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Original Article

RISCO DE LESÃO POR PRESSÃO EM IDOSOS COM COMPROMETIMENTO NA REALIZAÇÃO DE ATIVIDADES DIÁRIAS

RISK OF PRESSURE INJURY IN ELDERLY INDIVIDUALS WITH COMPROMISSE IN DAILY ACTIVITIES

RIESGO DE LESIÓN POR PRESIÓN EN ANCIANOS CON COMPROMISO EN LA REALIZACIÓN DE ACTIVIDADES COTIDIANAS

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RESUMO

Objetivo: avaliar o risco de idosos institucionalizados com comprometimento na realização das atividades de vida diárias (AVDs) desenvolverem lesão por pressão (LP). **Método:** trata-se de estudo transversal quantitativo, com amostra de 44 idosos, que utilizou como instrumentos de coleta de dados: questionário sobre perfil sociodemográfico dos idosos, escala de Katz e escala de Braden. Os dados foram analisados no programa estatístico SPSS 17.0. **Resultados:** verificou-se que 64,3% dos idosos possuíam risco de desenvolver LP, e 57,1% eram dependentes para realizar cinco ou mais AVDs. Quanto maior a independência para desenvolvimento de AVDs, menor o risco de desenvolver UP (r_s = -0,74; p < 0,05). **Conclusão:** a utilização de escalas preditivas como as de Braden e de Katz proporciona parâmetros para o enfermeiro planejar cuidados com a pele de modo individualizado, visando a segurança e bem-estar dos idosos institucionalizados.

Descritores: Segurança do paciente; Lesão por pressão; Idoso; Institucionalização; Enfermagem.

ABSTRACT

Objective: to evaluate the risk of institutionalized elderly people with impairment in performing daily life activities (DLAs) to develop pressure injury (PI). **Method**: This is a cross-sectional quantitative study, with a sample of 44 elderly people, which used as data collection instruments: a questionnaire on the sociodemographic profile of the elderly people, Katz scale and Braden scale. The data were analyzed in the statistical program SPSS 17.0. **Results**: it was verified that 64.3% of the elderly people had a risk of developing PI, and 57.1% were dependent to perform five or more DLAs. The higher the independence for DLA development, the lower the risk of developing PU (r_s = -0.74, p <0.05). **Conclusion**: The use of predictive scales such as those of Braden and Katz ones provides parameters for the nurse to plan individualized skin care, aiming at the safety and well-being of the institutionalized elderly people.

Descriptors: Patient safety; Pressure ulcer; Aged; Institutionalization; Nursing.

RESUMEN

Objetivo: evaluar el riesgo de ancianos institucionalizados con comprometimiento en la realización de las actividades de vida diaria (AVDs) desarrollar lesión por presión (LP). **Método**: se trata de un estudio transversal cuantitativo con una muestra de 44 ancianos que utilizó como instrumentos de recolección de datos: cuestionario sobre perfil sociodemográfico de los ancianos, escala de Katz y escala de Braden. Se analizaron los datos en el programa estadístico SPSS 17.0. **Resultados**: se verificó que el 64,3% de los ancianos tenían riesgo de desarrollar LP, y el 57,1% era dependiente para realizar cinco o más AVDs. Cuanto mayor la independencia para el desarrollo de AVD, menor es el riesgo de desarrollar UP (rs = -0,74; p <0,05). **Conclusión**: la utilización de escalas predictivas como las de Braden y de Katz proporciona parámetros para el enfermero planificar atención con la piel de modo individualizado, buscando la seguridad y el bienestar de los ancianos institucionalizados.

Descriptores: Seguridad del paciente; Úlcera por presión; Anciano; Institucionalización; Enfermería.

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INTRODUCTION

Pressure injury (PI) is a lesion of skin and/or soft tissue resulting from cellular hypoxia, which can cause tissue necrosis as a result of pressure or pressure with friction and shear, and may present as whole skin or as an open ulcer. It is found on bone prominence or related to the use of medical device or other artifact. Its occurrence is related to a decrease in the quality of life of the subject, since it may be associated with symptoms such as pain and deformity[1].

Each year, in the United States, more than 2.5 million people with PI are identified in the most diverse health settings, ranging from 0.4% to 38% in acute care, 0% to 17% in home care, and 2 % to 24% in long-term care institutions for the elderly individuals (LCIEI)[1-2]. About 60,000 patients die as a direct result of one PI each year[2]. Thus, the prevalence of PI has become a major threat to public health and the US health system[2]. In the UK, new cases of PI occur between 4% and 10% of patients admitted to a hospital[3]. In Brazil, although there are few robust studies on the incidence and prevalence of PI, the occurrences of these are high, varying from 10.6% to 62%, while the variation of this is 7.3%[4]. This large difference is justified by the profile of the studied population, methodology adopted and whether or not to include PI in the stage 1[1].

