

# Knowledge of nurses about the use of disposable diapers and the development of dermatitis in hospitalized patients

## Abstract

**Introduction:** Although the use of disposable diapers by adult patients in clinical settings is a noninvasive practice it can't be considered harmless for the patient and can cause negative impacts on the patient, such as mild to severe dermatitis. The use of disposable diapers should be carefully evaluated by nurses, who need the knowledge of its proper use.

**Objective:** To identify nurses' knowledge of the use of disposable diapers and the development of dermatitis.

**Methods:** a cross-sectional study with nurses of an inpatient clinic at a medical Hospital in Sao Paulo, Brazil. Two instruments were used, one of them consisted of information about the demographic and professional characteristics and the other investigated specific knowledge about the use of disposable diapers and the development of dermatitis.

**Results:** Of the 30 nurses, 76.67% female, young, working time median in the unit 3 years and 3 months, all held graduation in private higher education institutions and had 3 to 5 years (33, 34%) of completion of graduation, 90,00% have at least one training in a broad post-graduation. On the subject, 66.67% reported having enough information about urinary elimination, but only 6 have cited the optimal time for performing the diaper, 63.34% of these reported that the nursing auxiliaries/ technicians put on the disposable diaper regardless of the orientation of nurses and 26.67% reported carrying out an assessment for placing this diaper on the patient, 70.00% reported prescribing devices barrier in the patient wearing the diaper, but only 50.00% gave a correct sample barrier means. Dermatitis was the most common complication caused by disposable diapers. Were interviewed 30 nurses, 66.67% reported they had sufficient information on urinary eliminations. However, problems related to the care of the patient that used diaper were identified, such as: 80.00% did not know the ideal time to perform the diaper change, 63.34% reported that it was common to use two diapers at the same time in the patient. Only 26.67% of the interviewed nurses said they performed the evaluation of the patient regarding the need of using the diaper. It was identified that Nurses' lack of knowledge about the definition and use of barrier devices in the prevention of diaper-associated dermatitis.

**Conclusion:** Nurses presented appropriate knowledge about the negative effects of using disposable diapers in adult patients, but a lack of knowledge of the correct use of it. The study showed the need for better assessment by nurses concerning the use of disposable diapers in dependent adult patients. Result section needs to be rewritten for clarity. Too much information per sentence and more is breaking.

**Keywords:** nurse, adults, diapers, knowledge, psychological

Volume 1 Issue 3 - 2016

Monica Franco Coelho, Rafaella Chufuli Pace,  
Fernanda Machado Silva-Rodrigues, Magda  
Aparecida dos Santos Silva, Danielle Freitas  
Alvim de Castro

School of Nursing at Santa Casa de Sao Paulo School of Medical  
Sciences, Brazil

**Correspondence:** Monica Franco Coelho, School of Nursing  
at Santa Casa de Sao Paulo School of Medical Sciences, Brazil,  
Tel +5 11 9 9891 7038, Email monicaeerp@gmail.com

**Received:** November 09, 2016 | **Published:** December 12,  
2016

## Introduction

Urinary elimination is included as basic human needs at an individual, psychological and biological level and changes on this function are a result of hemodynamic imbalance of vital phenomena.<sup>1</sup> The use of disposable diapers is recommended when the patients are severely injured, bedridden, have no control over their eliminations or when leaving the bed is contraindicated.<sup>2</sup> In clinical settings, the use of disposable diapers replaces the use of waterproof sheets and decreases the number of bed linen changing, which enhances patient comfort. However, this practice has been carried out without the scientific basis needed.<sup>3</sup> The indiscriminate use of disposable diapers

can harm the patient. Changes in self-esteem and feelings of shame are amongst the damages reported by patients.<sup>2,3</sup> In addition, some clinical complications, such as the appearance of pressure ulcers, urinary tract infections and dermatitis are associated with the use of disposable diaper.<sup>2</sup> All these factors show that indiscriminate use of disposable diapers affects the patient physically and emotionally.

Diaper dermatitis is a type of contact dermatitis caused by primary irritation in the diaper area, described by Jacquet affecting more than 50% of infants and adults who use disposable diapers, due to incontinence.<sup>4</sup> Friction and maceration are predisposing factors frequently necessary for the development of this condition. Fecal

elimination is considered the main cause, as lipolytic and proteolytic enzymes act as triggering factors.<sup>4</sup>

Hence, diapers must be indicated exclusively for adult and elderly population that presents incontinence, decreased level of consciousness and severe mobilization restrictions.<sup>3</sup> Frequently, in hospitals where the number of patients depends on nursing care for activities of daily living is high, there is an insufficient number of nursing professionals. It is also common to verify that diaper changing does not occur according to patient's elimination, but according to nursing staff availability to provide hygiene and comfort, which often leads to wet diapers in contact with the skin for long periods.<sup>2</sup>

Approximately 20% of individuals aged 70 years or above need assistance to perform at least one activity of daily living, such as bathing, dressing and going to the bathroom. In Brazil, 1.500.000 elderly people need special care and a caregiver.<sup>5</sup> These data indicate a problem related to a simple practice that can bring detrimental consequences to patients, despite the possibility to be avoided. Considering the magnitude of the problem this study aims to explore nurses' knowledge about the use of disposable diapers and the development of dermatitis in clinical settings.

