

# NURSING DIAGNOSES AND ROY'S ADAPTATION PROBLEMS IN PATIENTS UNDERGOING BARIATRIC SURGERY

*Diagnósticos de enfermagem e problemas adaptativos de roy em pacientes submetidos à cirurgia bariátrica*

*Diagnóstico de enfermería y problemas de adaptación de roy en pacientes a través de cirugía bariátrica*

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**ABSTRACT: Objective:** To identify the nursing diagnoses of the North American Nursing Diagnosis Association (NANDA International) in patients who underwent bariatric surgery, during the postoperative period, and their relation to adaptation problems according to the Roy Adaptation Model. **Method:** This is an exploratory, multicase study carried out in a reference hospital for bariatric surgeries in the state of Ceará, Brazil, from November to December 2018. Data collection took place through interviews and physical examination using a structured instrument with the four modes of adaptation of the Roy Adaptation Model. **Results:** In this study, 21 nursing diagnoses were identified, which were related to the following adaptation problems: impaired breathing, difficulty dressing up, nutrition, sedentary lifestyle, sleep pattern, chewing, obesity control, low self-esteem, social interaction, healthy organism, anxiety, self-care, satisfaction with appearance, spirituality, healthy relationship, knowledge, and communication. **Conclusion:** Wellness nursing diagnoses predominated, which suggests that the performance of bariatric surgery and the obtained results, such as weight loss, increased disposition, and improved health status, positively influence the postoperative adaptation process.

**Keywords:** Bariatric surgery. Nursing diagnosis. Nursing theory. Perioperative nursing.

**RESUMO: Objetivo:** Identificar os diagnósticos de Enfermagem da *North American Nursing Diagnosis Association* (NANDA Internacional) nos pacientes no pós-operatório de cirurgia bariátrica e relacioná-los com problemas adaptativos propostos por Roy. **Método:** Estudo exploratório, a partir da técnica de multicase, realizado em hospital de referência em cirurgias bariátricas no estado do Ceará, no período de novembro a dezembro de 2018. A coleta de dados ocorreu por meio de entrevistas e do exame físico em que se utilizou instrumento estruturado com os quatro modos adaptativos de Roy. **Resultados:** Neste estudo, foram identificados 21 diagnósticos de Enfermagem, que estiveram ligados aos problemas adaptativos respiração prejudicada, dificuldade para vestir-se, nutrição, sedentarismo, padrão de sono, mastigação, controle da obesidade, baixa autoestima, interação social, organismo saudável, ansiedade, autocuidado, satisfação com aparência, espiritualidade, relacionamento saudável, conhecimento e comunicação. **Conclusão:** Predominaram diagnósticos de Enfermagem de bem-estar, o que sugere que a realização da cirurgia bariátrica e os resultados obtidos, como perda de peso, aumento da disposição e melhora do estado de saúde, influenciam positivamente no processo de adaptação pós-cirurgia.

**Palavras-chave:** Cirurgia bariátrica. Diagnóstico de enfermagem. Teoria de enfermagem. Enfermagem perioperatória.

**RESUMEN: Objetivo:** Identificar los Diagnósticos de Enfermería Internacional NANDA en pacientes en el postoperatorio de cirugía bariátrica y relacionarlos con problemas adaptativos del Modelo de Adaptación de Roy. **Método:** Estudio exploratorio, mediante la técnica multicase, realizado en un hospital de referencia en cirugías bariátricas en el Estado de Ceará, de noviembre a diciembre de 2018. La recolección de datos se realizó a través de entrevistas y examen físico en el que utilizó instrumento adaptado estructurado con los cuatro modos adaptativos de Roy. **Resultados:** Se identificaron 21 Diagnósticos

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de Enfermería, los cuales se relacionaron con problemas adaptativos, dificultad para respirar, dificultad para vestirse, nutrición, sedentarismo, patrón de sueño, masticación, control de la obesidad, baja autoestima, interacción social, organismo sano, ansiedad, autocuidado, satisfacción con la apariencia, espiritualidad, relación sana, conocimiento y comunicación. **Conclusión:** Predominaron los diagnósticos de enfermería de bienestar, lo que sugiere que la realización de la cirugía bariátrica y los resultados obtenidos, como la pérdida de peso, mayor disposición y mejor estado de salud, influyen positivamente en el proceso de adaptación posquirúrgico.

