



ORIGINALES

Dependency levels in hospitalized patients in surgical units of a university hospital

Grau de dependência de pacientes internados em unidades cirúrgicas de um hospital universitário

Grado de dependencia de los pacientes en unidades quirúrgicas de un hospital universitario

Francine Lima Gelbcke¹

Ana Paula de Souza²

Bruna Cunha²

José Luís Guedes dos Santos³

¹RN. Associate Professor of the Department of Nursing at the Federal University of Santa Catarina. Florianópolis/SC, Brazil.

²Nursing Student. Federal University of Santa Catarina. Florianópolis/SC, Brazil.

³RN. Assistant Professor of the Department of Nursing at the Federal University of Santa Catarina. Florianópolis/SC, Brazil.

E-mail: francine.lima@ufsc.br.

<http://dx.doi.org/10.6018/eglobal.17.4.303011>

Received: 3/09/2017

Accepted: 18/10/2017

ABSTRACT:

Objective: To identify the dependency levels of hospitalized patients in surgical clinical units.

Method: It is a cross-sectional study. A total of 5,083 evaluations were performed through the User Dependency Evaluation Tool between May and October 2015, totaling 120 days of collection in two surgical hospitalization units of a university hospital in the southern region of Brazil. The User Dependency Evaluation Tool is a new Patient Classification System developed in Brazil to assess the patients' dependency levels and the demand of the nursing team.

Results: It was evidenced that in 2,452 (48.2%) of the evaluations the patients required intermediate care, followed by 1,913 (37.6%) requiring minimal care, 652 (12.9%) requiring high dependency care and 59 (1.1%) requiring semi-intensive care. No patients were classified as requiring intensive care.

Conclusion: The results identified the degree of patient dependency in relation to nursing care, providing support to the management practice in nursing, especially for staff dimensioning in surgical units.

Key words: Nursing evaluation; Classification; Security management; Nursing human resources.

RESUMO:

Objetivo: identificar o grau de dependência de pacientes internados em unidades de clínica cirúrgica.

Método: Trata-se de um estudo transversal. Foram realizadas 5.083 avaliações por meio do Instrumento de Avaliação do Grau de Dependência dos Usuários (GDU), entre maio e outubro de 2015,

totalizando 120 dias de coleta em duas unidades de internação cirúrgica de um hospital universitário da região sul do Brasil.

Resultados: Evidenciou-se que em 2.452 (48,2%) das avaliações os pacientes necessitaram de cuidados intermediários, seguidos de 1.913 (37,6%) de cuidados mínimos, 652 (12,9%) de cuidados de alta dependência e 59 (1,1%) de cuidados semi-intensivos. Não foram classificados pacientes como de cuidados intensivos.

Conclusão: Os resultados permitiram identificar o grau de dependência dos pacientes em relação ao cuidado de enfermagem, fornecendo subsídios para a prática gerencial em enfermagem, especialmente para o dimensionamento de pessoal em unidades cirúrgicas.

Palavras-chave: Avaliação em enfermagem; Classificação; Gestão da segurança; Recursos humanos de enfermagem.

RESUMEN:

Objetivo: Identificar el grado de dependencia de pacientes internados en unidades de clínica quirúrgica.

Método: Se trata de un estudio transversal. Se realizaron 5.083 evaluaciones a través del Instrumento de Evaluación del Grado de Dependencia de los Usuarios (GDU), entre mayo y octubre de 2015, totalizando 120 días de recolección en dos unidades de internación quirúrgica de un hospital universitario de la región Sur de Brasil.

Resultados: Se evidenció que en 2.452 (48,2%) de las evaluaciones los pacientes necesitaron cuidados intermedios, seguidos de 1.913 (37,6%) de cuidados mínimos, 652 (12,9%) de cuidados de alta dependencia y 59 (1,1%) de cuidados semi-intensivos. No se han clasificado pacientes como de cuidados intensivos.

Conclusiones: Los resultados permitieron identificar el grado de dependencia de los pacientes en relación al cuidado de enfermería, proporcionando subsidios para la práctica gerencial en enfermería, especialmente para el dimensionamiento de personal en unidades quirúrgicas.

Palabras clave: Evaluación en Enfermería; Clasificación; Gestión de la Seguridad; Personal de Enfermería.

