

# The occurrence of the delayed surgical recovery nursing diagnosis among adults and the elderly

Ocorrência do diagnóstico de enfermagem de recuperação cirúrgica retardada entre adultos e idosos

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## Keywords

Perioperative nursing; Nursing diagnosis; Geriatric nursing; Nursing process; Adult; Elderly

## Descritores

Enfermagem perioperatória; Diagnóstico de enfermagem; Enfermagem geriátrica; Processos de enfermagem; Adulto; Idoso

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## Abstract

**Objective:** To compare the occurrence of the nursing diagnosis of delayed surgical recovery among the adult and elderly population.

**Methods:** This was an observational, cross-sectional study conducted with 72 patients followed after the fifth postoperative day. For data collection, a form with conceptual and operational definitions of the defining characteristics and related factors of the nursing diagnosis was used.

**Results:** The rate of the diagnosis of delayed surgical recovery was slightly higher in the elderly, which was 77.1%, compared to adults, which was 75.7%, but there was no significant difference (0.421). Different defining characteristics prevailed: "difficulty moving about" (0.045), "perception that more time is needed to recover," and "requires help to complete self-care" (0.000).

**Conclusion:** To differentiate adult and elder care favors the specialization of perioperative nursing care and surgical recovery in the time desired.

## Resumo

**Objetivo:** Comparar a ocorrência do diagnóstico de enfermagem de recuperação cirúrgica retardada entre a população de adultos e idosos.

**Métodos:** Estudo observacional seccional realizado com 72 pacientes acompanhados após o quinto dia de pós-operatório. Para coleta dos dados, utilizou-se um formulário com definições conceituais e operacionais das características definidoras e fatores relacionados ao diagnóstico de enfermagem.

**Resultados:** Houve aumento relativo da taxa do diagnóstico de recuperação cirúrgica retardada nos idosos, que foi de 77,1%, em comparação à dos adultos, que foi de 75,7%, contudo não houve diferença significativa (0,421). Prevaleram características definidoras diferentes: "Dificuldade para se movimentar" (0,045), "Percepção de que é necessário mais tempo para a recuperação", e "Precisa de ajuda para completar o autocuidado" (0,000).

**Conclusão:** Diferenciar o atendimento adulto e idoso favorece a especialização da assistência de enfermagem perioperatória e a recuperação cirúrgica no tempo almejado.

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## Introduction

Within Brazil, an elder is considered to be a person of 60 years of age or older. The elderly currently represent 14.5 million people - 8.6% of the total population of Brazil, therefore, this population segment is currently the fastest growing.<sup>(1)</sup>

Data from the World Health Organization predict that 63 million people will undergo surgical treatment due to injuries or traumas each year, and another 31 million to treat malignancies.

The increased number of surgeries in the elderly requires knowledge in surgical and geriatric nursing, because of the physiology of the human aging process, such as changes in skin turgor, loss of muscle mass, increased adipose tissue, decreased absorption of nutrients and drugs, impairment in balance and gait, speed and slowness in information processing.<sup>(1-3)</sup>

On the other hand, the growth of the rates of surgical complications such as dehiscence of the sutures, atelectasis, deep vein thrombosis, or infection is noted.<sup>(2-6)</sup> This requires strategies directed towards patient safety, reduction of morbidity and mortality, readmissions and hospital costs.

Surgical complications are indicative of a delay in recovery, a phenomenon of global interest that affects the outcomes of care and adds to the burden of the costs of treatment.

The nursing diagnosis of delayed surgical recovery (00100) is defined as the extension of the number of postoperative days required to initiate and perform activities that maintain life, health and well-being.

The correct identification of this diagnosis allows one to link factors contributing to the surgical delay, expanding the clinical focus of the nurse to assist in the reduction of the surgical sequelae.

The following are described as related factors of this diagnosis: pain, preoperative expectations, postoperative surgical site infection, obesity, extensive surgical procedure, and prolonged surgical procedure. Clinical indicators of the presence of this diagnosis include the following: postpones resumption of work/employment activities; difficult in moving about; evidence of interrupted healing of

surgical area, fatigue, perception that more time is needed to recover, loss of appetite with or without nausea, requires help to complete self-care, and, report of pain or discomfort.

The surgical inpatient units in Brazilian hospitals accommodate adults and elderly patients in the same area, and nursing care is generally directed to the two populations.

The objective of this study was to compare the prevalence of the nursing diagnosis of delayed surgical recovery in the population of adults and the elderly.

## Methods

This was an observational, cross-sectional study conducted with 72 surgical patients monitored after the fifth postoperative day, that is, patients with a borderline postoperative time. With this sample size, it was possible to assert that the identified proportions could be considered at the confidence level of 95%, and with the maximum percentage of error of 12%.