**Palabras clave:** Cirugía bariátrica. Diagnóstico de enfermería. Teoría de enfermería. Enfermería perioperatoria.

## INTRODUCTION

Bariatric surgery or gastroplasty is a therapeutic method increasingly sought by obese people to control and maintain severe obesity as well as comorbidities associated with this chronic health problem. In this context, for achieving beneficial and lasting results, it is imperative that individuals adequately understand which perioperative care practices should be implemented, in addition to being aware of the need for changing behaviors to achieve greater effectiveness of surgical treatment, better quality of life, and reduction of possible complications<sup>1</sup>.

Patient's adherence to adequate health practices and lifestyle changes favors the improvement of obesity-related indicators after undergoing bariatric surgery<sup>2</sup>. However, many individuals experience several difficulties during the follow-up of the perioperative treatment, as this change process is complex and involves several aspects such as social, physical, and psychological ones<sup>3</sup>.

Therefore, the nursing performance with patients undergoing bariatric surgeries is of fundamental importance, as these subjects face several changes and implications resulting from the treatment that require the provision of holistic, longitudinal, and scientifically-based care. Accordingly, nurses should use the nursing process (NP) and nursing theories to support and improve care practices<sup>4</sup>.

In this study, the Roy Adaptation Model stands out, according to which the NP understands the human being as an adaptive system and encompasses the following steps: behavior assessment; stimulus assessment; nursing diagnosis (ND); setting goals; intervention; and evaluation. According to this theory, the adaptation process can constitute a guiding basis for nursing practice, consisting of five elements: person, nursing goal, nursing activities, health, and environment<sup>5</sup>.

The person is the recipient of nursing care and is considered as a holistic adaptive system, whose behaviors can be classified as positive or inefficient adaptive reactions. These behaviors derive from mechanisms that can be identified based on

four modes of adaptation: physiological, self-concept, role function, and interdependence<sup>6</sup>.

Thus, the Roy Adaptation Model enables the understanding that people can demonstrate positive or negative responses to stimuli resulting from stressful situations, a context in which nurses act as mediators of strategies for implementing the actions of the care process, empowering the subjects to identify coping mechanisms that can mitigate negative responses and allow better results in their adaptation process<sup>6,7</sup>.

Therefore, considering the scarcity of studies on this topic, the identification of ND and its comparison with the adaptation problems of the Roy Adaptation Model will enable the formulation and implementation of appropriate care plans for patients who experience the postoperative (PO) period of bariatric surgery. Taking this into consideration, the following questions arose: Which NDs are evidenced in patients in the PO period of bariatric surgery? Is there a relationship between the NDs identified and the adaptation problems of the Roy Adaptation Model?

## OBJECTIVE

The present study aimed to identify the NDs of the North American Nursing Diagnosis Association (NANDA International) in patients who underwent bariatric surgery, during the PO period, and to relate them to the adaptation problems indicated in Sister Callista Roy's Theory.

## METHOD

### Study type and place

Exploratory study, with a qualitative approach, in which the multicase technique was employed. The survey was conducted in the state of Ceará, Brazil, from November to December 2018, in a reference hospital for bariatric surgeries of the Brazilian Unified Health System (SUS).

## Population and sample

People who were followed up by the Obesity Program of the State of Ceará participated in the study. In order to recruit the subjects, the list of patients who were already in the PO period was requested from the bariatric surgery service of the institution under study. Then, patients were invited via telephone to participate in the study, and explanations regarding the purpose of the call and the relevance of the research were given. Twelve subjects were randomly recruited, of which six attended the focus group meeting.

The following inclusion criteria were defined: age over 18 years; PO period of bariatric surgery between 0 and 24 months; and receive follow-up care by the institution's multidisciplinary team. The authors chose to interview only individuals who had already undergone the surgery due to the possibility of investigating the adaptation process. Thus, at the time of data collection, questions about both the experience in the preoperative period and in the PO period were included.

## Procedures for data collection

Data collection was carried out in a reserved air-conditioned room that was previously organized to facilitate the conduct of the focus group. A lead researcher assumed the role of moderator and three researchers were the observers at the time of data collection.