INTRODUCTION

In the context of nursing management, staff dimensioning has gained increasing importance for the planning of care actions aimed at patient safety and quality of care in health institutions⁽¹⁾. In addition, it also aides cost management, better utilization of location and human resources, ensuring greater effectiveness and nursing team productivity⁽²⁾.

The use of a Patient Classification System (PCS) is one of the main strategies for adequate staff quantification planning⁽³⁾. The PCS identifies the nursing care demands of the patients, allowing the workload of the team and its quantitative-qualitative adjustment to be monitored, when necessary. Based on these data, nurses can also characterize the patients' care profile and readjust their allocation in the units⁽⁴⁾. In Brazil, the importance of PCS implementation in professional practice was recognized by the Federal Nursing Council (COFEN) through Resolution 293/04⁽⁵⁾ and updated by Resolution 527/16⁽⁶⁾, which establishes the minimum parameters for nursing staff dimensioning.

Among the PCSs used in Brazil, the tool called "Level of Dependency of Users" was elaborated in 2012 by the Laboratory for Research on Work, Ethics, Health and Nursing (*Laboratório de Pesquisa sobre Trabalho, Ética, Saúde e Enfermagem – PRÁXIS*) in the Federal University of Santa Catarina, Brazil⁽⁷⁾. The instrument Level of Dependency of Users was adapted from Fugulin's instrument⁽⁸⁾, resulting from the identification of the need to include other factors which interfere with nursing care, such as cutaneous mucosal integrity, education / communication, sleep and rest, emotional security, sensory organ perceptions, as well as caring for the family⁷.

In recent years, there has been a growing scientific production on care complexity and patient care demands in relation to nursing^(1-4,9-11). However there are no studies in the literature regarding the demand of the nursing team based on the Level of Dependency of Users. In addition, the analysis of patient dependence level is a constant demand from health institutions, especially considering the particularities of each professional nursing practice context.

The surgical hospitalization units are the places where the necessary services are provided to people with health needs who require hospital admission. Therefore, they are relevant and determinant scenario of health care aimed at the population¹². Specifically in relation to the hospital context of this study, the surgical units underwent recent changes in the patient care complexity profile. One of the units started attending patients who had bariatric surgery, neurological surgery for the correction of epilepsy and liver transplantation. The other unit started to receive patients from the medical clinic, as well as the patients from the surgical clinic.

Thus, it became necessary to classify patients according to the level of care complexity, both to assess the demand for nursing staff to perform the care and to identify other aspects of care demands that vary according to the seasonality and complexity of care that these patients require. Thus, this study questions: what is the level of dependence for patients hospitalized in the surgical clinic units of a university hospital?

Based on the presented panorama, the objective of the research was to identify the level of dependence of patients from clinical surgical units of a university hospital.

MATERIAL AND METHOD

This is a descriptive-exploratory study with a quantitative approach. The research area included two surgical hospitalization units in the University Hospital of the Federal University of Santa Catarina, Florianópolis, Brazil, which are identified as Unit A and Unit B. The units care for patients of both sexes, who are hospitalized for treatment through the Brazilian Unified Health System (SUS).

The Unit A has 30 beds and is characterized as a general surgery unit, which also serves medical specialties such as: liver transplantation, neurosurgery, thoracic surgery, head and neck, and maxillofacial, as a specialty of dentistry. The nursing team consists of 30 professionals, of whom include 8 nurses and 22 nursing technicians or nursing assistants. The Unit B also has 30 beds which provides care for patients in four specialties: vascular surgery, plastic surgery, urological surgery and proctological surgery. In addition, it cares for patients with clinical pathologies, mainly related to neoplasias, digestive, respiratory and neurological diseases. For these services, it counts on 31 nursing professionals, consisting of 8 nurses, 20 nursing technicians or nursing auxiliaries and 3 nursing assistants. Data collection was performed between May and October 2015, totaling 120 days of collection in each of the units. Thus, an intentional sample of 5083 evaluations was obtained. The collections were carried out by two nursing students, who had already developed practical activities in the surgical units, having been trained to do so and under the supervision of the extension project team titled: "Evaluation of the user dependence level: validation and improvement of a computerized instrument".

Data were obtained through consultations with the patient's chart and direct observation, i.e. from the evaluation of the patient's care needs. The evaluations were carried out daily from Monday to Friday, except public holidays, with all the patients of

the unit and referred to the 24 hours of the previous day, except for those who, at the time of data collection, were in exams or surgical procedures or other out-of-unit procedures. It is emphasized that, according to the length of stay, the same patient was evaluated more than once in the period of data collection.