PIs are related to the increase in overall life expectancy, with geriatric patients who have movement restriction being the most affected by this condition[3]. Population aging and the institutionalization of the elderly people are growing phenomena in the Brazilian population. When they do not get old in a healthy way, increasing of longevity and the incapacitating process increases PI prevalence, leading to one more health problem for the elderly individuals[5]. It is a disabling process when a certain condition (acute or chronic) affects the functionality of the elderly people, compromising their daily activities, which, in terms of health assessment, are known as daily life activities (DLAs)[6]. In elderly people who live in LCIEI, PI is a health problem, especially for those who spend most of the time bedridden or sitting and exposed to extrinsic factors (friction, shear and moisture) and intrinsic factors (malnutrition, aging, low arteriolar pressure , loss of sensation, decreased muscle strength or mobility, incontinence, hyperthermia, anemia and smoking)[7].

A study performed in a Brazilian LCIEI showed a high prevalence of PI in the institutionalized elderly people. Some challenges to implement actions to reduce the occurrence of PI in this population in the studied area were identified: a reduced number of professionals of the nursing team for the care of elderly people with a high degree of dependence, poor use of personal hygiene materials, inadequate nutrition, difficulty in introducing protocols and scales for classification and treatment of injuries, and lack of training and motivation for continued care[8].

Among the professionals who provide assistance to the elderly individuals and who can act in the prevention of the occurrence of PI, the most outstanding are the nursing professionals, who can perform the treatment and prevention of injuries, which is why this subject has become the target of research in the area[3]. In this context, the nurse has validated scales capable of predicting the risk of developing PI and collaborating in the prevention of these by means of the early people identification of individuals at risk[1,9].

Although the action of assessing the risk of institutionalized elderly individuals developing PI is vey important for nursing, and also that the prevalence of PI has been high in LCIEI, there is a lack of published national studies that address the risk of institutionalized elders developing PI in the elderly people with some impairment to perform the DLAs. It can also be seen that, in LCIEI, nurses do not always use standardized instruments to identify patients at risk of developing PI and propose preventive measures, which may compromise care delivery[8]. However, it is imperative that the nursing professional works with the intention of preventing the onset of PI, since the appearance of these can reduce the autonomy of the elderly people, besides exposing them to the risk of complications resulting from compromised skin integrity. For this, the professional can use resources as standardized instruments that allow the identification of patients at risk of developing PI and, thus, to optimize preventive measures, contributing to the maintenance of the health status of the elderly individuals.

Considering this context, the following guiding question was formulated for the study: What is the risk of institutionalized elderly people with impairment in the performance of DLAs developing PI? The purpose of this study was to evaluate the risk of institutionalized elderly people with impairment in daily life activities (DLAs) developing pressure injury (PI).

METHODS

This is a cross-sectional study, carried out in three LCIEI of a municipality in Minas Gerais. The dynamics of elderly care in the institutions are similar; all of them have caregivers who are responsible full time for the care of the elderly people. The study population consisted of 114 elderly people, which corresponds to the total number of institutionalized elderly people in the period of data collection. Inclusion criteria were considered: to be resident in the LCIEI for at least two months; to be older than 60 years-old; to present the nursing diagnosis "impaired physical mobility", evaluated according to the related factors and defining characteristics described in the NANDA-I taxonomy[10]. It should be noted that only the elderly patients with "Impaired Physical Mobility" were included, as they necessarily presented some degree of impairment in the performance of DLAs, which was necessary to answer the research question. We excluded from the research the elderly people who already had PI at the first evaluation of the researchers and those who were in a situation of abandonment and did not have a legal representative, making up a final sample of 42 elderly people.

Data collection was performed by three researchers from March to May 2014, using the following instruments: sociodemographic profile of the questionnaire of elderly individuals, Katz Scale and Braden Scale[11-12].

The sociodemographic questionnaire elaborated by the authors included open and closed questions for the collection of data regarding age, sex, skin color, religion, marital status, number of children, cost of hospitalization, length of stay, schooling.

The Katz scale assesses the degree of dependency/independence of the elderly individuals to perform DLAs: ability to take a shower, to get dressed, to go to the toilet, to move, to stay continent and feed. It is a graduated scale from zero to six, being: zero – does not have dependence on any of the activities, six - presents alteration in the six activities. The higher the score, the higher the level of dependence[11].