Upon starting the focus group, the moderator explained how the meeting would take place and the rules of coexistence in such a way that everyone had the opportunity to speak. In addition, it was also explained that the meeting would be recorded, with the aim of later analyzing the participants' speeches. A script with questions based on the four Roy's modes of adaptation was used, namely: physiological, self-concept, role function, and interdependence. In the physiological mode, aspects related to neurological function, oxygenation, senses, nutrition, protection, bladder and intestinal elimination, activity, and rest were investigated. As for the role function mode, data on identification and social role were investigated; in the self-concept mode, psychological, spiritual, and self-image aspects were emphasized; and in the interdependence mode, data on affective adequacy, loneliness, and interpersonal relationships were analyzed<sup>8</sup>.

It is noteworthy that there were questions concerning the life before undergoing bariatric surgery, such as routine, eating habits, physical activity, and the effects of obesity on

daily life, in addition to questions related to the PO period, such as changes in health practices, adaptation to the new reality, and expectations regarding the obtained results.

## Data analysis

After transcribing the speeches, NDs were identified based on the NANDA-I Taxonomy II (2018–2020) and on the adaptation problems of the Roy Adaptation Model, comparing the diagnoses and difficulties in adaptation to establish similarities. The diagnostic process was carried out in two phases: analysis (data categorization and identification of gaps) and synthesis (grouping, comparison, identification, and relation of etiologic factors)<sup>9</sup>.

## Ethical aspects

Before data collection, the subjects received and signed the Informed Consent Form, and the objectives, benefits, and risks of the research were explained. In order to preserve the participants' anonymity, they were identified with names of butterflies. The study was carried out in line with the recommendations of Resolution No. 466/2012, and it was approved by the Research Ethics Committee of Universidade Federal do Ceará (UFC), under CAAE 56499116.2.3001.5041 and Opinion No. 1.658,436.

## RESULTS

Six participants in the PO period comprised the final study sample, in which there was a predominance of women (five participants). With regard to age, most subjects aged between 30 and 51 years.

The NDs and their correlation with adaptation problems in each mode described in the Roy Adaptation Model are presented next: physiological, role function, self-concept, and interdependence modes.

### Physiological mode

When evaluating the physiological mode of the individuals, changes were identified only in the aspects of nutrition and activity and rest, as demonstrated in Chart 1.

According to Chart 2, after surgery, wellness diagnoses related to nutrition and sleep pattern were identified. The diagnosis "impaired dentition" was also observed in two patients, as they reported difficulty chewing due to the use of dentures.

## Role function mode

The participants, after surgery, reported that they felt good, in the adaptation phase, according to the following reports:

- “I’m fine. I’m starting to eat properly again. I’m adapting [to it]...” (Emerald Swallowtail Butterfly, PO period of two months);
- “I’m feeling good today. I don’t see myself as obese anymore.” (Ruby Tiger Butterfly, PO period of seven months);
- “For some time, I didn’t care, but then I realized I needed help. I recognize myself today as another person, with a different quality of life.” (Peacock Butterfly, PO period of 12 months);
- “I look a lot better now.” (Queen Alexandra Birdwing Butterfly, PO period of nine months);
- “I see myself as a fat woman undergoing treatment.” (Zebra Longwing Butterfly, PO period of 18 months).

When asked about what care they took to manage obesity in the past and currently, most individuals reported that they previously had treatments based on diet, physical exercise, and psychological support, but they could not maintain their weight for a long time. Conversely, currently, they try to follow the nutritionist’s recommendations and to exercise.

- “I used to try avoiding unhealthy foods as much as possible. Today I exercise and I have a balanced diet.” (Emerald Swallowtail Butterfly, PO period of two months);
- “I used to see a psychologist and go on diets. Today I keep going into therapy and seeing a nutritionist. I also exercise nowadays.” (Queen Alexandra Birdwing Butterfly, PO period of nine months);
- “It did nothing to control obesity. I couldn’t. I suffered from deep anxiety and needed to eat. Today I ride a bike, take walks, try to follow the nutritionist’s guidelines regularly and undergo treatment with a psychologist.” (Peacock Butterfly, PO period of 12 months);
- “I tried walking, dieting, drinking Herbalife® shakes. Nowadays, I daily exercise and control my diet.” (Zebra Longwing Butterfly, PO period of 18 months).

