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BUNDLE: MEDICAL ADHESIVE-RELATED SKIN INJURY PREVENTION IN ADULT INTENSIVE CARE

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ABSTRACT

Objective: to build and validate a bundle for medical adhesive-related skin injury prevention in adult intensive care.
Method: this is a methodological study, carried out in three stages: development of a Scoping Review, bundle construction and content validity. This scoping review followed the JBI recommendations, and the content validity process was performed using the Delphi technique. Six expert judges participated in this process. For content validity analysis, the Content Validity Coefficient and binomial test were calculated. Items that reached a coefficient ≥0.80 and an agreement proportion of 80% among judges were considered valid for the binomial test.
Results: the bundle structure had 21 recommendations, grouped into categories: skin assessment, identification of patients at risk, product selection, skin preparation, adhesive application technique, adhesive removal technique and health professionals' education. The criteria established for assessment achieved satisfactory levels of assessment, being considered adequate by judges. In Delphi I, the assessed items obtained a Content Validity Coefficient ≥0.83 and in Delphi II, ≥0.97.
Conclusion: in this study, it was allowed to construct and validate a bundle for medical adhesive-related skin injury prevention in adult intensive care.

DESCRIPTORS: Critical care. Wounds and injuries. Intensive care units. Stomatherapy. Patient care bundles. Validity study.

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BUNDLE: PREVENÇÃO DE LESÕES DE PELE RELACIONADAS A ADESIVOS MÉDICOS EM TERAPIA INTENSIVA ADULTO

RESUMO

Objetivo: construir e validar um bundle para a prevenção de lesões de pele relacionadas a adesivos médicos em terapia intensiva adulto.
Método: trata-se de um estudo metodológico, realizado em três etapas: desenvolvimento de uma Scoping Review, construção do *bundle* e validação de conteúdo. A *Scoping Review* seguiu as recomendações do Joanna Briggs Institute, e o processo de validação de conteúdo foi realizado, por meio da técnica Delphi. Participaram desse processo seis juízes especialistas. Para a análise da validação de conteúdo, foram calculados o Coeficiente de Validade de Conteúdo e teste binomial. Foram considerados válidos os itens que atingiram coeficiente ≥0,80 e a proporção de concordância de 80% entre os juízes, para o teste binomial.
Resultados: a estrutura do *bundle* contou com 21 recomendações, agrupadas em categorias: avaliação da pele, identificação dos pacientes de risco, seleção do produto, preparo da pele, técnica de aplicação do adesivo, técnica de remoção do adesivo e educação permanente dos profissionais de saúde. Os critérios estabelecidos para a avalição alcançaram níveis de avalição satisfatórios, sendo considerados adequados pelos juízes. Em Delphi I, os itens avaliados obtiveram um Coeficiente de Validação de Conteúdo ≥0,83 e em Delphi II, ≥0,97.
Conclusão: neste estudo, permitiu-se construir e validar *bundle*, para a prevenção de leões de pele relacionadas a adesivos médicos em terapia intensiva adulto.

DESCRITORES: Cuidados críticos. Ferimentos e lesões. Unidades de terapia intensiva. Estomaterapia. Pacotes de assistência ao paciente. Estudo de validação.

BUNDLE: PREVENCIÓN DE LESIONES CUTÁNEAS RELACIONADAS CON ADHESIVOS MÉDICOS EN CUIDADOS INTENSIVOS DE ADULTOS

RESUMEN

Objetivo: construir y validar un bundle para la prevención de lesiones cutáneas relacionadas con adhesivos médicos en cuidados intensivos de adultos.
Método: se trata de un estudio metodológico, realizado en tres etapas: elaboración de un Scoping Review, construcción del bundle y validación de contenido. La revisión del alcance siguió las recomendaciones del JBI y el proceso de validación de contenido se realizó mediante la técnica Delphi. En este proceso participaron seis jueces expertos. Para el análisis de validación de contenido se calculó el Coeficiente de Validez de Contenido y la prueba binomial. Se consideraron válidos para la prueba binomial los ítems que alcanzaron un coeficiente ≥0,80 y una proporción de concordancia del 80% entre los jueces.
Resultados: la estructura del bundle tenía 21 recomendaciones, agrupadas en categorías: evaluación de la piel, identificación de pacientes en riesgo, selección de productos, preparación de la piel, técnica de aplicación de adhesivos, técnica de eliminación de adhesivos y educación continua de los profesionales de la salud. Los criterios establecidos para la evaluación lograron niveles de evaluación satisfactorios, siendo considerados adecuados por los jueces. En Delphi I, los ítems evaluados obtuvieron un Coeficiente de Validación de Contenido ≥0,83 y en Delphi II, ≥0,97.
Conclusión: en este estudio fue posible construir y validar un bundle para la prevención de lesiones cutáneas relacionadas con los adhesivos médicos en cuidados intensivos de adultos.

