

## Teaching about incontinence-associated dermatitis informed by problematization methodology

*Ensino sobre dermatite associada à incontinência subsidiado pela metodologia da problematização*

*La enseñanza sobre dermatitis asociada a la incontinencia subsidiada por la metodología de la problematización*

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### ABSTRACT

**Objective:** to evaluate as training a process of educational intervention on incontinence-associated dermatitis with nursing professionals from a public hospital. **Method:** qualitative, educational intervention study conducted in 2017 with seven internal medicine nursing professionals at a university hospital in the Midwest region of Brazil, using a non-probabilistic convenience sample. The meetings were recorded in their entirety in audio, and the data were treated using the content analysis technique. The study was approved by the research ethics committee. **Results:** the following thematic categories were identified: epistemological curiosity, research/investigation, evaluation, and joy. **Conclusion:** the participants reported having understood the subject, and stated that the meetings were conducted efficiently, cheerfully and dynamically. Note that the professionals discussed the problem, which mobilized the group to think about and change health care practices.

**Descriptors:** Nursing care; education, nursing; diaper rash; patient safety.

### RESUMO

**Objetivo:** avaliar de modo formativo um processo de intervenção educativa sobre dermatite associada à incontinência com profissionais de enfermagem de um hospital público. **Método:** estudo de intervenção educativa, com abordagem qualitativa, realizado em 2017, com sete profissionais da equipe de enfermagem do setor de clínica médica, de um hospital universitário da Região Centro-Oeste do Brasil. Investigada amostra não probabilística por conveniência. Os encontros foram gravados na sua totalidade em áudio e para tratamento dos dados utilizou-se a técnica de análise de conteúdo. Estudo aprovado por Comitê de Ética em Pesquisa. **Resultados:** nos depoimentos foram identificadas as seguintes categorias temáticas: curiosidade epistemológica, pesquisa/investigação, avaliação e alegria. **Conclusão:** os participantes relataram ter compreendido o tema, bem como afirmaram que a condução dos encontros ocorreu de forma eficiente, alegre e dinâmica. Destaca-se que os profissionais realizaram discussão sobre o problema, mobilizando o grupo para reflexão e mudança das práticas de cuidados em saúde.

**Descritores:** Cuidados de enfermagem; educação em enfermagem; dermatite das fraldas; segurança do paciente.

### RESUMEN

**Objetivo:** evaluar de modo formativo un proceso de intervención educativa sobre dermatitis asociada a la incontinencia con profesionales de enfermería de un hospital público. **Método:** estudio de intervención educativa, con enfoque cualitativo, realizado en 2017, junto a siete profesionales del equipo de enfermería del sector de clínica médica, de un hospital universitario de la región del Centro Oeste de Brasil, siendo la muestra no probabilística por conveniencia. Todos los encuentros fueron grabados en audio y, para el tratamiento de los datos, se utilizó la técnica del análisis de contenido. Estudio aprobado por el Comité de Ética en Investigación. **Resultados:** por los testimonios, se identificaron las siguientes categorías temáticas: curiosidad epistemológica, encuesta/investigación, evaluación y alegría. **Conclusión:** los participantes relataron haber comprendido el tema, afirmaron que los encuentros fueron conducidos de forma eficiente, alegre y dinámica. Se resalta que los profesionales realizaron discusiones sobre el problema, movilizándolo al grupo para la reflexión y el cambio de las prácticas de cuidados en salud.

**Descriptorios:** Atención de enfermería; educación en enfermería; dermatitis del pañal; seguridad del paciente.

## INTRODUCTION

Incontinence-associated dermatitis (IAD) is a cutaneous inflammation that occurs as a consequence of the contact of the skin of the perineal and perigenital regions, gluteus, thighs, and their surroundings with urine and/or stool. The injuries originated in this contact are characterized by local hyperemia or, in the most severe cases, skin rupture<sup>1</sup>.

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The physiopathology of the emergence of this type of injury is related to the exposure of the skin to irritants, such as urine and/or feces, for an extended period of time. The prolonged exposure to moisture changes the barrier function of the skin, leading to excessive hydration, altering the skin pH, and reducing its tolerance to friction, shear, or pressure. In addition to moisture, feces have digestive enzymes, which implies higher chances of tissue damage<sup>1,2</sup>.