All subjects also stated that social relationships were harmed, as they felt uncomfortable with criticism and prejudice. Currently, they feel comfortable with themselves and with other people.

- “I didn’t feel comfortable around people. I thought I was ugly. Even going to the gym was really bad. As I’m at the beginning [of the treatment] and my body hasn’t changed yet, I see that my psychological well-being is changing.” (Emerald Swallowtail Butterfly, PO period of two months);

**Chart 1.** Domains, nursing diagnoses, and Roy’s adaptation problems in the preoperative period of patients who had bariatric surgery.

Domains	Nursing Diagnoses	Roy’s Adaptation Problems
Activity/rest	00032 – Ineffective breathing pattern related to obesity, evidenced by dyspnea.	Impaired breathing
	00094 – Risk for activity intolerance related to unfitnes.	Sedentary lifestyle
	00204 – Ineffective peripheral tissue perfusion related to a sedentary lifestyle, evidenced by edema.	Sedentary lifestyle
Activity/rest	00109 – Dressing self-care deficit related to discomfort, evidenced by impaired ability to put on necessary clothing items and to put on shoes.	Difficulty getting dressed
Nutrition	00232 – Obesity classified by Body Mass Index (BMI) > 30 kg/m <sup>2</sup> , related to disordered eating behaviors.	Nutrition
Health promotion	00168 – Sedentary lifestyle related to lack of interest, evidenced by choosing a daily routine without exercise.	Sedentary lifestyle

**Chart 2.** Domains, nursing diagnoses, and Roy’s adaptation problems in patients who had bariatric surgery

Domains	Nursing Diagnoses	Roy’s Adaptation Problems
Nutrition	00163 – Readiness for enhanced nutrition evidenced by consumption of adequate foods, regular intakes, and manifestation of knowledge about healthy food choices.	Nutrition
Activity/rest	00165 – Readiness for enhanced sleep evidenced by the manifestation of feeling rested after sleeping and amount of sleep consistent with developmental needs.	Sleep pattern
Safety/protection	00048 – Impaired dentition related to inadequate oral hygiene, evidenced by lack of teeth.	Chewing

- “Since the surgery it’s been better. I leave home now..” (Ruby Tiger Butterfly, PO period of seven months);
- “For sure it got in the way. I couldn’t find an outfit and was embarrassed to go out. Obesity deforms you. Today I feel much better. I wear whatever clothes I want. It contributed not only to my health, but to my general well-being.” (Queen Alexandra Birdwing Butterfly, PO period of nine months);
- “It brought me many hardships. I even lost my job. Today I can relate very well. I help people more.” (Peacock Butterfly, PO period of 12 months);
- “It got in the way of my relationship with other people because of the criticism.” (Orange-tip Butterfly, PO period of 24 months).

The identified diagnoses and adaptation problems regarding the role function mode are presented in Chart 3.

### Self-concept mode

All participants reported that there were changes in their lifestyle after undergoing surgery and that expectations for performing the bariatric procedure were related to improved health and quality of life and the search for a new body.

- “It’s a chance to have a new body.” (Emerald Swallowtail Butterfly, PO period of two months);
- “It’s about smiling again. To lose weight and be happier.” (Ruby Tiger Butterfly, PO period of seven months);
- “I was hoping my life would change.” (Queen Alexandra Birdwing Butterfly, PO period of nine months);

- “Having a good future without the disease and with quality of life.” (Peacock Butterfly, PO period of 12 months).
- “To control diabetes, to have normal test results. A healthier life with quality of life.” (Zebra Longwing Butterfly, PO period of 18 months).
- “My expectation was to eliminate all the excess weight that existed in me.” (Orange-tip Butterfly, PO period of 24 months).

When asked if they felt satisfied with their own appearance, all participants said yes and reported that they felt good for themselves in the process of transformation; however, they mentioned that they still needed to improve.

- “I’m satisfied, but I still feel obese. I see myself in the process and I know that I will change even more.” (Emerald Swallowtail Butterfly, PO period of two months);
- “I’m fine. I have to improve more.” (Ruby Tiger Butterfly, PO period of seven months);
- “I’m great. I feel prettier.” (Queen Alexandra Birdwing Butterfly, PO period of nine months);
- “I’m satisfied. I’m a different person.” (Peacock Butterfly, PO period of 12 months);
- “I like what I see in myself, I’m a healthier person.” (Orange-tip Butterfly, PO period of 24 months).

