

NURSING STAFFING IN A SURGICAL HOSPITALIZATION UNIT: A DESCRIPTIVE STUDY

Camila Vicente¹ 
Lúcia Nazareth Amante² 
Luciara Fabiane Sebold² 
Juliana Balbinot Reis Girondi² 
Tatiana Martins³ 
Nádia Chiodelli Salum⁴ 
Ana Rosete Camargo Rodrigues Maia² 

ABSTRACT

Objective: to analyze Nursing staffing in a surgical hospitalization unit.

Method: a quantitative and exploratory-descriptive study conducted from March to May 2019, during the day shift, with inpatients of a surgical hospitalization unit of a university hospital in southern Brazil. Three instruments were used for data collection, applied to the participants and complemented with information from the medical records. The sample consisted in 196 participants and there were 920 classifications of the dependence level. The data were analyzed by means of simple descriptive analysis.

Results: the mean age of the patients was 56.71 years old, 57.8% were male, 39.1% had incomplete elementary school, and 36.7% were retired. The majority was classified as minimal care (16.81%), followed by intermediate care (6.81%), recommending from 8.38 to 10.06 nurses and from 17.01 to 20.43 nursing technicians or assistants.

Conclusion: the peculiarities of the surgical patients must be taken into account in the staffing, with the need for conducting more studies in this area.

DESCRIPTORS: Nursing; Peri-operative Nursing; Nursing Professionals; Organizational Downsizing; Patient Safety.

DIMENSIONAMIENTO DEL PERSONAL DE ENFERMERÍA EN UNA UNIDAD DE INTERNACIÓN QUIRÚRGICA: ESTUDIO DESCRIPTIVO

RESUMEN:

Objetivo: analizar el dimensionamiento del personal de Enfermería en una unidad de internación quirúrgica. **Método:** estudio cuantitativo y exploratorio-descriptivo, realizado entre marzo y mayo de 2019, durante el turno diurno, con pacientes internados en una unidad de internación quirúrgica de un hospital universitario del sur de Brasil. Para la recolección de datos se utilizaron tres instrumentos, aplicados a los participantes y complementados con informaciones de la historia clínica. Muestra de 196 participantes y 920 clasificaciones del grado de dependencia. Los datos se analizaron por medio de análisis descriptivo simple. **Resultados:** los pacientes presentaron una media de 56,71 años, 57,8% eran del sexo masculino, 39,1% tenían nivel de educación primaria incompleto y 36,7% eran jubilados. La mayoría fue clasificada como cuidados mínimos (16,81%), seguidos de intermedios (6,81%), con la recomendación de 8,38 a 10,06 enfermeros y de 17,01 a 20,43 técnicos o auxiliares de Enfermería. **Conclusión:** se deben considerar las peculiaridades de los pacientes quirúrgicos en el dimensionamiento del personal, con la necesidad de más estudios en esta área.

DESCRIPTORES: Enfermería; Enfermería Perioperatoria; Profesionales de Enfermería; Downsizing Organizacional; Seguridad del Paciente.

¹Secretaria Municipal de Saúde da Prefeitura Municipal de Palhoça. Palhoça, SC, Brasil.

²Universidade Federal de Santa Catarina. Florianópolis, SC, Brasil.

³Anestech Innovation Rising. Florianópolis, SC, Brasil.

⁴Hospital Universitário Professor Polydoro Ernani de São Thiago, Universidade Federal de Santa Catarina. Florianópolis, SC, Brasil.

INTRODUCTION

Nursing care is directed towards assistance, management, education and research. Among these performance areas is assistance to the surgical patient. In this context, Nursing plays a fundamental role, both in the execution of care directed to the clinical condition and in relation to the management of strategies to address educational, emotional, psychological and social needs. They are daily challenges to qualify assistance, in view of the complexity of the Nursing care to the surgical patient⁽¹⁻²⁾.