In the data collection, the evaluation instrument the Level of Dependency of Users⁽⁷⁾ was used, which is constituted of 16 evaluation indicators, including: mental state (neurological regulation), perception of sensory organs, oxygenation therapy, hormonal regulation, food, water intake, elimination/vomiting/drainage, vital signs/central venous pressure/mean arterial pressure, ambulation, mobility, body care, cutaneous and mucosal integrity, sleep and rest, emotional safety, and family, companion. Each score indicator has a score range from 1 (lowest score) to 5 (highest score). From this classification, a minimum score of 16 points and maximum of 80 can be obtained, and the patient is classified according to the following scores: minimal care (MC): 16 to 26 point, intermediate care (IC): 27 to 37 points, high-dependency care (HDC): 38 to 48 points, semi-intensive care (SIC): 49 to 59 points, intensive care (IC): up 59 points. The content validation of the instrument was carried out in 2015⁽¹³⁾.

The data collected was charted and recorded using the Microsoft Office Excel® program and analyzed by simple percentages. The results were presented in tables with the absolute and relative frequency calculations. In addition to the data collection with the GDU, the reports and statistical bulletins related to the hospital movement were also consulted. These sources were used to identify the occupancy rate of the beds and the average length of stay of the patients in the two units where the study was developed.

From the data related to the classification of patients, the personnel was calculated from the two units. The formula recommended by the Federal Nursing Council in Brazil⁽⁶⁾ was used, in which the nursing hours are determined by means of the classification of patients, application of the technical safety index and weekly hours worked for the definition of the constant of Marinho. The constant of Marinho is a constant number defined by a scholar Brazilian and applied in the personnel sizing, by recommendation of the Federal Nursing Council.

The study was approved by the Ethics Committee, and registered on the National Information System on Ethics in Research: CAAE n° 39820314.0.0000.0110.

RESULTS

During the data collection period, the bed occupancy rate in the Unit A was 79.5% and the mean length of stay of the patients was 5.56 days, with the Unit B showing a bed occupancy rate of 74.9% and the mean patient stay of 6.23 days. In relation to the classification of dependence level, the predominance of patients in minimal care (n=1192; 49.4%) in Unit A and in intermediate care (n=1426; 53.4%) in Unit B was obtained. The complete classification of patient dependence level in the units is presented in Table 1.

Table 1– Classification of patient dependence level. Florianópolis (SC), 2015.

| Category | Unit A (n=2413) | | Unit B (n = 2670) | | Total (n = 5083) | |
|----------------------|--------------------|------|----------------------|------|---------------------|------|
| | n | % | n | % | n | % |
| Minimal care | 1192 | 49,4 | 721 | 27,0 | 1913 | 37,6 |
| Intermediate care | 1026 | 42,5 | 1426 | 53,4 | 2452 | 48,2 |
| High dependency care | 189 | 7,8 | 470 | 17,6 | 659 | 12,9 |
| Semi-intensive care | 6 | 0,2 | 53 | 1,9 | 59 | 1,1 |
| Intensive care | - | - | - | - | - | - |

The majority of users throughout all months of data collection who were cared for at Unit B consisted of patients requiring intermediate care. In Unit A, where patients predominate in minimal care, it was observed that in July most of the patients required intermediate care (n=210; 56%) from the nursing team. Table 2 presents the classification of users over the months that covered the period of data collection in the units.

Table 2 – Classification of users over the months that covered the period of data collection. Florianópolis (SC), 2015.

| Type Unit | MC* | | SIC* | | HDC* | | SIC* | |
|--------------|-----------|-----------|-----------|-----------|---------|-----------|--------|---------|
| | A | B | A | B | A | B | A | B |
| Month | N(%) | N(%) | N(%) | N(%) | N(%) | N(%) | N(%) | N(%) |
| May | 128(40,8) | 77(23,4) | 151(37,2) | 182(55,3) | 29(9,2) | 69(20,9) | 5(1,6) | 1(0,3) |
| June | 184(31,6) | 120(26,2) | 192(39,9) | 232(50,7) | 29(7,1) | 87(19) | - | 18(3,9) |
| July | 227(26,6) | 129(26,7) | 210(56) | 240(49,6) | 44(9,1) | 103(21,3) | - | 11(2,2) |
| Aug | 208(34,1) | 173(37,9) | 151(38,3) | 213(46,7) | 15(4) | 64(14) | 1(0,2) | 6(1,3) |
| Sept | 223(32,4) | 127(26,1) | 148(33,2) | 277(57,0) | 23(5,8) | 79(16,2) | - | 3(0,6) |
| Oct | 222(28,7) | 91(20,5) | 174(7,2) | 271(61,3) | 49(11) | 67(15,1) | - | 13(2,9) |
| Nov | - | 4(21,0) | - | 11(57,8) | - | 3(15,7) | - | 1(5,2) |

