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BED BATH IN CRITICAL CARE PATIENTS: AN INTEGRATIVE REVIEW

BANHO NO LEITO EM CUIDADOS CRÍTICOS: UMA REVISÃO INTEGRATIVA

BAÑO EN EL LECTO EN CUIDADOS CRÍTICOS: UNA REVISIÓN INTEGRADORA

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Objective: analyze scientific studies on bed bath of adult patients in critical care. Method: an integrative literature review was conducted in 2016 in the following databases: CINAHL, PubMed, Scopus, LILACS, and Web of Science, using the descriptors: "baths," "critical care," with Boolean operator "and." Results: 21 articles were included. The studies focused on: the relation between bed bath and the prevention and control of healthcare-associated infections (HAIs), and description and evaluation of the bed bath procedure. Conclusion: a knowledge gap was observed in the literature in terms of the best bed bath technique, but the scientific studies analyzed in this review show this procedure can cause changes in the physiological parameters of adult patients in critical care.

Descriptors: Bath. Critical care. Nursing. Intensive care unit.

Objetivo: analisar as produções científicas sobre o banho no leito de pacientes adultos em cuidados críticos. Método: revisão integrativa da literatura realizada em 2016 nas bases de dados CINAHL, PubMed, Scopus, LILACS e Web of Science, utilizando os descritores "baths", "critical care", com o operador booleano "and". Resultados: foram incluídos 21 artigos. As publicações tiveram como foco: relacionar o banho no leito com a prevenção e o controle de Infecções Associadas aos Cuidados de Saúde, e descrever e avaliar o procedimento do banho no leito. Conclusão: há lacunas de conhecimento na literatura acerca da melhor técnica de banho no leito, mas a produção científica demonstra que esse procedimento pode provocar alterações nos parâmetros fisiológicos em pacientes adultos em cuidados críticos.

Descritores: Banhos. Cuidados críticos. Enfermagem. Unidades de Terapia Intensiva.

Objetivo: analizar las producciones científicas sobre el baño en el lecho de pacientes adultos en cuidados críticos. Método: revisión integradora de la literatura llevada a cabo en 2016, en las bases de datos dados CINAHL, PubMed, Scopus, LILACS y Web of Science, utilizándose los descriptores "baths", "critical care", con el operador booleano "and". Resultados: incluidos 21 artículos. Las publicaciones tuvieron como foco: relacionar el baño en el lecho con la prevención y el control de Infecciones Asociadas a la Atención de Salud, y describir y evaluar el procedimiento del

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baño en el lecho. Conclusión: hay lagunas de conocimiento en la literatura acerca de la mejor técnica de baño en el lecho, pero la producción científica señala que ese procedimiento puede provocar alteraciones en los parámetros fisiológicos en pacientes adultos en cuidados críticos.

Descriptores: Baños. Cuidados críticos. Enfermería. Unidades de Cuidados Intensiva.

Introduction

Intensive care units (ICUs) provide care to critically ill patients. They are considered hostile environments, due to the invasive procedures performed there[1], which involve specific materials, qualified professionals and specialized technologies for the monitoring, diagnosis and therapy required to provide care to these patients[2-4].

Patients with one or more main physiological systems in compromised conditions are considered in crucial care, for the maintenance of their homeostasis[2]. The need for continuous monitoring, in most cases, and the gravity of the disease process lead to impaired basic human needs (BHNs) in these patients, pointing out nursing problems that should be solved, such as: bathing and hygiene needs, comfort, safety and protection, among others[5].

The loss of autonomy for self-care in ICUs makes patients feel powerless in the fulfillment of their BHNs, since tasks previously considered as simple and habitual, such as body hygiene, are now performed by the nursing team[4,6]. Most patients in critical care cannot take a bath alone, forcing the nursing staff to provide them with a bed bath. This practice is defined as the bathing procedure performed in a patient who is fully dependent on bed care, given the absence of physical energy or insufficient functional state for self-care[7].

Bed bath should be understood as a procedure that is inherent to the nursing practice, which is performed routinely and presents risks to the patient. The risks related to bed bath in ICU patients include fall, infection, displacement of invasive devices[8], and changes in physiological parameters that are crucial for clinical evaluation. Transcutaneous arterial oxygen saturation, body temperature and heart rate are some of the physiological parameters that may change during bed bath and help aggravate the clinical condition[9]. In critical care patients, the effects generated by these changes may be even more significant, given the complexity of the health issues of these patients and the scenario in which they are inserted[10].

The physiological changes of patients related to nursing care have been addressed in the literature as resulting from the provision of inadequate and disqualified care, without technical and scientific rigor[10]. Then, scientific studies on how bed bath is performed is an important tool to guide the professional practice of nurses, which will have a theoretical support for the development of effective and safe care.

