

The Nurses' Knowledge With Regards to Both Classification and Prevention of Pressure Injury

Conhecimento dos Enfermeiros sobre Classificação e Prevenção de Lesão por Pressão

Conocimiento de Enfermeras sobre Valores de Clasificación y Prevención de Lesiones por Presión

Dieffeson Da Silva Cardoso¹; Francisco Matheus Oliveira Carvalho^{2*}; Gedeilson Bonfim Da Rocha³; Jadilson Rodrigues Mendes⁴; Saraí De Brito Cardoso⁵; Francisca Cecília Viana Rocha⁶

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ABSTRACT

Objective: The study's purpose has been to assess nurses' knowledge about pressure injury. **Methods:** It is a descriptive-exploratory study with a quantitative approach, which was carried out with 26 participating nurses who comprise the staff of all sectors from a private hospital in *Teresina* city, *Piauí* State. The questionnaire used has two parts, as follows: the first includes the participants' characterization data, and the second is composed of 41 items to be answered as True (T), False (F) and I do not know. Data were analyzed using the SPSS software. **Results:** Considering the correct answers, 74% of the nurses scored between 80 and 90% of the test, 9% of the professionals scored between 60 and 69%, and 9% of the professionals scored between 70 and 79% of the test, then demonstrating the lack of knowledge about the addressed subject. Also, 9% scored above 90%, where they demonstrated desired knowledge in relation to the subjects of the test. **Conclusion:** Through this research, it was possible to verify that the majority of the Nursing professionals showed unsatisfactory knowledge with regards to pressure injury.

Descriptors: Nursing, Wounds and Injuries, Prevention, Classification.

¹ Nursing Graduate by the UNINOVAFAPI. Centro Universitário UNINOVAFAPI, Brazil. E-mail address: dieffersonn_cardoso@hotmail.com

² Nursing Graduate by the UNINOVAFAPI. Centro Universitário UNINOVAFAPI, Brazil. E-mail address: franciscomatheus.16@hotmail.com

³ Nursing Graduate by the UNINOVAFAPI. Centro Universitário UNINOVAFAPI, Brazil. E-mail address: gedeilson2016@hotmail.com

⁴ MSc in Family Health, Professor of the Nursing Department at UNINOVAFAPI. Centro Universitário UNINOVAFAPI, Brazil. E-mail address: jadilson_2000@yahoo.com.br

⁵ MSc in Intensive Therapy, Professor of the Nursing Department at UNINOVAFAPI. Centro Universitário UNINOVAFAPI, Brazil. E-mail address: sarai.c@hotmail.com

⁶ MSc in Nursing, Professor of the Nursing Department at UNINOVAFAPI. Centro Universitário UNINOVAFAPI, Brazil. E-mail address: feciliavr@hotmail.com

RESUMO

Objetivo: Avaliar o conhecimento dos enfermeiros sobre Lesão por Pressão. **Métodos:** Trata-se de um estudo descritivo e exploratório, com abordagem quantitativa. Realizado com 26 Enfermeiros que compõem o quadro funcional de todos os setores de um Hospital Privado em Teresina -PI. O questionário possui duas partes: a primeira engloba os dados de caracterização dos participantes e a segunda é composta por 41 itens a serem assinalados como verdadeiro (V), falso (F) e não sei. Os dados foram analisados por meio do software SPSS. **Resultados:** Quanto aos acertos, 74% dos enfermeiros acertaram entre 80 a 90% do teste, 9% dos profissionais acertaram entre 60 e 69%, sendo que 9% dos profissionais acertaram entre 70 e 79% do teste, demonstrando falhas de conhecimento nos itens abordados, 9% acertaram acima de 90%, onde estes demonstraram conhecimento desejado em relação aos assuntos do teste. **Conclusão:** Foi possível evidenciar que a maioria dos profissionais da enfermagem demonstrou conhecimento insatisfatório sobre LPP.

Descritores: Enfermagem, Ferimentos e Lesões, Prevenção, Classificação.

