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INTEGRATIVE REVIEW ARTICLE

HUMAN RESOURCES AND MATERIALS FOR THE PREVENTION OF PRESSURE ULCERS

RECURSOS HUMANOS E MATERIAIS PARA A PREVENÇÃO DE LESÃO POR PRESSÃO RECURSOS HUMANOS Y MATERIALES PARA LA PREVENCIÓN DE LESIÓN POR PRESIÓN

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ABSTRACT

Objective: to describe the recommendations on human and material resources directed at the prevention of pressure ulcers. **Method:** a bibliographic, descriptive, integrative review type study, with a search for articles in the MEDLINE, BDENF, LILACS and SCOPUS databases, in the period of November 2017. The descriptors "pressure ulcer", "health resources", "Human resources" and "Nursing", crossed with the Boolean marker "and" in Portuguese, English and Spanish in the last five years. **Results:** only two articles published by Brazilian nurses were selected. **Conclusion:** in view of the description of the recommendations on material resources directed to the prevention of pressure ulcers, specific recommendations and instruments were not identified to evaluate the adequate quantity of human and material resources from the perspective of pressure ulcer prevention, a fact that points out a gap in knowledge and demonstrates the need to design and implement technologies. **Descriptors:** Pressure Ulcer; Health Resources; Human Resources; Nursing; Nurses; Material Resources in Health.

RESUMO

Objetivo: descrever as recomendações sobre recursos humanos e materiais direcionados para a prevenção de lesão por pressão. **Método:** estudo bibliográfico, descritivo, tipo revisão integrativa, com busca de artigos nas bases de dados MEDLINE, BDENF, LILACS e SCOPUS, no período de novembro de 2017. Utilizaram-se os descritores "lesão por pressão", "recursos em saúde", "recursos humanos" e "Enfermagem", cruzados com o marcador *booleano* "and" nos idiomas português, inglês e espanhol, nos últimos cinco anos. **Resultados:** selecionaram-se apenas dois artigos publicados por enfermeiros brasileiros. **Conclusão:** tendo em vista a descrição das recomendações sobre recursos materiais direcionados para a prevenção de lesões por pressão, não se identificaram recomendações e instrumentos específicos para avaliar o quantitativo adequado de recursos humanos e materiais na perspectiva da prevenção de lesão por pressão, fato que aponta uma lacuna no conhecimento e demonstra a necessidade de elaborar e implementar tecnologias. **Descritores:** Lesão por Pressão; Recursos em Saúde; Recursos Humanos; Enfermagem; Enfermeiros e Enfermeiras; Recursos Materiais em Saúde.

RESUMEN

Objetivo: describir las recomendaciones sobre recursos humanos y materiales dirigidos a la prevención de lesión por presión. **Método:** estudio bibliográfico, descriptivo, tipo revisión integrativa, con búsquedas de artículos en la base de datos MEDLINE, BDENF, LILACS y SCOPUS, en el período de noviembre de 2017. Se utilizaron los descriptores "lesión por presión", "recursos en salud", "recursos humanos" y "Enfermería", cruzados con el marcador de booleano "and" en portugués, Inglés y español en los últimos cinco años. **Resultados:** se seleccionaron sólo dos artículos publicados por enfermeros brasileños. **Conclusión:** teniendo en cuenta la descripción de las recomendaciones sobre recursos materiales dirigidos a la prevención de lesiones por presión, no se identificaron recomendaciones e instrumentos específicos para evaluar el cuantitativo adecuado de recursos humanos y materiales en la perspectiva de la prevención de lesión por presión, hecho que apunta una laguna en el conocimiento y demuestra la necesidad de elaborar e implementar tecnologías. **Descriptores:** Úlcera por Presión; Recursos en Salud; Recursos Humanos; Enfermería; Enfermeros; Recursos Materiales en Salud.

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INTRODUCTION

It is known that pressure ulcers (PU) are defined as localized damage to the underlying skin or soft tissues, usually on a bone surface, which remains in direct contact with a rigid area, resulting in an injury to the intact skin or open ulcer.¹ This is one of the main complications presented by people who are bedridden at home or in hospital units. Its occurrence is directly proportional to the risk factors presented by the patients.²

It is shown that, in US hospitals, the incidence of PU in hospitalized patients is 7% and the prevalence is 15%.³ In Brazil, a study carried out in a university hospital located in São Paulo shows that the incidence of PU was 23.1% in patients with a high risk factor. Still in this perspective, in a public hospital in Fortaleza, reference in trauma, the incidence of PU in a population of 75 patients was around 36%.² Such a reality costs the public and private institutions.