Thus, it is essential that the institution has in its staff a qualified team with an adequate number of professionals complying with Resolution 543/2017, which addresses Nursing Staffing (NS) in different working scenarios⁽³⁾.

NS is a tool to allocate the quantitative (number) and qualitative (category) aspects of professionals necessary for Nursing assistance in a health institution⁽³⁻⁴⁾. The following is considered for the calculation: characteristics of the health and Nursing services, as well as of the patients; including as a minimum framework the Patient Classification System (PCS) according to the patients' dependence level, Nursing assistance hours, and professional/patient proportion⁽³⁾.

It is highlighted that nurses are in charge of performing NS, being a standard of excellence for qualified care and patient safety⁽³⁾. In the practice, this theme is relevant in recent studies carried out in Brazil and worldwide, which evidence its importance, asserting that it promotes changes in the service, enables staff readjustment and, consequently, qualified assistance; it controls expenses, reduces work overload and adverse events, and promotes patient safety^(1,4-7).

A bibliographical review shows that properly allocating human resources enables to support the planning of actions, contributing to the performance of qualified assistance and patient safety as it is directly related to the occurrence of adverse events⁽⁴⁾. Another research study shows this relation associating the reduction in staffing with the increase in adverse events in a surgical unit⁽⁷⁾.

An international study carried out in six countries shows that the increase in the number of Nursing professionals was associated with lower mortality (OR=0.89), fewer chances of low hospital gradings by the patients (OR=0.90), lower chance of low-quality reports (OR=0.89), and enhanced patient safety (OR=0.85). The reduction in the number of these professionals generates an 11% increase in the chances of death⁽⁵⁾.

Inadequate assistance of NS increases patient mortality, worsens assistance quality, reduces patient safety, increases adverse events, worsens professionals' health, and generates dissatisfaction at work. An adequate workforce is associated with better outcomes for patients and professionals⁽⁵⁾.

NS adapts nurses regarding the human resources necessary to perform Nursing assistance; however, the professional daily challenge is to show the achievement of this number of professionals and its maintenance in an inpatient care unit⁽⁴⁾. In view of the importance of NS evidenced in the studies^(1,4-7) and of the work overload daily experienced in the Brazilian Nursing practice associated with the increase in the complexity and demands of surgical patients' care, it was decided to study NS in an inpatient surgical care unit (ISU).

It is believed that NS is essential for patient safety, considering that it is a tool to adjust the staffing according to the patients' dependence level. Therefore, this study aims at analyzing the Nursing staffing of an inpatient surgical care unit according to the patients' dependence level.

METHOD

An exploratory-descriptive and quantitative study carried out in an ISU of a university hospital in southern Brazil, which had 30 mixed hospital beds distributed in 12 rooms, serving surgical and medical specialties.

The population was calculated by estimating the mean of patients hospitalized from September to November 2018. The size sample was calculated using WINPEPI/version 1.65, resulting in 175 participants with a standard deviation of 10, a sampling error of 1.5%, a confidence level of 95%, and a 10% addition for possible losses and refusals.

196 participants accepted to participate in the study, with 920 classification scripts of the dependence level being completed. Of the 196 participants, 128 agreed to have their data used for clinical characterization. The inclusion criterion was being hospitalized in the ISU during the data collection period, and the exclusion criterion was being under 18 years old.

Data collection was carried out daily between March and May 2019 in the day shift, totaling 38 days. Collection was carried out by a research team composed of a graduate student in the area, a professor nurse of a graduation course focused on the surgical theme, and undergraduates (scholarship students).

Data collection was based on diverse information obtained from the patients and complemented with medical records, using three instruments composed of closed questions as script; the first to identify the patients' characteristics, the second to classify their dependence level, and the third to identify the daily staffing of Nursing professionals.

The authors of the study elaborated the following two instruments: Script to Characterize the Patient and Script to Assess the Daily Staffing of Nursing Professionals. In order to assess the dependence level, Fugulin's Script for the Classification of Patients' Dependence was used⁽⁸⁾.