RESUMEN

Objetivo: Evaluar el conocimiento de las enfermeras sobre la lesiones por presión. **Métodos:** Se realizó un estudio descriptivo y exploratorio con enfoque cuantitativo. Realizado con 26 enfermeras que componen la fuerza de trabajo de todos los sectores de un hospital privado en Teresina-PI. El cuestionario tiene dos partes: la primera incluye los datos de caracterización de los participantes y el segundo consiste en 41 elementos para ser marcado como verdadero (V), falsa (F) y no saben. Los datos fueron analizados utilizando el software SPSS. **Resultados:** En cuanto a los golpes, 74% de las enfermeras acordado entre el 80-90% de la prueba, el 9% de los encuestados acordados entre 60 y 69%, y 9% de los encuestados acordado entre el 70 y el 79% de la prueba, lo que demuestra lagunas de conocimiento en temas abordados, 9% tiene más de 90%, que presentó estos conocimientos deseada con respecto a los sujetos de prueba. **Conclusión:** La evidencia de que la mayoría de los profesionales de enfermería mostraron poco conocimiento de la LPP.

Descriptores: Heridas y Traumatismos, Prevención, Clasificación.

INTRODUCTION

Knowledge can be improved throughout life, and still be learned as either a process or as a product that moves from a smaller to a larger point without having an end point, or limitations; with it are generated information that is of great value to humanity. It is necessary to know where to look for it, how and when to use it to differentiate one individual from the other.¹

Through a knowledge based on scientific evidence, Nursing uses recommendations in clinical practice to promote the improvement of the quality of care and provide benefits for patients and their families, using preventive actions. Nevertheless, the challenge presented is focused on making proper clinical practice and improving customer care. Therefore, to act with competence is possible when one has in mind the search for knowledge and its updating.²

For Morita *et al.*,¹ Nursing is designed to build a social good with its work, and the situation that is currently experienced requires that the nurses acquire a solid

knowledge base, when perceiving the variety of issues that relate to the assistance, in the attempt to adapt and improve the quality of care provided to the population.

Recently the National Pressure Ulcer Advisory Panel (NPUAP)³ announced a change in the terminology from Pressure Ulcer to Pressure Injury and updated the stages, in addition to terminology change, Arabic numerals are now used in phase names rather than Roman numerals. The term "suspected" was taken from the diagnostic label of deep tissue injury.

For NPUAP, the Pressure Injury (PI) causes damage to the underlying skin and/or soft tissue, usually over a bone prominence or related to one medical device or another. The lesion may have intact skin or an open ulcer and can be very painful. Occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. Tolerance of soft tissue to pressure and shear can also be affected by microclimate, nutrition, perfusion, comorbidities and soft tissue condition.

Nurse member of the multiprofessional health team and leader of the Nursing team is responsible for the management of care, this management, which emphasizes decision making and which provides the choice of the best care practice to be dispensed to the patient. However, for a practice with quality, it is necessary that the care actions must be scientifically based on the best clinical evidence, for the optimization of available human resources and the reduction of costs to the institution.⁴

For the authors, Sorares *et al.*,⁵ the PI is considered a problem that must be taken into consideration by all professional areas, and Nursing stands out for its essential care, since it accompanies all the time the evolution of the patient, making it responsible for preserving the risks that this may cause.

The multi casualty of the occurrence of PI is evidenced in numerous studies, and to treat these causes it is necessary to relate Nursing care together with the involvement of high level of information and knowledge. It should be emphasized that care becomes more efficient through constant search for improvement.⁴

The authors Martins and Soares⁶ affirm that the current situation demands that the Nursing professional acquires a solidity of knowledge and becomes able to adapt his theory to the practice. Nursing continues to have major responsibilities related to injury, prevention, and treatment of pressure ulcers. It is important to emphasize the importance of deepening the knowledge about such injuries in order to better identify the problem, make decisions and use up-to-date practices to address the issue.

In this sense, the Nursing profession takes great responsibility in the process of caring for patients who require the use of preventive measures regarding the risk of PI. This knowledge is necessary because of the serious

complications that these cause and the own discomfort for the patient. Given the aforementioned, the study aimed to assess the nurses' knowledge about PI.

Bearing the aforesaid in mind, this study then hypothesized the following: nurses have a certain lack of knowledge about PI. It should be noticed that the present study aimed to evaluate the nurses' knowledge about Pressure Injury.

METHODS

It is a descriptive-exploratory study with a quantitative approach, which aims to investigate the level of knowledge of nurses concerning the PI. The participating Nursing team is from a private hospital unit located in *Teresina* city, *Piauí* State. The sample consisted of 26 nurses who comprise the staff of all sectors from the referred hospital.