A study was conducted, which evaluated the daily expenses with the treatment of these ulcers, and that the mean was from R\$ 98.90 to R\$ 180.00, but according to the evolution and degradation of the tissue present in the lesion, the values gradually increased.⁴ Another study carried out in Minas Gerais, to evaluate the monthly expenditure, shows values from R\$ 915.75 to R\$ 36.629.95 and the annual value of R\$ 445,664.39. In these values, human and physical resources are not included and, if they were measured, the values would be even more exorbitant.⁴

It should be noted, therefore, that care with PU occupies the third place in health spending by Brazilian institutions. In addition, the demand for nursing care time increases by 50% of what would be dispensed if this time were applied only in prevention. This reinforces the benefits that prevention offers both for the patient, for the family and for the health unit.⁵

In this context, it should be emphasized that the quality of services provided to hospitalized persons by nursing professionals is directly linked to the health care indicators performed by health institutions. Among these indicators, the incidence of PU is often related to the quality of Nursing services. The human resources deficit in Nursing and the deficiency of material resources directly reflect on the care given to the patient, including, with a view to the prevention of this type of ulcer.⁶

In this scenario, the innumerable risk factors involved in the development of an PU and, consequently, the importance of the

patient's evaluation in the attempt to identify these factors, are highlighted. This evaluation requires knowledge of nurses for the prescription of individualized preventive measures, that is, according to the need of each person. From the identification of the risk presented by the patient, the Nursing team uses auxiliary material resources to potentiate the preventive actions implemented, as they help reduce the vulnerability of the skin to pressure, friction, shearing and maceration.⁷

In this context, it should be emphasized that, given the structural difficulties and human resources deficiency faced by numerous institutions, the patient's exclusive assessment of the risk classification is insufficient. Data show that PUs are considered to be an aggravating factor in health units even with the efforts by institutions to use validated scales for risk assessment and the application of preventive measures.²

It is therefore necessary, in addition to the risk assessment presented by the patient, to assess the availability of human and material resources available to the nurse and staff so that preventive measures are actually implemented. The lack of structure can be a triggering factor for the emergence of PU and discouraging to the nursing team.⁸ In this sense, it is considered important to evaluate not only the risk presented by the patient but also the structure in which the patient is, because the lack or the precariousness of resources can increase the risk presented by the person.

OBJECTIVES

- To describe the recommendations on human and material resources directed to the prevention of pressure ulcers;
- To identify specific instruments for the evaluation of the human and material resources essential to an inpatient unit from the perspective of the prevention of pressure ulcers.

METHOD

This is a bibliographic, descriptive, integrative review type study with search of articles in the MEDLINE, BDNF, LILACS and SCOPUS databases. It is characterized by grouping, analyzing and synthesising research results, on a given topic or issue, in a systematic and orderly manner in order to present, discuss and deepen knowledge.⁹ The integrative review includes the analysis of relevant research that supports the decision making seeking knowledge and appropriation

of a certain subject and pointing out knowledge gaps that need to be studied and deepened by carrying out new studies.⁹

The following steps were followed: 1) definition of the guiding question; 2) literature search from the selection of descriptors and definition of the selection criteria; 3) sample selection and evaluation of the studies included in the literature review; 4) categorization of studies; 5) interpretation of the results and 6) synthesis of the articles analyzed.⁹

The study was guided by the following guiding questions: What are the recommended recommendations in the literature on human and material resources directed to the prevention of pressure ulcers? Are these instruments to evaluate the human and material resources indispensable to a hospital admission unit with a view to the prevention of PU?

The following descriptors were available from the Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH) cross-labeled with the Boolean "and": health resources; human Resources; pressure ulcer and Nursing. The search was carried out in November 2017 using the following inclusion

criteria: articles that address the theme; available in full, online; published in Portuguese, English and Spanish, with a temporal cut in the last five years. In addition, documents such as technical notes, guidelines, resolutions and manuals on the subject matter available online were searched. Theses, dissertations or monographs were excluded.