Therefore, this study aimed to analyze the scientific studies on bed bath in adult patients in critical care.

Method

This is an integrative literature review. This type of design allows a synthesis of the knowledge about the study theme, showing knowledge gaps thereof. It consists of the analysis of relevant studies to support the decision-making process and improve clinical practice[11].

The study theme and guiding question were defined in the first stage of the study. The study theme was bed bath of patients in critical care. The guiding question of the study was: What has been published about bed bath in adult patients in critical care?

The descriptors and databases to be analyzed were defined in the second stage of the study. The descriptors were included after checking

the Health Sciences Descriptors, available on the Virtual Health Library. Then, the search on national databases used the descriptors "*banho*" (bath) and "*cuidados críticos*" (critical care). Mesh terms "baths" and "critical care" were used in the search on international databases. Boolean operator "and" was used in the combination of descriptors. Then, the databases to be analyzed were defined to reflect the distinct geographical realities and broaden the search potential: Cumulative Index of Nursing and Allied Health Literature (CINAHL), U.S. National Library of Medicine National Institute of Health (PubMed), Scopus, and Web of Science. The bibliographic study was conducted from September 30 to October 7, 2016. Chart 1 below shows an overview of the studies found on the databases.

Chart 1 – Systematization of the electronic search on studies related to bed bath on different scientific databases. Viçosa, Minas Gerais, Brazil – 2016

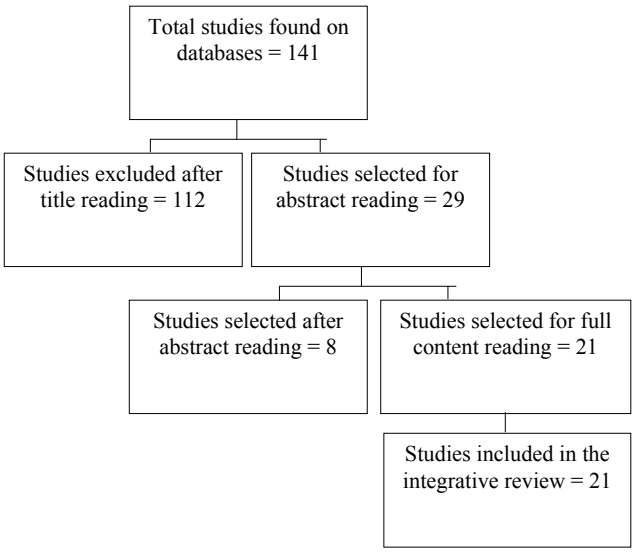
Database	**"DeCs" -** "Mesh Terms"	**Number of studies**
CINAHL	"*baths*" *and* "*critical care*"	10
LILACS	"banhos" *and* "cuidados críticos"	1
PUBMED	"*baths*" *and* "*critical care*"	63
SCOPUS	"*baths*" *and* "*critical care*"	29
WEB OF SCIENCE	"*baths*" *and* "*critical care*"	38

Source: Created by the authors.

In the third stage of the study, the inclusion criteria were defined – original studies, published in the national and international literature, focused on bed bath in adult patients in critical care written in Portuguese, English or Spanish – as well as exclusion criteria – studies published as editorials, opinions or comments, monographs, dissertations and theses, and systematic or integrative literature reviews. A period of time was not defined for the publications, since the idea was to explore all existing publications on the theme. Then, the study population consisted of 141 articles. After that, the articles were selected for the study sample by reading their title, abstract, and full article, according to the methodology for integrative review studies[11].

The study title had to be related to the themes of "bed bath" and "adult patients in critical care," but should not necessarily contain these terms in the title. First, the authors read the title, then they screened the studies. After that, they read the abstract and screened the studies for a full content reading of selected studies, keeping in mind the guiding question. After that, the study sample consisted of 21 articles. Figure 1 shows the sample selection process for this study.

Figure 1 – Sample selection process for studies on bed bath from national and international databases. Viçosa, Minas Gerais, Brazil – 2016



Source: Created by the authors.

The information to be extracted from the published studies was defined in the fourth stage of this study. For this purpose, an instrument was developed to gather and synthesize key information from the study. The instrument contained the following variables: title, country and year of publication, objective, study design, sample, respect for ethical criteria while conducting the study, and main results.

Extracted data were analyzed according to the content presented by the studies, using descriptive statistics. The studies were categorized in terms of level of evidence, according to the following classification: level I – meta-analysis or systematic reviews; level II – controlled randomized clinical studies; level III – non-randomized clinical studies; level IV – cohort and control case studies; level V – systematic reviews of descriptive studies; level VI – descriptive studies; level VII – expert opinion[12]. The description of the study design followed the classification defined by the authors.

