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Nursing knowledge about incontinence-associated dermatitis in a teaching hospital

Conhecimento de enfermeiros sobre dermatite associada à incontinência em um hospital de ensino

Conocimiento de enfermeras sobre dermatitis asociada a incontinencia en un hospital docente

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ABSTRACT

Objective: Verify the nursing knowledge about incontinence-associated dermatitis in a teaching hospital.

Method: Descriptive, cross-sectional research with quantitative analysis carried out with 90 nurses from a university hospital in the northeast of the country between January and February 2021. Data were collected through a self-administered online questionnaire. Applied Fisher's exact association statistical test for crossing the variables.

Results: 75.6% of the participants had knowledge about the definition of incontinence-associated dermatitis, however most participants were wrong about several factors, such as: image identification (58.9%), evaluation (66.7%), prevention and treatment (58.9%), risk assessment method (62.2%).

Conclusion: Participants have weaknesses in the knowledge of incontinence-associated dermatitis. It is recommended that this study should be reproduced in other scenarios, in order to contribute to the production of protocols to optimize the management of incontinence-associated dermatitis.

Keywords: Nursing care. Dermatitis. Enterostomal therapy. Hospitalization. Hospitals, university.

RESUMO

Objetivo: Verificar o conhecimento de enfermeiros acerca da dermatite associada à incontinência em um hospital de ensino.

Método: Pesquisa descritiva, transversal e com análise quantitativa, realizado com 90 enfermeiros de um hospital universitário do nordeste do País entre janeiro e fevereiro de 2021. Os dados foram coletados através de um questionário *online* auto aplicado. Os dados foram analisados através do teste Exato de Fisher.

Resultados:75,6% dos participantes apresentaram conhecimento sobre a definição de dermatite associada à incontinência, contudo a maioria dos participantes errou sobre diversos fatores, tais como: identificação da imagem (58,9%), avaliação (66,7%), prevenção e tratamento (58,9%), método de avaliação de risco (62,2%).

Conclusão: Os participantes apresentam fragilidades no conhecimento de dermatite associada à incontinência. Recomenda-se a reprodução deste estudo em outros cenários, a fim de contribuir com a produção de protocolos que otimizem o manejo.

Palavras-chave: Cuidados de enfermagem. Dermatite. Estomaterapia. Hospitalização. Hospitais universitários.

RESUMEN

Objetivo: Controlar el conocimiento de las enfermeras sobre la dermatitis asociada a incontinencia en un hospital universitario.

Método: Investigación descriptiva, transversal con análisis cuantitativo, realizada con 90 enfermeros de un hospital universitario del nordeste del país entre enero y febrero de 2021. Los datos fueron recolectados a través de un cuestionario en línea autoaplicado. Aplicó la prueba estadística de asociación exacta de Fisher para cruzar las variables.

Resultados:75,6 % de los participantes tenía conocimiento sobre la definición de dermatitis asociada a incontinencia, sin embargo, la mayoría de los participantes se equivocaron en varios factores, como: identificación de imágenes (58,9 %), evaluación (66,7 %), prevención y tratamiento (58,9 %), riesgo método de evaluación (62,2%).

Conclusión: Los participantes tienen debilidades en el conocimiento de la dermatitis asociada con la incontinencia. Se recomienda que este estudio se reproduzca en otros escenarios, con el fin de contribuir a la elaboración de protocolos que optimicen el manejo de la dermatitis asociada a incontinencia.

Palabras clave: Cuidado de enfermería. Dermatitis. Estomaterapia. Hospitalización. Hospitales universitarios.

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INTRODUCTION

Incontinence-associated dermatitis (IAD) is defined as the onset of shiny-looking erythema and edema of the skin surface, sometimes accompanied by serous exudates, and is considered the most prevalent type within the spectrum of skin injuries associated with moisture, especially in patients with urinary and/or fecal incontinence[1] Therefore, this dermatitis has aroused the interest of the scientific community, due to the various impacts in the quality of life of the affected individuals[2].