During the search, 17 articles were identified in LILACS, 13 in BDENF, 149 in MEDLINE and 14 in SCOPUS, totaling 193 articles. In order to select the articles, a thorough reading of the titles and abstracts was carried out, identifying if they included the objectives of the study and / or answered the guiding question of the research. After the selection of the articles, the information was extracted, highlighting the relevant points of the articles. In addition to the articles, documents considered significant were selected to answer the research questions elaborated. In Figures 1 and 2, the articles found and excluded are presented resulting in only two selected studies.

Figure 1. Flowchart representative of the search in the databases LILACS, BDENF, MEDLINE and SCOPUS - excluded articles. Rio de Janeiro, November 2017.

Figure 2. Flowchart representative of the search in the databases LILACS, BDENF, MEDLINE and SCOPUS - articles included. Rio de Janeiro, November 2017.

It was based on hierarchization, to classify the level of evidence of the articles, according to the research design, namely: level 1 - evidence resulting from the meta-analysis of multiple controlled and randomized clinical studies; level 2 - evidences obtained in individual studies with experimental design; level 3 - evidence of quasi-experimental studies, time series or case-control; level 4 - evidence from descriptive (non-experimental) studies or qualitative approach; level 5 - evidence from case or experience reports and level 6 - evidence based on expert opinions including interpretations of non-research based information, non-regulatory or legal opinions.¹⁰ For the organization of the data, an instrument based on a review protocol containing the following data: journal / year, author, title, objectives, response to the research question and level of evidence.

RESULTS

In figure 3, the two articles¹¹⁻² are selected, in addition to the Technical Note GVIMS / GGTES N3,¹³ the pressure ulcer prevention protocol of the Ministry of Health,¹⁴ Guideline¹⁵ and COFEN Resolution No. 543.¹⁶

Journal or Institution / Year	Author(s)	Title	Objectives	Level of evidence
Brazilian Journal of Nursing/2016 ¹¹	Quadros DV, Magalhães AMM, Mantovani VM, Rosa DS, Echer IC.	Analysis of managerial and care indicators after the adequacy of Nursing staff.	To analyze care and management indicators after the adequacy of the Nursing staff.	4
Nursing Network Magazine of the Northeast /2013 ¹²	Rolim JA, Vasconcelos JMB, Caliri MHL, Costa IB.	Prevention and treatment of pressure ulcers in the daily routine of intensive care nurses.	To identify the prevention and treatment activities of pressure ulcer planned and / or implemented by nurses in the Intensive Care Unit, their importance and the difficulties encountered in carrying them out.	4
Technical note GVIMS/GGTES N°3/2017 ¹³	Santos ACRB, Carvalho AA, Santana HT, Morelo LT, Costa MMM, Caliri MHL et al.	Safe practices for the prevention of Pressure Injury in health services.	To guide managers and professionals who work in the Patient Safety Center and Assist in safe practices in LP prevention in health services.	6
Ministry of health/ 2013 ¹⁴	Ministério da Saúde/ Anvisa/ Fiocruz	Protocol for the prevention of pressure ulcer		6
NPUAP/ EPUAP/ PPIA ¹⁵	Langeno D, Cuddigan J, McNichol L, Stechmiller J, Schoonhoven L, Clark M et al.	PreventionandTreatmentfPressureUlcers: QuickReferenceGuide.	To advise nursing professionals on the main prevention measures regarding pressure ulcers (lesions) and other skin lesions.	6
Resolution COFEN N°543/2017 ¹⁶	Silva MCN, Sampaio MRFB	Updates and establishes parameters for the Sizing of the Professional Nursing Board in the services / places where Nursing activities are performed.	To guide health professionals, through evidence-based care, on best practices around LP prevention.	6

Figure 3. Profile of the selected productions. Rio de Janeiro, November 2017.

It is important to mention that, during the search of the articles in the data sources, it was found that a great deal dealt with questions related to risk assessment and the qualification of professionals for the application of scales and preventive measures without addressing the resource question human and material, a fact that justified the exclusion of the same and the selection of only two articles, both published by Brazilian authors. A retrospective descriptive study, with a quantitative approach, and an exploratory study with a qualitative approach are highlighted. Regarding the level of evidence, the selected studies were characterized as level 4.

It should be emphasized that, given the limited availability of articles that specifically address the human and material resources

directed to the problem involving the development of pressure ulcers, the information obtained to answer the research questions was predominantly found in the other selected documents. These include three Brazilian publications and one international publication, the latter involving the collaboration of the European Pressure Ulcer Advisory Panel (EPUAP) and the Pan Pacific Pressure Injury Alliance (PPPIA). All aimed to develop evidence-based recommendations. Since they are elaborated documents based on expert opinions, they were characterized with level of evidence 6. Figure 4 shows the synthesis of the productions selected during the search.