In the fifth stage of the study, the results were obtained after the extraction and interpretation of the information from the previous stage. Finally, in the sixth stage, the synthesis of extracted knowledge on bed bath in adult patients in critical care was presented, after the studies were organized in synoptic tables, according to the central theme of the studies that comprised the study sample.

Results

The analysis corpus was based on 21 articles, of which 90.5% (19) were published in 2010 and later. Most studies (57.1% - 12) were conducted in the United States, followed by Brazil, France and Mexico, with 2 (9.5%) studies each, and South Korea, Australia and the United Kingdom, with 1 (4.8%) study each.

Regarding the classification of studies based on the level of scientific evidence, 9.5% (2) belonged to the level of evidence I; 4.8% (1) to level II; 42.9% (9) to level III; 9.5% (2) to level IV; and 23.8% (5) to level VI.

The interpretation of collected data categorized the studies into two groups of analysis, according to the theme affinity: the first group included studies that related bed bath with the prevention and control of healthcare-associated infection (HAIs); and the second group included studies describing and evaluating bed bath procedure in adult patients in critical care. Charts 2 and 3 present the synthesis of the results.

Chart 2 – Summary of studies that related bed bath in adult patients in critical care with the prevention and control of healthcare-associated infection (HAIs). Viçosa, Minas Gerais, Brazil. 2016 (to be continued)

Author/ year	Objective/study design/sample	Level of evidence	Conclusion
Armellino D, Woltmann J, Parmentier D, Musa N, Eichorn A, Silverman R, et al.[13], 2014	Evaluate the effect of daily bath with chlorhexidine on the reduction of methicillin-resistant *Staphylococcus aureus* (MRSA) transmission in patients of an ICU with a positive MRSA result or a central venous catheter (CVC). An observational descriptive study. N=18,248 patient-days.	VI	A 72% reduction in MRSA transmission was observed after using the 2% chlorhexidine bath when compared to the soap and water bath (p<0.001).
Cassir N, Papazian L, Fournier P-E, Raoult D, La Scola B[14], 2015	Evaluate the amount and the bacterial diversity of the skin of patients of an ICU and the effect of the chlorhexidine bath on the skin microbiota. A retrospective analysis of prospectively collected data. N=20 patients.	III	The daily bath with 2% chlorhexidine reduced the amount and diversity of bacterial colonization on the skin (p=0.004), with changes in skin microbiota; its use is recommended with caution due to the possibility of bacterial resistance.
Cassir N, Thomas G, Hraiech S, Brunet J, Fournier PE, La Scola B, et al.[15], 2015	Evaluate the impact of daily bath with chlorhexidine on the incidence of healthcare-associated infections (HAIs), with a focus on their causative bacteria. A retrospective analysis of prospectively collected data. N=325 patients.	III	After the chlorhexidine, a significant reduction was observed in the incidence of HAIs (p=0.01), CVC-related infections (p=0.02); ventilator-associated pneumonia (VAP) (p=0.006), and urinary tract infections (UTIs) (p=0.01).
Chung YK, Kim JS, Lee SS, Lee J, Kim HS, Shin K, et al.[16], 2015	Evaluate whether the daily bath with chlorhexidine could prevent the acquisition of carbapenem-resistant *Acinetobacter baumannii* (CRAB) in an ICU. A quasi-experimental study. N=1,147 patient-days.	III	A statistically significant reduction was observed in the incidence of CRAB (p<0.001) and a reduction of environmental contamination during the bath with 2% chlorhexidine (p<0.001).
Johnson D, Lineweaver L, Maze LM[17], 2009	Identify and quantify the bacteria in the basins of patient baths and evaluate the basins as a possible reservoir for bacterial colonization and a risk factor for subsequent hospital infection. A prospective study. N= 92 basins.	III	Bacterial growth was observed in 98% of the samples from the bath basins: *Enterococcus* 54% (p<0.001), gram negative bacteria 32% (p<0.001), *Staphylococcus aureus* 23% (p<0.001), and vancomycin-resistant *Enterococcus* 13% (p=0.004).
Martínez-Reséndez MF, Garza-González E, Mendonza-Olazaran S, Herrera-Guerra A, Rodríguez-López JM, Pérez-Rodriguez E, et al.[18], 2014	Simultaneously evaluate the effect of the bath with 2% chlorhexidine and the correct practice of hand hygiene on the reduction of hospital infections in an ICU. Quasi-experimental study. N=1,007 patients.	III	A reduction in infection rates was observed when comparing the intervention period to pre-intervention (p=0.0268) and post-intervention (p=0.0532). In addition, the comparison of pre-intervention to the intervention period showed a statistically significant reduction of VAP (p=0.036), UTI associated with indwelling urinary catheter (IUC) (p=0.0001), and greater use of hand hygiene (p=0.0001).