In Brazil, 56.2% of patients diagnosed with urinary and/or fecal incontinence had dermatitis[3]. In other countries such as Australia, the prevalence of incontinence-associated dermatitis in hospitalized patients is 10%[4], and in 73% of these the condition started after admission, which demonstrates the need for tools to prevent IAD in hospitals[5].

No studies assessing the prevalence of incontinence-associated dermatitis were found in the State of Piauí. However, a study carried out in a basic health unit in Teresina, with a sample of 306 participants, identified a prevalence of 40.8% of urinary incontinence in women[6], which may suggest the occurrence of IAD at some point in the lives of these people who experience this type of incontinence.

The lack of knowledge of the multidisciplinary team, especially nursing professionals, is a risk factor for the development and inadequate management of cases of incontinence-associated dermatitis, as these professionals have difficulty distinguishing IAD from other types of injuries, such as, for example, pressure injury (PI)[7].

There is a significant correlation between dermatitis associated with urinary and fecal incontinence, considering aspects such as the frequency of stools, poor skin conditions and oxygenation, pain, fever and restriction of mobility. In addition to these factors, there is the incidence of comorbidity caused by low serum albumin, which is associated with a marked increase in the likelihood of skin damage[1–8].

Incontinence-associated dermatitis causes discomfort in affected patients, as it manifests itself through pain, burning, itching, among other symptoms in the affected sites. Furthermore, many professionals are unaware of the management of dermatitis and use inappropriate products for its treatment, thus prolonging the period of hospitalization of patients, which significantly impacts their quality of life[9–10].

A study carried out in an oncology hospital verified the high cost of IAD by comparing the available treatment alternatives. The study found that a long-term cost reduction of 12.4% could be achieved with the use of a care protocol with sanitizer and polymer film barrier. However, despite the technologies developed, conventional skin treatment (water, soap and zinc oxide ointment) has become the most common treatment used by health services, increasing public spending on health care, especially when there is an evolution to PI[11].

In this regard, incontinence-associated dermatitis is considered a public health issue that concerns the scientific community. Therefore, to minimize its incidence, investigation of nurses' knowledge about this condition is needed to identify the gaps in the available scientific literature on the subject, as well as understanding the relationship between knowledge and care practice.

In view of the aforementioned, and the high incidence of incontinence-associated dermatitis, especially during the hospitalization period, as well as the negative impact caused by this condition, the following question was posed: What is the nurses' knowledge about the identification of incontinence-associated dermatitis in a teaching hospital? Therefore, this study aims to verify the knowledge of nurses about incontinence-associated dermatitis in a teaching hospital.

METHOD

Descriptive, cross-sectional research with quantitative analysis. The study setting was a teaching hospital in Teresina, State of Piauí.

The study population consisted of nurses from the referred hospital, distributed in three shifts (morning, afternoon and night), consisting of 219 professionals, of whom 122 performed care functions, 14 were away due to leaves, and 97 were distributed in managerial sectors, performing administrative functions.

No sample calculation was performed because the population was small. Convenience sampling was used and the following inclusion criteria were established: nurses working in direct nursing care for adult and elderly patients in inpatient and intensive care units, who agreed to participate in the study by answering the online questionnaire available. Nurses allocated to administrative functions, on days off during collection, and those away from the work environment due to leave were excluded from the study.

Thus, the approximate sample of 108 nurses distributed in the care sectors of the selected institution was considered eligible for completing the online questionnaire, of which 90 agreed to participate in the research. The percentage of 10% loss was adopted.

Due to the COVID-19 pandemic, the online questionnaire was made available by the authors through the access link and shared in the official group of professionals at the health institution through WhatsApp®.

Data collection was carried out by the authors from January to February 2021, through self-administration of the online questionnaire prepared in Google forms®, based on previous studies[7–12].