The Braden scale is composed of six items that aim to evaluate the risk for developing PI, according to the score: 19 to 23 points, without risk; 15 to 18 points, low risk; 13 to 14, moderate risk; from 10 to 12, high risk; and 9 or fewer points, very high risk[12].

Prior to the initiation of data collection, the researchers were trained on the use of the Braden scale based on the evaluation of fictitious clinical cases previously validated by content experts. In total, 12 cases were elaborated by the researcher responsible and sent for evaluation of three experts with experience in teaching, research, and use of the Braden scale in clinical practice. Seven cases were selected for training, which showed agreement on 100% of the following items among the three experts: level of risk in the Braden scale; if it allows the application of the Braden scale; writing of the clear clinical case, in order to allow an accurate evaluation of the Braden scale subscales; clear clinical clues, so as to identify the punctuation in each item of the scale; adequacy of the case studies to be applied to seventh-year nursing students for training purposes in the use of the Braden scale. For the application of the Braden scale, two researchers were selected who achieved excellent agreement with the experts (Kappa ≥ 0.90)[13].

It is noteworthy that the application of the Katz and Braden scales were performed by independent researchers, in order to guarantee the screening of the evaluators.

For descriptive analysis of the data, frequency distribution tables were used. The prevalence of elderly individuals at risk of developing PI was calculated. The Kolmogorov-Smirnov, D'Agostino & Pearson and Shapiro-Wilk tests were used to verify the normality of the variables "risk for PI development", "degree of dependency to perform DLAs" and "institutionalization time"[14]. The tests showed that they were non-normal distribution variables. For inferential analysis, Spearman's nonparametric correlation test was used to verify the existence of a correlation between the following variables: "risk for PI development"; "Degree of dependency to perform DLAs"; "Length of stay in the LCIEI"; "Risk for PI development" and "degree of dependence to perform DLAs". All tests were performed using SPSS software version 21.0. The level of significance was set at 5% ($p < 0.05$).

The study obeyed the ethical precepts set forth in Resolution No. 466/12 and was approved by the Research Ethics Committee (Ethical Opinion No. 517.957). The Informed Consent Form was signed by the elderly people or their legal guardian. It should be noted that the legal guardian could be a family member, caregiver or the institution where the elderly person resided.

RESULTS AND DISCUSSION

From the 42 elderly people in the study, the majority (25 - 59.5%) were female. The mean age of these elderly subjects was 79.07 years-old (+ 9.1 years). The majority (38 - 90.5%) paid for admission to retirement and 32 (76.2%) were hospitalized for family reasons. The mean length of hospital stay was 5.4 years (+ 6.0 years), with a minimum stay of 06 months and a maximum of 27 years. In terms of schooling, 17 (40.5%) had one to four years of study, followed by 11 (26.2%) illiterate and four (9.6%) with five or more years of study. It was not possible to identify the educational level of 10 (23.7%). Regarding the number of children, 18 (42.9%) do not have children, 20 (47.6%) had one or more children and four (9.5%) did not report.

The predominance of the female among the elderly individuals who live in the LCIEI studied reflects the national panorama, which points to the increase in the life expectancy of individuals with a preponderance of female gender. According to the census conducted in 2010[15], women represent 55.5% of the Brazilian elderly population and 61% are older than 80 years-old.

Table 1 shows the risk of participating elderly people in developing PI according to the Braden Scale.

Table 1 - Risk of the elderly people in the study to develop PI according to the Braden Scale - Divinópolis, Minas Gerais (2014).

Level of risk	n	%
No risk	15	35,7
Moderate	11	26,2
High	10	23,8
Low	4	9,5
Very high	2	4,8
Total	42	100,0

Source: Research data, 2014.

It was verified that the prevalence of elderly people at risk to develop PI according to the Braden Scale was 64.3% (95% CI: 48.0% - 78.4%). Among these, 17 (63.1%) presented significant alterations in the "Friction and shear" sub-items and "Physical Activity". The mean score obtained by the elderly individuals on the Braden Scale was 15.7 (SD = 4.1 points, 95% CI: 14.4 - 17.0).

A Brazilian study[16] showed that one of the main reasons for the institutionalization of the elderly people was the difficulty of performing DLAs. The dependence on the performance of DLAs is generated by loss of functional capacity, which in turn is influenced by the aging process[16-17]. However, the institutionalization of the elderly people can lead to the loss of functional capacity, since most LCIEI do not have sufficient human and financial resources to provide assistance aimed at promoting self-care[16].