Among the factors associated with the emergence of IAD, both extreme ages, patients' general health and nutritional condition, tissue oxygenation, tissue perfusion, exposure of the skin to friction or shear, and body temperature stand out as triggering causes. In association with these factors, incontinence is the primordial element for the emergence of this type of injury, whether it is urinary, fecal, or double. The condition of the skin in the perineal and perigenital regions and their surroundings, patients' capacity to go to the toilet without assistance, and their cognitive capacity to identify the need to eliminate their excretions are also risk factors associated with the emergence of IAD<sup>3,4</sup>.

This type of injury is prevalent in hospital institutions, given that the clients of this care setting usually experience pathological conditions that involve a reduced level of consciousness. However, its incidence and prevalence are not fully known. It is estimated that, in hospital settings, the prevalence of IAD in incontinent clients is 29.0% and that the rate of IAD is 16.5% in the total inpatient population. Another study identified an IAD rate of 21.3% in hospital facilities<sup>5,6</sup>.

In Brazil, a study carried out in the Southeast Region identified an IAD incidence rate of 20.4% in intensive care unit inpatients. The average time between the admission to the unit and the emergence of the injury was nine days<sup>7</sup>.

Incontinence-associated dermatitis causes an extremely painful injury, which decreases patients' quality of life and comfort and can predispose to more severe injuries, for instance pressure injuries (PIs). An IAD injury that is not properly and timely treated often evolves to a PI. Additionally, healthcare professionals find it difficult to differentiate between IAD injuries and PIs, because both can occur in incontinent patients and have similar characteristics<sup>1,4,8-13</sup>.

Given all these factors and the importance of implementing proper care measures to each type of injury, it is indicated that healthcare teams are trained to carry out the differential diagnosis of these conditions to increase patients' safety<sup>1,4,8-13</sup>.

The present study had the objective of evaluating, in a formative way, a process of educational intervention about IAD with nursing professionals at a public hospital.

## **THEORETICAL FRAMEWORK**

In 2004, the National Policy of Permanent Education in Health (PEH) was instituted in Brazil as a strategy to train and develop the professional skills of workers at the Brazilian Unified Health System. According to this policy, the education practiced in the health field must combine learning with the critical reflection on the problems experienced by healthcare teams to promote solutions<sup>14</sup>.

One of the assumptions of PEH is the identification of healthcare workers' educational needs, with the educational process being developed in the workplace itself, according to the daily routine of the institutions. These educational processes must have the health needs of assisted people and populations as a reference<sup>14</sup>.

One of the authors used to support the National Policy of PEH was the educator Paulo Freire. A central premise of his work is the importance of dialogic education, in which students are not mere listeners, but instead actors with a voice, reflective and active beings in the process of teaching and learning<sup>15</sup>.

Two of the great challenges in implementing educational processes is the adherence of the participants to the activities and the incentive to make the people involved in the process feel that they belong to it. In this context, adopting new methodologies and using varied teaching strategies can help change the care practices and promote harm-free assistance. It is important that the participants have a voice and can feel that they are actors of the actions in educational processes. Another factor to be emphasized is the applicability of the contents to reality<sup>6,16</sup>.

A methodology that has been applied in the health area is problematization. It proposes the execution of five steps for teaching: the identification of the problem; the survey of the related key points; theorization, in which the scientific literature on the subject is searched for; the identification of the hypothesis to solve the problem; and the application of the found solutions to reality<sup>16</sup>.

Given this scenario, the direct connection between IAD and PIs, and the high prevalence of IAD in incontinent patients, the present study developed an educational process about IAD with nursing professionals who worked at a clinical medicine sector, based on PEH and Paulo Freire's premises, valuing the dialogic and problematizing methodology<sup>14-16</sup>.

## METHODOLOGY

Intervention study with a qualitative approach. It was carried out by promoting educational meetings with professionals of the nursing team of the Teaching Hospital at the Federal University of Grande Dourados, in Dourados, state of Mato Grosso do Sul, Brazil.

The participants were selected through convenience non-probability sampling and were nursing professionals who worked in the afternoon shift of the medical clinic of the institution. The team had eight employees in December 2017, when data were collected. The invitation to participate in the study was made to all these workers and, because of the work demand in the sector, seven professionals agreed to be included in the study, which had four meetings, and managed to fully participate in it.

The educational meetings were carried out in the nursing room of the sector and, during the development of the dialogue on the subject, the participants were arranged in a circle to facilitate the discussion.

Before the beginning of the study, the participants received information about the objectives of the study and the benefits and risks involved in it, as well as an explanation about the freedom to participate or not. The activity was initiated only after the consent of the participants and the individual signature of a free and informed consent form.

