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# Incontinence-Associated Dermatitis in Hospitalized Elderly Patients: Nurses' Self-Reported Knowledge

## Dermatite Associada à Incontinência em Idosos Hospitalizados: Conhecimento Autorreferido de Enfermeiros

## La Dermatitis Asociados Con La Incontinencia en Ancianos Hospitalizados: Percepción Subjetiva de Conocimiento del Enfermero

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## ABSTRACT

**Objective:** Identifying the self-reported knowledge of nurses concerning the prevention, diagnosis, and treatment of incontinence-associated dermatitis (IAD) in hospitalized elderly patients, as well as proposing the construction of a nursing care protocol based on a flowchart. **Methods:** Descriptive and qualitative exploratory research through a semi-structured interview with hospital nurse professionals in the second semester of 2016. Interview data were analyzed through thematic analysis. **Results:** Presented in three categories: Elderly Admission and IAD Prevention: The majority of the clientele is elderly people, for whom the adoption of hygiene care and barrier application consist in prevention; IAD Diagnosis in elderly people: They do not know the staging of the IAD; IAD Treatment: It includes devices that avoid the contact of the eliminations with the skin, in which there have been difficulties in differentiating the injury categories. **Conclusion:** There was no consistency among the nurses about the products that should treat the skin with IAD.

**Descriptors:** Diaper Dermatitis, Elderly Care, Fecal Incontinence and Urinary Incontinence.

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## RESUMO

**Objetivo:** Identificar o conhecimento autorreferido dos enfermeiros em relação a prevenção, diagnóstico e tratamento da dermatite associada a incontinência (DAI) em idosos hospitalizados e propor a construção de um protocolo de cuidados de enfermagem a partir de fluxograma. **Métodos:** Pesquisa exploratória descritiva, qualitativa, através de entrevista semiestruturada com enfermeiros de unidades de um hospital, no segundo semestre de 2016. Os dados das entrevistas foram analisados mediante análise temática. **Resultados:** Apresentados em três categorias: Admissão do idoso e prevenção da DAI: A maioria da clientela é idosa, na qual a adoção de medidas de higiene e aplicação de barreira consistem na prevenção; Diagnóstico da DAI no idoso: Desconhecem o estadiamento da DAI; Tratamento da DAI: Inclui dispositivos que evitam o contato das eliminações com a pele existindo dificuldades em diferenciar as categorias da lesão. **Conclusão:** Ausência de uniformização entre os enfermeiros acerca dos produtos que tratam a pele com DAI.

**Descritores:** Dermatite das Fraldas, Assistência a Idosos, Incontinência Fecal, Incontinência Urinária.

## RESUMEN

**Objetivo:** Identificar los conocimientos de auto-reporte de las enfermeras en cuanto a la prevención, el diagnóstico y el tratamiento de la dermatitis asociada a la incontinencia (DAI) en ancianos hospitalizados y proponer la construcción de un protocolo de cuidados de enfermería de diagrama de flujo. Métodos: Este exploratorio, descriptivo cualitativo, a través de entrevistas semiestructuradas con enfermeros de unidades de un hospital en la segunda mitad de 2016. Los datos de las entrevistas fueron analizados mediante el análisis temático. Resultados: presentado en tres categorías: Admisión de la Tercera Edad y prevenir la DAI: La mayoría de la clientela es de edad avanzada, en la que la adopción de la higiene y la aplicación de barrera consiste en la prevención; El diagnóstico de la DAI en los ancianos: Sin darse cuenta de la puesta en escena de la DAI; El tratamiento de la DAI: Incluye dispositivos que eviten el contacto con la piel eliminaciones dificultades para diferenciar las categorías de lesiones existentes. Conclusión: La falta de uniformidad entre las enfermeras sobre los productos que tratan la piel con DAI.

