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RESEARCH

KNOWLEDGE OF NURSING PROFESSIONALS ABOUT DERMATITIS ASSOCIATED WITH INCONTINENCE AND PRESSURE INJURY

CONHECIMENTO DOS PROFISSIONAIS DE ENFERMAGEM SOBRE DERMATITE ASSOCIADA A INCONTINÊNCIA E LESÃO POR PRESSÃO

CONOCIMIENTO DE LOS PROFESIONALES DE ENFERMERÍA SOBRE LA DERMATITIS ASOCIADA CON LA INCONTINENCIA Y LESIÓN POR PRESIÓN

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ABSTRACT

Incontinence-associated dermatitis (IAD) and pressure injury (PI) are problems that affect the skin, especially in the case of hospitalized individuals in critical situations. These events may have a similar clinical presentation and it is essential that health professionals know how to differentiate them. This study aims to evaluate the knowledge of the nursing team about PI in stages 1 and 2 and of IAD regarding the concept, identification, prevention and treatment. This is a descriptive, exploratory, cross-sectional study with quantitative analysis performed with 76 nursing professionals. The data were collected in October 2017 and professionals were first approached to pass on information about the research and the questionnaire. The instrument was distributed to participants during working hours, and they filled it out and returned it to the researchers. The questionnaire applied had questions on definition, evaluation, prevention and treatment of IAD and PI. The study revealed that, with respect to skin changes caused by IAD and PI, the correct answers were more frequent in questions about IAD. Regarding evaluation, the rate of correct answers was close to the average (56.58%). In the prevention and treatment category, the highest percentage of correct answers was found in questions that referred to the importance of professional qualification and direct care measures to patients. The study led to the conclusion that, among the skin conditions IAD and PI in early stages, the professionals showed less knowledge about the latter.

Keywords: Nursing Care; Pressure Ulcer; Diaper Rash; Fecal Incontinence; Knowledge.

RESUMO

A dermatite associada a incontinência (DAI) e lesão por pressão (LP) é dano que acomete a pele, principalmente de indivíduos hospitalizados em situações críticas. Esses eventos podem ter apresentação clínica semelhante, sendo fundamental que os profissionais de saúde saibam diferenciá-los. Este estudo visa avaliar o conhecimento da equipe de Enfermagem quanto à LP nos estágios 1 e 2 e da DAI em relação ao conceito, identificação, prevenção e tratamento. É pesquisa descritiva exploratória, transversal, com análise quantitativa, realizada com 76 profissionais de Enfermagem. Os dados foram coletados no mês de outubro de 2017 e foi realizada abordagem prévia com os profissionais para informá-los sobre a pesquisa e o questionário. O instrumento foi distribuído aos participantes durante o horário de trabalho, e estes o preencheram e retornaram aos pesquisadores. Foi aplicado questionário com questões sobre definição, avaliação e prevenção e tratamento da DAI e LP. O estudo revelou no teste de conhecimento que, entre as alterações cutâneas de DAI e LP, os acertos foram maiores naquelas questões sobre a DAI. Em relação à categoria avaliação, o índice de acertos foi próximo do médio (56,58%). Na categoria prevenção e tratamento, o maior percentual de acertos foi entre questões que envolviam a importância da capacitação dos profissionais e medidas de cuidados diretos ao paciente. Concluiu-se que, entre as afecções cutâneas DAI e LP nos estágios iniciais, os profissionais demonstraram menos conhecimento sobre a LP.

Palavras-chave: *Cuidados de Enfermagem; Lesão por Pressão; Dermatite das Fraldas; Incontinência Fecal; Incontinência Urinária; Conhecimento.*

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RESUMEN

La dermatitis asociada a la incontinencia (DAI) y lesión por presión (LP) afectan la piel, principalmente de pacientes hospitalizados en situación crítica. La presentación clínica de ambos trastornos es parecida y por ello es imprescindible que los profesionales de salud sepan distinguirlos. El presente estudio busca evaluar el conocimiento del equipo de enfermería en LP en las etapas 1 y 2 y en concepto, identificación, prevención y tratamiento de DAI. Investigación descriptiva, exploratoria, transversal con análisis cuantitativa, llevada a cabo con 76 profesionales de enfermería. La recogida de datos se realizó en octubre de 2017; antes se les informó a los profesionales sobre la investigación y el cuestionario. Durante el horario de trabajo, los participantes recibieron un cuestionario con preguntas sobre definición, evaluación, y prevención y tratamiento de DAI y LP, que completaron y devolvieron a los investigadores. A través de la prueba de conocimiento, el estudio reveló que, en los trastornos cutáneas de DAI y LP, había más respuestas correctas referentes a DAI. En la categoría evaluación, el índice de respuestas correctas fue equilibrado (56%). En prevención y tratamiento, el mayor porcentaje de respuestas correctas era sobre la importancia de la capacitación profesional y medidas de cuidados directos al paciente. Se concluye que, entre los trastornos de la piel DAI y LP en las primeras etapas, los profesionales demuestran tener menos conocimiento en LP.