During the first meeting, the researcher explained the intention to carry out educational meetings with the team, and the group chose the IAD subject jointly. The educational needs of the group regarding IAD were identified. The outline of the educational moments is shown in Figure 1.

Educationa l meeting	Content addressed during the educational meetings	Used teaching strategies
1st	Group definition of the subject and identification of educational needs by applying brainstorm (Steps 1 and 2 of the Problematization Methodology with Maguerez's Arch) <sup>16</sup> .	Brainstorm
2nd	Group reading of scientific papers about IAD and reflections on the findings (Step 3 of the Problematization Methodology with Maguerez's Arch) <sup>16</sup> .	Text study
3rd	Group reading of package inserts of the products available on the market and at the institution to treat IAD and dialogued expository lesson about the IAD categories and the differences between IAD application of multimedia injuries and PIs (Steps 3 and 4 of the Problematization Methodology with Maguerez's Arch) <sup>16</sup> .	Text study and expository dialogued with the lesson
4th	Use of educational game to apply the content discussed during the educational meetings to reality (Step 5 of the Problematization Methodology with Maguerez's Arch) <sup>16</sup> .	Educational game

**FIGURE 1:** Outline of the educational meetings about IAD carried out with the nursing team. Dourados, MS - Brazil, 2017.

The teaching strategies used in the present study were brainstorm, dialogued expository lessons, text study, and educational games. For the elaboration of the educational game, contents were selected taking into account the scientific evidence about IAD and materials created by authors who developed educational games in the health area. The game designed during the meetings was not validated<sup>1-13,17</sup>.

The present study adopted the Problematization Methodology with Maguerez' Arch in the handling of the educational meetings<sup>16</sup>. At the end of each meeting, the participants were asked to evaluate it individually from a formative perspective.

The formative evaluation aims to help students' learning and seeks to inquire the involved actors about how the process can be improved. This type of evaluation occurs during the routine of the classes and the activities, with a dialogued reflection on them, and can be carried out formally or not<sup>18</sup>.

The meetings were registered as audio and fully transcribed by a researcher. Analysis was initiated with reading and rereading of the accounts, evaluation writings of the participants, and field diary logs. Analysis units were selected based on significant words or sentences, which allowed to identify the thematic categories by applying the content analysis technique<sup>19</sup>. Four thematic categories emerged: epistemological curiosity, research, joy, and evaluation.

The participants' accounts were identified with the label P (for "participant") followed by the number indicating the order in which the accounts occurred in the first meeting. Therefore, the actors were identified as P1, P2, and so on. Ethical principles were observed, in accordance with the directions of Resolution no. 466/2012 of the Brazilian National Health Council. The proposal of the present study was approved by the Research Ethics Commission of the institution and by the Human Research Ethics Commission of the Federal University of Mato Grosso do Sul as per report no. 2,197,369 and Certificate of Presentation for Ethical Appreciation (CAAE): 70593017.8.0000.8030.

## RESULTS AND DISCUSSION

### Study participants characterization

The participants of the present study were nursing professionals who worked at the clinical medicine sector, which provides care to adult patients, most of whom depend on nursing care. Two participants were nurses and five were nursing technicians. Two were women and five were men. Regarding the time working in those professions, two had between one and five years, two from five to nine years, and the others had been working in the nursing area for ten years or more. Three professionals had an undergraduate degree and four had a specialization. None of them had a master's or a PhD degree. The thematic categories (epistemological curiosity, research/investigation, joy, and evaluation) are analyzed in the following sections.

### Epistemological curiosity

The accounts of the people involved in the educational meetings showed that encouraging curiosity in the teaching-learning process is necessary and that it mobilizes the students toward searching for knowledge. In the first meeting, the participants asked some questions that were not immediately answered, and the reading of scientific papers was encouraged so the professionals could find the answers to their questions in the publications<sup>20,21</sup>.

*The meetings were conducted in a simple, but dynamic and instructive way, making us look forward to the next one. (P2)*

*[...] I am going to do my search today. (P1)*

*Can I use corn starch, talcum powder, and/or essential fatty acids for IAD? (P4)*

*Oh my God, I wonder if I will have the opportunity to participate in the next meeting (P1)*

*At the end of the meeting, the group did not seem to want to conclude the activity. When the researcher informed the participants that they were discharged, they did not seem to want to wrap the meeting up and kept staring at the researcher (Researcher's field diary, first meeting)*

### Research

Since the first meeting, the group listed questions about IAD. The participants carried out a group reading of scientific papers to find answers to the questions, and simultaneously there was a discussion and a reflection about the practices<sup>3,20,21</sup>.