**Descriptores:** Pañales dermatitis, Asistencia para los ancianos, Incontinencia fecal, Incontinencia urinaria.

# IINTRODUCTION

In recent years, there has been an increase in population aging rates in Brazil. According to the Instituto Brasileiro de Geografia e Estatística (IBGE) [Brazilian Institute of Geography and Statistics], in the last census, conducted in 2010, the elderly represent 10.8% of the Brazilian population.[1] It is estimated that in 2050 the elderly population may be corresponding to 22.7% of the total population in Brazil.[2]

With aging, there is a decrease in sensory sensitivity, cognitive ability, and visual acuity, which together with increased skin fragility contribute to the appearance of skin lesions, especially in situations of hospitalization or institutionalization.

The skin injuries can be originated by a variety of causes, including incontinence-associated dermatitis (IAD), which is common in the elderly, and is caused by skin exposure to moisture from bladder and bowel excretions. The IAD is also known as perineal or irritant dermatitis, diaper rash, and many other names, which are referred to moisture-related skin lesions.[3]

The IAD is considered a cutaneous inflammatory lesion that occurs due to prolonged contact of the perianal, perineal, and perigenital areas with feces and urine. It leads to skin irritation, followed by an inflammatory response, skin hyperhydration and, subsequently, epithelial rupture.[4]

The IAD is evidenced by: edema, fissures, ulcerations, bright erythema, among others.[5] It causes discomfort, pain, burning, pruritus, and also decreases the life quality of patients affected by this type of skin injury.[6] The IAD might lead to a prolongation of the hospitalization time as well, predisposing the patient to the aggravating factors of it.

The continued use of disposable diapers in hospitalized elderly may aggravate the lesion, especially in the absence of adequate hygiene and frequent changes. Prolonged contact of diuresis with high levels of ammonia increases the skin's pH causing irritation, accumulating incrustations, therefore, facilitating the surface rupture and increasing the risk for the development of IAD, showing a maceration and gradual excoriation. [4,7]

When diuresis is associated with stool contact, it increases the occurrence risk. Thus, it is essential to be vigilant in these areas with regard to the elderly under immobility conditions and those who use diapers during hospitalization.

Enteral nutrition and antibiotic therapy also increase the risk of IAD as they change the gut flora, causing symptoms such as liquid stools, which leads to a greater area of skin exposure to moisture. [4]

Age is not considered a risk factor for IAD, but it must be considered that with the physiological process of aging the skin undergoes a few transformations, such as increased skin fragility and decreased ability to act as a barrier. [8]

The prevalence of the IAD corresponds to 83% of the hospitalized patients in intensive care units.[9] A study carried out in 2011 indicates that the appearance of the first signs of IAD in critical patients appears within four days of exposure to moisture.[10]

It is verified that early detection of these skin injuries come from the systematization of nursing care (SNC), including daily care, risk assessment at admission and during hospitalization, skin inspection and choice of appropriate products in order to prevent and treat the IAD.

In view of the preceding, the present study aimed: to identify the self-reported knowledge of nurses concerning the prevention, diagnosis, and treatment of incontinence-associated dermatitis (IAD) in hospitalized elderly patients, as well as to propose the construction of a nursing care protocol based on a flowchart.

## METHODS

The present study is a qualitative research, exploratory descriptive type, which was carried out with nurses who work in a large hospital located in the North side of the *Rio Grande do Sul* State. It has been done at the second semester of 2016.

Nursing professionals who worked in the emergency room, 4 clinical and surgical intensive care units, as well as general and cardiological intensive care units of the referred hospital were taken as participants in the study. The units were chosen because they are practice field of the Integrated Multiprofessional Residency in the Elderly Health Program, and they show a high index of permanence for hospitalized elderly patients.

The nursing team of the referred hospital is comprised by 159 professionals, the sample selection was performed for convenience, and the nursing professionals of the described units that met the inclusion and exclusion criteria were approached through the signing of the Informed Consent Form (ICF).

Participants' selection met the following inclusion criteria: the subject must be either nurse manager or caregiver of each unit under research process, and being in professional practice over the period of data collection for more than six months. Were excluded from the study the nurses under any of the following situations: on vacation, retired, with less than six months enrolled in the company, and those who did not agree to participate.