Palabras clave: *Atención de Enfermería; Úlcera por Presión; Dermatitis del Pañal; Incontinencia Fecal; Incontinencia Urinaria; Conocimiento.*

INTRODUCTION

Incontinence-associated dermatitis (IAD) is a type of erythema and edema of the skin surface, sometimes accompanied by blisters with serous exudate, erosion, or secondary skin infection. This condition is associated with exposure to urine or faeces in individuals with urinary and/or fecal incontinence.[1] It causes considerable discomfort and its treatment can be difficult, time-consuming and costly.[2]

IAD is the result of the association of several events affecting the skin of incontinent patients: exposure of the skin to chemical irritants from incontinence such as urine and faeces, use of restraining material (diaper), and use of products that are not suitable for the process of skin hygiene. In cases of institutionalized patients the situation is aggravated by the condition of the disease and exposure to several additional factors.[3]

Pressure injury (PI), in turn, is a localized damage to the skin and/or underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue.[4]

When IAD occurs, there is a high risk of developing PI as well as increased risk of infection and morbidity.[5] The differential diagnosis between PI and IAD is based on the visual and historical examination of the patient. Incorrect classification has significant implications for prevention, treatment and comparative assessment of quality of care.[6]

Thus, care for patients exposed to these two skin changes requires the effort of all members of the multidisciplinary team to prevent and treat them; however, the nursing team is responsible for the largest portion of care. The nursing team is responsible for direct care and management of assistance, so that nurses need to be prepared for it.[7]

It has been identified in the clinical practice that many medical practitioners have difficulty distinguishing IAD from PI in early stages, which led the National Pressure Ulcer Advisory Panel (NPUAP) and the European Pressure Ulcer Advisory Panel (EPUAP) to establish guidelines for differentiation of IAD and PI, and not its classification in stages 1 and 2. Thus, a nursing approach directed to the distinction between the IAD and PI is necessary, with the use of appropriate care technologies and identification the presented signs, treatment and improvement of the individuals' health conditions.[8]

The nursing team responsible for direct and continuous care in the prevention and treatment of these injuries should know the structure of the skin to correctly identify each of the pathological changes that may occur. By doing so, that the patients under its attention will receive preventive care and appropriate treatment, promoting the improvement of the service rendered.[9]

In view of this, it is necessary for the nursing team to know these changes, supported on a practice based on scientific evidence and not only on non-systematized clinical experiences. Thus, the best available clinical evidence should be used for decision making so as to reduce the risk of complications and improve nursing care.[10]

The present study was carried out to evaluate the knowledge of the nursing team about PI in stages 1 and 2 and IAD in relation to definition, evaluation and related interventions.

METHODOLOGY

This is a descriptive, exploratory, cross-sectional study with quantitative analysis, in compliance with Resolution nº 466/12, which deals with research involving human beings.[11] The study was approved by the *Comitê de Ética em Pesquisa* (COEP) of the *Universidade Federal de Minas Gerais* under the CAAE number 55759616.7.0000.5149 and of the *Núcleo de Ensino, Pesquisa e Extensão* (NEPE). The professionals who agreed to participate in the study signed the *Termo de Consentimento Livre e Esclarecido* (TCLE).

The research place was a teaching hospital in four hospital wards intended for clinical patients. The population of professionals consisted of 27 nurses and 106 nursing technicians. However, professionals who did not agree to participate, those who

were on vacation, and absentees by medical certificate were not included in the study. The study had, therefore, a convenience sample of 76 professionals (16 nurses and 60 nursing technicians).

Data collection was performed by nursing students/scholarship holders who underwent training in evaluation of IAD and PI. The data collection instrument was divided in two parts: the first one covered information on sociodemographic data of the participants and the second one was a questionnaire containing 18 statements with themes related to definition (10), evaluation (4) and prevention and treatment (4) of DAI and PI. For each of the statements the participant would consider the options and select one of the following answers: I agree (A), I disagree (D), or I do not know (NK).