All respondents were Catholics and believed it was important to seek God at all times in their lives, and stated that the concept of spirituality was meaningful and clear for them. Overall, the individuals positively characterized themselves in relation to their personality. The psychological characteristic present in almost all subjects was anxiety.

**Chart 3.** Domains, nursing diagnoses, and Roy’s adaptation problems in patients in the pre- and postoperative period of bariatric surgery in the role function mode.

Perioperative period	Domains	Nursing Diagnoses	Roy’s Adaptation Problems
Preoperative	Health promotion	00078 – Ineffective health management related to difficulty controlling the complexity of the therapeutic regimen, evidenced by the difficulty with the prescribed regimen.	Obesity control
	Self-perception	00153 – Risk for situational low self-esteem related to body-image disorder.	Low self esteem
	Roles and relationships	00052 – Impaired social interaction related to self-concept disorder, evidenced by dysfunctional interaction with other people.	Social interaction
Postoperative	Coping/stress tolerance	00187 – Readiness for enhanced power evidenced by the expression of willingness to increase participation in health choices.	Healthy organism
	Health promotion	00162 – Readiness for enhanced health management expressed by the desire to improve the management of prescribed regimens.	Obesity control



The identified diagnoses and adaptation problems regarding the self-concept mode are presented in Chart 4.

### Interdependence mode

When asked about the most important person in their lives, the participants' responses varied between children, wives, and husbands. All subjects reported that they also lived or interacted with obese people, and that they instructed these people as for the need for managing weight to improve health and quality of life.

- *"Friends. I resolve their doubts and post them on social media so they can keep up with my postoperative period."* (Emerald Swallowtail Butterfly, PO period of two months);
- *"Siblings and friends. I try talking [about it], but my brother doesn't want to have the surgery."* (Ruby Tiger Butterfly, PO period of seven months);
- *"My husband and friends. Some friends have even had the surgery."* (Queen Alexandra Birdwing Butterfly, PO period of nine months);
- *"My siblings, but they didn't seek treatment."* (Zebra Longwing Butterfly, PO period of 18 months).

Next, in Chart 5, the NDs and the adaptation problems for the interdependence mode are presented.

## DISCUSSION

The present study evidenced NDs in the preoperative period of bariatric surgery, mainly related to the following adaptation problems: nutrition, activity, rest, self-esteem, and social participation. NDs in the PO period were related to nutrition, sleep pattern, and improvements in self-care, self-perception, communication, and family and social relationships.

In this context, in the physiological mode, the preoperative NDs "obesity," "sedentary lifestyle," and "risk for activity intolerance" represent frequent implications in the lifestyle of obese individuals linked to the adaptation problems of nutrition and sedentary lifestyle. These findings point to a growing increase in overweight and obesity rates in the world's population, which derives from inappropriate health behaviors such as sedentary lifestyle and unbalanced nutrition. These, in turn, corroborate the occurrence of psychosocial and physical impairments among obese individuals<sup>10</sup>.

Another important ND was the "ineffective breathing pattern." Among changes resulting from obesity, there is the impairment of respiratory function, which is related to the dimension of oxygenation in the physiological mode of the Roy Adaptation Model, due to decrease in lung compliance and the efficiency of respiratory muscles, which decreases the inspiratory capacity and compromises gas exchange, in addition to favoring the occurrence of respiratory complications<sup>11</sup>.

**Chart 4.** Domains, nursing diagnoses, and Roy's Adaptation Problems in patients who had bariatric surgery in the self-concept mode.

Domains	Nursing Diagnoses	Roy's Adaptation Problems
Coping/stress tolerance	00146 – Anxiety related to situational crises, evidenced by distress, apprehension, growing tension and concern.	Anxiety
Activity/rest	00182 – Readiness for enhanced self-care evidenced by the expression of increasing independence in maintaining well-being.	Self-care
Self-perception	00167 – Readiness for enhanced self-concept evidenced by the expression of satisfaction with their body image and personal identity.	Satisfaction with appearance
Life principles	00068 – Readiness for enhanced spiritual well-being related to prayer and participation in religious activities.	Spirituality

**Chart 5.** Domains, nursing diagnoses, and Roy's Adaptation Problems in patients who had bariatric surgery in the interdependence mode.