The data were collected through a semi-structured interview, covering open and closed questions, in which the interviewee had the possibility to discuss about the topic. During the interviews, the data were recorded and stored on a tape recorder.

It is worth mentioning that when the answers were repeated, the interviews were ended. This technique is called data saturation, because no new information is added.[11]

The interview data were analyzed through thematic analysis since it is constituted in detecting the "cores of meaning that make up a communication". Firstly, the interviews were transcribed by the researchers, and subsequently covered as three stages of the thematic analysis: in the pre-analysis, the researchers took "direct contact" with the field material, using exhaustive reading. In the second stage, understood as a material exploration, we found "categories that are expressed or meaningful words according to which the content of a speech is organized." And finally, the researcher made "interpretations", based on scientific reading.[11]

The present study was approved by the Research Ethics Committee of the *Universidade do Passo Fundo*, under law statement nº 1,716,111 in September 7th 2016, and by the Research and Post-Graduation Committee of the São Vicente de Paulo Hospital. The study respected the ethical precepts recommended for human research, according to the guidelines of the Resolution nº 466 in December 12th 2012 of the National Health Council - Health Ministry. It was decided to nominate the study participants by numbers.

## RESULTS AND DISCUSSION

Fourteen nurses were interviewed, so that 71.4% were women. The majority of the participants have been working professionally over six years. 57% of the interviewees work in a closed unit, and most have worked either in the unit or the institution for more than four years.

Taking the data analysis in consideration, the following categories were listed: I) Admission of the Elderly and IAD Prevention; II) IAD Diagnosis in the Elderly; III) IAD Treatment.

### ADMISSION OF THE ELDERLY AND IAD PREVENTION

As life expectancy increases, there is a physiological decline and a greater exposure of the organism to chronic diseases, which exacerbates the vulnerability of the elderly, predisposing to hospitalization and multiprofessional care.

Thus, according to the interviews, it was verified that a significant part of the hospitalized patients in the mentioned units are elderly ones, which requires from the nurse a careful look since the beginning at the admission in the unit,

> *"Our greatest demand is elderly patients. I think that in the morning shift we assist 80 patients, of which approximately 40-50 are elderly. I do not know how to convey in numbers exactly, but more than 50% are elderly patients." (Nurse 1)*

It is inferred that the SNC is the formalization of the moment when the nurses evaluate the patients at the admission through anamnesis and physical examination:

> *"The first thing we evaluate on the patient upon arrival is the signs of risk, assess the vital signs, and afterwards we check if there is any comorbidities. We first treat the motive that made him come, and then begin to see the patient as a whole: skin, if he is nourished or malnourished, hydrated or not; we evaluate every motor part, if you have any mobility impairment; we also assess the part of the bladder eliminations, if he evacuates in diapers, if he has diuresis and spontaneous evacuations,*

*to see if he has dermatitis or some harm; and finally, to see if the patient is suffering bad treatment." (Nurse 1)*

*"[...] if I cannot do the SNC by the time he arrives, at least I am going to look for him. Usually, the seniors who come are bedridden, the girls call me to take off their diaper, take a look at the sacral region, as well as the back, which facilitates the whole process. I do evaluate them all." (Nurse 8)*

The SNC organizes the work based on the nurse-patient approach, identifying care needs and promoting a quality of health recovery.[12] It is also directed to a sequence of nursing diagnoses and interventions, being configured as an instrument that allows humanized and holistic care, which considers the patient as unique, enabling interaction with them in order to implement and plan their care in an integral manner.

*"[...] I look at the patient in a general way, and one of the things that I look at quite a lot are the skin injuries, if the patient has any catheters, and also I evaluate how he has been taken care." (Nurse 3)*

Failures or generalizations have also been reported in the evaluation,

*"I do not have a specific assessment. The only difference with elderly patients is whether one is laid down or seated according to their own needs." (Nurse 2)*

Admission process of patients, especially the elderly ones, demands from the hospital service the need for rapid response, considering the patients' physiological changes,[13] as well as physical and psychosocial effects.