*MC = Minimal care; IC = Intermediate care; HDC = High dependency care; e, SIC = Semi-intensive care

From the data on the degree of dependence of the patients, the quantity of personnel of the two hospitalization units was defined. The formula recommended by Federal Nursing Council in Brazil⁽⁶⁾ was calculated from the calculation of Total Nursing Hours (TNE) and Constant of Marinho (KM), as shown in Table 1:

Table 1 - Formula for calculating staff dimensioning

Total Nursing hours (TNE) = (No. of Patients requiring Minimum Care x 4) + (No. Patients requiring Intermediate Care x 6) + (No. of Patients requiring High Dependency Care x 10) + (No. Patients requiring Semi-Intensive Care x 10).

Constant of Marinho (KM) = Days of the week x Technical Security Index (TSI) / Working day (WD).

Quantitative personnel = TNE x KM.

It should be noted that for the TSI definition, the absenteeism rate of around 20% and the 30-hour workweek were taken into account.

Based on the above formulation, a total of 30 workers (9 nurses and 21 nursing technicians) were identified for Unit A and a total of 40 workers (13 nurses and 27 nursing technicians) for Unit B were identified. The distribution of professionals considered the group of patients with the highest prevalence - minimum care in the Unit A and intermediate care in Unit B, as defined in Resolution 527/16⁽⁶⁾.

DISCUSSION

The patient classification systems allow to establish the relationship between the demand for patient care and the offer of care defined by the number of available workers aiming for quality patient care and safety. Brazilian studies on staff dimensioning have been carried out in recent years with varied focuses and objectives, mainly emphasizing the proposal of scale models⁽¹⁴⁾, literature review⁽¹⁵⁾ and evaluation of several services using existing scales such as Fugulin, from Perroca, the *Nursing Activities Score*, the *Therapeutic Intervention Scoring System* (TISS - 28), among others^(3,9,15,16).

In this sense, the innovation of this study corresponds to the use of Level of Dependency of Users Tool, which is a validated instrument which extended the instrument proposed by Fugulin⁽⁷⁾. Thus, this is the first study conducted in Brazil using Level of Dependency of Users Tool to evaluate hospitalized patient dependence levels in surgical clinics. The results showed a higher concentration of patients requiring intermediate care, followed by minimal care, high dependency care and semi-intensive care.

This result is compatible with the characteristics of a university hospital, which receives and provides care to cases which range from simple to complex. Similarly, a study in surgical units using the Perroca instrument found a predominance of semi-intensive patients, followed by intermediate care, justifying these data as a function of the hospital's profile, which is characterized as highly complex⁽⁹⁾.

In relation to the surgical units in which the data were collected, the Unit A had the highest patient turnover (52.2%) in relation to Unit B (43.7%). This can be explained by the fact that in the Unit A patients are submitted to procedures that require short periods of hospitalization, such as patients admitted for thyroidectomy or appendectomy. Regarding the degree of dependence, the predominance of patients requiring minimal care (49.4%) in Unit A and a small number of patients in semi-intensive care (0.2%) were obtained. In Unit B, there was a predominance (53.4%) of patients requiring intermediate care. In addition, patients in semi-intensive care accounted for 1.99% of admissions, higher than in SHU-I.

The predominance of patients in intermediate care is related to the profile of the patients treated in the Unit B who obtained higher scores on the Level of Dependency of Users Tool for mobility, locomotion, body care and mucosal integrity. In this unit, the patients are submitted to procedures that require long periods of hospitalization and thus require more care from the nursing team, as in the case of vascular surgeries and treatment of large burns. In addition, the SHU-II also serves medical clinic patients, mostly elderly, who have a longer period of hospitalization.