The study setting was a large university hospital located in the state of Rio de Janeiro, in the southeastern region of Brazil, with 550 beds. There were 210 surgical patients admitted during the period of September of 2011 to March of 2012; included in the study were 72 patients with more than five postoperative days.

The research instrument was a form with the conceptual and operational definitions of the defining characteristics and related factors of the nursing diagnosis, delayed surgical recovery, sociodemographic variables, information about the number of days in pre- and post-operative care, results of laboratory tests, and observation of the surgical wound.

For data analysis, the Statistical Package for the Social Sciences, version 13.0, was used. To assess the normality of the data, the Kolmogorov-Smirnov test was used. To investigate significant differences, chi-square or Mann-Whitney tests were used; when there were inconclusive results, we adopted the Fisher exact test, and for the odds ratio, we considered the confidence interval of 95% (CI 95%).

Beginning with the results produced, analysis was performed of the differences between the two

populations for the diagnosis of delayed surgical recovery, by means of a simple, descriptive and analytic cross-section, for determining the differences and the levels of occurrence.

The development of the study conformed to national and international norms of ethics in research involving human beings.

## Results

The distribution of the sample according to age is presented with 37 (51.4%) adult subjects and 35 (48.6%) elderly. In table 1, the distribution of the nursing diagnosis, delayed surgical recovery, is presented according to age range and sex.

It was observed that there was a difference in the prevalence of the diagnosis of delayed surgical

**Table 1.** Delayed surgical recovery

Variables	With delayed surgical recovery	Total	Without delayed surgical recovery	Total
Adult				
Female	12	28	3	9
Male	16		6	
Elderly				
Female	8	27	2	8
Male	19		6	

recovery in the elderly (77.1%) compared to adults (75.7%), but without a statistically significant difference ( $p = 0.421$ ). There was no difference between study groups regarding sex ( $p = 0.136$ ).

To the extent that the age range advanced, the prevalence of the diagnosis of delayed surgical recovery increased in the elderly: 48.6% of the elderly were over the age of 70 years and, of these, 82.3% had delayed surgical recovery.

For the variables “postoperative days” and “days of hospitalization”, these did not follow a normal distribution according to the Kolmogorov-Smirnov test ( $p = 0.001$  and  $p = 0.007$ , respectively); we adopted for comparison the Mann-Whitney test, with no significant difference between the groups ( $p = 0.227$  and  $0.098$ ).

Among the surgeries with statistical differences between adults and the elderly, were gastrointestinal ones ( $p = 0.001$ ), with CI 95% of 1.67 to 9.01 and

an odds ratio of 3.9 times more of developing gastrointestinal problems than an adult.

Another surgery with a significant difference was that of tumor removal. The chi-square test proved inconclusive, but the Fisher exact test showed a significant difference ( $p = 0.003$ ) among adults and the elderly. Indeed, while not occurring among adults, in the elderly group this occurred in 13.6% of the group.

Table 2 presents the distribution of the defining characteristics of the nursing diagnosis of delayed surgical recovery, according to the two populations.

**Table 2.** Defining characteristics

Defining characteristic		Adults	Elderly	p-value
Postpones resumption of work/ employment activities	Absent	7	9	0.685
	Present	21	18	
Difficulty in moving about	Absent	13	7	0.045
	Present	15	20	
Evidence of interrupted healing of surgical area	Absent	14	19	0.606
	Present	14	8	
Fatigue	Absent	16	11	0.059
	Present	12	16	
Perception that more time is needed to recover	Absent	19	9	0.000
	Present	9	18	
Loss of appetite with nausea	Absent	20	22	0.252
	Present	8	5	
Loss of appetite without nausea	Absent	24	20	0.414
	Present	4	7	
Requires help to complete self-care	Absent	20	10	0.000
	Present	8	17	
Report of discomfort	Absent	17	14	0.498
	Present	11	13	

Chi-square test conducted to calculate the p-value

The defining characteristic, “Difficulty in moving about” presented a significant difference ( $p=0.045$ ), with an odds ratio equal to 2.1, indicating that the chance of the elderly having difficulty in moving about is 2.1 times greater than the chance of an adult presenting the same difficulty.

Another peculiar characteristic of the elderly was a “Perception that more time is needed to recover” ( $p=0.000$ ), which suggested that the elderly themselves identified subjectively the delay in their recovery.

For the characteristic, “Requires help to complete self-care” ( $p=0.000$ ), there was a correlation observed with the first, “Difficulty in moving about”, and also the importance of assessing functional capacity in the elderly surgical patients. The

chance of an elder needing this help is 4.62 times greater than the chance of an adult, with a mean CI of 2.054 to 10.372.

Table 3 presents the distribution of the related factors of the nursing diagnosis of delayed surgical recovery in the two populations.