DESCRIPTORES: Cuidados críticos. Heridas y lesiones. Unidades de cuidados intensivos. Estomaterapia. Paquetes de atención al paciente. Estudio de validación.

INTRODUCTION

Medical adhesive-related skin injury (MARSI) it is a recurrent event in health environments, however, still underestimated and neglected identification. In recent years, there has been a growing debate about the problem[1–2].

This is a preventable injury that occurs after removing an adhesive attached to the skin. Damage happens when the adhesive strength exceeds the strength of interactions between skin cells. Depending on the characteristics, MARSI can be grouped into some types: mechanical injuries (skin stripping, friction injuries and tension injuries), dermatitis (irritant contact dermatitis and allergic dermatitis) and others (maceration and folliculitis)[1].

All patients who use medical adhesives are susceptible to the occurrence of MARSI, however some factors may increase this risk, such as improper medical adhesive application and removal, fragile skin, pre-existing dermatological conditions, clinical conditions, prolonged exposure to humidity, recurrent use of adhesives fixed to the skin, prolonged use of certain medications, among others[1,3–4].

It should be noted that, in the Intensive Care Unit (ICU), patients generally make use of many medical devices, and adhesives are largely present, they are in the monitoring electrodes, fixation of catheters and vascular devices, fixation of drains and orotracheal tubes, among others. Thus, critically ill patients are among those most at risk of developing MARSI[4–5].

In Brazil, a prospective cohort study conducted in an ICU revealed a 31.0% incidence of MARSI in patients with a peripheral venous catheter[6]. Another study identified a prevalence of 22.7% in a cardiac ICU[4]. In China, the incidence identified in the ICU was 11.86%5. In the United States, a study identified an average prevalence of 13% in a teaching hospital[7].

It should also be noted that, in addition to interfering with skin integrity, it can cause pain, increase the risk of infection and the size of a pre-existing injury, delay healing, increase hospitalization time and treatment costs, as well as nursing time, impacting the quality of service provided to patients[2].

Thus, the prevention of these injuries deserves attention, since this care can impact quality of care and patient safety. Thus, it is necessary for nursing professionals to recognize it on a daily basis and implement care for its prevention. To this end, it is worth emphasizing the importance of investing in education, training and qualification of nursing professionals[1,3,8].

Aiming to improve quality of care and the nursing work process, translation of scientific evidence into actions, for clinical practice, is essential. For this, some technologies can be used[9]. Among those available for nursing, bundles are presented as a tool that can bring good results for care. It is a small, evidence-based set of interventions for a defined segment of patient/population and care that, when implemented together, will deliver significantly better results than when implemented individually[10].

Making use of these health technologies is the prerogative of health institutions that value the excellence of services and seek to ensure professionals' and users' safety, in addition to serving as a support to organize and manage nursing work[11].

Considering the impacts and importance of care for MARSI, as well as the distancing of professionals on the subject, this study is relevant, as it provides a technology in a bundle format, built through scientific evidence, with the main measures for MARSI prevention, in the intensive care environment, adult. Thus, the objective of this study was to construct and assess the content of a bundle for MARSI prevention in adult patients in the ICU.

METHOD

This is a methodological study of construction and validity of a bundle for MARSI prevention in an adult ICU, based on the methodological framework of Pasquali[12], which consists of three processes: I - theoretical foundation; II - empirical procedure, carried out through instrument application and information collection; and III - analytical procedures. These are, sequentially in this study, scoping review, bundle construction, content validity by judges and, finally, statistical analysis, in the period from 2021 to 2022.