A questionnaire composed of two parts was used, as follows: the first includes the participants' characterization data (age, gender, working time in the Nursing area, working time in the hospital area, workload in the institution, other employment relationship in the health field, other employment relationship outside the health field and PI training); and the second, which was composed of 41 items that were answered as True (T), False (F) and I do not know. Each correct answer (T or F) from Annex A scored one point. A score greater than or equal to 37 points (90%) was considered adequate.⁷

The questionnaire already validated in other researches was transcribed and maintained its originality, even after the new definition of NPUAP 2016 about PI.³ The same was delivered by the researchers and filled by the employee in his environment and working hours in the morning or afternoon shifts, without compromising his professional assistance, where he could not take the questionnaire home and do not make any kind of external consultation. This questionnaire was applied in the days from Monday to Friday over the period from October to November 2016.

After the data collection phase, the data were organized and structured using the Microsoft Excel® 2010 software and analyzed using SPSS software (version 20.0), in which they were subjected to a descriptive statistical analysis by the relative and absolute frequencies, central tendency and dispersion. In order to verify the association between variables the Chi-Square Test was used with a confidence level of 95% and margin of error of 5%, where the results are presented in tables. The discussion was based on the literature, and also national and international protocols for prevention and monitoring of PI.

The research project was submitted to the Brazil Platform and directed to the Research Ethics Committee from the *Centro Universitário UNINOVAFAP*, being approved under the Legal Opinion No. 1.789.154 and *Certificado de Apresentação para Apreciação Ética (CAAE)*

[Certificate of Presentation for Ethical Appreciation] No. 57636916.1.0000.5210.

RESULTS AND DISCUSSION

Table 1 shows the distribution of the participants according to sociodemographic characteristics. With regards to age, the majority of nurses were within the age group from 25 to 29, 30% were between 30 and 34 years old, 9% were between 20 and 24 years old and 35 to 39 years old and 4% were between 40 and 44 years old.

Considering the gender, it was observed a greater frequency of women 83%. Males accounted for 17% of the sample. Regarding working time in the Nursing area, 9% of the professionals are under 1 year, 26% had 1 to 3 years, 30% were between 3 and 5 years and 35% over 5 years.

With regards to the working time in the hospital area, 43% were 3 to 5 years old, 30% were over 5 years old, 17% were 1 to 3 years old and 9% were under 1 year. Observing the workload at the institution, 70% worked 40 hours a week, 30% worked 30 hours, and no professional worked 20 hours a week at the institution.

In reference to professionals who have another job in the health area, 52% say no, 48% say yes. Among the professionals who have other jobs outside the health area, 87% of nurses do not have 13 nurses. Analyzing whether the professionals have training on pressure injuries, it was found that 78% do not have training and 22% have training.

Table 1 - Characterization of the nurses according to their sociodemographic data. *Teresina* city, *Piauí* State, 2016.

SOCIODEMOGRAPHIC CHARACTERISTICS	NURSE (n=23)	
	n	%
Age group		
20 to 24 years old	2	9
25 to 29 years old	11	48
30 to 34 years old	7	30
35 to 39 years old	2	9
40 to 44 years old	1	4
Gender		
Male	4	17
Female	19	83
Working time in the Nursing field		
< 1 year	2	9
1 to 3 years	6	26
3 to 5 years	7	30
> 5 years	8	35
Working time in the hospital field		
< 1 year	2	9
1 to 3 years	4	17
3 to 5 years	10	43
> 5 years	7	30
Working hours at the institution		
20 weekly hours	0	0
30 weekly hours	7	30
40 weekly hours	16	70
Other employment relationship in the health field		
No	12	52
Yes	11	48
Other employment relationship outside the health field		
No	20	87
Yes	3	13
PI training		
No	18	78
Yes	5	22

In **Table 2** it was observed that in the items related to the evaluation and classification of PI, in the items (number 9, 32 and 33) the participants obtained 90% or more hits in five

items (number 1, 6, 20, 31, 38) the nurses obtained between 70 and 89.9%, it was observed that the participating nurses had difficulty in the items (6 and 38) regarding the development of PI in stages 1 and 2.