It is imperative to pay attention to what underlies the admission process, taking care of the items that may reflect elderly carelessness events,

*"[...] the seniors who come to us are often mistreated, ill-treated, whether they come from an institution or the family ...there are few or no responsible relatives. The elderly patient arrives fragile, often malnourished and disoriented because they do not know where they actually are. We see several problems of loneliness." (Nurse 3)*

Negligence of caring reflects the need for resources, and in the context, a hospitalization is marked by weaknesses, depending on a large number of nursing staff, products, and practices.

It was identified that the nurse was able to assess the elderly patient on admission, diagnosing whether the patient is at risk for developing an IAD, as well as whether it has already come from home or some institution having any skin harm. Once the incontinence is verified, the nurse should be attentive for skin care, and be able to prevent and treat an IAD. It is necessary to know the degree of dependence that makes it possible, foreseeing adequate personnel dimensioning in order to meet the demand.

Most hospitals have a deficiency of human resources, which directly affects the care coverage of the hospitalized person. The necessary quantification and qualification of the nursing team are outstanding problems in the work scenario since it is directly linked to patients care.[14] The personnel dimension reflects the range of care to the elderly patient, such as hygiene, diaper change, repositioning, food, among others.

Regarding the measures used to prevent IAD, it was observed that a large number of nurses are aware of the care procedures and products used, and they also advise the technical team on frequent diaper changes.

*"The only preventive work here in the unit is to guide the technicians on how to change diapers when the patient has urinated or evacuated. We recommend changing the diaper and try to avoid letting the patient urinated or evacuated, which is something that happens in the units sometimes. Additionally, if the patient is showing too much incontinence, we communicate a medical doctor for a drug treatment or even ask a nutritionist to change the diet. However, we do not use any product, just a diaper exchange as fast as possible aiming not to leave the patient in touch with stools and urine." (Nurse 8)*

Prevention care includes skin inspection, cleaning, and application of skin protectors; it is also imperative to identify the source of moisture[15] and the elimination of causes that may be reversible. Furthermore, it is fundamental to pay attention to the patients' nutrition and hydration.[3]

Initially, the IAD prevention can be accomplished by performing the hygiene of the skin after each elimination episode with water and liquid soap using a soft towel.[16]

In a second moment, the barrier cream is used, it acts as a skin protector, which must be the base of dimethicone, and that allows to inspect the skin.[3] It is worth mentioning that barrier creams repel water.[17] Zinc oxide creams may also be used, but it should be removed before inspecting the skin.[3]

*"Prevention use: the barrier cream, some nurses like to use the protective skin powder, put on every perianal region, it pulls the moisture and leaves the medium dry." (Nurse 8)*

It is necessary to keep the skin clean and dry, and when the region is extremely humid one must use protective skin powder.[18] The powder is composed of gelatin, pectin and carboxymethylcellulose sodium, which absorbs moisture.

In addition to that, attention should be paid to individuals who are vulnerable to IAD by performing prevention through the reduction of skin contact with irritants.[16] In this sense, it is very important to observe hospitalized patients at units who are unable to self-hygiene and, thus, prevent skin changes.[6]

It is noteworthy that during this work two nurses were unaware of the presentations and the active principle of the products used for prevention.

> *"The prevention today is done through the barrier powder and spray, we use both and they have given good results up to now." (Nurse 2*)

Being alert to the risks, being sensitive, instructing the technical team and adopting critical thinking, it all reflects on nurse's commitment from basic to more complex care.

According to the statements heard during this work, it was concluded that the nurses are attentive to the fragility of the skin of the elderly, as well as the diaper use is a risk factor for IAD.