This scoping review was carried out to identify and synthesize scientific evidence on MARSI in adult patients in intensive care. It was developed, according to the method proposed by JBI[13], with research protocol registered in the Open Science Framework*ork* (DOI 10.17605/OSF.IO/6QKAV).

Briefly, in this review, the main strategies identified in the studies for MARSI prevention in an adult ICU correspond to skin assessment, identification of patients at risk, selection of the appropriate adhesive product, proper technique for medical adhesive application and removal, education of professionals and patients[14].

During the instrument construction, the recommendations were classified into levels of evidence, according to the methodology of the studies, from which they were extracted. To this end, the study classification system recommended by the JBI was adopted, with level 5, expert opinion; level 4, descriptive observational studies; level 3, analytical observational studies; level 2, quasi-experimental studies; and level 1, experimental studies[15].

For the validity process, Pasquali suggests six to 20 judges, requiring at least threes[12]. Armed with this concept, the researchers invited 20 eligible judges to assess the instrument.

For expert selection, initially, a survey of nursing experts in stomatherapy was carried out, through the *Plataforma Curriculum Lattes* of the Brazilian National Council for Scientific and Technological Development (CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*) (http://lattes.cnpq.br/). The curricula were analyzed and scored, according to the adaptation of Fehring's criteria[16], namely: master's degree in nursing (4 points), master's degree with a dissertation in stomatherapy (1 points), research on skin injuries (2 points), article published on skin injuries (2 points), doctoral degree in stomatherapy (2 points), clinical practice in stomatherapy (1 point), specialization certificate in stomatherapy (2 points), with a maximum score of 14 points. The minimum score considered for inclusion in the study was five points.

After the search, an email was sent to professionals with an invitation to participate in the study, in addition to instructions for accessing the Informed Consent Form (ICF). Those who agreed to participate in the study had access to the form with the bundle and the questions for assessing the instrument, through Google Forms.

The instrument to be filled out, initially, had questions for participant characterization, sequentially, to assess each category of the bundle, such as: skin assessment, identification of patients at risk, product selection, skin preparation, adhesive application technique, adhesive removal technique, and health professionals' education. At the end of each session, a space for comments and suggestions was made available.

The judges were invited to judge, according to behavior, objectivity, simplicity, clarity, relevance, accuracy, variety, modality, typicality, credibility, breadth and balance[12]. It should be noted that a brief explanation of each criterion was provided.

Assessment was carried out using the Likert-type scale, as follows: 1 - inadequate (I), classified as the degree of disagreement; 2 - partially adequate (PA); 3 - not sure (N), classified as degree of indecision; 4 - adequate (A) and 5 - totally adequate (TA), both as a degree of agreement.

For the form distribution stage, the Delphi technique was used, in which the specialists receive an interactive questionnaire, which is circulated repeatedly, preserving individual responses' anonymity[17]. In this study, the form was circulated twice. The first assessment round by judges was called Delphi I. After assessments and considerations made by judges, the instrument underwent modifications and was sent for a second assessment round, corresponding to Delphi II. The judges had access to a document with feedback on each suggestion.

Data from judges' assessment were entered into Microsoft Excel 2021®, proceeding with the analysis, checking the score of each item. Item relevance was obtained by analyzing the Content Validity Coefficient (CVC), proposed by Hernandez-Nieto in 2002[18]. An agreement level of equal to or greater than 0.80 was adopted[(12)]. Moreover, the unilateral binomial test was performed to verify the proportion of judges who considered the item suitable for analysis. A significance level of 5% was adopted, so that p-values greater than 0.05 indicated agreement among judges[19]. The analysis was performed using the R software, version 4.1.1 (R Core Team 2021).

This study was guided by Resolution 510/2016 of the Brazilian National Health Council and approved by the Research Ethics Committee of the *Universidade Federal de São João del-Rei*. It is noteworthy that all participants had access to guidelines and the ICF.

RESULTS

In the content validity process, all 20 eligible judges were invited and six agreed to participate, composing the expert committee of the first (Delphi I) and second assessment rounds (Delphi II).

As shown in Table 1, all specialists were female, doctors and stoma therapists, 66.7% worked in research, 100% in teaching, 16.7% in assistance, 16.7% in management, 50% had 11 to 20 years of experience in stomatherapy. The experts' minimum age was 34 years old and the maximum age 70 years old (mean = 50.8 and standard deviation = 12.56). Regarding the time of experience, in clinical practice, the minimum was 2 years and the maximum 34 years (mean = 18.5 and standard deviation = 10.77).