*About prevention: monitoring the skin integrity; cleaning the skin with products with an acidic pH; avoiding friction when drying the skin; applying emollient agents and moisturizers on the intact skin; protecting the skin with barrier cream. (P6)*

*For healing, the paper mentions monitoring the IAD evolution and depth; cleaning the skin with products with acidic pH or preferably using a towel soaked with a 3% dimethicone solution. (P6)*

*The paper I read addresses basically the same things, the different information that it brings concerns with the treatment. It says that the treatment measures focus on the use of diets and exercises for the pelvic floor for retention of urine and feces. It also indicates the use of antifungal creams and topical corticosteroids in the short term. To treat the associated infection in more severe cases, it is necessary to use metronidazole as an oral dose of 400 mg. (P1)*

*The mentioned risk factors were the presence of comorbidities, double incontinence, high level of dependence to carry out the self-care activities; being 65 years old or older. (P1)*

*Great interest of the group in the possibility of using corn starch and talcum powder to prevent and treat IAD. After reading and discussing papers, the group realized that these products are not indicated (Observer's field diary, second meeting)*

## Joy

During the meetings, the researcher, the participants, and the observer noticed a casualness atmosphere. There was laughter when the activities were developed, either because of something said by a participant or because of the activity itself.

*Just to make cookies. [Answering if corn starch could be used to prevent or treat IAD during the fourth educational meeting] (P7)*

*Productive meeting, it brought new terminology, more information, and answered questions in a dynamic way. (P5)*

*It was a pleasant meeting, with new knowledge on a subject that is new to me. (P6)*

*The group as a whole brought itself to participate in the discussion on the subject. (Observer's field diary, second meeting)*

A dialogic and participatory pedagogical process encourages students to engage in it enjoyably<sup>15,16</sup>.

## Evaluation

At the end of each meeting, a written and individual evaluation activity was carried out by the participants, who were not identified in it so they could feel free to express their opinion about the process. The goal was to favor the improvement of the developed activities and of the researcher as an educator. Some excerpts of the reports of the participants are as follows.

*Very relevant subject, because it addresses the routine of the workplace and adds knowledge to improve the care delivered to patients.*

*It was very interesting to address these subjects that are present in our work routine. We need to bring ourselves up to date to be able to take better care of our patients.*

*The importance of changing the patient's diaper after a short period of use to prevent IAD.*

*The meeting was productive, we learned how to use the barrier cream correctly and in a way that helps save material. We improved our capacity to differentiate between IAD and PIs.*

*I found the dynamics and the teaching great, it is the only way to clarify the most common doubts, such as the fact that we cannot use corn starch or talcum powder in those injuries. Unfortunately, I did not attend all the meetings because some of them happened on my days off.*

*I liked the game very much, it helped me memorize the contents.*

Curiosity is a vital phenomenon that moves human beings. It mobilizes people and makes them feel impatient before the world. Educators must not *limit* the curiosity of their students for the sake of content memorization<sup>15</sup>.

Together with curiosity, which is inherent in the learning process, joy must also be present in the acts of teaching and studying. Part of the responsibility for promoting this joy is the educators', who should feel joy when teaching. Studying, teaching, and learning must be accessible and interesting. They may be demanding, but must be pleasant<sup>15</sup>.

During the meetings, the researcher tried to indulge the curiosities and answer the questions of the participants about IAD, as well as establish a cheerful and casual atmosphere to set the dialogue about the subject. The questions related to the use of corn starch and talcum powder to prevent or treat IAD and the differentiation of injuries similar to those caused by IAD, such as PIs. Regarding the possibility of using corn starch to prevent or treat IAD, the literature emphasizes that there is no scientific evidence to support this use and that it causes skin dryness, and consequently is not indicated for these purposes<sup>22</sup>.

Another question addressed by the team related to the use of talcum powder to prevent or treat IAD. Applying talcum powder in these injuries is contraindicated because there is no scientific basis justifying its use, and the product can favor the growth of fungi on patients' skin<sup>22</sup>. The team also reported that many professionals use essential fatty acids to prevent and treat IAD. However, it is known that these substances cannot make up a protective layer on the skin and are easily removed when in contact with the diaper. Additionally, occlusive agents are not indicated to be applied on these injuries, therefore essential fatty acids must not be used to prevent and treat IAD<sup>1,23</sup>.