> *"The skin of the elderly is already much more fragile, so I do evaluate if the patient is not with a bladder catheter, because this is already an aggravating to develop the IAD, if they have diarrhea too, bedridden that cannot mobilize or cannot alternate much. I think the diaper use also helps. I think those are the signs. I see that the patient who has a bladder catheter is harder developing the IAD, because the diuresis does not come into contact with the skin. It would help leaving the skin as dry as possible, alternate decubitus, and ideally not putting on the diaper, but our patients need it. So, if they have to use the diaper, the professional must leave it the shortest time after an evacuation, which happens a lot (diarrhea). Hence, these nursing care is what we have to have." (Nurse 5)*

The prevention of IAD should cover the etiology of incontinence, assessment of the risk of perianal and perigenital skin.[19] In patients having diarrhea, the action should be urgent, communicating the nutrition and medical team for the introduction of medications and modifications in diet.

The nurse should prescribe the absorbent material by the patients' characteristics and according to the type of incontinence.[20] The use of diapers with good material, with greater absorption capacity, also decreases the risk of IAD. It should be noted that it is not recommended to place diaper pads between the diaper and the skin, as they generate friction with the patient's skin.

The acrylate terpolymer film, which is a liquid spray, can also be used in the prevention of IAD, however, one should expect to dry the product before closing the diaper.

However, even with the nurses' knowledge about the care and products used in the prevention of IAD, it is inferred that prevention is difficult since many hospitalized elderly patients in the units surveyed developed IAD.

## IAD DIAGNOSIS IN THE ELDERLY

Regarding the diagnostic criteria, the data collected showed that the nurses recognize the signs present in the skin of the patient with IAD. The vast majority of the participants mentioned that diaper use and incontinence are the primary causal factors for this type of skin injury, and they were convinced that the maintenance of the skin conditions and the immediate diagnosis of this lesion using appropriate treatment to avoid progression, constitute immeasurable protective approach.[21]

> *"Primarily, we see the skin fragility and if it is well hydrated. If it visibly has a chance of developing lesions or if it already has a previous redness, for example, we already believe and think that soon the dermatitis might onset." (Nurse 4)*

> *"The risk signs are usually the use of diapers, bedridden, diarrhea, and urinary incontinence. Often the diaper should be eliminated, but there is no way to do it, once the basic care is hygiene." (Nurse 3)*

Urinary incontinence affects 40 to 70% of the hospitalized elderly,[22] and the use of diapers is indicated, but using them without this indication can lead to incontinence since the elderly do not stimulate eliminations.[23] The diapers use should be very well evaluated, as well as the emotional and functional aspects involved. It is worth noting that diaper use over a period of 11 to 15 days increases the risk of skin integrity.[24]

It must be emphasized that when the patient is incontinent either urinary or fecal, and their mobility is impaired, the evaluation should be even more careful done, making it possible to diagnose the etiology of the injury, which in some cases may show that the pressure lesions can be combined with the injury by moisture.[15]

Likewise, it is necessary to evaluate the conditions of immobility, excessive use of creams, as well as, the characteristics of the wound, such as shape, depth, location, and among others.

> *"[...] one must be aware, because, both the patient who is bedridden and the patient who uses diaper... who*

*has diaper micturition, they may develop a rash or something else. The redness begins to irritate; some tell that they feel itchy, pain or burning... the first sign is when the skin begins to turn reddish." (Nurse 8)*

The IAD is characterized by poorly defined edges, bright hyperemia, unlike pressure injury, where the coloration is more opaque and is developed in regions of bony prominences.

*"The skin is very irritated, red, some create even bubbles, looks like bubbles with water inside, but the first sign is that the skin begins to turn red where it is in contact with the diaper." (Nurse 13)*

It is important to emphasize that some nurse professionals are not aware that IAD is classified in two categories, sometimes making it difficult to manage it. The category 1 is defined by skin redness, but it is intact still, showing signs of edema and erythema. The category 2 is evidenced by the previous signs, added to the presence of vesicles, bubbles, erosion, skin stripping, and may or may not be associated with infection.[3]

With the effective identification of IAD, the nurse has the possibility of treating it.[25-26] It is perceived that diagnosis is relatively easy, but the most challenging is to become alert to the causative agents, and also avoid their rapid progression. Moreover, is necessary to know the treatment in order to break the adoption of "old" products, and not to confuse category 1, or even category 2 with the pressure injury, then leading to erroneous treatments.