Table 2 shows the level of dependence of the elderly people in the study to perform DLAs according to the Katz Scale.

Table 2 - Level of dependence of the participants to perform the DLAs according to the Katz Scale - Divinópolis, Minas Gerais (2014).

Level of dependence	n	%
6	13	31,0
5	11	26,2
4	5	11,9
3	4	9,5
1	4	9,5
2	3	7,1
0	2	4,8
Total	42	100,0

Source: Research data, 2014.

The majority (24 - 57.1%) (CI 95%: 41.0% - 72.3%) has presented dependence to perform five or more DLAs. Also, according to the Katz scale, 100.0% of the elderly people had dependency on bathing, dressing, using the toilet, moving from one place to another and on the

ability to self-controlled urination and evacuation, and the majority (22 - 52.4%) was dependent on food. The mean scores obtained by the elderly individuals on the Katz scale were 4.2 (SD = 1.9 points, CI 95% 3.6 - 4.8).

Among the elderly people evaluated in the study, only 4.8% were considered independent to perform all DLAs. The study pointed out that the greater the dependence to perform DLAs, the greater the risk of institutionalization of the elderly individuals. Older people with mild dependencies to perform DLAs presented a risk of institutionalization 1.7 times higher than those who were independent, and those with severe dependence presented a 2.1-fold greater risk when compared to those who were independent[18]. Thus, stimulating the independence of the elderly individual is important to reduce the risk of institutionalization. The results of an international clinical trial point to the implementation of interventions in the elderly people who are dependent to perform one or more DLAs as an effective means of promoting their independence[19].

Spearman's correlation test showed that there is a negative correlation between the degree of dependence to perform DLAs and the risk of developing PI ($rs = -0.74$; $p < 0.05$), that is, the greater the independence for development of ADL, the lower the risk of developing PI.

Increased longevity and disability increase the prevalence of PI and the complications and severities resulting from it[9]. In this study, the greater the degree of dependence to perform DLA, the greater the risk of the elderly people developing PI ($rs = -0.74$, $p < 0.05$). A similar result was found in other studies[20-21]. In a prospective cohort study with 183 elderly individuals, 97.3% of the elderly people with PI had a compromise to perform the DLAs ($p < 0.0001$)[20]. A positive correlation was found between the degree of dependence to perform DLAs and the risk of developing PI ($p < 0.0001$)[21]. Thus, the need to implement interventions with the support of a multi-professional team that promote greater autonomy for the institutionalized elderly people in their self-care is reinforced[19]. In order to do so, the presence of the nurses in the LCIEI is essential, since the stimulus to self-care is also a nursing intervention and it is essential for the safety of the institutionalized elderly people, as it contributes, not only to the prevention of skin lesions, but also to improve their self-esteem[3,19]. To reduce the risk of developing PI, nurses should describe the degree of individual dependence to perform DLAs and initiate preventive nursing care.

In this study, 47.2% of the elderly people do not have children and 76.2% were hospitalized for family reasons. This finding may be related to the emergence of new family arrangements. The study points out that the insertion of women (main caretaker) in the labor market and financial difficulties presented by families are factors that contribute to the institutionalization of the elderly people. In addition, institutionalization occurs when the elderly individuals become dependent on care in a proportion greater than the ability of family members to care[16-17].

There was no correlation between the variables "Time of institutionalization" and "Risk of developing PI" ($rs = 0.12$, $p = 0.43$) and "Dependency level in DLAs ($rs = 0.02$; $p = 0.85$), which allows us to infer that the time of institutionalization did not increase the risk of developing PI and the degree of dependence to perform DLAs.

The prevalence of risk in the elderly people to develop PI was 64.3%. In other studies, this prevalence was 49.0%[17] and 38.8% of elderly people at high risk for developing PI [21]. This high prevalence may be related to the use of diapers, positioning and inappropriate displacement in the bed, which lead the elderly individual to the exposure of the risk factors in the analyzed population.

It is important to implement preventative measures such as raising the head of the bed up to a maximum of 30º, using beds and special mattresses to redistribute pressure, using a mobile liner to move or to transfer bedridden patients, change of decubitus, conduction of physical therapy and exchange of diapers[7]. These measures are interventions of responsibility of the nursing team and are configured as essential to guarantee the safety of the patient in the prevention of PI.