Table 2 shows the CVC of each assessed criterion, referring to the domains that make up the bundle, for MARSI prevention in an adult ICU, in the Delphi I and II assessment rounds.

As observed in Delphi I, in the adhesive selection domain, the behavioral and clarity criteria obtained a CVC of 0.83, characterizing the lowest value obtained. The other criteria, referring to the skin assessment, identification of patients at risk, adhesive selection, skin preparation, adhesive application, adhesive removal, and professionals' education domains, achieved CVC ≥0.87.

In Table 3, the level of statistical significance of agreement among judges is presented. It is observed that, in Delphi I and II, all criteria (behavioral, objectivity, simplicity, clarity, relevance, precision, breadth, balance, variety, modality, typicality, credibility), reached ρ-value ≥0.05.

Table 1 – Characterization of judges participating in the validity process of bundle. Divinópolis, MG, Brazil, 2022. (n=6).

Characterization of judges	n	%
Sex		
Female	6	100
Age		
30 to 40 years	1	16.7
41 to 54 years	2	33.3
51 to 60 years	2	33.3
61 to 70 years	1	16.7
Professional qualification		
Doctoral degree	6	100
Stomatherapist	6	100
Professional activity		
Research	4	66.7
Teaching	6	100
Care	1	16.7
Management	1	16.7
Clinical practice in stomatherapy		
Yes	6	100
Operating time		
1 to 5 years	1	16.7
11 to 20 years	3	50
21 to 35 years	2	33.3

Table 2 – Content Validity Coefficient in Delphi I and II for validity of bundle for medical adhesive-related skin injury prevention in the Adult Intensive Care Unit. Divinópolis, MG, Brazil, 2022. (n=6).

Criteria	Skin assessment	Identification of patients at risk	Adhesive selection	Skin preparation	Adhesive application	Adhesive removal	Professionals' education
	Delphi I Delphi II	Delphi I Delphi II	Delphi I Delphi II	Delphi I Delphi II	Delphi I Delphi II	Delphi I Delphi II	Delphi I Delphi II
Behavior	0.87 0.97	0.97 1.0	0.83 0.97	0.97 1.0	1.0 1.0	0.93 1.0	1.0 1.0
Objectivity	0.87 1.0	0.97 1.0	0.93 0.97	1.0 1.0	0.87 1.0	1.0 1.0	0.97 1.0
Simplicity	0.93 0.97	0.93 0.97	0.93 0.97	1.0 1.0	0.97 1.0	0.97 1.0	0.97 1.0
Clarity	0.93 0.97	0.97 0.97	0.83 0.97	0.90 0.97	0.97 0.97	0.97 1.0	0.97 0.97
Relevance	0.97 1.0	0.97 1.0	1.0 0.97	1.0 0.97	1.0 1.0	0.97 1.0	1.0 1.0
Accuracy	0.87 1.0	0.97 1.0	0.93 0.97	1.0 0.97	1.0 1.0	1.0 1.0	1.0 0.97
Breadth	0.97 1.0	1.0 1.0	0.97 1.0	0.90 1.0	0.87 1.0	0.97 1.0	1.0 1.0
Balance	0.97 1.0	1.0 1.0	0.93 1.0	1.0 1.0	1.0 1.0	0.97 0.97	1.0 0.97
Variety	0.97 1.0	0.93 1.0	0.93 0.97	0.87 0.97	1.0 1.0	1.0 1.0	1.0 1.0
Modality	0.93 1.0	0.97 1.0	0.90 0.97	0.97 0.97	0.90 1.0	1.0 1.0	1.0 1.0
Typicality	0.97 1.0	0.93 1.0	0.97 0.97	1.0 1.0	1.0 1.0	0.93 1.0	1.0 1.0
Credibility	0.93 0.97	1.0 1.0	0.97 1.0	1.0 0.97	0.97 1.0	0.97 1.0	1.0 1.0
CVC Total	Delphi I 0.96	Delphi II 0.99					

Table 3 – Binomial test for content validity of bundle for medical adhesive-related skin injury prevention prevention in the Adult Intensive Care Unit. Divinópolis, MG, Brazil, 2022. (n=6).

