity (hypertension, diabetes mellitus, anxiety/depression, ventilatory disorders, dyslipidemia, osteoarticular disorders, and biliary lithiasis) and at least one of the following NDs: Acute pain, Risk for perioperative positioning injury, Impaired tissue integrity, and Risk for infection. This finding demonstrate the extent of nursing care required by bariatric surgery patients, since surgical treatment interferes with their physical and psychological status⁽²⁰⁾.

Thus, nurses need to understand the decision making process through which patients decide to undergo bariatric surgery and provide them which comprehensive care⁽²⁰⁾, which goes beyond the hospitalization period, with educational guidance and behaviors that favor successful recovery of their health⁽²⁰⁾.

■ CONCLUSIONS

The present study has shown that patients undergoing bariatric surgery were mostly adult women with class III obesity and at least one associated comorbidity, the most prevalent of which was hypertension. The research also found that the higher the patient age the higher the incidence of hypertension, diabetes mellitus, and anxiety and/or depression. In addition, smokers had more ventilatory disorders than nonsmokers or abstinent smokers, being imperative that these patients receive guidance on and treatment for smoking cessation before the surgical procedure.

Acute pain and Impaired tissue integrity were the most frequent actual NDs reported in this study, and Risk for perioperative positioning injury and Risk for infection were the most frequent risk NDs. These NDs required nursing care such as controlling vital signs, reporting pain as the fifth vital sign, and using protective mechanisms in patient surgical positioning, in addition to monitoring weight daily and guiding and comforting the patient.

The shortage of nursing studies on bariatric surgery has brought limitations to the discussion of data while corroborating the need to expand research on the topic. This is a relatively new field of knowledge in Brazil, which gives relevance to the results of the present study in terms of improving clinical practice, teaching, and research.

■ REFERENCES

1. World Health Organization (CH). Obesity and overweight. Geneva, 2013.
2. Ministério da Saúde (BR). *Vigilante Brasil 2012*. Brasília; 2011.
3. Branco-Filho AJ, Nassif LS, Menacho AM, Aurichio ERA, Siqueira DED, Fernandez RM. Tratamento da obesidade mórbida com gastrectomia vertical. *ABCD Arq Bras Cir Dig*. 2011;24(1):52-54.
4. Moraes LO, Peniche ACG. Assistência de enfermagem no período de recuperação anestésica: revisão de literatura. *Rev Esc Enferm USP*. 2003;37(4):34-42.
5. NANDA International. *Diagnósticos de enfermagem da NANDA: definições e classificação 2012-2014*. Porto Alegre: Artmed; 2013.
6. Pruinelli L, Severo IM, Almeida MA, Lucena AF, Santos GG. Operacionalização do processo de enfermagem no HCPA. In: Almeida MA, et al. *Processo de enfermagem na prática clínica: estudos clínicos realizados no Hospital de Clínicas de Porto Alegre*. Porto Alegre: Artmed; 2011. p. 53-62.
7. Bulechek GM, Butcher HK, Dochterman JM, Wagner CM. *Nursing Interventions Classification (NIC)*. 6th ed. St. Louis: Mosby-Elsevier; 2013.
8. Moreira RAN, Caetano JA, Barros LM, Galvão MTG. Diagnósticos de enfermagem, fatores relacionados e de risco no pós-operatório de cirurgia bariátrica. *Rev Esc Enferm USP*. 2013;47(1):168-75.
9. Jóia-Neto L, Lopes-Junior AG, Jacob CE. Alterações metabólicas e digestivas no pós-operatório de cirurgia bariátrica. *ABCD Arq Bras Cir Dig*. 2010;23(4):266-9.
10. LoBiondo-Wood G, Haber J. *Desenhos não-experimentais*. In: LoBiondo-Wood G, Haber J. *Pesquisa em enfermagem: métodos, avaliação crítica e utilização*. 4. ed. Rio de Janeiro: Guanabara-Koogan; 2001. p.114.
11. Li Q, Chen L, Yang Z, Ye Z, Huang Y, He M, et al. Metabolic effects of bariatric surgery in type 2 diabetic patients with body mass index < 35 kg/m². *Diabetes Obes Metab*. 2012;14(3):262-70.
12. Pajecki D, Mancini MC, Halpern A, Zilberstein B, Garrido Jr AB, Cecconello I. Abordagem multidisciplinar de pacientes obesos mórbidos submetidos a tratamento cirúrgico pelo método da banda gástrica ajustável. *Rev Col Bras Cir*. 2010;37(5):328-32.
13. Faria CS, Botelho C, Silva RMVG, Ferreira MG. Tabagismo e obesidade abdominal em doadores de sangue. *J Bras Pneumol*. 2012;38(3):356-63.
14. Dias-Junior SA, Pinto RC, Angelini L, Fernandes FLA, Cukier A, Stelmach R. Prevalência de tabagismo ativo e passivo em uma população de asmáticos. *J Bras Pneumol*. 2009;35(3):261-5.
15. Pereira LV, Sousa FAEF. Psychophysical evaluation of the descriptors of pain in the postoperative. *Rev Latino-Am Enfermagem*. 2007;15(3):474-9.
16. Rocha LA, Maia TF, Silva LF. Diagnósticos de enfermagem em pacientes submetidos à cirurgia cardíaca. *Rev Bras Enferm*. 2006;59(3):321-6.
17. Mello BS, Massutti TM, Longaray VK, Trevisan DF, Lucena AF. Applicability of the Nursing Outcomes Classification (Noc) to the evaluation of cancer patients with acute or chronic pain in palliative care. *App Nurs Res*. Forthcoming 2015. doi:10.1016/j.apnr.2015.04.001
18. Tanaka DS, Peniche ACG. Assistência ao paciente obeso mórbido submetido à cirurgia bariátrica: dificuldades do enfermeiro. *Acta Paul Enferm*. 2009;22(5):618-23.
19. Felix LG, Soares, MJGO, Nóbrega, MML. Protocolo de assistência de enfermagem ao paciente em pré e pós-operatório de cirurgia bariátrica. *Rev Bras Enferm*. 2012 jan-fev;65(1):83-91.
20. Oliveira, DM, Merighi, MAB, Jesus, MCP. A decisão da mulher obesa pela cirurgia bariátrica à luz da fenomenologia social. *Rev Esc Enferm USP*. 2014;48(6):970-6.

■ Corresponding author:

Amália de Fátima Lucena

E-mail: afatimalucena@gmail.com

Received: 10.09.2014

Approved: 30.06.2015