The "Script to Characterize the Patient" surveyed the following: age, gender, schooling, occupation, comorbidities, reason for hospitalization, and medical specialty. The "Script to Assess the Daily Staffing of Nursing Professionals" verified professional category (Nurse, Nursing Technician, Nursing Assistant) and work shift (morning/afternoon/night) in the Occurrence Records of the ISU and in the service scale.

The "Script for the Classification of Patients' Dependence" identified the total of hospital beds occupied and the patients' classification according to their dependence level. Fugulin's PCS assesses the dependence level based on the following care areas: mental condition, oxygenation, vital signs, motility, walking, feeding, body care, elimination, and therapeutic; attributing values from one (lowest) to four (highest) according to their dependence level. After each score was established, the values were added to calculate the total score, classifying them as minimal care (MC) when it ranged from nine to 14 points, as intermediate care (IC) from 15 to 23 points, as semi-intensive care (SIC) from 24 to 31 points, and as intensive care (ItC) when over 31 points.

The following values were used to calculate NS: Total of Nursing Hours (TNH), Days of the Week (DW), Weekly Working Hours (WWH), Technical Safety Index (TSI), Marinho's Constant in Uninterrupted Assistance Unit (KMUAU), and Staffing for the Inpatient Unit (SIU).

All the data were organized in Excel® 2010 tables and analyzed based on simple descriptive analysis. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline, which contains 22 verification items with recommendations that should be included for a more precise and complete description of

the study, was used as research guide⁽⁹⁾.

The study is one of the results of the macro-project entitled: "Occurrence of adverse events and staffing: An exploratory study", approved by the Committee of Ethics and Research with Human Beings of the Federal University of Santa Catarina, under opinion No. 2,963,637.

RESULTS

Clinical Characterization of the Patients

The age of the participants varied from 19 to 84 years old, with a mean of 56.1, predominance of the male gender with 74 (57.8%) men; 50 (39.1%) with incomplete elementary school, 30 (23.4%) with complete elementary school, 21 (16.4%) with complete high school, 11 (8.6%) with complete higher education, eight (6.3%) with incomplete high school, six (4.7%) with incomplete higher education, and two (1.6%) being illiterate. In addition to 47 (36.7%) retirees, 44 (34.4%) employees, 19 (14.8%) self-employed individuals, 12 (9.4%) housewives, three (2.3%) students, and three (2.3%) unemployed people.

Regarding the health-disease condition, 88 (68.75%) had some underlying disease and 40 (31.25%) did not have any comorbidities. Of the underlying diseases, 31 (35.22%) had Systemic Arterial Hypertension associated with Diabetes Mellitus; 29 (7.95%), Diabetes Mellitus; nine (10.22%), obesity; seven (7.95%), Diabetes Mellitus; seven (7.95%), Congestive Heart Failure; and nine (10.22%), other comorbidities (hypothyroidism, Parkinson, Chronic Obstructive Pulmonary Disease).

A total of 111 (86.7%) participants were hospitalized for surgery, 10 (7.8%) for clinical treatment, and seven (5.5%) for clinical research. The distribution of the participants among the specialties was the following: vascular, 36 (28.10%); digestive tract, 15 (11.70%); proctology, 14 (10.90%); plastic surgery, 10 (7.80%); urology, nine (7.00%); head and neck, six (4.70%); hepatology, five (3.90%); others (oral and maxillo, thoracic, otorhinolaryngology), five (3.90%); and medical clinic (oncology, palliative), four (3.10%).

Staffing and Daily Number of Nursing Professionals

A difference is observed between the number of professionals assigned to the ISU and the number of professionals active in the assistance, considering maternity leaves, sick leaves, or vacations. In addition to that, during May there was the hiring of a nurse and of two Nursing technicians that were not yet completely performing assistance, as well as the presence of four Nursing undergraduate students serving mandatory supervised internships and a nurse of the Multi-professional Integrated Residency in Health program under the supervision of nurses in the morning and afternoon periods. The staff of Nursing workers in the ISU is shown in Table 1.