Criteria	Skin assessment	Identification of patients at risk	Adhesive selection	Skin preparation	Adhesive application	Adhesive removal	Professionals' education
	ρ-value Delphi I Delphi II	ρ-value Delphi I Delphi II	ρ-value Delphi I Delphi II	ρ-value Delphi I Delphi II	ρ-value Delphi I Delphi II	ρ-value Delphi I Delphi II	ρ-value Delphi I Delphi II
Behavior	0.345	0.738	0.345	0.738	0.738	1	1
	0.738	1	0.738	1	1	1	1
Objectivity	0.345	0.738	0.738	1	1	0.345	1
	1	1	0.738	1	1	1	1
Simplicity	0.345	0.345	0.738	1	0.738	0.738	1
	0.738	0.738	0.738	1	1	1	1
Clarity	0.345	0.738	0.345	0.738	0.345	0.738	1
	0.738	0.738	0.738	0.738	0.738	1	0.738
Relevance	0.738	0.738	1	1	1	0.738	1
	1	1	0.738	0.738	1	1	1
Accuracy	0.345	0.738	0.345	1	0.345	1	1
	1	1	0.738	0.738	1	1	0.738
Breadth	0.738	1	0.738	1	1	1	1
	1	1	1	1	1	1	1
Balance	0.738	1	0.345	1	1	1	1
	1	1	1	1	1	0.738	0.738
Variety	0.738	0.345	0.738	0.345	1	0.738	1
	1	1	0.738	0.738	1	1	1
Modality	0.345	0.738	0.345	0.738	0.738	0.738	1
	1	1	0.738	0.738	1	1	1
Typicality	0.738	0.345	0.738	0.738	0.738	0.738	1
	1	1	0.738	1	1	1	1
Credibility	0.345	1	0.738	1	0.738	1	1
	0.738	1	1	0.738	1	1	1

As explained, we can consider that the instrument was validated in the first assessment round, since all criteria obtained satisfactory coefficients. However, the judges sent suggestions for improving the instrument, which were analyzed by the researchers, who considered it important to be incorporated into the bundle. Therefore, the instrument underwent adaptations and was sent for a second assessment round. In the end, all assessed criteria reached CVC ≥ 0.97 and ρ-value greater than 0.05. The total CVC of the instrument in Delphi II was 0.99.

We can infer that the domains presented in the bundle, with their respective interventions, are adequate, since the coefficients and p-values presented demonstrate that there was agreement among expert judges in Delphi I and II.

With regard to experts' suggestions, in item 1, clarity was suggested in the regularity of skin assessment; in item 5, in extremes of age, older adults were added, since the bundle is directed to the adult ICU. In item 9, it was suggested to change the term "trim the hair" to "shave the hair". In item 15, it was recommended to start the sentence with the verb in the infinitive. Other recommendations were related to the clarity of information, correct spelling, tense and structure. The final structure of the bundle had 21 recommendations, grouped into categories: skin assessment, identification of patients at risk, product selection, skin preparation, adhesive application technique, adhesive removal technique and continuing education of health professionals (Chart 1).

Chart 1 – Bundle: Medical adhesive-related skin injury prevention in the Adult Intensive Care Unit. Divinópolis, MG, Brazil, 2022.

Final version - Bundle: Medical Adhesive-Related Skin Injury Prevention in the Adult Intensive Care Unit		
Category	**Nursing interventions**	**LoE***
Skin assessment	1- Examine the skin of all patients upon admission and thereafter, daily, above all, before medical adhesive application and after its removal.	4
	2- Assess skin integrity, its coloration, temperature, humidity, turgor, fragility, edema and signs of local irritation.	4
	3- Previously recognize the types of skin injuries caused by medical adhesives (Mechanical: skin stripping, tension injury and friction injury. Dermatitis: irritant contact dermatitis and allergic dermatitis. Others: maceration and folliculitis).	5
Identification of patients at risk	4- Obtain patient history of known allergies and sensitivities, particularly to components of the medical adhesive.	4
	5- Identify patients at risk through the following factors: Extremes of age (older adults); Underlying clinical conditions (diabetes, immunosuppression, renal failure, chronic venous insufficiency); Dermatological conditions (dermatitis, eczema, underlying injuries); Exposure to humidity; Malnutrition; Dehydration; Dry skin; Use of certain medications (chemotherapy, vasoconstrictors, long-term corticosteroids, anticoagulants); Recurrent use of medical adhesive.	3

Chart 1 – Cont.