## IAD TREATMENT

The data collected showed that nurses have the knowledge to handle mild IAD (category 1), nevertheless, the moderate or severe cases, which include category 2, including skin peeling and blistering are under the responsibility of the Institution Skin Group if there is a request for evaluation by the medical team. Therefore, the team should be oriented to inform the nursing professionals about the earlier signs of IAD.

*"[...] Sometimes the team do not tell us at the very beginning, and we end up realizing when it is already at a more advanced level of dermatitis. I have gotten a few complicated cases over my professional life. If the patient has dermatitis at the beginning, the use of barrier cream or the skin protective spray can work. But, If the patient is already a more advanced case, look for the Institution Skin Group. There have been times when we needed to call the nurse of the group who evaluated the lesions." (Nurse 6)*

The Skin Group of the hospital visited during this research consists of nurses who are trained to prevent, identify and prescribe products to treat the skin lesions of hospitalized patients. The evaluations are requested by the medical professional, and the nurse is responsible for evaluating patients from certain hospitalization units.

Once the IAD has taken place, the actions mentioned in the prevention should be performed, so that it does not worsen and it is indicated to apply a barrier film, as well as, routinely evaluate the IAD.[16] A frequent diaper change is recommended. Every 3 hours after the episode of urination and/or evacuation.

It is known that for cases of category 1 dermatitis, the barrier cream may be used. In dermatitis category 2, where the skin condition is worsening, it is recommended to use the barrier film based on acrylate terpolymer, because when applied they form a protection barrier on the skin.[3] Spraying of this product in the perianal and perigenital areas is effective and allows reduction of costs in the treatment of IAD.[6] The film is composed of liquid spray, forms a protective barrier that resists hygiene.[4]

It was identified that most nurses know that the skin protection spray can also be used in the treatment, but they are unaware that the barrier cream is not recommended to treat moderate or severe IAD (category 2) because they are not trained properly on how to use these products.

*"Prevention: cream barrier; Treatment: cream or spray." (Nurse 7)*

Once the injury has been established, the following actions should be done:

*"Protective skin spray, we do use it once a day, in the morning shower, it is our routine. Then, I prescribe for a patient and we can use the same bottle for several, who passes is just nursing at bedtime." (Nurse 8)*

*"The first thing we do is always communicate the doctor, sometimes we pass some product and try to associate some medication for diarrhea, sometimes when it is already aggravating (with a pressure ulcers opening) asks for a delay probe, or if it is man, urinary incontinence device. [...] we always use cream barrier once a day, under the Skin Group supervision. With the barrier cream, it usually does not worsen so much that we need to use the skin protective spray. Then, we use the cream and the protective powder. Of course, we have to have the diaper change more frequently, and with diarrhea it has to be urgent. (Nurse 12)*

The use of delayed bladder catheterization should be carefully analyzed in the treatment of IAD as it is linked

to the high risk of urinary tract infection,[3]. It should be assessed if the benefit outweighs the risk.[27,20] It is important to note that the device should be discontinued after IAD improvement. However, in men, the use of a device for urinary incontinence may be indicated.

For the handling of liquid stool, a restraining device, similar to an ostomy pouch should be used.[3]

A worrying fact has arisen in the answers of three nurses, who pointed out the use of sunflower oil based product, which is a medium chain fatty acid, emollient and does not have the capacity to repair the skin already damaged by the IAD.[3]

*"The guideline is to guide the team of what is the IAD, suggest to the medical team, if possible pass a delayed catheter and already start treatment with barrier cream and other medications. [...] "skin protection powder", skin protective spray, barrier cream - let me see what else they use here - we use a lot of sunflower oil, which I think is a major factor, that is it." (Nurse 2)*

Untreated IAD offers risks for secondary skin infections such as candidiasis.[3]

Thus, as the IAD is associated with candidiasis, the procedure is to use nystatin cream as treatment, which is the most appropriate antifungal, however, this product is difficult to remove and prevents the visualization of the skin.[4] In this study, four nurses were unaware of this particularity.