Production title	Synthesis of the answer to the research questions
Analysis of managerial and care indicators after the adequacy of Nursing staff ¹¹	The increase of 40% in the number of nurses and 16% in the number of nursing technicians resulted in the reduction of 75% in pressure ulcer rates. It is identified that the increase in the number of personnel contributed to better results.
Prevention and treatment of pressure ulcers in the daily routine of intensive care nurses ¹²	The difficulties, reported by nurses, point to the deficiency in human resources in number, capacity and lack of adherence of the team and in the material resources to promote comfort and safety to the patient.
Technical note GVIMS/GGTES Nº3/2017 ¹³	The use of resources in a correct way, through training, guidance and adequate human resources, directs to a safe assistance and provides subsidies in the continuity of the programs around the prevention of PU.
Ministry of Health/2013 ¹⁴	The protocol directs Nursing professionals about the preventive measures that should be adopted after the application of the Braden scale showing the level of risk and the conducts involving the application of material resources in the aid of the prevention of PU.
Prevention and Treatment of Pressure Ulcers: Quick Reference Guide ¹⁵	The guide directs health professionals to evidence-based best clinical practices in the use of ancillary resources as a means of preventing PU.
Resolution COFEN nº543/2017 ¹⁶	The adequate dimensioning of Nursing professionals in the hospitalization units reflects directly on the safe and harmless care.

Figure 4. Synthesis of selected productions. Rio de Janeiro, November 2017.

DISCUSSION

It is understood that the PU prevention requires, from the hospital institutions, physical and environmental structure, number of appropriate Nursing professionals and auxiliary material resources. In order to better understand the importance of these resources, it is considered essential to mention the main precautions recommended in the perspective of the prevention of PU ranging from patient evaluation, definition of preventive measures to the continuous and systematic implementation of these measures, which must be constantly re-evaluated.

It should be noted that recommendations on preventive measures, the Technical Note, the Ministry of Health Handbook and the Guideline guide health professionals on evidence-based best practices in order to

promote safe patient care for those at risk of developing PU.¹³⁻⁵

It is evidenced that the risk assessment, considered the first step for prevention, should be performed by the nurse at the time of admission. The Guideline¹⁵ conducts a complete evaluation of the patient within a maximum of eight hours after admission.

It is recalled that on this evaluation, Technical Note¹³ and the protocol of the Ministry of Health¹⁴ privilege risk assessment through the use of predictive scales, such as Braden, for the subsequent application of preventive measures including the adequate use of material resources. In this context, it is highlighted that, during the evaluation, besides the identification of intrinsic factors, extrinsic PU factors such as pressure, friction, shear and maceration are also found. It is recalled that the latter are directly related to

poor nursing care, sometimes caused by an inadequate number of caregivers.¹²

It can be seen that the recommendations aimed at prevention are considered low cost and can be applied in both hospital and home settings. Among them are the change of decubitus; skin inspection, especially in the areas of bony prominence and use of devices, at least twice a day; body hygiene, keeping skin clean and dry; skin hydration; the adequate nutritional and water caloric support and the participation of the family member and the patient.¹³⁻⁵

Thus, after identifying the risk presented by the patient, among the preventive actions, the periodic mobilization of the patient in the bed in order to reduce the pressure. To define their frequency, nurses should evaluate aspects such as: age, nutritional status, tissue tolerance, level of mobility in the bed, clinical status, use of medications and comfort, among others. The frequency usually indicated for at risk patients is every two hours.¹³⁻⁵ Still in this context, the repositioning of patients in wheelchair use should be done hourly in order to relieve the pressure on susceptible areas.^{5,13-5}

It should be emphasized that the handling of the patient during the change of decubitus should be adequate, that is, without dragging it in the bed or chair, in order to avoid the rupture of the skin by friction or shearing,¹⁴⁻⁵ fact which requires sufficient numbers of personnel to carry out the action with the correct frequency and in an appropriate manner.