Domains	Nursing Diagnoses	Roy's Adaptation Problems
Roles and relationships	00159 – Readiness for enhanced family processes evidenced by proper communication and positive relationships.	Healthy relationship
Perception/cognition	00161 – Readiness for enhanced knowledge expressed by the desire to improve learning.	Knowledge
	00157 – Readiness for enhanced communication manifested by the desire to improve communication.	Communication

Still on the physiological mode, it was observed that NDs in the PO period were also related to adaptive responses in nutrition, sleep pattern, and chewing. Improvement in nutrition was identified after bariatric surgery, expressed by the ND “readiness for enhanced nutrition,” which is shown as a relevant adaptation behavior, considering that change in dietary pattern represents one of the follow-up strategies for surgical treatment to ensure weight management<sup>12</sup>.

The presence of insomnia and obstructive sleep apnea before bariatric surgery is common among obese patients, which compromises the basic need for activity and rest. An improvement in the sleep pattern was identified, which reflects a positive post-surgery adaptive response, as it provides greater physical comfort in the long term, with reduced fatigue, sleepiness, and increased physical disposition, favoring well-being and promoting improved quality of life<sup>13</sup>.

Concerning the role function mode, three preoperative diagnoses were identified, which were related to ineffective obesity control, self-esteem, and social interaction. Obesity contributes to low self-acceptance, low self-esteem, changes in mood, and increased stress, thus boosting the search for the surgical procedure as a strategy for changing lifestyle and psychological relief<sup>4</sup>. A study identified that people with higher Body Mass Index (BMI) have high levels of anxiety and depression<sup>15</sup>.

Conversely, in the PO period, two diagnoses were identified for the role function mode, concerning the willingness to manage obesity and having a healthy body, which shows that the subjects recognize the need for changes in inappropriate health behaviors as well as demonstrate resilience and willingness to make decisions and develop healthy habits to prevent weight regain.

Weight regain is related to the persistence of dysfunctional eating behaviors and can generate feelings of anxiety, frustration, fear, or failure due to frustration over the treatment process. Thus, adherence to care in the PO period becomes relevant to achieve good results after bariatric surgery, which requires holistic follow-up by health professionals, with an approach that permeates both the physical and emotional aspects, aiming to facilitate the patients’ coping process and performance of effective adaptive responses<sup>16</sup>.

In the self-concept mode, four diagnoses were identified, which were related to adaptation problems of anxiety, self-care, appearance, and spirituality. Anxiety is recurrent in the PO period, being a worrisome symptom because it increases the dependence of nursing care on the part of patients, negatively interfering with the clinical evolution.

Hence, care aimed at the subjects’ psychological aspects is relevant to promote anxiety relief, in addition to assisting patients to identify situations that favor the occurrence of this symptom and coping strategies<sup>17</sup>.

Regarding self-care, the weight loss process after undergoing surgery brings, in addition to benefits to health and quality of life, the recognition of a new identity and the improvement of self-concept and care practices. In this sense, a study carried out in the south of England identified that patients undergoing bariatric surgery, in the PO period, experienced benefits such as improved mobility, performance of daily activities, relief of physical symptoms, and psychological well-being. However, they also dealt with negative changes, such as the development of excess skin and obstacles to eating in social events, which interfere with the subjects’ self-perception and coping capacity regarding care and implications for the PO period<sup>18</sup>.

Thus, it is worth highlighting that, after surgery, patients face a new process of adaptation in several particularities of their lives such as physical and psychological health, dietary pattern, body image, weight, and social participation. Such changes can be ambivalent when experienced in a positive or negative way, demanding health care that assists in recognizing the achieved benefits, reducing postoperative complications, and adapting to a new lifestyle<sup>18,19</sup>.

From this perspective, the inclusion of the family in the entire perioperative period of bariatric surgery is emphasized, in such a way to empower and sensitize family members to provide the necessary support to the patient in complying with the treatment. In the interdependence mode, the ND “readiness for enhanced family processes” demonstrated that there were positive changes in relationships with family members in the PO period of the study participants, which indicates there may have been adequate adaptation of the relatives to the subjects’ treatment process which in turn becomes important because it provides a support network that will contribute to the acquisition of good lifestyle habits by patients<sup>20</sup>.