A study carried out in 2015 indicated that the interventions proposed for the treatment of IAD in a long-stay institution with thirty-eight elderly patients were: (i) to perform diaper changes every four hours; (ii) hygiene of the perineal region with each episode of feces or urine; (iii) application of barrier cream once a day; (iv) advise the elderly to report when they have a wet diaper; (v) change of sheets when wet. These interventions were applied in three weeks, and after this period it was observed that only one elderly person presented with desquamation and seven had hyperemia. Although, all of them persisted with urinary incontinence, and seven of them still had IAD, it is important to highlight that twenty patients had their symptoms of IAD cured. These data indicate that these actions are effective in reducing the occurrence of IAD.[28]

When questioned about the difficulties in the treatment of IAD, the nurses reported on economic issues, lack of knowledge and commitment of the nursing technicians to perform the care. Disadvantages were identified regarding personnel size and lack of time.

*"One can not ask for too much cream barrier, which is expensive, it is a economic issue. Sometimes the patient gets more time with feces and urine in the diaper because of the time limitation of the employees in making the changes; sometimes, the patient needs more than three diapers, the quality of the diapers is not good either, but it is the that we have to offer." (Nurse 3)*

*"In the IAD management, I believe that it is engaging the employee that gets along, because the nursing technician is who really deal with it. The patient has evacuated, he has to have the discernment, and the good sense to go there and change the patient and if you have any product, pass it on. The care, barrier cream, spray skin protector has to go through and wait a little bit to close the diaper; then, there are some precautions that we have to train the staff more, I think this is the main care, trying to prevent the patient from being in contact with feces and urine." (Nurse 7)*

Thus, it is necessary to engage and clarify the nursing team about skin lesions, especially IAD, as this generates a lot of pain and discomfort to the hospitalized elderly, as well as increases the costs and the duration of a hospitalization.

When questioned about the actions of permanent education, it was identified that many nurses surveyed did not receive training on IAD in their work environment. Likewise, it was observed that no one cited the nursing care manual of the referred hospital, which has an explanation that addresses the IAD.

*"I did not receive any training about it." (Nurse 2)*

*"No, not here at my workplace. We keep learning somehow here in the hospital what has been done; but, I already have participated of forums, some more focused lectures, and this way we end up learning in the outside than actually in continuous training, from the institution, and among colleagues. We can also learn with the experiences." (Nurse 11)*

These findings corroborate a study conducted in 2014 since many Brazilian nurses have no discernment in assessing IAD, and confuse it with pressure injury in its early stages.[29] Therefore, all the nurse professionals must be qualified for differential diagnosis, using the products, and to take care of these injuries.[30]

The ongoing training of the nursing professionals about the characterization of the lesions is extremely important.[31] Institutions should, therefore, provide training on skin lesions, as well as, supply a sufficient staff crew to carry out the prevention and treatment of the IAD.

Considering the non-standardization among the nurses, the deficiency or lack of reading in the nursing care manual and the disagreement between what protects and what treats the skin with IAD, in this study a flowchart was constructed (Fig. 1). It includes: risk identification,

prevention, early diagnosis, and treatment. The flowchart was aimed to support the construction of an institutional care protocol for the IAD.