Table 1 – Number of Nursing workers by months. Florianópolis, SC, Brazil, 2019

	Number of Professionals				Technical Safety Index		
	PS		AP		AR	RAB	TSI
	Enf	T/A Enf.	Enf	T/A Enf.			
March	9	25	7	23	3,6	4	7,6
April	9	25	7	21	2,9	9,3	12,2
May	20	27	7	22	2,7	6,7	9,4
Mean	9,3	25,6	7	22	3,1	6,7	9,8

Key: PS - Professionals' Staffing; AP - Active Professionals; Nur. - Nurses; Nur. T/A - Nursing Technicians or Assistants; AR - Absenteeism Rate; RAB - Rate of Absence due to Benefits; TSI - Technical Safety Index.

Source: The authors (2020).

Patients' Dependence Level

In the data collection period, the number of hospital beds occupied varied from 20 to 28 and the unit did not reach its maximum capacity on any day. The most prevalent numbers of hospital beds occupied were 23 (18.40%), 25 (21.10%), and 26 (18.40%), reaching a mean of 24.08. There was a mean occupancy rate of 80.26%, varying from 66.66% to 93.33%, with a prevalence of 83.33%.

The dependence level varied from MC to SIC and no patient was classified as ItC. The number of patients classified as MC varied from 11 to 25 a day; as IC, from one to 16 a day; and as SIC, from zero to two patients a day. Those classified as MC had a prevalence of 36 days (94.74%); and those classified as IC, of two days (5.26%), reaching a total of 639 (16.81%) patients in MC, 259 (6.81%) in IC, and 22 (0.58%) in SIC.

Staffing of Nursing Professionals

The TNH calculation was based on the classification of the patients' dependence level as MC, IC, SIC, and ItC, resulting in a total of 113.90 Nursing hours. KMUAU is based on NS as seven complete days in uninterrupted assistance units.

The WWH of the nurses was 30 or 36 hours/weeks; and that of the Nursing technicians/Nursing assistants, 30, 36, or 40 hours/week. Considering the approximate number of professionals with workloads of 30h/week and 36h/week, it was decided to calculate both variables, resulting in a KMUAU (30h) of 0.2683 and a KMUAU (36h) of 0.2236, respectively.

From the outcomes of the TNH and KM variables, the Staffing (S) was obtained, reaching a value of 30.5593 for 30h/week and of 25.4680 for 36h/week. For inpatient units, it is recommended to calculate SIU based on the PCS and on TSI, where this TSI value cannot be below 15%. Therefore, a value of 15% (0.15) was used as a standard for the TSI calculations shown in Table 1. A total SIU of 30.5513 was reached for 30h/week, and of 25.4558 for 36h/week.

The percentage distribution of the total Nursing staffing and the PCS result must be 33% of nurses and 67% of Nursing technicians/Nursing assistants for MC and IC. Considering the data previously highlighted, with an S of 30.5 for 30-hour workload and an S of 25.4 for 36-hour workload, reference values from 8.38 to 10.06 nurses and from 17.01 to 20.43 Nursing technicians/Nursing assistants were obtained for staffing.

DISCUSSION

NS by means PCS is essential to identify its number, and it should be continuously applied in the health institutions to attain repercussions in assistance^(4,6,10). In view of the care demands presented by patients, NS has been discussed in institutions to allocate professionals, focusing on the improvement in patient safety, on the reduction of the possible complications related to health care, and on the decrease of hospital costs⁽¹¹⁾.

National and international bibliographical reviews reinforce the importance of NS for qualified assistance in different Nursing areas, and highlight understaffing of professionals, pointing out that lack of workers compromises assistance, overloads work, and favors stress as well as the occurrence of errors and adverse events^(1,4-6).