For the preparation of the questions, manuscripts about the subject were searched in the literature so as to provide information scientifically regarding definitions, classification, and etiopathogenesis of IAD and PI. The questionnaire was validated in terms of content by two specialist nurses in the area of injuries who considered it adequate to evaluate the knowledge of the themes approached. No adjustments were necessary to the use of the instrument.

Data were collected in October 2017. The professionals were first approached to be informed about the research and the questionnaire. The instrument was then distributed to the participants during working hours and they completed it and returned it to the researchers.

Responses were inserted in a Microsoft Excel spreadsheet using the double typing technique. Then, the Statistical Package for the Social Sciences for Windows (SPSS), version 20.0, was used for descriptive analysis of the data.

RESULTS

The medical clinic sector had a total of 133 professionals from the nursing team, including 27 nurses and 106 nursing technicians. Seventy-six professionals from the nursing team participated in the study, of which 16 were nurses (21.05%) and 60 nursing technicians (78.95%). Eleven nurses (41%) and 46 nursing technicians (43%) did not participate in the study. The participants' distribution, according to sociodemographic characteristics, is presented in Table 1.

There was predominance of women in the sample (89.47%) and of professionals who presented less than five years of working time in the institution (51.31%). Regarding the definition of IAD and PI, the knowledge of the professionals (Tab 2) was observed.

It was noticed that the average of correct answers in the 10 items regarding the definition was of 78.28%. In seven (70%) of these items, the participants had a rate of correct answers above 80%. The aspects with less accuracy were those referring to the classification of PI stage II (38.16%) and to the risk factors related to the location of the injury (38.16%).

Table 1 - Participants of the research, according to sociodemographic characteristics. *Belo Horizonte*, 2017

Profession	n (76)	%
Profession		
Nurse	16	21.05
Nursing Technician	60	78.95
Total	**76**	**100**
Sex		
Female	68	89.47
Male	8	10.53
Total	**76**	**100**
Age (years)		
20 to 29 years	13	17.1
30 to 39 years	19	25
40 to 49 years	19	25
50 to 59 years	4	5.26
No answer	21	27.64
Total	**76**	**100**
Working time (years)		
< 5 years	39	51.31
5 to 10 years	17	22.37
10 to 15 years	8	10.52
15 to 20 years	0	0
No answer	12	15.8
Total	**76**	**100**

Table 3 presents the results regarding the correct answers to the items related to the evaluation of IAD and PI in the knowledge test.

In the items regarding the evaluation of IAD and PI stage 1 and 2, the participants gave between 50 and 60% of correct answers in items 6 and 7 and 60% or more of correct answers in items 8 and 9.

The professionals' knowledge about prevention and treatment of IAD and PI are presented in Table 4.

It was identified that in the items referring to the knowledge about prevention of IAD and PI stages 1 and 2 (items 13, 14 and 15), the participants had a rate of correct answers above 80%.

Regarding the knowledge of the professionals about the clinical evaluation necessary for identification of IAD and PI in the figures presented in the questionnaire, 43 professionals (56.58%) gave correct answers, and 22 (28.95%) incorrect answers; 11 professionals (14.47%) were not able to distinguish them.

Table 2 - Correlation index on the definitions of IAD and PI stages 1 and 2. *Belo Horizonte*, 2017

Item	Definition of IAD and PI stage 1 and 2	n (76)	%
01	IAD is a superficial inflammation of the skin related to prolonged exposure to moisture, such as urine and/or faeces.	43	96.05
02	Pressure injury is a localized damage to the skin and/or underlying soft tissue usually over a bony prominence or related to a medical or other device. It occurs as a result of intense and/or prolonged pressure or pressure in combination with shear.	56	73.68
03	The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, co-morbidities and condition of the soft tissue.	68	89.47
04	Prolonged contact with urine and faeces is the main extrinsic factor related to the onset of IAD.	71	93.42
05	Friction and humidity are common extrinsic factors that lead to the appearance of PI and IAD.	66	86.84
10	Stage II PI is the partial-thickness loss of skin with exposed dermis. The wound bed is viable, pink or red, moist, and may also present as an intact or ruptured (serum-filled) blister.	66	86.84
11	In stage II PI, adipose (fat) and deeper tissues are visible. Granulation tissue, slough and eschar are present.	29	38.16
12	The development of PI stages 1 and 2 generally result from inadequate microclimate and shear on the skin, on the pelvis and calcaneum.	29	38.16
16	Moisture from the incontinence makes the skin more susceptible to friction and shear action, contributing to the appearance of pressure injuries.	66	86.84
17	All incontinent patients are at risk of developing IAD, but those with mixed incontinence are the most vulnerable, especially when there is diarrhea.	71	93.42