The online questionnaire consisted of 1. Free and Informed Consent Form (ICF), 2. Sociodemographic characterization of the participants and 3. Online questionnaire on incontinence-associated dermatitis. The first part provided ethical clarifications to the participants, such as the study objectives, benefits and risks. The second part consists of questions regarding the sociodemographic profile of the participants, based on a validated instrument, such as: age, gender, place of birth, marital status, maximum degree, number of years of education, care work, weekly workload, sector of work and number of employment relationships in the care area[12].

The third part consisted of 16 statements with themes related to the identification (10), evaluation (3), prevention and treatment (3) of incontinence-associated dermatitis, including the distinction between IAD and PU through the use of two images validated by experts and made available by the original instrument, in terms of content, by two nurses specialized in stomatherapy related to the topics covered[7]. For each statement, the participant should select an answer option: I agree, I disagree and I don't know.

Adjustments were necessary in the instrument. Thus, authorization was requested from the authors of the original study[7]. The adjustments concern replacing educational level with maximum training; inclusion of the number of years of education, area of activity, weekly workload, sector, existence of other care employment bonds; organization of theoretical statements considering the dimensions evaluated by the original instrument (definition, extrinsic factors and evaluation), IAD management (prevention, treatment, cleaning and instrument of evaluation).

A priori, all variables of the online questionnaire for data collection were organized and coded in a dictionary called codebook. Subsequently, the collected data were entered (double data entry) in a Microsoft Office Excel for Windows 2010 spreadsheet, to identify possible inconsistencies, and exported to the Statistical Package for the Social Sciences (SPSS) 20.0 and R version 4.0.4 software.

Descriptive analyzes were performed based on the results of the data obtained with SPSS, and after the spreadsheets were structured, Fisher's exact test was applied for cross-tabulation of outcome and independent variables (sociodemographic data - sector of activity). The reason for choosing this analysis was based on the importance of verifying the knowledge profile of professionals who provide care in the sectors of the selected health institution with the highest incidence of injuries. Such data was obtained through indicators previously collected in 2020. Statistical significance was 5%.

The knowledge of nurses about incontinence-associated dermatitis in a teaching hospital was considered as an outcome variable, and as independent variables, sociodemographic data (gender, date of birth, color/race, marital status, maximum degree, number of years of education, sector, weekly working hours, number of employment contracts). The answers were distributed according to the percentages of correct answers, incorrect answers and lack of knowledge ("I don't know").

The study was approved by the Research Ethics Committee of Universidade Federal do Piauí (UFPI) under CAAE no 01564818.2.0000.5214 and under protocol no.3,026,373. Also, the formal requirements of the regulatory standards for research involving human beings were observed, with the presentation of the virtual Free and Informed Consent Term (ICF), guaranteeing confidentiality, privacy and non-use of information to the detriment of participants, according to an established resolution[13]. The authors authorized the use of the original instruments.

RESULTS

Ninety nurses participated in the research, and the percentage of losses was lower than expected (7.2%). Analysis of the sociodemographic characteristics of the population investigated showed a predominance of women (83.3%), with the highest degree of specialization (54.4%), five or more years of education (96.5%), who have been working for five years or more in nursing care (88.9%), with a weekly workload of 36 to 44 hours (53.3%), and who had other employment relationships (61.1%).

Regarding the sectors of the participants, 24.4% worked in internal medicine, followed by 23.3% in the Intensive Care Unit, 21.1% in the Surgical Clinic, 20% in the High Complexity Care Unit in Oncology and 11. 1% in the COVID Intensive Care Unit.

In Table 1, data collected about the identification of incontinence-associated dermatitis showed that most professionals chose the correct statement in the first item related to the definition, with a percentage of 75.6%, as well as 61.1% of the participants chose the same option in the third statement. However, 63.3% of the sample considered the second statement (item 2) on the same topic incorrect. Regarding extrinsic factors, there was a higher percentage of correct answers among the participants, in statements 3, 4 and 14, with values of 80%, 62.2% and 80%, respectively.