Final version - Bundle: Medical Adhesive-Related Skin Injury Prevention in the Adult Intensive Care Unit		
Product selection	6- Select the most appropriate adhesive product for patients' skin considering its particularities assessed.	5
	7- To choose the adhesive, consider: Patients' skin conditions; Expected adhesive action (e.g., critical, non-critical device fixation, dressing, wound dressing); Time of permanence of the adhesive product. Adhesive properties (e.g., cohesiveness over time, softness, flexibility, strength); Anatomical location/area (whether the site is flat, subject to movement or friction, exposure to moisture, exudate and/or body fluids); Potential adverse effects of insufficient adherence Adhesive failure when the purpose is fixing a critical device;	4
Skin preparation	8- Prepare the skin, making sure it is clean and dry;	4
	9- Shave the hair, if necessary, preferably with scissors, avoiding using blades;	4
	10- Avoid using products that increase adhesive adhesion to the skin (e.g., benzoin);	5
	11- Consider using a barrier film before applying the medical adhesive (available in foams, wet wipes or sprays), especially in patients at risk of skin injury;	4
	12- Wait for liquid solutions to dry completely when applied to the skin, in order to avoid moisture;	5
Adhesive product application technique	13- Apply adhesive without straining, pulling or stretching;	5
	14- Use firm and gentle pressure to put the adhesive product in place, avoiding gaps and wrinkles;	5
	15- Fold a small edge of the adhesive over itself to form a small flap that facilitates its removal later;	5
	16- Apply adhesive only to the required area	5
Removal technique	17- Start removal from the edges of the adhesive product;	5
	18- With the fingers of the opposite hand, support the skin, keeping it firm; remove the adhesive product slowly on itself in the direction of hair growth, keeping it horizontal and at a low angle close to skin surface. As the product is removed, continue to move the fingers of the opposite hand supporting the newly exposed skin;	5
	19- Consider the possibility of using adhesive remover products (available in liquid solution, wipes, sprays);	4
	20- The use of lotion, petrolatum or mineral oil can be considered as alternative products for removing the adhesive;	5
Health professionals' education	21- Promote permanent education for health professionals, addressing: Identification and recognition of medical adhesive-related skin injuries; Skin preparation; Application and removal techniques; Use of skin barrier products and adhesive removers; Strategies for skin injury prevention.	5

*LoE: Level of Evidence

At the end of the questionnaire, the specialists answered about bundle applicability and its use for nursing care, all specialists considered the bundle applicable in clinical practice and recommended its use for nursing care.

DISCUSSION

Preventive measures and good clinical practices are essential to ensure patient safety and quality of care for hospitalized patients. The proposition of such measures can support the planning and administration of health services[20].

Thus, it is essential to understand MARSI, as it is an avoidable complication, which can cause several harms to patients. In the national scenario, studies that deal with the perception of nursing professionals regarding the theme are unknown. At the international level, in a study carried out in the United Kingdom, an attempt was made to understand the experiences and perspectives of professionals on MARSI, and it was found that the incidence is high, education on risk assessment and prevention is low, concluding that professionals need educational efforts, around awareness, as well as strategies for its prevention[2].

In this regard, the relevance of this study is affirmed, as the bundle designed aims to standardize safe and quality care for MARSI prevention in an adult ICU. It should be noted that the adherence to health technologies, when well used, can help in the process of nursing care for patients. In this context, the implementation of bundles has been recommended, as they have positive impacts on clinical practice[21–22].

The interventions presented in this bundle were divided into categories for better understanding and implementation. These interventions were subsidized by the articles highlighted in the scoping review. It is emphasized that the care listed are recommendations that are repeated in scientific publications[1,2,4,8].

Skin assessment and prescription of care is an attribution of nurses and essential during patient care. It becomes particularly important for patients using medical adhesives. Through assessment, it is possible to identify dermatological conditions, pre-existing injuries, identify risk factors, devices in use, among others, and subsequently help to distinguish skin damage related to the use of adhesive from other disorders or dermatological conditions non-traumatic[1].