**Table 3.** Related factors

Related factors		Adults	Elderly	p-value
Pain	Absent	14	11	0.855
	Present	14	16	
Preoperative expectations	Absent	1	3	0.183
	Present	27	24	
Postoperative surgical site infection	Absent	14	17	***
	Present	14	10	
Obesity	Absent	25	22	0.373
	Present	3	5	
Extensive surgical procedure	Absent	9	8	0.823
	Present	19	19	
Prolonged surgical procedure	Absent	19	18	0.498
	Present	9	9	

Chi-square test conducted to calculate the p-value; \*\*\* Inconclusive test

Despite the absolute differences, such as with pain and obesity, with two more observations in the elderly than in adults, there were also three observations in adults of expectation in the preoperative period and four more of surgical site infection than in the elderly, but all without statistical significance. The remaining observations of extensive and prolonged surgical procedure were equal in both populations, not influencing the differences between them.

Other related factors mentioned in the literature and analyzed in this study were: nutritional deficiency, diabetes, use of corticosteroids, systemic arterial hypertension and anemia. Among these, only arterial hypertension presented a significant statistical difference ( $p = 0.026$ ), with an odds ratio of 2.46 and 95% CI = 1.11 to 5.47.

## Discussion

The limits of the results of this study are related to the cross-sectional design that does not allow the establishment of relationships of cause and effect.

Some studies consider the increased possibility of complications in surgical recovery in elderly patients with rates from 24 to 67.7%.<sup>(2,3,6)</sup> The results

of this study showed no significant difference in the prevalence of the diagnosis of delayed surgical recovery.

The physiological changes resulting from the aging process may influence the surgical recovery of elderly patients, causing postoperative complications.<sup>(1)</sup> Such complications are associated with imbalanced nutrition, dehydration, stress and common comorbidities in this phase of life, and may affect the surgery recovery of the clients.<sup>(1,6)</sup>

In addition, the elderly possessed a lower functional capacity rating, which worsened after surgery, due to a reduction of physical strength and tolerance to physical stress, and muscle weakness from both aging and in response to the immediate postoperative period.<sup>(7)</sup>

Therefore, beginning in the preoperative period, it is necessary to perform physical efforts to compensate for and improve lung function, since anesthesia and certain surgeries can lead to changes in respiratory mechanics, pulmonary volumes, and gas exchange. Thus, breathing exercises that promote pulmonary expansion and consequent blood oxygenation after anesthesia are indicated, as an intervention for the elderly. With decreased functional capacity, the elderly tend to have more difficulty than adults to accomplish preoperative and postoperative breathing exercises.<sup>(8)</sup>

In a study about the principal nursing diagnoses presented in hospitalized elderly, of the 61 clients, 30 (50.74%) were diagnosed with impaired physical mobility (00085) characterized by postural instability while performing activities of daily living, limited range of motion related to the medications, discomfort, sensory-perceptual losses, neuromuscular and musculoskeletal, cognitive impairment, malnutrition, joint stiffness or contractures, loss of integrity of bony structures and the presence of acute or chronic degenerative diseases.<sup>(9)</sup> Namely, these are common characteristics of the elderly that interfere in mobility and, consequently, retard their surgery recovery.<sup>(1-3,6)</sup>

Those with chronic diseases, such as dyslipidemia and systemic arterial hypertension, which are associated with underlying pathology, even further affect the functional capacity of the elder-

ly, in other words, their independence and self-care. The difficulty of the elderly in maintaining, in the postoperative period, arterial pressure and body mass index with values within normal limits should be considered.<sup>(10)</sup>

The decreased self-care ability determines changes in the care routine, impacting the caregiver/family, with the necessity of adapting the environment and the fragility of the patient.<sup>(1,2,10)</sup> Studies reveal that 5% of the people greater than 65 years of age lose the capacity to execute simple cares related to basic activities of daily living, a rate that rises to 30% when the age exceeds 85 years.<sup>(3)</sup>

Another important peculiarity of the aging process that influences surgical recovery would be changes in the skin, which becomes dry and brittle, preservation of elasticity and turgor are decreased, prone to injury, marked presence of subcutaneous fat, and decreased hair, sweat and sebaceous glands. Injuries can be caused in conjunction with factors such as impaired mobility, imbalanced nutrition, impaired sensory perception and skin moisture.<sup>(2,4,7,10)</sup> For this reason, the analysis of the diagnosis broadens the analysis of the contributing factors and indicators of delayed surgical recovery in the elderly.

## Conclusion

The elderly presented more prolonged surgical recovery due to the difficulty for movement, dependence for self-care, and their own perception that more time was needed to recover, requiring nursing care specific to the process of human aging. Differentiating this care, of the adult and elderly patient, may foster perioperative care in the desired time.

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## Collaborations

Santana RF contributed to the project design, analysis and interpretation of data, drafting the article and final approval of the version to be published. Amaral DM contributed to the project design, analysis and interpretation of data and writing the article. Cassiano KM contributed to the project design, analysis and interpretation of data. Pereira SK and Delphino TM collaborated with the project design and execution of the research.

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