National studies in SIU evidenced that 29.08% of the patients were classified as MC and 37.5% as IC⁽¹²⁾, just as in another study showing the relevance of 48.2% of patients classified as IC and 37.6% as MC⁽¹³⁾. A prevalence of patients in MC and IC in SIU^(7,12-13) is verified, corroborating this study.

Despite the fact that patients in MC require fewer working hours from the Nursing professionals, it is also important to note other demands, such as medication preparation/administration, follow-up in examinations, referral to procedures, and Nursing guidelines that require support and assistance time, aspects that were not considered by the PCS used.

No patients were classified as ItC, since they are referred to the Intensive Care Units (ICUs). It is highlighted that the patients in SIC were in a low index; however, they require constant monitoring, qualified human resources, and technological resources not available in an SIU. Therefore, the presence of participants in SIC can be justified by the recent discharge of patients from the ICU or by the lack of a semi-intensive unit in the institution^(6,12-13).

The SIU of this study has an adequate NS according to what is recommended by the Federal Nursing Council (*Conselho Federal de Enfermagem*, COFEN) regarding the Nursing hours per patient/24 hours and the distribution of professionals according to the PCS⁽³⁾. A recent study carried out in an SIU of a university hospital in southern Brazil corroborates this result⁽⁷⁾.

Despite the adjustment of the professionals' staffing to Resolution 543/2017⁽³⁾ when this number oscillates downwards, it generates work overload and increases the occurrence of adverse events, compromising patient safety⁽⁷⁾.

Fugulin's PCS is one of the five instruments suggested by the COFEN^(3,8). However, this instrument was created to be implemented in a medical clinic unit and, for this reason, it does not fully meet the patients' characteristics of other inpatient units, such as in the surgical unit.

The characteristic of the surgical patients are little studied because they are normally hospitalized as independent, evolving in the immediate post-operative period to dependent, and becoming gradually semi-independent until acquiring their independence again. A common situation in an SIU is having patients with a surgical wound or wounds of other origin, requiring Nursing care not contemplated by the PCS. In addition to the dressing, Nursing care related to drains/stomas are not included in the assessment items.

Care actions related to dressings can be verified in the study SIU, as most of the patients are hospitalized for a vascular surgical procedure and have extensive injuries and amputations derived from multiple comorbidities, mainly from the association of underlying diseases such as diabetes and hypertension, present in most of the participants.

Proctology patients with an indication for colo/ileostomy, of neck and head surgeries with tracheotomy, and those with burns under the care of the plastic surgery team also require specific and complex care. All these working areas are classified by the National Council of the Health Secretariat as medium to high complexity care, including assistance to oncology and palliative patients, also identified in fewer numbers in the study⁽¹⁴⁾.

Therefore, the classification of dependence generated as minimal and intermediate care for these patients can be under-identified, since relevant aspects are not addressed. The classification adapted by Santos could present another result, as it includes other items such as skin-mucosal integrity/tissue impairment, frequency of dressing changes, and time used in the dressings⁽¹⁵⁾. Extensive dressings, such as the vascular ones, may require direct assistance time not contemplated by the application of Fugulin's instrument⁽⁸⁾. It is noted that none of the five instruments suggested by the COFEN encompasses these aspects⁽³⁾.

In addition to that, it is to be considered that this is a university hospital, involving the presence of undergraduate and graduate students (*lato sensu* and *stricto sensu*) in the inpatient units. This makes that assistance nurses, in addition to all their activities, develop a tutor role, an aspect not considered in the total workload by the COFEN⁽³⁾. The study shows a challenge caused by this double activity of assistance nurses, as it causes work overload and lack of time, which can be correlated with lack of training of the tutors, physical structure limitations, and lack of human and material resources⁽¹⁶⁾.

Important aspects are pointed out about the TNH calculation considered by the COFEN⁽³⁾, as it only includes technical procedures, not taking into account other activities of nurses' responsibility such as: assistance planning, educational, administrative, and bureaucratic actions including trainings, team meetings, guidelines to patient/family, education in health, and uni- or multi-professional pre-operative visit⁽¹⁷⁾.