It is important to note that on wetness, especially when it comes to people with urinary or fecal incontinence, diaper replacement is recommended immediately after elimination, either urinary or fecal, in order to minimize skin contact with moisture.¹⁴⁻⁵ The inspection of the sheets should be carried out at each bed mobilization in search of moisture, dirt and creases in the sheets, since the presence of these factors increases the risk of PU.¹⁷ In this regard, it is recalled that in many cases, due to a lack of personnel, patients are kept in contact with the humidity due to the absence of the diaper change at the time the eliminations occur, a fact that requires even the performance of intimate hygiene.

It is emphasized, when it comes to shear, when tissue layers move in opposite directions, that tissue deformity, blood vessel injury and ischemia may occur.¹ Attention should be paid to bed positioning, avoiding postures that favor the occurrence of this extrinsic factor, especially in cases of elderly

and people with sagging skin. Regarding devices that, according to NPUAP, may potentiate the development of PU, especially in the surrounding tissue in contact with it and with body fluids / drainage, the Guideline suggests careful inspection of these regions at least twice a day, in order to identify early signs of PU.¹⁵

Availability of human resources: an indispensable condition for the prevention of pressure ulcers

For the above-mentioned considerations, the need to adapt human resources to a safe care in all health follow-ups is revealed. The supervision of clinical practices, the audit of the activities carried out and the permanence of the quality of care services are the responsibility of the nurse who, with an adequate number of professionals, can manage these functions adequately and effectively.¹¹

In this sense, among the guidelines for health managers / administrators, it is noted that Technical Note ¹³ reinforces the importance of adequate human resources as a safety and prevention measure for health-related incidents, including PU.¹³

It is clarified that, despite the growing concern to promote quality and safe patient care, with the implementation and implementation of evaluation protocols, the lack of human resources in health units is still an aggravating factor, since many institutions cannot sustain the continuous application of preventive measures during the 24 hours.

It is considered the importance of the appropriate dimensioning of Nursing professionals for a safe care and study carried out in a university hospital of the South of Brazil, responsible for the care of patients of the Unified Health System, analyzed care and management indicators after the increase of human resources of Nursing, being four nurses and seven Nursing technicians in the service scale. The measure resulted in the reduction of 75.0% in the prevalence of pressure ulcers, 10.5% in falls and 50.0% in bladder catheter infections.¹¹ This fact shows that the adequacy of the number of nursing professionals had a direct impact on the quality and safety in patient care.¹¹

It is explained that, due to the absence of articles that specifically addressed the dimensioning of personnel aimed at the prevention of pressure injuries, it was considered important to resort to the COFEN resolution n ° 543,¹⁶ that addresses the dimensioning of the professional staff in the services / places where Nursing activities are carried out. This resolution updates and

establishes parameters based on the definition of the patient profile in each health unit. Thus, the third article of this resolution establishes the proposed service time, as hours of Nursing per patient in 24 hours, as well as the percentage distribution of the total number of Nursing professionals and the patient / professional ratio, being: four hours of Nursing, for patient, in minimal care; six hours of Nursing, per patient, in the intermediate care; ten hours of Nursing, per patient, in high dependency care; ten hours of Nursing per patient in the semi-intensive care and 18 hours of Nursing per patient in intensive care.

It is observed, with regard to the distribution of Nursing professionals related to the Patient Classification System (PCS):¹⁶ Minimum and intermediate care where 33% are nurses and the other, nursing technicians and / or assistants; High dependency care where 36% are nurses and the other nursing technicians and / or assistants; Semi-intensive care where 42% are nurses and the other, Nursing technicians; Intensive care where 52% are nurses and the other, Nursing technicians.

In relation to the calculation, the PCS and the proportion of professional / patient should be considered considering¹⁶: Minimum care - one Nursing professional for six patients; Intermediate care - a Nursing professional for four patients; High dependency care - a nursing professional for 2.4 patients; Semi-intensive Care - a Nursing Professional for 2.4 patients and Intensive Care - a Nursing Professional for 1.33 patients.