Therefore, the importance of comprehensive, individualized, and longitudinal follow-up on the part of health professionals is emphasized, as, throughout the treatment process, numerous doubts and concerns arise, as well as adaptation problems linked to the social determinants of health, whose resolution is pertinent in such a way that patients and families are more qualified to take and provide perioperative care<sup>21</sup>.

Furthermore, the implementation of the Roy Adaptation Model with patients undergoing bariatric surgery can support

the provision of individual, holistic, and qualified care, making individuals active agents in their care process, enabling them to identify positive and negative stimuli that interfere with their adaptation to the PO period. In addition, this implementation allows for the development of a care plan consistent with the needs of individuals at each stage after surgery.

As contributions to the field of nursing, this study highlights the feasibility of the applicability of the Roy Adaptation Model in providing care to patients undergoing bariatric surgery, as well as making ND available to this population, based on the identification of phenomena specific to nursing. This can guide the practice of nurses who work in perioperative care in the development of more adequate care plans for this population.

Finally, a limitation of this study is the nonclinical validation of the NDs by expert judges as well as the impossibility

of implementing a nursing care plan based on Roy's adaptation problems.

## FINAL CONSIDERATIONS

The Roy Adaptation Model enabled to identify NDs and their correlation with modes of adaptation at different times during the perioperative period of bariatric surgery. The predominance of wellness diagnoses suggests that the stimuli present in the subjects' daily lives influence a positive response to the post-surgery adaptation process and that weight loss, increased well-being, and improved health status are the most evident stimuli for the occurrence of this positive response. Further studies should be conducted to compare the adaptation process between the preoperative period and the different phases of the PO period.

## REFERENCES

1. Conz CA, Jesus MCP, Kortchmar E, Braga VAS, Machado RET, Merighi MAB. Path taken by morbidly obese people in search of bariatric surgery in the public health system. *Rev Latino-Am Enferm.* 2020;28:e3294. <http://dx.doi.org/10.1590/1518-8345.3579.3294>
2. Barros LM, Gomes FAV, Carneiro FN, Galindo Neto NM, Frota NM, Caetano JA. Knowledge and attitude of candidates to gastroplasty about perioperative: randomized clinical trial. *Rev Bras Enferm.* 2020;73(6):e20180869. <http://dx.doi.org/10.1590/0034-7167-2018-0869>
3. Miranda RCD, Radünz V, Sebold LF, Rosa LM, Girondi JBR, Tourinho FSV. Communication technologies of a Nutrition service contributing to the safety of bariatric surgery patients. *Texto Contexto Enferm.* 2019;28:e20170425. <http://dx.doi.org/10.1590/1980-265X-TCE-2017-0425>
4. Berwager DC, Matos FGOA, Alves DCI, Oliveira JLC. Links between diagnostics, results and nursing interventions for patients in the transoperative period. *Rev SOBECC.* 2018;23(4):195-204. <https://doi.org/10.5327/Z1414-4425201800040002>
5. Leopardi MT. Teorias em enfermagem: instrumentos para a prática. Florianópolis: Papa-Livros; 1999. 226 p.
6. Roy C, Andrews HA. The Roy adaptation model. Lisboa: Instituto Piaget; 2001.
7. Freitas MC, Oliveira MF. Assistência de enfermagem a idosos que realizam cateterismo cardíaco: uma proposta a partir do Modelo de Adaptação de Calista Roy. *Rev Bras Enferm.* 2006;59(5):642-6. <http://dx.doi.org/10.1590/S0034-71672006000500009>
8. Miranda ARA, Araújo CS, Faleiros-Castro FS. Instrumento para coleta de dados de pacientes adultos com artrite reumatoide. *Rev Enferm Cent O Min.* 2012;2(2):228-42. <https://doi.org/10.19175/recom.v0i0.213>
9. Cerullo JAS, Cruz DALM. Raciocínio clínico e pensamento crítico. *Rev Latino-Am Enferm.* 2010;18(1):124-9. <http://dx.doi.org/10.1590/S0104-11692010000100019>
10. Talukdar D, Seenivasan S, Cameron AJ, Sacks G. The association between national income and adult obesity prevalence: Empirical insights into temporal patterns and moderators of the association using 40 years of data across 147 countries. *PLoS One.* 2020;15(5):e0232236. <https://doi.org/10.1371/journal.pone.0232236>
11. Vaz SFA, Matos TFV, Mendes MER, Preto LSR, Fernandes HJ, Novo AFMP. Eficácia da técnica de breath stacking na função respiratória em mulheres submetidas a cirurgia bariátrica. *Rev Enf Ref.* 2019;4(23):49-58. <http://dx.doi.org/10.12707/RIV19046>
12. Cassin S, Leung S, Hawa R, Wnuk S, Jackson T, Sockalingam S. Food addiction is associated with binge eating and psychiatric distress among post-operative bariatric surgery patients and may improve in response to cognitive behavioural therapy. *Nutrients.* 2020;12(10):2905. <https://doi.org/10.3390/nu12102905>
13. Sivas F, Moran M, Yurdakul F, Ulucaköy Koçak R, Başkan B, Bodur H. Physical activity, musculoskeletal disorders, sleep, depression, and quality of life before and after bariatric surgery. *Turk J Phys Med Rehabil.* 2020;66(3):281-90. <https://doi.org/10.5606/tftrd.2020.3694>
14. Lima MDO, Silva TPR, Menezes MC, Mendes LL, Pessoa MC, Araújo LPP, et al. Environmental and individual factors associated with quality of life of adults who underwent bariatric surgery: a cohort study. *Health Qual Life Outcomes.* 2020;18(1):87. <https://doi.org/10.1186/s12955-020-01331-1>
15. Dias I, Afonso RM, Gonçalves D, Lopes T, Pereira H, Esgalhado G, et al. Estudo sobre a relação entre sintomas psicopatológicos e IMC na adultez e velhice. *Psic Saúde Doenças.* 2020;21(1):198-204. <http://dx.doi.org/10.15309/20psd210129>