It is important to stress another question mentioned by the group: the differentiation of injuries known as IAD confounding, for instance PIs. Some of the main differences between these injuries are: PIs may contain devitalized tissue, which does not occur in IAD injuries; PIs have a regular shape, whereas IAD injuries are irregular and diffuse; PIs can be significantly deep, and IAD injuries usually are superficial; last, the hyperemia in these injuries differs, being uniform in PIs and nonuniform in IAD injuries, which are surrounded by several white or pink spots<sup>24</sup>.

Over the meetings, it was observed that the group acquired new knowledge, such as the correct use of the barrier cream, a product that was already available at the institution but was misused, because the participants reported that they could not use it correctly, applying an excessive amount on the skin and not spreading it until it was no longer visible. Another relevant piece of information was related to the observance of the manufacturer's instructions regarding the periodicity to change or reapply the product<sup>1</sup>.

The team understood the appropriate indication of products for IAD. To prevent or treat an injury in an initial stage (category 1 IAD), it is possible to use barrier cream containing dimethicone or ointments with zinc oxide. For injuries with skin rupture (category 2 IAD), protective films are recommended. If the physical examination indicates signs of skin peeling or itching, professionals have to suspect fungal infection associated with the injury. In this case, the use of nystatin associated with zinc oxide is indicated, because this product can make up a barrier on the skin and has antifungal action. Depending on the severity of the fungal infection, oral medications may be associated with the topical ones according to the physician's prescription. The drug usually prescribed in these cases is oral metronidazole<sup>1-4,21</sup>.

The evaluations of the activities showed the progress in the group's knowledge about IAD and described changes and reflections on the practices carried out until then. These reflections are understood as methodical and scientific reflections in the problematization methodology framework<sup>16</sup>. Epistemological curiosity and research/investigation emerged in the thematic categories and favored the transformation of the practice observed in the evaluations.

The act of teaching must not be disconnected from some important aspects, such as the search of the contents and the evaluation of the formative process, especially when this is developed in the practice context in the PEH sphere. In the present study, the search of the subject was fundamental to answer the questions of the group and provide resources for safe care to the patients, guaranteeing the protagonism and empowerment of workers and the collective development promoted by them<sup>14,25</sup>.

The adopted methodology, which resorted to Maguerez' arch, corroborated the reflection on the practices, because it is problematizing, adopts dialogue to promote teaching, and goes beyond the simple transmission of contents, allowing the application of the learned content<sup>16,26</sup>. These findings are corroborated by a similar PEH experience carried out by applying the problematization methodology in a hospital setting<sup>27</sup>.

The authors of the present study opted to use the formative evaluation modality to identify aspects related to the improvement of the executed process. The accounts revealed in the evaluations resulted from the continuous evaluation developed in the teaching process. However, it was possible to notice the development of knowledge in the group of participants in all the categories, considering that the formative evaluation must be guided by dialogue to build students' knowledge. In addition to applying the formal evaluation, which may be necessary to value the studied content, educators must also have a sense of vigilance to notice the nonverbal signs given during the teaching process, such as silence, a smile, or the act of leaving the environment where the discussions occur. In this context, the pedagogical space, where the teaching-learning process is carried out, must be continuously analyzed so educators can identify whether the teaching practice is being effective<sup>15</sup>.

However, considering that the present study had the objective of evaluating, in a formative way, an educational intervention about IAD, the authors believe that the developed categories show the power of teaching in the practice context, especially regarding a subject that is still little discussed in the nursing context. The study demonstrated the potential of an evaluation method that seeks to embrace the involved people, allowing dialogue, listening, and honest confrontation, which favors the development of collective changes<sup>28</sup>.

## CONCLUSION

The teaching process was carried out within the work routine of the professionals, together with the other tasks of the team, in accordance with the PEH principles. This was one of the challenges faced in the present study.

Analysis showed that the educational intervention induced reflections that had the practice as a starting point but were guided by scientific knowledge, in addition to causing changes in the involved people and leading them toward more aware decision-making. The participants reported comprehension of the subject and declared that the meetings were cheerful and dynamic. The interest of the team during the activities was noticeable, and it was *beautiful to see* the sadness of the participants for being on a day off when one of the meetings occurred.

The main limitation of the study was the sample, which included only one professional category. However, the selected methodology and the adopted strategies proved effective to carry out health educational activities. The implemented process should be replicated in other healthcare settings to discuss subjects that require continuous updating.



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