A study carried out in an inpatient unit of a teaching hospital outside of São Paulo city in Brazil showed that 43.9% of the patients were 60 years old or older⁽¹⁷⁾. This portion of the population corresponded to 53% of the patients of a medical clinic unit in Brasília, Brazil⁽¹⁸⁾. In comparison to young patients, the elderly are at increased risk of complications, such as falling out of beds, urinary tract infections associated with bladder catheterization, adverse outcomes associated with the use of restraint, and

development of acute confusion. Therefore, the patient with these characteristics requires differentiated nursing care, as well as greater attention from the nursing team professionals^(19,20).

Reinforcing this line of thought, research carried out in a urological unit in a hospital in Spain pointed out that the level of dependence increases when patients are older⁽²¹⁾. Another study developed in a medical clinic unit of a Swiss university hospital showed that as care complexity increases, more nursing time is needed to perform patient care. In addition, a greater number of nurses contributes to patient safety⁽²²⁾.

Patients in semi-intensive care are usually bedridden and require bathing in bed, continuous O₂ use, enteral nutrition support, bladder catheter and drains, items that have a higher score on the classification instrument. It is expected that they represent a smaller number in surgical units, because after more complex surgical procedures patients go to the Intensive Care Unit, where they remain until their clinical and hemodynamic parameters are stabilized.

Regarding the degree of dependence, the predominance of patients requiring minimal care (49.4%) in Unit A and a small number of patients requiring semi-intensive care (0.2%) were obtained. In Unit B, the predominance of patients requiring intermediate care (53.4%) was found. In addition, patients requiring semi-intensive care accounted for 1.99% of admissions, higher than in the Unit A.

Another result that attracted attention was the number of patients requiring minimal care, referring to those awaiting surgery. These data corroborate the study findings using the Perroca instrument in surgical hospitalization units, in which the majority of patients were classified as requiring minimal care, and the level of complexity varied after performing the surgical procedure, later returning to minimal care⁽²³⁾.

Studies point out the need to establish the complexity profile of patient care in the unit so that the adequate number of workers can be estimated so that the team is not overworked^(1,2). The use of a systematized instrument helps to have a classification pattern in the daily follow-up of patients. In addition, classification tools allow us to identify changes in the complexity profile of hospitalized patients due to the seasonality of the pathologies or the increase in chronic diseases due to the aging process and changes in the population profile^(20,24).

Regarding the calculation of personnel, it is observed that the current number of Unit A workers, considering the occupation rate and the degree of complexity of the patients, is adequate. In the Unit B, there is an under-dimensioning of the team, which was defined mainly by the greater degree of complexity of the patients. The adequate number of nursing professionals is of extreme importance, as it guarantees the quality and safety of care.

Adequate nursing staff dimensioning is considered an incentive factor for excellent professional nursing performance. This issue should receive special attention on the part of managers, because the quality of customer service is directly linked to the employees' satisfaction, especially with regard to nursing staff, which work in direct contact with the patient in the hospital⁽²⁵⁾. Therefore, it is imperative that nursing managers and health organizations seek strategies to overcome the difficulties in allocating human, financial and technological resources for a service based on best practice⁽²⁶⁾.

The use of Level of Dependency of Users was adequate for the establishment of the assistance complexity profile, contributing to adequate staffing. Thus, the main contribution of this study is to provide scientific evidence for the planning of nursing

care and nursing staff/personnel dimensioning for the investigated area. The differences in the level of patient dependence of the two surgical units were already expected, given the specificities of the patients treated in each of them. However, until the development of this research, such differences were based only on the perception of nursing professionals and managers.

One limitation of the research was that data regarding sociodemographic characteristics and the pathology and/or reason for hospitalization were not collected. Thus, it is recommended that future investigations include these variables in order to test associations with care categories. Further studies are also needed to investigate the relationship between the number of nursing care hours for each category of care regarding safety and quality.

CONCLUSIONS

The present study contributed to knowledge regarding to the level of patient dependence from surgical hospitalization units of a university hospital. It was found that in 2,452 (48.2%) of the evaluations the patients required intermediate care, followed by 1,913 (37.6%) minimal care, 652 (12.9%) high dependency care and 59 (1,1%) semi-intensive care. Patients with this degree of complexity were usually not admitted to intensive care units.

The Level of Dependency of Users Tool proved to be feasible as a means of evaluating and monitoring the care needs of the hospitalized patient. In addition, it is a tool that can help the process of staff dimensioning for nursing teams in inpatient units, considering the units' particular area of care.