16. Kortchmar E, Merighi MA, Conz CA, Jesus MC, Oliveira DM. Reganho de peso após a cirurgia bariátrica: um enfoque da fenomenologia social. *Acta Paul Enferm.* 2018;31(4):417-22. <https://doi.org/10.1590/1982-0194201800058>
17. Pezzim IM, Firmino APO, Carvalho R, Romero WG, Wandekoken KD, Fiorin BH, et al. Ansiedade contribui para o aumento do grau de dependência da assistência de Enfermagem no pós-operatório imediato de cirurgia bariátrica. *REME - Rev Min Enferm.* 2020;24:e-1321. <http://dx.doi.org/10.5935/1415-2762.20200058>
18. Coulman KD, MacKichan F, Blazeby JM, Donovan JL, Owen-Smith A. Patients' experiences of life after bariatric surgery and follow-up care: a qualitative study. *BMJ Open.* 2020;10(2):e035013. <http://dx.doi.org/10.1136/bmjopen-2019-035013>
19. Aguiar PV, Gomes EV, Santos IN, Cavalcanti ATA. Pacientes submetidos a cirurgias bariátricas: fatores associados a complicações pós-operatórias de sítio cirúrgico. *Rev SOBEC.* 2018;23(1):28-35. <https://doi.org/10.5327/Z1414-4425201800010006>
20. Scherer A, Moré C, Motta C, Coradini A, Farias R. Rede social significativa e de suporte social: impacto no tratamento bariátrico. *Psic Saúde Doenças.* 2019;20(3):630-50. <http://dx.doi.org/10.15309/19psd200307>
21. Barros LM, Carneiro FN, Galindo Neto NM, Araújo MF, Moreira RA, Barbosa LP, et al. Intervenção educativa e indicadores de obesidade de candidatas à gastroplastia: estudo quase-experimental. *Acta Paul Enferm.* 2020;33:eAPE20180305. <https://doi.org/10.37689/acta-ape/2020ao0305>

## | ERRATUM |

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In the manuscript “Nursing diagnoses and Roy’s adaptation problems in patients undergoing bariatric surgery”, DOI: 10.5327/Z1414-4425202100030005, published in the *Rev SOBEC.*, v. 26, n. 3, p.156-164, on page 156:

### Where it reads:

Jennara Cândido de Nascimento<sup>3</sup>

### It should read:

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