Table 2 - Indexes of the research participants' right answers in the knowledge test, according to the items about the evaluation and classification of pressure injury. *Teresina city, Piauí State, 2016.*

EVALUATION AND CLASSIFICATION		NURSE (n=23)					
Question	Right	%	Wrong	%	I do not know	%	
1- Stage I pressure ulcer is defined as intact skin, with hyperemia of a localized area, which does not show visible whitening or the color differs from the surrounding area. (T)	20	87	3	13	0	0	
6- A Stage III pressure ulcer is a partial loss of skin, involving the epidermis. (F)	17	74	6	26	0	0	
9- Stage IV pressure ulcers present total loss of skin with intense destruction and tissue necrosis or damage to muscles, bones or support structures. (T)	22	96	1	4	0	0	
20- Pressure ulcers in Stage II present a loss of skin in its total thickness. (F)	18	78	5	22	0	0	
31- Pressure ulcers are sterile wounds. (F)	19	83	4	17	0	0	
32- A region of the skin with a pressure ulcer scar may be damaged faster than the intact skin. (T)	22	96	1	4	0	0	
33- A bubble in the region of the heel should not be cause for concern. (F)	22	96	1	4	0	0	
38- Stage II pressure ulcers can be extremely painful due to the exposure of nerve endings. (T)	17	74	6	26	0	0	

Table 3 shows the distribution of the hit indexes of the participants in the knowledge test according to the items on the prevention of PI. It is identified that of the 33 items of the test 19 items (2, 7, 8, 10, 12, 21, 22, 24, 25, 26, 27, 28, 29, 30, 35, 37, 39, 40, 41) the participants obtained 90% or more of right answers. In 5 items (13, 14, 15, 17, 18) the hit rate was less than 50%. The questions with less accuracy by the participants were (15,17), and the question of number 15 obtained 26% of errors and 39% did not know to answer, since the question of number 17 obtained 65% of errors.

The least successful questions were the use of water or air gloves to relieve pressure on the calcaneus; cushions of the type of water wheels; positioning of the lateral decubitus, the patient with or at risk of developing a pressure lesion should be at a 30 degree angle to the bed mattress; as to the period of time for repositioning when sitting in the chair; orientation to the patient with limited mobility to perform pressure relief every 15 minutes while sitting in the chair.

Table 3 – Indexes of the research participants' right answers in the knowledge test, according to the items about the pressure injury prevention. *Teresina city, Piauí State, 2016.*

Question	Right	%	Wrong	%	I do not know	%
2- The risk factors for the development of pressure ulcer are: immobility, incontinence, inadequate nutrition and altered level of consciousness. (T)	22	96	1	17	0	0
3- All patients at risk for pressure ulcer should have a thematic inspection of the skin at least once a week. (F)	13	57	10	43	0	0
4- The use of hot water and soap can dry the skin and increase the risk for pressure ulcer. (T)	15	65	6	26	2	9
5- It is important to massage the regions of bony prominences, if they are hyperemic. (F)	18	78	5	22	0	0
7- All patients should be evaluated at admission to hospital for risk of development of pressure ulcer. (T)	23	100	0	0	0	0
8- The creams, transparent and curative dressings of superfine hydrocolloids help protect the skin against the effects of friction. (T)	21	91	2	9	0	0
10- An adequate dietary intake of protein and calories should be maintained during illness/hospitalization. (T)	22	96	1	4	0	0
11- Patients who are restricted to the bed should be repositioned every 3 hours. (F)	13	57	10	43	0	0
12- A scale with changeover schedules should be used for each patient with or at risk for pressure ulcer. (T)	22	96	0	0	1	4
13- Water or air gloves relieve pressure on the calcaneus. (F)	10	43	13	57	0	0
14- Water or air-type cushions assist in the prevention of pressure ulcer. (F)	9	39	14	61	0	0
15- In the position in lateral decubitus position, the patient with pressure ulcer or at risk for the same should be at a 30 degree angle to the bed mattress. (T)	8	35	6	26	9	39
16- In the patient with pressure ulcer or at risk for pressure ulcers, the head of the bed should not be raised at an angle greater than 30 degrees if there is no medical contraindication. (T)	20	87	3	13	0	0
17- The patient who does not move alone should be repositioned every 2 hours when sitting in the chair. (F)	8	35	15	65	0	0
18- The patient with limited mobility who can change the position of the body without help, should be instructed to perform pressure relief every 15 minutes while sitting in the chair. (T)	9	39	10	43	4	17
19- The patient with limited mobility and who can remain in the chair should have a cushion in the seat to protect the region of bony prominences. (T)	20	87	1	4	2	9
21- The patient's skin at risk for pressure ulcer should remain clean and free of moisture. (T)	22	96	1	4	0	0
22- Measures to prevent new injuries do not need to be adopted continuously when the patient already has a pressure ulcer. (F)	23	100	0	0	0	0
23- Moving sheets or linings should be used to transfer or move patients who do not move alone. (T)	20	87	1	4	2	9
24- The mobilization and transfer of patients who do not move must always be performed by two or more people. (T)	22	96	1	4	0	0