Table 3 - Rate of correct answers of participants according to the items in the evaluation of IAD and PI stages 1 and 2. *Belo Horizonte*, 2017

Item	Evaluation of IAD and PI stage 1 and 2	n (76)	%
06	To confirm if the lesions is a PI, the patient should be put in lateral position and, after 30 minutes, have the erythema pressed. There is confirmation of PI if the erythema does not bleach and remains in place constantly	42	55.26
07	For evaluation of IAD, the erythema should be pressed with the finger for three seconds; the area pressed bleaches. After the pressure ceases, the erythema returns, indicating IAD.	43	56.58
08	PI stage 1 is characterized by intact skin with a localized area of erythema that does not bleach and that may look different in individuals with dark-colored skin.	49	64.47
09	In PI stage 1, changes in sensitivity, temperature or consistency (hardening) may occur before visual changes.	52	68.42

Table 4 - Distribution of the rate of correct answers of the participants to the items on prevention and treatment of IAD and PI stages 1 and 2. *Belo Horizonte*, 2017

Item	Interventions related of IAD and PI stage 1 and 2	n (76)	%
13	Soft cleansing of the skin, hydration, decubitus change, barrier skin protection, and diaper changes as needed are preventive measures to avoid the development of IAD and PI.	73	96.05
14	In order to reduce the incidence of IAD, it is necessary to identify patients at risk to evaluate the skin of the incontinent patients on a daily basis and to train the entire care team.	73	96.05
15	For the prevention and treatment of IAD, the indicated skin protectors can be Vaseline-based ointments, barrier creams, zinc oxide and non-irritating polymeric film.	68	89.47
18	The Braden scale is an instrument used to assess the risk of developing pressure injuries in "CRITICAL" patients.	16	65.69

DISCUSSION

Publications about the differentiation between IAD and PI are still few and no national studies were found in the databases addressing the knowledge of nurses and nursing technicians on the cutaneous affections IAD and PI. In this sense, the present study has an innovative character.

This research had the participation of 59% of the nurses and 57% of the nursing technicians of the medical clinic units. The participation of the professionals in the studies allows identifying the flaws in the knowledge. Training can be offered in order to prepare and improve the teams for early identification of skin changes in IAD and PI.

During the training promoted in service, there may be exchange of experiences and correction in misconceptions. With this, it is possible to build a critical collective consciousness, transposing it, later, to the individual level of the participants, allowing the promotion of the autonomy of each person based on the educational strategy.[12]

The data presented showed that the nursing professionals had an average score of 56.58% on the question related to the identification of these cutaneous problems through images. Regarding the definitions, the professionals obtained an average score of 78.28%, evidencing that they had knowledge but yet present a strong difficulty in clinical identification. From the

clinical point of view, it is known that IAD often occurs in the complete absence of the causal factors for the development of PI (pressure, shear forces on the skin and underlying soft tissues). Although the clinical presentation of PI in early stages and IAD is similar, the etiological factors are different.[13]

Considering the results of the present study, the percentage of correct answers among nursing technicians and nurses in the statements about prevention and treatment measures was reasonable (86.81%). Still in the item prevention and treatment, the highest percentage of correct answers was in the questions that involve professional qualification and direct care measures to patients. A study[13] performed with nursing technicians/assistants and nurses used a knowledge test on pressure injury (pressure ulcer), prepared by Pieper and Mott[14], a version that has been adapted and validated to be used in Brazil. The average of correct answers to questions about prevention compared to questions about evaluation and classification were below the established cutoff of 90%.

Regarding the evaluation, the rate of correct answers was close to the mean, indicating weaknesses in the evaluations of IAD and PI by the professionals. A study estimated that 50% of all patients with incontinence had had at least one episode of IAD, although it was recognized that this problem was frequently confused with PI.[15] The incorrect evaluation, diagnosis and treatment of IAD and PI associated with prolonged episodes of patient incontinence increases the cost of health care.[16]

Continuous skin assessment is essential for early detection of damage caused by IAD and PI and to differentiate whether or not the erythema of the skin is bleachable; these actions are considered important measures. In PI, the skin is intact, presenting unbleached flushing, with an initial sign resulting from this problem. In order to confirm the presence of PI, pressure is applied on the erythema with a finger for three seconds, allowing the bleaching to be assessed after removal of the finger.[4] The cause of the erythema is, therefore, not considered to be originated by a PI, but rather by other cutaneous affections, including IAD, mainly when the erythema is related to the diaper area.