REFERENCES

1. Quadros DV, Magalhães AMM, Mantovani VM, Rosa DS, Echer IC. Análise de indicadores gerenciais e assistenciais após adequação de pessoal de enfermagem. *Rev. Bras. Enferm.* [Internet]. 2016 Aug [cited 2017 Jan 02]; 69(4):684-90. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672016000400684&lng=en. <http://dx.doi.org/10.1590/0034-7167.2016690410i>.
2. Silva KS, Echer IC, Magalhães AMM. Grau de dependência dos pacientes em relação à equipe de enfermagem: uma ferramenta de gestão. *Esc. Anna Nery* [Internet]. 2016 [cited 2016 Sep 18]; 20(3):e20160060.
3. Rosetti AC, Gaidzinski RR, Fugulin FMT. Carga de trabalho de enfermagem em pronto-socorro geral: proposta metodológica. *Rev. Latino-Am. Enfermagem* [Internet]. jan.-fev. 2013 [acesso em: 04 out. 2016] 21(Spec):[08 telas]. Disponível em: http://www.scielo.br/pdf/rlae/v21nspe/pt_28.pdf
4. Alves MVMFF, Messora TCC, Gonçalves SPA, Luppi CHB. Avaliação do Grau de Dependência de pacientes em enfermaria de ortopedia de um hospital escola. *Rev. Eletr. Enf.* [Internet]. out.-dez. 2011 [acesso em: 28 set. 2016] 13(4):612-9. Disponível em: <http://www.fen.ufg.br/revista/v13/n4/v13n4a04.htm>.
5. Conselho Federal de Enfermagem. Resolução n.293/04. Fixa e estabelece parâmetros para dimensionamento do quadro de profissionais de enfermagem nas unidades assistenciais das instituições de saúde e assemelhados [Internet]. São Paulo: COREN-SP; 2004 [citado 2013 jun. 10]. Disponível em: http://novo.portalcofen.gov.br/resoluo-cofen-2932004_4329.html
6. Conselho Federal de Enfermagem. Resolução n. 527/2016. Atualiza e estabelece parâmetros para o dimensionamento do Quadro de Profissionais de Enfermagem nos serviços/locais em que são realizadas atividades de enfermagem. DOU n. 217 de 11

de novembro de 2016. Disponível em <http://www.cofen.gov.br/wp-content/uploads/2016/11/Resolu%C3%A7%C3%A3o-527-16-parte-1.pdf>. Acesso em 03.03.2017

7. Gelbcke FL, Matos E, Schmoeller R, Mesquita MPL, Benedet SA. Instrumento para classificação do grau de dependência de usuários: um estudo para contribuir no dimensionamento de pessoal. *Enfermagem em Foco* 2012;3(2):25-8.

8. Fugulin, F. et al. Implantação do sistema de classificação de pacientes na unidade de clínica médica do hospital universitário da USP. *Rev. Med. HU-USP*, v. 4, n. 1/2, p. 63–8, 1994.

9. Magalhães AMM, Riboldi CO, Guzinski C, Silva RC, Moura GMSS. Grau de dependência de pacientes em unidade de internação cirúrgica. *Rev. Bras. Enferm.* [Internet]. set.-out. 2015 [acesso em: 26 set. 2016] 68(5):824-9. Disponível em: <http://www.scielo.br/pdf/reben/v68n5/0034-7167-reben-68-05-0824.pdf>

10. Schmoeller R, Gelbcke FL. Indicativos para o dimensionamento de pessoal de enfermagem. *Texto Contexto Enferm.* [Internet]. out.-dez. 2013 [acesso em: 06 out. 2016] 15(3):971-9. Disponível em: <http://www.scielo.br/pdf/tce/v22n4/13.pdf>

11. Casarolli ACG, Eberhardt TD, Nicolla AL, Fernandes LM. Nível de complexidade assistencial e dimensionamento de enfermagem no Pronto-Socorro de um hospital público. *REUFMS* [Internet]. abr-jun. 2015 [acesso em: 29 set. 2016] 5(2):278-285. Disponível em: <https://periodicos.ufsm.br/reufsm/article/view/16811>

12. Lorenzetti J, Gelbcke FL, Vandresen L. Tecnologia para gestão de unidades de internação hospitalares. *Texto contexto - enferm.* [Internet]. 2016 [cited 2016 Oct 15];25(2):e1770015.