Table 1 – Knowledge of nurses about identification, considering definition, extrinsic factors and evaluation of incontinence-associated dermatitis. Teresina, Piauí, Brazil, 2021

	Item Identification of IAD	n (%)		
		Incorrect	Correct	I don't know
	Definition of IAD			
1	IAD is a superficial inflammation of the skin related to prolonged exposure to any form of moisture such as urine and/or feces.	20 (22.2)	68 (75.6)	2 (2.2)
2	IAD is localized damage to the skin and/or underlying soft tissue, usually over a bony prominence or related to the use of a medical device or other artifact. It is the result of intense and/or prolonged pressure in combination with shear.	57 (63.3)	30 (33.3)	3 (3.3)
9	IAD is the loss of skin in its partial thickness, with exposure of the dermis, with the wound bed viable, pink or red, moist and can also look like an intact blister (filled with serous exudate) or ruptured.	30 (33.3)	55 (61.1)	5 (5.6)
	Extrinsic factors related to IAD			
3	Prolonged contact with urine and feces is the main extrinsic factor related to the onset of IAD.	17 (18,9)	72 (80.0)	1 (1.1)
4	Friction and moisture are common extrinsic factors that lead to the onset of IAD.	33 (33.7)	56 (62.2)	1 (1.1)
14	All incontinent patients are at risk of developing IAD, but those with mixed incontinence are the most vulnerable, especially when diarrhea is present.	15 (16.6)	72 (80.0)	3 (3.3)
	Assessment of IAD			
5	To confirm IAD, patient must be placed in lateral recumbent position and 30 min later the erythema is pressed and red color persists, rather than blanching.	60 (66.7)	14 (15.6)	16 (17.8)
6	To assess IAD, press on the red area of the erythema with your finger for 3 seconds. The area will go white and when pressure is removed, the erythema will reappear, indicating IAD.	55 (61.1)	20 (22.2)	15 (16.7)
7	IAD is characterized by a localized area of intact skin with non-blanchable erythema and may look different in dark skin.	56 (62.2)	24 (26.7)	10 (11.1)
8	In IAD, changes in sensitivity, temperature, or consistency (hardening) may occur before visual changes.	39 (43.3)	46 (51.1)	5 (5.6)
10	In IAD, adipose tissue and deeper tissues are visible and granulation tissue, slough, and necrosis are present.	17 (18.9)	67 (74.4)	6 (6.7)

Source: Research data, 2021.

In the statements that addressed the assessment of incontinence-associated dermatitis, also in Table 1, most participants made mistakes: five (66.7%), six (61.1%) and seven (62.2%).

Moreover, the data showed a considerable percentage of participants who ignored ("I don't know") the subject in statements 5 (17.8%), six (16.7%) and 7 (11.1%), which concern IAD assessment. However, there was a higher percentage of correct answers in statements 8 and 10, which report the evaluation addressing the characterization and clinical evolution of the injury, with values of 51.1% and 74.4% of correct answers, respectively.

Analysis of the results of the management (prevention and treatment) of incontinence-associated dermatitis showed a higher number of correct answers in statement 11, about the correct management of the skin (gentle cleaning, hydration, use of barrier cream, diaper change according to need) and 12, on risk identification, daily assessment as preventive measures against incontinence-associated dermatitis, with the respective percentages of correct answers: 83.3% and 85.6% as shown in Table 2.

However, the participants considered statement 13 (58.9%), which addressed the types of skin protectors indicated for the prevention and treatment of incontinence-associated dermatitis, incorrect. Statement 15, about the risk assessment method for the development of incontinence-associated dermatitis using the Braden scale, was considered incorrect by most participants (62.2%) as shown in Table 2.

As it can be seen in Table 3, 58.9% of the participants answered the question about identification of an image with a case of incontinence-associated dermatitis incorrectly, attributing the case of dermatitis to pressure injury. Correlation of the sectors of activity of the participants and image identification showed a percentage of disagreement in descending order, as described below: internal medicine (26.4%), followed by the High Complexity Care Unit in Oncology (22, 6%), Intensive Care Unit - ICU (20.7%), Surgical Clinic (17.0%), and COVID Intensive Care Unit (13.2%). There was no statistically significant association between the variables, and p-value was 0.656.