In items 05 and 16 of the test, questions about extrinsic factors (friction, moisture and shear) as discussed as common causes for the occurrence of IAD and PI. In these questions, the professionals reached 86.84% of correct answers. Multiple studies have shown statistically significant values aassociating incontinence with the occurrence of IAD and risk of pressure injury.[15]

The present study revealed that, among the cutaneous IAD and PI changes, the correct answers were greater in the knowledge about IAD. Regarding the questions on PI, a higher percentage of incorrect answers was observed, and the greatest difficulties were found in the staging and use of the Braden scale.

According to Rolim,[17] recognizing PI is a problem that interferes with the quality of patient care. It is necessary to implement effective prevention measures, identify the development of the injury, its causes, and the risk factors for its occurrence. In the questions about PI staging, there were 38.16% of correct answer, thus indicating the difficulty of the professionals to describe and define the stages 1 and 2 of PI.

Regarding prevention and treatment, the item 18 states that the application of the Braden scale is a preventive factor aimed at reducing the risk of developing PI. The professionals (65.69%) answered the question correctly. The systematic use of the Braden scale is an important strategy in the care of patients and its application should be considered as a parameter of good nursing practice, besides being able to contribute to the improvement of the indicator of process for prevention of PI.[18]

Among the limitations of the study, we highlight the absence of professionals of the nursing team in the days of data collection, which hindered the participation of a greater number of people.

It is important that new national surveys are conducted to strengthen the discussions about the knowledge on IAD and PI, because identifying the difference between these lesions promotes the improvement of quality nursing care.

CONCLUSION

It was noticed that, among the cutaneous affections, the professionals showed less knowledge about PI than about IAD.

Regarding the knowledge about the definition of IAD and PI, the participants of the study obtained the average percentage of correct answers in the10 items of 78.28%. The aspects with lower accuracy were those related to the classification of PI stage 2 and the risk factors related to the site of the injury. Regarding the items related to the evaluation of IAD and PI, the participants obtained a percentage of correct answers above 50% and regarding the knowledge about prevention of IAD and PI, the this percentage was greater than 80%.

Daily skin evaluation is essential for early detection of damage caused by IAD and PI and, for that end, it is necessary to know the aspects of these diseases.

Thus, it is necessary to develop continuing education actions to improve professional care practices. These factors influence the quality of life of patients in long-term hospitalizations, during which the nursing team, both nurses and nursing technicians, is responsible for professional care and promotion of the clients' well-being. In order for this to occur effectively, it is important that medical practitioners be willing to take part in the actions promoted, so as to improve their knowledge and to confirm it.