## Materials and methods

This is a cross-sectional study, conducted at a Medical School Hospital, in the period of February 1<sup>st</sup> – March 26th in 2016. The study was approved by the Ethics Committee from the institution (research protocol number 1.396.370). The participants were nurses

who perform their activities at clinical medicine units, who voluntarily agreed to participate in the study. Those professionals, who were not in the unit during the data collection period due to medical leave or vacation, were excluded.

Nurses were interviewed using two instruments, one of them consisted of demographic information, and the other was a semi-structured questionnaire developed by the researcher, which included 14 questions about nurses' specific knowledge of disposable diapers' use and its relationship with the development of dermatitis. The data was stored in Excel software, and the quantitative variables were analyzed using the procedures of descriptive statistics, expressed by mean, median and standard deviation (SD).

## Results and discussion

A total of 30 nurses were interviewed, 23(76.67%) young, 11(36.67%) in the age group of 20 to 30 years, minimum age of 20 and maximum of 50 years of age. As for the working time on the median unit found was 39 months, the median of 36 months and the standard deviation of 33 months. Regarding the training of the professionals who were interviewed, all nurses, 30(100.00%) obtained their undergraduate degree in private institutions and 27(90.00%) have concluded it for less than 10 years. The interval of completion of the undergraduate course varied from a year to 21 years. The majority, 27(90.00%) of the nurses were specialists, and one of them (3.33%) had a Ph.D. in nursing. Objective responses obtained during the interview are shown in Table 1.

**Table 1** Nurses' responses regarding the use of disposable diapers in adult patients

Questions	Answers		
	Yes	No	Others
	N %	N %	N %
Do you believe you have received enough information in nursing school about patient's urinary elimination?	20 66,67	10 33,33	- -
Do you think it is important for nurses to participate in the decision of using diapers in patients?	29 96,67	01 3,33	- -
Have you ever tried to use more than one diaper on the patient?	25 83,33	05 16,67	- -
Is it common to use more than one diaper on patients at your unit?	19 63,34	10 33,33	01 3,33
Is there a protocol to use diapers at your unit?	29 96,67	01 3,33	- -
Do you think that the use of disposable diapers can bring any damage to patient's health?	25 83,33	03 10,00	02 6,67

Only one participant didn't consider important for nurses to participate in the decision of using disposable diapers, as the other members of the nursing team had more time to perform this activity. Moreover, according to this nurse, they also had more contact with the patients, in order to observe their specific needs. Nursing performs a direct role in the care of patients' needs of elimination, hygiene, comfort and related needs. Nurses are the professionals that have to evaluate and plan the care offered by the nursing team, and also prepare the team regarding the strategies and resources to be used for each person. Such as, the criteria to use urinary catheters and disposable diapers.<sup>2</sup>

Questions three and four asked about the use of more than one diaper at the same time on a patient. The majority of nurses reported that they have never done that, despite admitting that they have seeing other professional doing so. The majority of the nurses denied that this practice is common at the unit and one of them reported not knowing

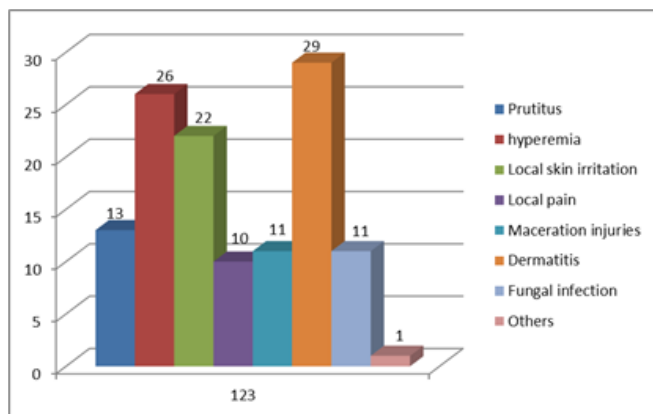
if it is common to use two diapers at the same time in patients. Nurses stated that using more than one diaper on a patient is a common practice in their care setting, due to a low nursing staff level. Another reason was also the lack of quality of the available diapers.

When questioned about a guideline for diapers' use on patients, the majority of nurses recognized that there weren't specific procedures for this activity. The recommendation would consist in a guideline recommended to adult and elderly patients. Nurses should evaluate the need of each patient, the reasons of using it and what are the patients that need to use diapers, the reasons of using it and what is the care related to hygiene, the length in hours to exchange diapers and other important aspects.

The use of diapers in the health setting requires a specific care related to urinary eliminations, such as changing diapers frequently, using the correct size and applying barriers to protect and prevent

humidity. The long contact between the skin and wet diapers will increase the skins' permeability to the acid content of the urine and the activity of proteases and fecal lipases, the main factors that harms the health of elderly patients, who have a fragile and sensitive skin.