Table 2 – Nurses' knowledge about the management (prevention and treatment) of incontinence-associated dermatitis. Teresina, Piauí, Brazil, 2021

Item	Management of IAD	n (%)		
		Incorrect	Correct	I don't know
11	Gentle cleansing of skin, hydration, barrier cream, diaper changing as needed are preventive measures to prevent IAD development.	15 (16.7)	75 (83.3)	0 (0.0)
12	To reduce the incidence of IAD, the patient at risk must be identified, the skin of the incontinent patient must be evaluated daily and the entire care team must be trained.	13 (14.4)	77 (85.6)	0 (0.0)
13	For the prevention and treatment of IAD, the barrier products can include petrolatum ointments such as Vaseline, barrier creams, zinc oxide oil and non-irritating polymeric film.	53 (58.9)	34 (37.8)	3 (3.3)
15	The Braden scale is an instrument used to assess the risk of development of IAD in "CRITICAL" patients.	56 (62.2)	31 (34.4)	3 (3.3)

Source: Research data, 2021.

Table 3 – Correlation between the sectors of activity of the participants and identification of the image of incontinence-associated dermatitis provided by the online original instrument*. Teresina, Piauí, Brazil, 2021

Care sector	Identification of the image that corresponds to IAD	
	Incorrect Image: Pressure injury	**Correct Image:** Incontinence-associated dermatitis
	n (%)	**n (%)**
ICU COVID (Health center 1)	7 (13.2)	3 (8.1)
Oncology (Health center 2)	12 (22.6)	6 (16.2)
Internal Medicine (Health center 3)	14 (26.4)	8 (21.6)
Surgical clinic Health center 4)	9 (17.0)	10 (27.0)
ICU	11 (20.7)	10 (27.0)
Total	**53 (58.9)**	**37 (41.1)**

Source: Research data, 2021.
* Fisher's exact test was applied and p-value was = 0.656.

Considering all the statements presented to the study participants, the one with the highest percentage of incorrect answers was question 5 (66.7%) and is related to the extrinsic factors associated with IAD: Friction and moisture are common extrinsic factors that lead to the onset of IAD. On the other hand, the statement with the highest percentage of correct answers was question 12 (85.6%) which describes IAD management: To reduce the incidence of IAD, patients at risk must be identified, the skin of incontinent patients must be evaluated on a daily basis and the entire care team must be trained, as shown in Figure 1.

The other statements with the highest percentage of incorrect answers in descending order were question 2 (63.3%) which describes the identification of IAD and its