In addition, the decrease in the mobility of the elderly participants involved in the increase in the use of diapers, even those with controls of urination and evacuation, which increases the risk of PI due to the predisposition to a process of maceration of the skin that, if it is uncontrolled, leads to a reduction in tensile strength, making the skin susceptible to compression, friction and shear[1,7]. This finding reinforces the need to raise the awareness of the care team about the

importance of stimulating the self-care of the elderly people, as well as the complications resulting from exposure of the skin to moisture for a longer period of time.

In view of the above, we note the need to implement public policies aimed at the attention of the elderly population, as well as actions aimed at the care of family members in order to encourage the elderly people to stay with the family. It is suggested that caregiver assistance is initiated by the home care teams, through the creation of discussion groups between family members and health staff, as well as the promotion of physical and cultural activities aimed at the elderly people with altered functional capacity, in a way to stimulate self-care, respecting the limitations of each individual. Thus, it is believed to improve the care relationship between the family and the elderly individual and to reduce the rates of LCIEI hospitalization.

It should be noted that PI prevention is one of the six axes adopted by the National Patient Safety Program, which involves good practices, error reduction and non-preventable harm to a patient during the health care process. In this context, it is necessary that health care for the elderly people should be a priority in the LCIEI, in order to provide greater security by improving nursing care and minimizing possible health damages resulting from care practice. This practice can be understood as a set of values, competencies, attitudes and patterns of individual and collective behaviors that are reflected in a healthy and safe organization[22].

LP is an avoidable adverse event. Treatment of these lesions is usually costly, long-term, and damaging to patients, healthcare professionals, and hospitals. Thus, many actions should be implemented with a focus on safety, especially bed rest, to prevent PI. The risk assessment and the training of nurses for preventive care should be part of a good PI prevention plan. In addition, it is important to invest in the caregiver's training, be it formal, informal or family, about the care related to PI prevention[23]. Other actions such as repositioning, pain management, use of foam cushions, protection of bony prominences, and management of extrinsic and intrinsic factors are important activities for PI prevention[7,24]. These are interventions of responsibility of the nursing team, and contribute to the maintenance and recovery of individuals' health status, in order to guarantee a safe and harmless assistance.

The use of validated scales directs the clinical judgment of the nurse and facilitates the decision making and the construction of care plans focused on the prevention of PI based on scientific evidence[9]. Scales that stratify the risk of PI development and evaluate the degree of dependence to perform the DLAs are important tools for nursing care management and allow the elaboration of individualized care plans[18,20]. In this study, the Katz and Braden scales showed high internal consistency (Cronbach's Alpha, respectively, 0.81 and 0.82), which allows us to recommend their adoption in the nursing practice of nurses who work at LCIEI.

Thus, the importance of the application of predictive risk scales for the development of PI in LCIEI by nurses is emphasized, in order to provide a scientifically based care that directs nursing interventions to the most recurrent potential problems that can trigger the formation of PI. The use of the Braden scale allows nurses to perceive problems related to nutritional status, mobility, sensory perception, friction and shear, humidity and degree of physical activity of the elderly person institutionalized. Thus, the use of this instrument allows a wide evaluation and the planning of the care in order to guarantee the institutionalized patient's safety for PI prevention. However, a study showed that the use of scales is important, but in itself, it does not guarantee the implementation of interventions aimed at PI prevention[25], and it is necessary to reconcile the results obtained with the application of the scales and the effective planning and implementation of care.

It is suggested that nurses working at LCIEI guide their practice through assistance protocols aimed at coping with the main problems that affect the elderly people, especially those dealing with the prevention and treatment of PI, as well as the stimulation of self-care.

CONCLUSION

The elderly people institutionalized have presented a high prevalence for the risk of developing PI and dependence to develop five or more DLAs. It was evidenced that the greater the degree of dependence to perform DLA, the greater the risk of the elders in developing PI. There was no correlation between the time of institutionalization, the risk of developing PI and degree of dependency in DLAs. The scales used

presented high internal consistency in the study sample.

One limitation was the small number of participants. Therefore, it is recommended that it is replicated in other long-term institutions in order to ratify these results.

It is concluded that institutionalized elderly individuals present a high prevalence for the risk of developing PI, which reinforces the need for the presence of nurses in these institutions, since this professional plays an important role in evaluating the risk that these individuals present to develop PI, both at admission as well as during their stay in the institution. Thus, it is suggested to carry out clinical trials that seek to propose and to test interventions to reduce the risk of developing PI in institutionalized elderly people, as well as to test nursing interventions that stimulate the increase of the functional capacity, which will strengthen the practice based on evidence in this field and the construction of assistance protocols aimed at stimulating the self-care of this clientele.

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