25- In patients with chronic conditions who do not move alone, rehabilitation should be initiated and include guidelines on pressure ulcer prevention and treatment. (T)	23	100	0	0	0	0
26- Any patient who does not wander should be submitted to a risk assessment for the development of pressure ulcer. (T)	23	100	0	0	0	0
27- Patients and families should be advised of the causes and risk factors for pressure ulcer development. (T)	23	100	0	0	0	0
28- Regions of bony prominence may be in direct contact with one another. (F)	23	100	0	0	0	0
29- Every patient at risk for developing pressure ulcer should have a pressure-redistributing mattress. (T)	22	96	1	4	0	0
30- The skin, when macerated by moisture, is damaged more easily. (T)	21	91	0	0	2	9
34- A good way to decrease pressure in the calcaneal region is to keep them elevated from the bed. (T)	19	83	3	13	1	4
35- All care to prevent or treat pressure ulcers does not need to be recorded. (F)	23	100	0	0	0	0
36- Shear is the force that occurs when the skin adheres to a surface and the body slides. (T)	18	78	2	9	3	13
37- Friction can occur as the patient moves over the bed. (T)	22	96	1	4	0	0
39- In patients with incontinence, the skin should be cleaned at the time of elimination and during routine intervals. (T)	22	96	1	4	0	0
40- The development of educational programs in the institution can reduce the incidence of pressure ulcer. (T)	23	100	0	0	0	0
41- Inpatients need to be evaluated for the risk of pressure ulcer only once during their hospitalization. (F)	23	100	0	0	0	0

Table 4 shows the distribution of participants in the test according to the percentage of correct answers. Considering the correct answers, 70% of the nurses scored between 80 and 89% of the test, 9% of the professionals scored between 60 and 69%, and 9% of the professionals scored between 70 and 79% of the test, demonstrating knowledge gaps in the items covered, 13% scored 90% or higher, they showed the desired knowledge regarding the subjects of the test, it is worth noting that no nurse scored 100% of the test.

Table 4 –Distribution of the participants in the knowledge test according to the percentage of correct answers. *Teresina* city, *Piauí* State, 2016.

CORRECT ANSWER PERCENTAGE	NURSE (n=23)	
	n	%
< 50	0	0
50 to 59	0	0
60 to 69	2	9
70 to 79	2	9
80 to 89	16	70
≥ 90	3	13
Total	23	100

Nursing is responsible for direct and continuous care in the prevention, classification, and treatment of PI. To have a quality of care, it is necessary that the Nursing has a basis

in the best evidence on the subject. The knowledge of these evidences about PI should be part of the knowledge roll of all the nurse professionals.⁸

Considering the 26 nurses that comprise the functional team of all sectors of the research site, only 23 nurses accepted to participate in the study and answered the two questionnaires, one socioeconomic questionnaire and the other with 41 items about PI.

The sociodemographic table showed that, in relation to the age of the participants, where it prevailed from 25 to 29 years old, the average among them was not enough to exceed the average age group from 40 to 44 years old. Regarding the average of hits using the gender parameter, it was identified that the female gender prevailed in the male relationship.

It was observed in this study that the majority of the nurses had less than five years of work in the Nursing profession or in the hospital area. These data may contribute to explain the lack of knowledge of these professionals about some aspects of PI prevention and identification, as was verified in a national study that used the same test.⁹

It was found that both professionals who have other jobs in the health area and those who have other work outside of health obtained a better average of correct answers to the PI questionnaire, considering that almost 50% of professionals affirm that they have another job employment in the health area and only 13% outside the health area.

Concerning the differentiation of professionals with or without PI training, it can be stated that most of the participants had no training on the subject, yet, these professionals obtained a better average of the 41 items compared to those who have training on the subject.

The test results, considering the total number of correct answers (83%), showed that the Nurses' knowledge was insufficient, since most of them scored between 80 and 89% of the items. Knowledge was considered inadequate, since most of the participants scored below 90% of the test.⁷ In the present study, it was found that only three nurses obtained 90% or more of correct answers. As no participant reached 100%. These results are unsatisfactory, since the participants showed that they did not have enough domain of the subjects covered in the 41 items of the questionnaire, with this it is noticed that these professionals do not have a good practical base and scientific knowledge regarding the subject approached.

Of the items that were less than 50% of the correct answers, we can mention items 13 and 14 that deal with the use of water or air gloves and air or water wheel type pads that either may or may not help in the PI prevention.