These nurses' competences are extremely important, since it is necessary to identify the patients' and family members' needs, seeking to develop guidance activities that minimize doubts, fears, anxieties and anguishes, and which are often not concentrated on physiological and technical questions of the surgical procedure but on diverse information regarding recovery and family and socioeconomic re(structuring)⁽¹⁸⁾.

Factors such as the clinical condition of the patients can interfere with the work overload of the professionals as, currently, due to the increasing number of aged individuals and the advances in surgical technology, new challenges are present in the professionals' work and, consequently, there is a higher work demand⁽¹⁾.

Studies on SIU, such as the one of 2007 in a university hospital of Rio Grande do Sul, match the clinical characterization identified in the participants of this study, in which most of the patients are male with their mean age falling in the adult age group, over 55 years old⁽¹⁹⁾, as researched in 2016 in general hospitals of Minas Gerais, with a prevalence of married patients and elementary schooling⁽²⁰⁾.

It is noted that, despite the classification of patients in the adult age group, the predominance fluctuates between the adult and old adult age groups, with the majority being retirees. This factor can be related to the multiple comorbidities and impairments caused by the current disease, underlying diseases, or previous history of other diseases, which makes it possible to infer that these patients are previously disabled and impaired in some functions. It can also be the result of the natural aging process that creates limitations that can be intensified with hospitalization. Such situation is verified when remembering that the patients' age is not measured in the PCS instruments⁽²¹⁾. Just like schooling can also interfere with the understanding of the health-disease process and with the difficulty in complying with the guidelines, requiring more time to go over assistance services already performed, causing professional wear down⁽²¹⁾.

It is important that the nurse responsible for NS assesses the situational environment and observes other factors that may interfere with the professional practice. Despite the

resolution being updated, other factors that can interfere with the professional practice are not assessed in the NS calculation and in the classification of dependence but need to be taken into consideration, since the active participation of the professionals in the practice and the complex and subjective care condition cannot be limited only to stages of this NS method.

The study limitations are the lack of PCSs exclusively directed to patients in surgical health conditions, the research being conducted in a short period of time, as well as the fact it was carried out in the SIU of a single university hospital, precluding the expansion of the sample and of the results obtained by means of this data collection, It is suggested to conduct studies in more than one inpatient unit, making it possible to compare different realities and contemplating the specificities of surgical patients in university hospitals.

CONCLUSION

The study identified that the NS of an SIU for adults is in compliance with the dependence level of their inpatients. There was predominance of participants in minimal care, followed by intermediate care, resulting in an NS in accordance with what is recommended by the COFEN.

The study evidences the direct relation of NS for management, education and assistance, showing that an adequate NS contributes to the quality of the service and to patient safety. By being applied to surgical patients, the PCS shows weaknesses that need to be reviewed, emphasizing the need to elaborate and validate new PCS instruments according to the dependence level that specifically consider the characteristics of surgical patients, extensively including the nurses' responsibilities in an SIU.

The study represents a contribution to the academic and scientific area, disseminating diverse information relevant to the knowledge of Nursing professionals that provide care to surgical patients, by performing NS and by reflecting on the peculiarities existing in surgical patients that must be taken into consideration when assessing and applying NS calculations, pointing out that more studies should focus on this area.

REFERENCES

1. Malley A, Kenner C, Kim T, Blakeney B. The role of the nurse and the preoperative assessment in patient transitions. *AORN J.* [Internet]. 2015 [accessed 20 jul 2019]; 102(2). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4547842/>.
2. Bruckenthal P, Simpson MH. The role of the perioperative nurse in improving surgical patients' clinical outcomes and satisfaction: beyond medication. *AORN J.* [Internet]. 2016 [accessed 10 jun 2019]; 104(6S). Available from: <https://www.ncbi.nlm.nih.gov/pubmed/27884219>.
3. Conselho Federal de Enfermagem. Resolução n. 543, de 18 abril 2017. Estabelece os parâmetros mínimos para dimensionar o quantitativo de profissionais das diferentes categorias de enfermagem para os serviços/locais em que são realizadas atividades de enfermagem. Rio de Janeiro: COFEN; 2017.
4. Braga DCD, Selow MLC. The relevance of nursing staff scaling for quality in patient care: a literature review. *Vitrine Prod. Acad.* [Internet]. 2016 [accessed 27 abr 2020]; 4(2). Available from: <https://docplayer.com.br/72060910-li-producao-de-alunos-do-programa-de-pos-graduacao-artigos-cientificos.html>.