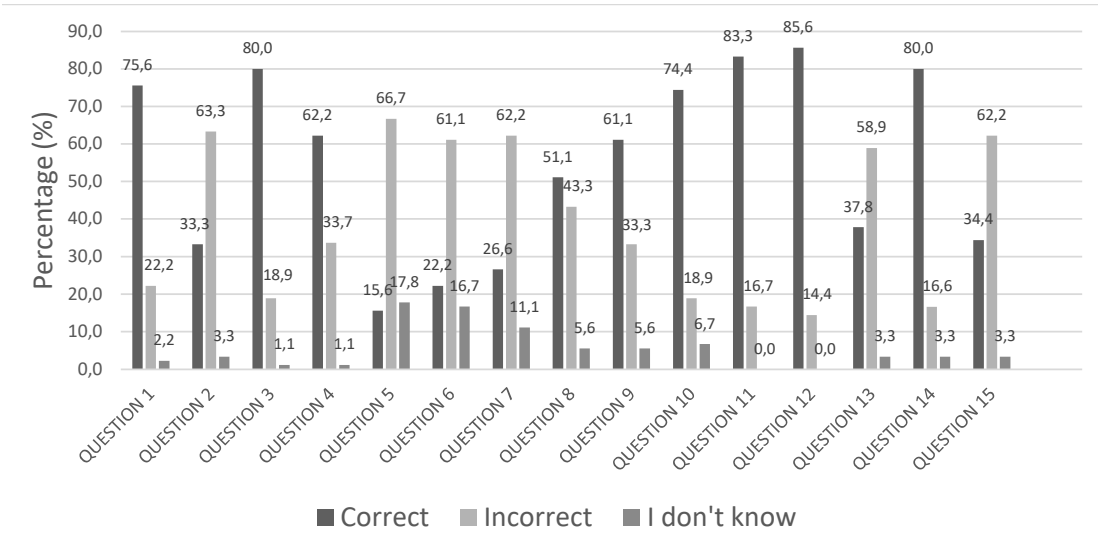

Figure 1 – Knowledge of nurses about identification, considering definition, extrinsic factors and evaluation of incontinence-associated dermatitis. Teresina, Piauí, Brazil, 2021.
Source: Research data, 2021.

presentation regarding the wound bed, questions 7 and 15 are statements related to the identification of pressure injuries and had the same percentage (62.2%), as shown in Figure 1.

DISCUSSION

The present study aimed to evaluate nurses' knowledge of incontinence-associated dermatitis in order to understand the dimension of this problem in a teaching hospital. The findings related to the sociodemographic variables revealed the predominance of women, which reinforces the influence of this population in nursing.

The high rate of participants with postgraduate degrees showed their commitment and interest in acquiring and updating knowledge. A study that investigated nurses' knowledge of pressure injuries (PI) corroborates the evidence found on maximum degree in the sociodemographic profile. Thus, it is noteworthy that nurses sought to invest in the development of their technical-scientific knowledge through *Lato sensu* postgraduate courses[13–14].

Insufficient knowledge about the dimensions of identification, assessment and management can be attributed both to the specificity of the topic, as well as to the recent publication of the official definition of IAD, during the global conference between specialists in the area, held in 2010. This fact could be harmful for the performance of professionals who have completed education before 2010[15].

The pandemic context experienced by health professionals during the study period, in which health services operated with demands above their usual capacity, due to the spread of Sars-CoV-2 that causes Covid-19 also deserves mention. This means that professional nurses were working at a high risk of contamination by the new coronavirus, facing excessive working hours that triggered problems such as physical fatigue and psychological stress, which may have influenced the pattern of responses to the topic addressed[16].

Moreover, the heavy workload allows daily contact with patients treated for IAD, since these injuries had a high prevalence of 56.2%, as pointed out in a recent study carried out in the context of the internal medicine department of a teaching hospital[3]. Thus, the importance of institutions promoting refreshment courses and continuing education on injuries that most affect the assisted patients, such as IAD, is recognized.

Regarding knowledge about the identification of IAD, nurses demonstrated to know the definition. However, they made a mistake when identifying IAD as PI, revealing their difficulty in distinguishing the two types of injuries. Thus, it can be inferred that such a mistake will prevent the delivery of adequate care for people affected by IAD, compromising the resolution of the problem, resulting in longer hospital stay and increased costs for the health institution[11].

Another condition that makes it difficult to distinguish these injuries is the combination between IAD prevention and treatment protocols and the protocols that address PI, with the justification of a holistic approach in the management of skin injuries. However, this combination of protocols contributes to underreporting of IAD in hospitals, as it makes it difficult to distinguish between IAD and PI[2].

Regarding extrinsic factors, participants mastered the subject, especially when they related IAD and moisture, recognizing that moisture is the main factor that can predispose individuals to the onset of IAD, as shown in the analyzed studies[17]. Based on this finding, it is reinforced that IAD is included in the group of injuries internationally known as Moisture-associated skin damage (MASD)[15].

The statements about the evaluation of the IAD had a high percentage of incorrect answers and lack of knowledge. This evidence allows us to infer that nurses had little knowledge about the assessment of IAD, incurring in possible incoherent practices in the face of an event of this nature. Furthermore, interpretation of the statements showed that these professionals use the same parameters to assess PI in IAD. Thus, nurses' lack of knowledge in distinguishing IAD from other types of injury, such as PI, is a risk factor for the onset and worsening of this condition, since these injuries are managed differently[7].