People with risk factors for PI should be evaluated systematically, since prevention is still the best course of action. Regardless of the treatment and at any PI stage, techniques are needed to avoid vasoconstriction, so that it does not favor the development of pathologies due to lack of oxygen supply. The use of air mattress or pneumatic is also considered an important form of prevention and the traditional uses of

water or air gloves and air or water wheel type cushions are contraindicated for increasing the area of ischemia.¹⁰

Another item that the Nurses missed and did not know was to change the patient's lateral decubitus by 30 degrees relative to the bed mattress. For Caballero¹¹ this procedure is of importance to avoid the patient to acquire PI and also for those who already have the injury, because with the change of decubitus with a maximum of every two hours it will provide relief of the pressure of bony prominences and of the injured area.

In relation to the repositioning time of the wheelchair, which was one of the items with the lowest number of hits, according to Mauricio *et al.*,⁴ the individual in wheelchairs should change their position every 15 minutes to modify the pressure site in the sacral region. And it is up to health professionals to conduct or guide the repositioning.

In studies such as de Fernandes, Caliri and Haas,¹² investigated the effect of an educational intervention on the level of knowledge of the measures recommended for the prevention of pressure ulcer of the Nursing team members from an Intensive Care Center (ICU). Knowledge was measured using the same knowledge test used in the present study. Nursing professionals participated in the study. In the first phase, 7 nurses answered the pre-test and obtained 86.4% of correct answers, in the 90% parameter their study was unsatisfactory. Since it was not possible to verify if the educational action implemented would result in improvement of the indexes of success in the post-test, since there was no participation of the nurses in this phase.

Another study with 25 nurses from a private hospital also used the same knowledge test. The average percentage of hits was 70.6%. Unfortunately not getting the percentage of correct answers, however, it was identified that the test scores were significantly higher in those who participated in continuing education activities offered by the institution.¹³

The results obtained by professionals in this research and in previous national and international studies show that knowledge failures exist and persist, despite the technical-scientific advance on the subject and the availability of guidelines that make the recommendations for practice.¹⁴

The use of risk assessment instruments for PI development, such as the Braden and Norton scales, where it identifies whether the patient is at risk and the associated risk factors, these scales help nurses in subsequent preventive measures to be adopted for each patient.¹²

A study showed that it is possible and essential to use risk prediction scales as a way to assess the risk that the client has to develop PI. The Braden scale is a predictive risk instrument to evaluate according to sensory perception, moisture, activity, mobility, nutrition, friction, and shear, allowing greater resolution in preventive actions.¹⁵

Considering that the development of PI during hospitalization is an important indicator of the quality of care provided, it is expected that a systematic prevention approach will be adopted as a Norton scale, which assesses five risk factors, as

follows: physical condition; level of consciousness; activity; mobility; incontinence.¹⁶

Herein, it was verified that the nurse professionals obtained a good knowledge score from the Braden and Norton scales, knowing all their parameters to identify the risk factors for PI development.

CONCLUSIONS

Within the proposed objectives, it was verified that the majority of nurses are in the age group from 25 to 29 years old, with the working time in both Nursing and hospital areas less than 05 years, and also with the prevalence in the female gender and with a weekly workload of 40 hours. It was also observed that the majority of the participants do not have other employment in the health area or outside the health area, and most of them do not have PI training.

Herein, it was possible to show that most of the Nursing professionals demonstrated poor knowledge about PI, since the majority obtained scores below 90%. Regarding the distribution of the correctness index in the knowledge tests of the 41 questions.

Accordingly, the lack of knowledge on the subject addressed is evident. In this sense, it is emphasized the necessity of continuous education on the preventive measures of PI, as well as the questions related to their staging. Continuing education, along with a continuous assessment of knowledge, with the Nursing professionals of the institution, would incorporate new knowledge, technologies, and options available for use in their practices, as well as clarification of responsibility with regards to the issue of PI prevention.

The study's limitations lie in the restriction of the field, since only one health service was used, not covering realities of other services in different regions of the country. Hence, it is suggested to carry out new research concerning the matter that takes into account this limitation, since the extension of fields and participants will give more subsidies so that the issues addressed are deepened, then allowing discussions to propose intervention strategies that generate reflexes in the quality of Nursing care.

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***Corresponding Author:**

Francisco Matheus Oliveira Carvalho

Rua Vereador Álvaro Monteiro, 1519

Parque Alvorada, Teresina, Piauí, Brasil

E-mail address: franciscomatheus.16@hotmail.com

Telephone number: +55 86 9 8141-6725

Zip Code: 64.005-270

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