Nurses were also questioned about the possibility of causing harm to patients by using diapers. Most of them answered yes, but two of them that reported that it would not be possible for them to answer the question, as according to them, it depends on each patient. The participants were also questioned about symptoms considered more frequent for patients that use diapers, as indicated in Figure 1.



**Figure 1** Frequent symptoms in patients that use diapers, according to nurses' responses.

Amongst a hundred twenty-three answers reported by nurses, the main symptoms were dermatitis, hyperemia and local skin irritation. The skin wounds related to the use of disposable diapers represent a problem that causes discomfort to patients and can be prevented. Some of the characteristics of these wounds are erythema, maceration injuries and ulceration, followed by pain on the affected sites, frequently the buttocks, thighs, genitals and inferior abdomen, i.e. parts that are in direct contact with diapers.<sup>6</sup>

The participants were also asked to evaluate the quality of the disposable diapers, available at the hospital. The majority of them, 18(60,00%) reported that the quality of the diapers was good, 6(20,00%) said it was poor, 5(16,67%), very poor quality and 1(3,33%) excellent. In addition to the quality of the diapers, nurses disclosed some characteristics of a good quality diaper. From 64 answers, 22(34,38%) stated that good absorption is important, when considering the quality of the product, 14(21,88%) considered the right size according to the patient as an essential aspect, 8(12,50%) considered the proper fixation, 7(10,95%) presence of absorbent gel, 3(4,69%) elasticity, 2(3,12%) less plastic material, 2(3,12%) like underpants, similar to some children diapers, 2(3,12%) good adhesives, 1(1,56%) hypoallergenic, 1(1,56%) durable, 1(1,56%) good quality and 1(1,56%) with more cotton.

According to some researchers conducted in Pediatrics, some aspects as quality and capacity of absorption, as well as the early exchange of diapers and the use of barrier creams help to maintain the genitourinary skin integrity.<sup>7</sup> Even though nurses have cited that they had enough knowledge about urinary eliminations during their preparation, question one showed that the majority of them presented difficulties to answer other specific questions about this subject and those who showed some knowledge, in fact did not put it into practice, bringing the concept of what is ideal and what is really performed at the unit. The quality of care of patients who wear diapers requires

nurse's constant participation, from the assessment and prevention to the treatment of possible injuries.<sup>2</sup>

This study showed the presence of important gaps regarding the knowledge of diapers using. Nurses being more prepared, must educate the whole nursing team about the proper use of this resource, need for assessment, and prevention of skin damage caused by diapers, in terms of evidence-based practice. Moreover, the lack of resources in general, including the reduced number of employees contributes to the quality of the care provided to this population.

## Conclusion

This study identified that nurses do not assess patients to indicate the proper use of the disposable diaper, which is a common practice in hospitals in Brazil. Using diapers in adult and elderly patients require specific care measures to prevent damage, always based on scientific knowledge and evidences. Although nurses presented good formal training, many conceptual gaps related to patient care were observed. The identification of these gaps is essential to understand how diapers use has occurred in nursing care and if this was added as a common practice, without the development of knowledge associated with its use.

To avoid the unnecessary use of the disposable diaper and better practices related to it, there is a need for the creation of a care protocol and guidelines based on an accurate and frequent assessment of the patient. In addition to checking the needs of using the diaper, nurses should prescribe specific precautions related to the use of this resource in order to prevent urinary tract infection, dermatitis and pressure injuries associated with its use.

## Acknowledgements

None.

## Conflict of interest

The author declares no conflict of interest.

## References

1. Horta WA. *Processo de enfermagem*. São Paulo, Brazil: Springer; 1979.
2. Coelho MF. *Impacto f using disposable diapers in hospitalized patients: survival analysis study*. Brazil: Springer; 2014.
3. Silva TC, Mazzo A, Santos RCR, et al. Consequências do uso de fraldas descartáveis em pacientes adultos: implicações para a assistência de enfermagem. *Aquichan*. 2015;15(1):21–30.
4. Zanini M, Wulkan C, Paschoal LHC, et al. Erupção pápulo-ulcerativa na região da fralda: relato de um caso de dermatite de Jacquet. *An Bras Dermat*. 2003;78(3):355–359.
5. Tomomitsu MRSC, Lemos ND, Perracini MR. Prevalência e fatores associados à fragilidade em cuidadores idosos. *Geriatrics & Gerontologia*. 2010;4(1):3–12.
6. Humphrey S, Bergman JN, AUS. Practical management strategies for diaper dermatitis. *Skin Therapy Lett*. 2006;11(7):1–6.
7. Martinho J, Faustino L, Escada M. Advantages of using barrier creams vs polymeric films in contact dermatites and moisture lesions. *Journal of Aging & Innovation*. 2012;1(6):21–33.
8. Beguin AM, Malaquin Pavan E, Guihaire C, et al. Improving diaper design to address incontinence associated dermatitis. *BMC Geriatrics*. 2010;10:86.