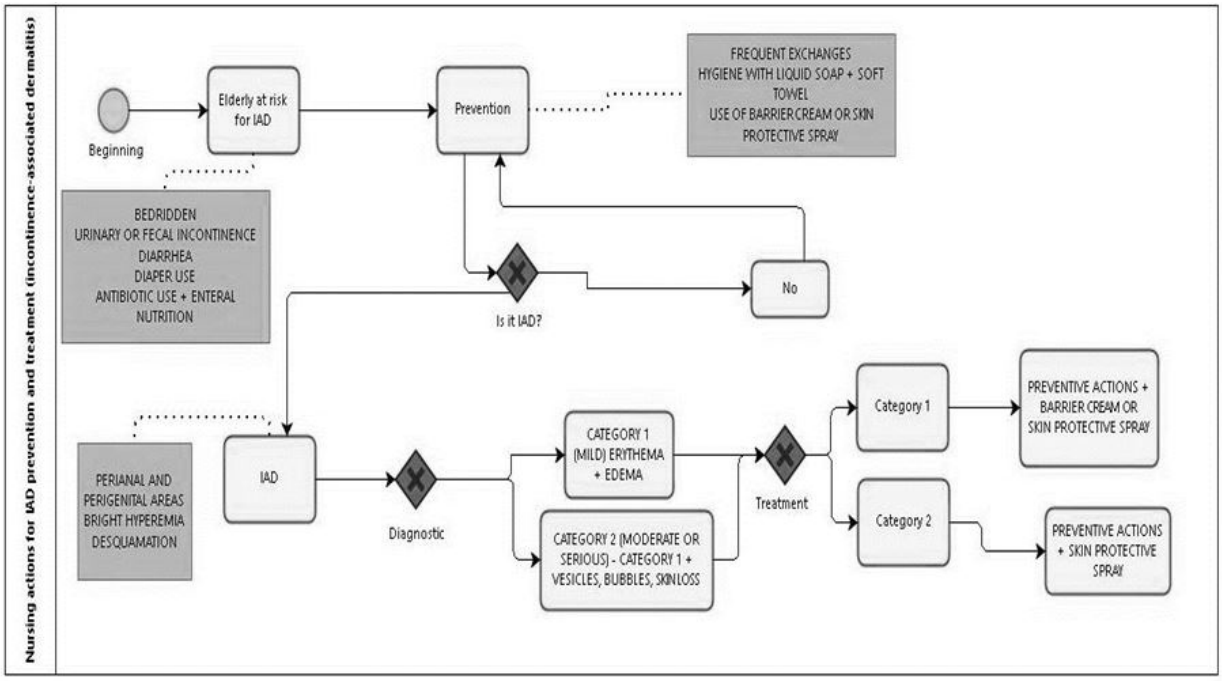


**Figure 1 Flowchart -** Nursing actions for IAD prevention and treatment
**Source:** Strehlow BR, Fortes VLF, Amarante MV 2016.

## CONCLUSION

The present study was able to identify the self-reported knowledge of nurses about the actions in concern to the prevention, diagnosis, and treatment of IAD, allowing the construction of a flowchart, which in turn, may serve as a basis for protocoling more advanced care.

Undertaking the SNC consists of a unique moment of visualizing the skin conditions of the elderly patient. It is a consensus that nurses know the risk factors and consider it easy to diagnose, but they do not know the categories of the IAD, which makes it difficult to treat, and also might cause the inappropriate use of some products.

However, it is inferred that prevention is not easy, since many hospitalized elderly patients have a high level of human dependency and also do use diapers regularly, which favors the development of IAD.

Therefore, the professionals' commitment against causal factors should be the focus. Along with hygienic care, the use of the barrier cream and the acrylate terpolymer based spray, is an effective way to protect against IAD. In the advanced lesion, the treatment ends up including, besides the skin protective spray, the reasonable indication of the bladder catheter for women and the urinary device for men. It is necessary to standardize the products from prevention to treatment, and use the care flowchart to every elderly incontinent patient in diaper use, enhancing the safety of the same and the quality of attention. Additionally, causing the reduction of the time period of hospital stay and expenditures by either the public or private healthcare system.

Considering the difficulties faced in the IAD management, what can be highlighted is the difficulty in mobilizing the nursing team in carrying out a most frequent diaper changes, adequacy of personnel dimensioning, and the effective achievement of care for both prevention and treatment of IAD. Regarding the actions of permanent education, it was verified that the IAD topic was not part of the training schedule of the interviewees.

Care topics that involve hygiene and comfort claim their importance, meaning that the nurse needs to enhance their professional knowledge about the prevention and the criteria for the treatment of IAD in hospitalized elderly patients.

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