5. Aiken LH, Sloane D, Griffiths P, Rafferty AM, Bruyneel L, McHugh M, et al. Nursing skill mix in European hospitals: cross-sectional study of the association with mortality, patient ratings, and quality of care. *BMJ Qual Saf.* [Internet]. 2017 [accessed 20 jul 2019]; 26. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5477662/pdf/bmjqs-2016-005567.pdf>.
6. Girardi C, Feldhaus C, Oliveira JLC de, Schran L da S, Luz MP da, Tonini NS, et al. Sizing of nursing staff in hospital emergency room. *Rev. Adm. Saúde.* [Internet]. 2018 [accessed 11 jul 2019]; 18(71). Available from: <http://dx.doi.org/10.23973/ras.71.95>.
7. Sell BT, Amante LN, Martins T, Sell CT, Senna CVA, Loccioni MFL. Dimensionamento dos profissionais de enfermagem e a ocorrência de eventos adversos em internação cirúrgica. *Ciênc. cuid. saúde.* [Internet]. 2018 [accessed 20 jul 2019]; 17(1). Available from: https://www.researchgate.net/publication/324710463_Dimensionamento_dos_profissionais_de_enfermagem_e_a_ocorrenda_de_eventos_adversos_em_internacao_cirurgica1_Dimensioning_of_nursing_professionals_and_the_occurrence_of_adverse_events_on_surgical_admis.
8. Fugulin FMT. Dimensionamento de pessoal de enfermagem: avaliação do quadro de pessoal das unidades de internação de um hospital de ensino. [tese]. São Paulo (SP): Escola de Enfermagem/USP; 2002.
9. Malta M, Cardoso LO, Bastos FI, Magnanini MMF, Silva CMFP da. Iniciativa SROBE: subsídios para a comunicação de estudos observacionais. *Rev Saúde Pública.* [Internet]. 2010 [accessed 08 jul 2020]; 44(3). Available from: scielo.br/pdf/rsp/v44n3/21.pdf.
10. Vandresen L, Pires DEP de, Lorenzetti J, Andrade SR de. Classification of patients and nursing staff's sizing: contributions of a management technology. *Rev. Gaúcha enferm.* [Internet]. 2018 [accessed 11 jul 2019]; 39. Available from: <http://www.scielo.br/pdf/rgenf/v39/1983-1447-rgenf-39-e2017-0107.pdf>.
11. Batassini E, Silveira JT da, Cardoso PC, Castro DE, Hohegger T, Vieira DFVB, et al. Nursing Activities Score: what is the ideal periodicity for assessing workload? *Acta Paul. Enferm.* [Internet]. 2019 [accessed 22 out 2019]; 32(2). Available from: http://www.scielo.br/pdf/ape/v32n2/en_1982-0194-ape-32-02-0162.pdf.
12. Araújo MT, Henriques AVB, Velloso C, Queiroz CF de, Santos AMR dos. Staff dimensioning of a hospital surgical unit. *Rev. Gest Saúde.* [Internet]. 2016 [accessed 22 out 2019]; 7(2). Available from: https://www.researchgate.net/publication/317409357_Dimensionamento_de_pessoal_de_uma_unidade_de_internacao_cirurgica.
13. Gelbcke FL, Souza AP de, Cunha B, Santos JLG dos. Dependency levels in hospitalized patients in surgical units of a university hospital. *Enferm. glob.* [Internet]. 2018 [accessed 14 jul 2019]; 52. Available from: http://scielo.isciii.es/pdf/eg/v17n52/en_1695-6141-eg-17-52-550.pdf.
14. Conselho Nacional de Secretários de Saúde (CONASS). Assistência de Média e Alta Complexidade no SUS. Conselho Nacional de Secretários de Saúde. [Internet]. Brasília: CONASS; 2011. [accessed 10 jul 2019]; Available from: <https://livroaberto.ibict.br/handle/1/619>.
15. Santos F dos, Rogenski NMB, Baptista CMC, Fugulin FMT. Patient classification system: a proposal to complement the instrument by Fugulin et al. *Rev. Latino-am. enferm.* [Internet]. 2007 [accessed 11 jul 2019]; 15(5). Available from: <http://www.scielo.br/pdf/rlae/v15n5/v15n5a14.pdf>.
16. Araújo TAM de, Vasconcelos ACCP de, Pessoa TRRF, Forte FDS. Multiprofessionality and interprofessionality in a hospital residence: preceptors and residents' view. *Interface (Botucatu)* [Internet]. 2017 [accessed 14 jul 2019]; 21(62). Available from: <https://doi.org/10.1590/1807-57622016.0295>.
17. Fakh FT, Carmagnani MIS, Cunha ICKO. Nursing personnel downsizing in a teaching hospital. *Rev. bras. enferm* [Internet]. 2006 [accessed 22 out 2019]; 59(2). Available from: <http://www.scielo.br/pdf/reben/v59n2/a12.pdf>.
18. Böck A, Nietzsche EA, Terra MG, Cassenote LG, Wild CF, Salbego C. Ações educativas desenvolvidas no período perioperatório em um hospital universitário: percepção de pacientes cirúrgicos. *Rev. enferm. UFSM.* [Internet]. 2019 [accessed 22 out 2019]; 9. Available from: <https://periodicos.ufsm.br/reufsm/>