REFERENCES

1. Beeckman D. A decade of research on Incontinence-Associated Dermatitis (IAD): evidence, knowledge gaps and next stages. J Tissue Viability. 2016[cited 2017 Sept 23];26(1):47- 56. Available from: https://www.sciencedirect.com/science/article/pii/S0965206X1600022X?via%3Dihub
2. Beeckman D, Campbell J, Campbell K, Chimentão D, Coyer F, Domansky R, *et al.* Proceedings of the Global IAD Expert Panel. Incontinence associated dermatitis: moving prevention forward. Wounds International Best Practice Principles. 2015[cited 2017 Sept 19]. Available from: https://www.researchgate.net/publication/276468311_Proceedings_of_the_Global_IAD_Expert_Panel_Incontinence-associated_dermatitis_moving_prevention_forward
3. Black JM, Gray M, Bliss DZ, Kenneedy-Evans KL, Logan S, Baharestani MM, *et al.* MASD Part 2: incontinence-associated dermatits and intertriginous dermatitis. A Consensus. J Wound Ostomy Continence Nursi. 2011[cited 2017 Sept 22];38(4):359-70. Available from: https://insights.ovid.com/crossref?an=00152192-201107000-00009
4. National Pressure Ulcer Advisory Panel. The NPUAP serves as the authoritative voice for improved patient outcomes in pressure injury prevention and treatment through public policy, education and research. Washington, DC: NPUAP; 2016. [cited 2017 Sept 21]. Available from: http://www.npuap.org/.
5. Kottner J, Beeckman D. Incontinence-associated dermatitis and pressure ulcers in geriatric patients. G Ital Dermatol Venereol. 2015[citado em 2017 Sept 20];150(6):717-29. Available from: https://www.ncbi.nlm.nih.gov/pubmed/26186379.
6. Beeckman D, Schoonhoven L, Fletcher J, Furtado K, Heyman H, Paquay L, *et al.* Pressure ulcers and incontinence-associated dermatitis: effective ness of the Pressure Ulcer Classification education tool on classification by nurses**.** Qual Saf Health Care. 2010[cited 2017 Oct 01];19(4).1-4. Available from: https://qualitysafety.bmj.com/content/19/5/e3
7. Martins DA, Soares FFR. Conhecimento sobre prevenção e tratamento de Úlceras de Pressão entre trabalhadores de enfermagem em um hospital de Minas Gerais. Cogitare Enferm. 2008[cited 2017 Sept 15];13(1):83-7. Available from: https://revistas.ufpr.br/cogitare/article/view/11956
8. Baessa CEB, Meireles VC, Balan MAJ. Ocorrência de dermatite associada à incontinência em pacientes internados na Unidade de Terapia Intensiva. Rev Estima. 2014[cited 2017 Sept 15];12(2). Available from: https://www.revistaestima.com.br/index.php/estima/article/view/89
9. Rodrigues MM, Souza MS, Silva JL. Sistematização da assistência de enfermagem na prevenção da Lesão Tecidual por Pressão. Cogitare Enferm. 2008[citado em 2017 Sept 10];13(4):566-75. Available from: https://revistas.ufpr.br/cogitare/article/view/13117/8875
10. Ercole FE, Macieira TGR, Wenceslau LCC, Martins AR, Campos CC, Chianca TCM. Revisão integrativa: evidências na prática do cateterismo urinário intermitente/demora. Rev Latino-Am Enferm. 2013[cited 2017 Sept 09];21(1). Available from: http://www.scielo.br/pdf/rlae/v21n1/pt_v21n1a23
11. Conselho Nacional de Saúde (BR). Resolução n o 466, de 12 de dezembro de 2012. Brasília: CNS; 2012. [cited 2017 Sept 05]. Disponível em: http://conselho.saude.gov.br/resolucoes/2012/reso466.pdf
12. Souza LM, Wegner W, Gorini MIPC. Educação em saúde: uma estratégia de cuidado ao cuidador leigo. Rev Latino-Am Enferm. 2007[cited 2017 Sept 19];15(2). Available from: http://www.scielo.br/pdf/rlae/v15n2/pt_v15n2a22.pdf
13. Galvão NS, Serique MAB, Santos VLCG, Nogueira PC. Conhecimentos da equipe de enfermagem sobre prevenção de úlceras por pressão. Rev Bras Enferm. 2017[cited 2017 Sept 19];70(2):312-8. Available from: http://www.scielo.br/pdf/reben/v70n2/pt_0034-7167-reben-70-02-0294.pdf
14. Fernandes LM, Caliri MHL, Haas VJ. Efeito de intervenções educativas no conhecimento dos profissionais de enfermagem sobre prevenção de úlceras por pressão. Acta Paul Enferm. 2008[cited 2017 Sept 12];21(2):305-11. Available from: http://www.scielo.br/pdf/ape/v21n2/pt_a12v21n2.pdf
15. Gray M, Giuliano KK. Incontinence-Associated dermatitis and immobility as pressure injury risk factors a multisite epidemiologic analysis. J Wound Ostomy Continence Nurs. 2017[cited 2017 Nov 03]. Available from: doi: 10.1097/WON.0000000000000390. [Epub ahead of print]
16. Holroyd S. Incontinence-associated dermatitis: identification, prevention and care. Br J Nurs. 2015[cited 2017 Oct 11];4(9). Available from: https://www.magonlinelibrary.com/doi/10.12968/bjon.2015.24.Sup9.S37
17. Rolim JA, Vasconcelos JMB, Caliri MHL, Santos IBC. Prevention and treatment of pressure ulcers in the daily lives of intensivist nurses. Rev Rene. 2013[cited 2017 Oct 11];14(1):148-57. Available from: http://connection.ebscohost.com/c/articles/88182393/prevention-treatment-pressure-ulcers-daily-lives-intensivist-nurses
18. Matozinhos FP, Velasquez-Melendez G, Tiensoli SD, Moreira AD, Gomes FSL. Factors associated with the incidence of pressure ulcer during hospital stay. Rev Esc Enferm USP. 2017[cited 2017 Oct 11];51:e03223. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342017000100421