Therefore, it supports the appropriate selection of medical adhesive, as skin conditions must be considered. Currently, there are a variety of adhesive products on the market with different specificities, those used in tapes and dressings are mainly silicone, acrylate, hydrocolloid and polyurethane[1,8].

Acrylate adhesives are pressure sensitive, act more slowly and adhesion increases over time, are resistant to heat and moisture, are not repositionable and can cause more trauma on removal. Silicone adhesives are softer, are useful for repeated applications to the same area, can be repositioned, however are less moisture resistant compared to acrylate tapes and are not suitable for securing heavy critical devices. Hydrocolloids mold well to the surface of the skin, their adhesion may vary over time depending on the water content of the hydrocolloid and may cause trauma during removal[8,23]. Thus, in the selection process, the professional must pay attention to the characteristics of each product.

When it comes to the application and removal process, using the proper technique is important to minimize damage to the skin, as among the preventable causes of MARSI are improper techniques for application and removal, application in the wrong direction, application to wet skin, rapid and high-angle removal[1].

Faced with such specificities, in addition to the implementation of prevention strategies, it is important to promote the continuing education of nursing professionals, aiming at raising awareness, identifying and managing injuries, as well as the adoption of prevention strategies[5,23].

With regard to level of evidence, it can be observed that the recommendations, in general, do not have a high level of evidence, which makes us affirm the importance of clinical studies, with a strong level of evidence, that can be translated into clinical practice.

It is emphasized that the first recommendations for MARSI prevention were published in the international scenario in 2013[1], through a consensus of experts, in which its level of scientific evidence is classified in five, according to JBI[15], so it is still an incipient discussion.

Referring to the validity process, after developing instruments in the nursing area, it is essential to submit them to the validity process, in order to be considered reliable to support a safer practice[24]. Thus, the presented bundle was submitted to the content validity process, aiming to recognize its quality.

In the validity process, in relation to judge characterization, the female hegemony reflects the profile of nursing, on the world stage, which continues to be a mostly female profession[25]. In Brazil, data from 2017 indicate that 87% of professionals are female[26].

As for professional qualification, all judges were doctors and stoma therapists, with experience in clinical practice. The participation of experienced professionals is extremely important for validating instruments to be applied in care practice. It is also noteworthy that specialized professionals have a strong influence in promoting innovations that impact the advancement of nursing[27].

The level of agreement among judges related to the bundle, for MARSI prevention in an adult ICU, was considered satisfactory, making the instrument suitable for application in clinical area. However, it is worth noting the importance of further studies to assess the impact of its applicability in clinical practice.

It is worth emphasizing the importance of access by nursing professionals to important products for MARSI prevention, such as adhesive removers, skin barrier products, as well as adhesives that cause less damage to patients' skin. To this end, it is important that health service managers also understand MARSI and the impacts it causes to the patient and the institution.

The bundle presented in this study, if well used, can bring positive results to nursing clinical practice, through professionals' guidance, for assessment and care of patients' skin using medical adhesives as well as the management of these adhesives. It has the potential to reduce MARSI in adult ICUs, impacting cost reduction, quality of care and, consequently, improving patient clinical experience and satisfaction.

Among the limitations of this study, we mention the low level of evidence of the recommendations found in the literature. There was also low feedback from experts invited to participate in the study, making the progress of the study challenging; however, the number of judges included is considered satisfactory, as recommended in the literature.

CONCLUSION

The validity process of instruments developed for application in clinical nursing practice is essential to demonstrate their quality and reliability. In this study, allowed to identify bundle validity, for MARSI prevention in an adult ICU, which obtained a CVC ≥ 0.97, in behavior, objectivity, simplicity, clarity, relevance, accuracy, breadth, balance, variety, modality, typicality and credibility, reaching a total CVC of 0.99 and ρ-value ≥0.05, reaching the proposed objective.

Implementing the bundle in health services can contribute to nursing care quality regarding MARSI prevention in an adult ICU.

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NOTES

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Data analysis and interpretation: Rabelo AR, Moraes JT
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APPROVAL OF ETHICS COMMITTEE IN RESEARCH

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CONFLICT OF INTEREST

There is no conflict of interest.

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