It is fundamental, in this sense, the dimensioning of Nursing professionals regarding the prevention of PU considering that the quality of care provided to the patient is directly proportional to the number of Nursing professionals. In addition, although not addressed in this study, it is considered important the qualitative aspect related to the knowledge of the professionals to carry out the appropriate prevention techniques. According to COFEN Resolution No. 543, the quantitative and qualitative aspects of nursing professionals directly interfere with the safety and quality of care.¹⁶

Recommended auxiliary material resources for the prevention of pressure ulcers

It is known that, to complement preventive actions, some material resources are available in the market with the purpose of helping the team in prevention. In spite of the importance of these resources, it is emphasized that their efficacy only occurs in conjunction with the adequate evaluation of the patient and the continuous application of individualized

preventive care, especially the change of decubitus, considered the main measure of PU prevention. In this context, the need for properly trained Nursing professionals aiming at the appropriate use of such resources, avoiding wastage and, especially, damages to the patient's skin is highlighted, considering that improper use of the devices may potentiate or cause harm to the patient.¹²

The description of these features begins with the surfaces of support or redistribution of pressure, which have the purpose of reallocating the concentrated pressure under the bony prominences.¹² The market offers several devices, among them: mattresses, integrated system beds, mattresses and cushions based on air, foam, gel, viscous liquid, elastomer and water.¹² It should be emphasized that the selection of the support device should be effective in its applicability taking into account factors such as reduced mobility or immobility, height and weight of individual and risk of developing PU.¹ The EPUAP ratifies that the support surfaces should be directed in a personalized way depending on the need to redistribute the pressure of each individual.¹

The use of materials in regions of bony prominences such as protective films, pressure reliefs, cushions, cushions and also pressure-reducing mattresses is indicated in one of the articles selected in this study.¹² In a study carried out in hospitals Intensive care in Canada with 12,787 individuals, it was observed that the use of pressure reducing devices reduced the incidence and prevalence of PU, demonstrating the importance of this resource in the prevention.¹⁸

It is important to mention a quantitative, descriptive, analytical and cross-sectional study of the different types of support surfaces performed with patients hospitalized in two intensive care centers of public teaching hospitals in Campo Grande, MS, which evaluated the occurrence of PU according to the type of mattress used by the patients. It was found that the development of PU was higher in patients who used the viscoelastic foam mattress than those who used the pneumatic mattress.¹⁷

It should be emphasized, also on the support surfaces, the need for use also in wheelchair patients. A descriptive study with a quantitative approach, developed in the city of João Pessoa / PB, in primary health care, revealed that of the 1634 registered users who needed home care, PU prevalence was around 10%, and in those with limited physical and wheelchair use, the indexes reached 13.5%.¹⁸ Thus, in the case of patients with an

indication of remaining seated in chairs, air and foam cushions are recommended. The cushions should be inspected for wear as they should provide comfort to the patient allowing air circulation and reducing the temperature and humidity in the gluteus region.¹⁴⁻⁵

The use of calcaneus suspension devices, such as pillows or foam cushions, is also indicated and should be used on the back of the leg to avoid pressure on the Achilles tendon avoiding contact with the bed surface. During positioning, the knee should be flexed slightly to avoid compression of the popliteal vein and increased risk of deep venous thrombosis.¹⁴⁻⁵ In this sense, the need for evaluation by the nurse stands out, considering that the choice of support should aim to increase the body area in contact with the support surface reducing pressure.

The use of barrier cream, absorbents or diapers is recommended among the MH¹⁴ and Guideline¹⁵ as humidity management recommendations. These devices should be inspected at each bedside for moisture. The use of disposable diapers can enhance the appearance of maceration, due to humidity, leaving the skin fragile and exposed to external aggressions.

Among the moisturizers and humectants, urea and essential fatty acid (EFA) creams are recommended, which promote hydration of the tissues.¹³⁻⁵ Among the skin protectors are: barrier cream, semipermeable film, polyurethane foam, rectal bags and / or oily substances. The semi-permeable film and polyurethane foam should be applied after skin cleansing and skin inspection in regions of bony prominences.^{7,13,15}

CONCLUSION

The proposed objectives were partially achieved through this study, since it was possible to describe the recommendations on material resources specifically directed to the prevention of pressure injuries. However, no specific recommendations and instruments were identified for the evaluation of the human and material resources necessary for an inpatient unit from the perspective of PU prevention. In this sense, it is important to note that there is no specific recommendation for the quantitative ideal of human and material resources described in the literature on PU prevention. This fact reveals a gap in knowledge.

It is also necessary to evaluate the available resources so that the preventive actions are actually implemented, even though national and international

governmental bodies direct interventions on prevention according to the patient's risk assessment.

It is suggested, on the basis of this, to carry out research to more accurately evaluate whether, based on the definition of the risk presented by the patient, the hospital units have adequate structure to meet the patient's skin integrity maintenance needs.

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