13. Cesconetto, Daiana. Validação de Conteúdo do Instrumento de Avaliação do Grau de Dependência dos Usuários. Dissertação (Mestrado profissional Gestão do Cuidado em Enfermagem) Universidade Federal de Santa Catarina, Florianópolis, 2015. 150 p.

14. Santos NC, Fugulin FMT. Construção e validação de instrumento para identificação das atividades de enfermagem em unidades pediátricas: subsidio para determinação da carga de trabalho. *Rev. esc. enferm. USP* [Internet]. 2013 Oct [cited 2017 Jan 02] ; 47(5): 1052-1059. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342013000501052&lng=en.

<http://dx.doi.org/10.1590/S0080-623420130000500007>.

15. Meneguetti MG, Nicolussi AC, Scarparo AF, Campos LF, Chaves LDP, Laus AM. Dimensionamento de pessoal de enfermagem nos serviços hospitalares: revisão integrativa da literatura. *Rev. Eletr. Enf.* [Internet]. 2013;15(2):551-63. Disponível em: <http://dx.doi.org/10.5216/ree.v15i2.18559>. doi: 10.5216/ree.v15i2.18559.

16. Abreu Sonia Portella de, Pompeo Daniele Alcalá, Perroca Márcia Galan. Use of patients' classification instruments: analysis of the brazilian production of knowledge. *Rev. esc. enferm. USP* [Internet]. 2014 Dec [cited 2016 Oct 16];48(6):1111-8.

17. Brito AP, Guirardello EB. Nível de complexidade assistencial dos pacientes em uma unidade de internação. *Rev. bras. enferm.* [Internet]. 2012 Feb [cited 2017 Jan 02]; 65(1): 92-96. Available from:

http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672012000100013&lng=en. <http://dx.doi.org/10.1590/S0034-71672012000100013>.

18. Abdul-Hak CK, Barros AF. The incidence of phlebitis in a Medical Clinical Unit. *Texto contexto - enferm.* [Internet]. 2014 Sep [cited 2017 Mar 04] ; 23(3): 633-638. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-07072014000300633&lng=en. Epub Sep 30, 2014.

19. Boltz M, Capezuti E, Wagner L, Rosenberg MC, Secic M. Patient safety in medical-surgical units: can nurse certification make a difference? *Medsurg Nurs.* 2013;22(1):26-32.

20. Lee, Eric A. Making hospitals safer for older adults: updating quality metrics by understanding hospital-acquired delirium and its link to falls. Perm J. 2013 Fall;17(4):32-6.
21. Sánchez Ramos, L.; Blázquez Hernández, R.; Herrero Cecilia, I.; Martín Merino, G.; Páez Borda, A. Evaluación de los niveles de dependencia de pacientes ingresados en la Unidad de Cuidados Urológicos. ENFURO 36. NÚM. 104. OCTUBRE/NOVIEMBRE/DICIEMBRE 2007.
22. Hirsbrunner T, Denhaerynck K, Fierz K, Milisen K, Schwendimann R. Nurse staffing, patient turnover and safety climate and their association with in-patient falls and injurious falls on medical acute care units: a cross-sectional study. Journal of Hospital Administration 2015;14(3):54-60.
23. Araújo VB, Perroca MG, Jericó MC. Variabilidade do grau de complexidade assistencial do paciente em relação à equipe de enfermagem. Rev. Latino-Am. Enfermagem [Internet]. 2009 Feb[cited 2017 Feb 02];17(1):34-9. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692009000100006&lng=en. <http://dx.doi.org/10.1590/S0104-11692009000100006>
24. Perroca MG. The new version of a patient classification instrument: assessment of psychometric properties. J Adv Nurs. 2013;69(8):1862-8.
25. Silveira CD, Bessa ATT, Paes GO, Stipp MAC. Nursing team management: factors associated with job satisfaction. Enfermeria Global 2017;16(3):224-39.
26. Araújo MT, Henriques AVB, Velloso C, Queiroz CF, Santos AMR. Dimensionamento de pessoal de uma unidade de internação cirúrgica. Rev. Gest.Saúde 2016;7(2):650-69.

ISSN 1695-6141

© [COPYRIGHT](#) Servicio de Publicaciones - Universidad de Murcia