It should be noted that there is a wide variety of skin protectors available on the market, such as creams, ointments, pastes, lotions and films, as well as different formulas based on dimethicone, zinc oxide and acrylate. However, the low level of knowledge of the participants is evidenced when the approach is more specific, concerning the types of products indicated for IAD prevention and treatment. This evidence is mainly related to the lack of standardization of terminology to describe these products. Moreover, despite the widespread use of these products, there are few randomized controlled studies proving their effectiveness through clinical trials[2].

Regarding the similarities between PI and IAD, both are correlated, as the two types of injuries share many risk factors, such as restrictions on mobility, tissue layers compromised due to poor conditions, skin oxygenation and longer hospital stay, which are factors that contribute to the score on the Braden Scale[18]. However, many nurses were unable to identify the applicability of this online questionnaire, which is used to specifically assess the risk of developing pressure injuries.

Therefore, despite sharing risk factors, there are specific characteristics that distinguish both injuries, such as the affected site, etiology, forms of evaluation and presentation, as well as clinical findings, since pressure injuries result from

damage to the skin or soft tissues, most often located over a bony prominence, due to prolonged or intense pressure in combination with shear. Furthermore, PI manifests itself as non-blanchable erythema when finger pressure is applied to the area, and can be painful unlike IAD[7].

This lack of knowledge has a negative impact on the quality of care provided to patients affected by PI and IAD, since the systematic use of assessment instruments is considered a parameter for the promotion of good Nursing practices[7].

Regarding the nurses' knowledge about the distinction between PI and IAD through images validated by specialists, obtained from the original instrument and inserted in the online data collection questionnaire, it differed between the hospital sectors evaluated. The best performance was observed in the surgical clinic and the worst in internal medicine. The distinction between the two diagnoses is difficult and requires prior knowledge on the subject. There are also mixed forms, i.e., cases in which the patient is affected by both injuries. Therefore, the ability to distinguish between the two diagnoses is an important strategy in IAD management[19–20].

It is emphasized that the management of IAD is part of good nursing practices, with application of the guidelines and international protocols proposed for prevention and treatment. Thus, the identification of the risk of developing IAD, through continuous skin assessment, gentle cleansing, use of a barrier cream, and diaper change as needed, are the most effective interventions for the prevention of incontinence-associated dermatitis[19].

However, although many of the nurses who participated in this study proved to know some of these preventive methods, most professionals demonstrated that this knowledge is based on empiricism, that is, it comes from everyday practice, without the search for a scientific basis. And this was identified as a deficit in the knowledge of these items and behaviors.

In view of the aforementioned, despite the little knowledge of the aspects related to the identification and evaluation of IAD, it can be inferred that the best practices of the participants are related, in general, to prevention and treatment, which somewhat favors the delivery of appropriate care in the context of IAD.

CONCLUSION

The results obtained exposed the lack of knowledge of the nurses who participated in the research about incontinence-associated dermatitis, especially regarding the identification aspects, such as the location and evaluation of IAD compared to PI. Such evidence is not consistent with the profile of the participants, as they have many years of education, a fact that presupposes greater experience and, consequently, better management of IAD cases.

It was found that nurses need institutional encouragement through training in prevalent injuries in the hospital environment, such as IAD. This will make it possible to promote high quality health care, through the rectification of concepts and practices, in order to build consistent knowledge in a critical way.

Therefore, this study aimed to contribute to improving the quality of nursing care, through the survey of recurrent problems in health services, being the first step to reduce the incidence of IAD. The present study will also provide theoretical support for the implementation of interventions related to continuing education in the training of professionals, also contributing to future publications, since the literature on the subject is still scarce, and further analysis on the subject is required.

The limitations and weaknesses of the study include the planning for remote data collection during the COVID-19 pandemic, in view of the low initial adherence of nurses to the research, and their difficulty in returning the online questionnaires completed, which can be justified by the increased demands in the hospital context during the pandemic period.

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