[article/view/34760](#).

19. Munhoz OL, Andolhe R, Magnago TSB de S, Dalmolin G de L, Passa TS. Profile of patients and incidents in a surgical clinic unit. *Rev. enferm. UFPE*. [Internet]. 2018 [accessed 20 jul 2019]; 12(2). Available from: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/viewFile/230813/27847>.
20. Gomes LL, Volpe FM. The profile of clinical and surgical admissions to the general hospitals of the FHEMIG network. *Rev. méd. Minas Gerais*. [Internet]. 2018 [accessed 22 out 2019]; 28(supl.5). Available from: <http://rmmg.org/artigo/detalhes/2445>.
21. Araújo MT, Velloso ISC, Queiroz CF de, Henriques AVB. The dimension of the nursing staff of a medical unit. *Rev. enferm. Cent.-Oeste Min.* [Internet]. 2016 [accessed 12 jul 2019]; 6(2). Available from: <http://www.seer.ufsj.edu.br/index.php/recom/article/view/971>.

HOW TO REFERENCE THIS ARTICLE:

Vicente C, Amante LN, Sebold LF, Girondi JBR, Martins T, Salum NC *et al.* Nursing staffing in a surgical hospitalization unit: a descriptive study. *Cogitare enferm*. [Internet]. 2021 [accessed "insert day, month and year"]; 26. Available from: <http://dx.doi.org/10.5380/ce.v26i0.72640>.

Received: 02/04/2020

Approved: 18/09/2020

Corresponding author:

Camila Vicente

Secretaria Municipal de Saúde da Prefeitura Municipal de Palhoça – Palhoça, SC, Brasil

E-mail: camilavicente.enf@gmail.com

Role of Authors:

Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - CV

Drafting the work or revising it critically for important intellectual content - CV, LNA, LFS, JBRG, TM, NCS, ARCRM

Final approval of the version to be published - CV, LNA, LFS, JBRG, TM, NCS, ARCRM

Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - LNA



Copyright © 2021 This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original article is properly cited.