Chart 2 – Summary of studies that related bed bath in adult patients in critical care with the prevention and control of healthcare-associated infection (HAIs). Viçosa, Minas Gerais, Brazil. 2016 (conslusion

Mendonza-Olazaran S, Camacho-Ortiz A, Martínez-Reséndez MF, Llaca-Díaz JM, Pérez-Rodríguez E, Garza-González E[19], 2014	Evaluate the influence of the bath with 2% chlorhexidine on critical patients with *Acinetobacter baumannii*. A quasi-experimental study. N=327 patients.	III	The samples of *Acinetobacter baumannii* from patients who received the bath with 2% chlorhexidine presented a reduction in the minimum inhibitory concentration and increased biofilm production.
Noto MJ, Domenico HJ, Byme DW, Talbot T, Rice TW, Bernard GR, et al.[20], 2015	Determine whether a daily chlorhexidine bath in critically ill patients reduces the incidence of HAIs. A randomized clinical study. N=9,340 patients.	II	The daily chlorhexidine bath did not reduce the incidence of HAIs, especially infections associated with CVC, UTI, VAP and infections caused by *Clostridium difficile*.
Popp JA, Layon J, Nappo R, Richards WT, Mozingo DW[21], 2014	Evaluate the use of a chlorhexidine bath protocol combined with standard prevention in reducing hospital infections in patients with burns. A cohort study. N=480 patients.	IV	In burn patients, two daily baths with 0.9% chlorhexidine diluted in water ensured a zero rate of VAP (p=0.08) and CVC-related infection (p=0.18), but without statistical significance.
Powers J, Peed J, Burns L, Ziemba-Davis M[22], 2012	Evaluate the presence of bacteria in bath basins when using 4% diluted chlorhexidine solution in water to wash the patients. A prospective study. N=90 basins.	III	A bacterial growth was observed in only four basins (4.4%). When comparing this study to another one conducted in 2009, a reduction of 95.5% was observed in positive cultures for bacteria in the basins with chlorhexidine (p<0.001).
Rupp ME, Cavalieri RJ, Lyden E, Kucera J, Martin M, Fitzgerald T, et al.[23], 2012	Determine the effect of chlorhexidine bath on the reduction of HAIs in hospitalized patients. A quasi-experimental study. N=347,042 patient-days.	III	Reduced infections caused by *Clostridium difficile* was observed in all cohorts during the period with chlorhexidine bath (p=<0.001). The relative risk of infection during the period without chlorhexidine was 1.85.
Shah HN, Schwartz JL, Luna G, Cullen DL[24], 2016	Clarify the effectiveness of the daily bath with 2% chlorhexidine for the reduction of CVC-related blood infections and determine the cost of this practice. A meta-analysis. N=6 studies.	I	The bath with 2% chlorhexidine reduced the rates of CVC-related infections (p<0.0001). The costs were not analyzed, but chlorhexidine towels are estimated to cost US$ 4.10 more than chlorhexidine-free towels, and US$ 4.94 to US$ 5.10 more than soap and water bath.
Spencer C, Orr D, Hallan S, Tillmanns E[25], 2013	Evaluate whether the octenidine bath can reduce MRSA transmission as an option to chlorhexidine. A retrospective study. N=2,431 patients.	IV	A reduction was observed in MRSA transmission with the use of octenidine. The mean number of cases per month during the use of octenidine was 76% lower (p<0.01) when compared to the use of soap and water.

Source: Created by the authors.

Chart 3 – Summary of studies describing and evaluating bed bath procedure in adult patients in critical care. Viçosa, Minas Gerais, Brazil – 2016 (to be continued)

Author/ year	Objective/study design/ sample	Level of evidence	Conclusion
Coyer FM, O'Sullivan J, Cadman N[26], 2011	Describe the bed bath practice performed by nurses in ICUs in terms of time, frequency, duration of the procedure and agents used in cleaning. An exploratory study of two sequential phases: a quantitative and a qualitative phase. N=539 nurses.	VI	Most bed baths were performed in patients in mechanical ventilation (MV), within 8 hours before the questionnaire was applied, using soap and water; the duration was 15 to 30 minutes, and it included the change of decubitus and without the use of emollients. The qualitative analysis showed that providing comfort was considered the main objective of the bath.
Eigsti JE[27], 2011	Describe the experience of an ICU nursing team with the construction of a quality improvement initiative through the standardization of basic nursing care regarding the use of special beds, bath procedures and skin protection. An experience report. N=93 patients/30 nurses.	VI	Bed bath can positively influence patient care and potentially hospital costs. In this study, towels impregnated with 2% chlorhexidine was used in bathing. During the period of its use, a reduction was observed in the procedure duration. In addition, there was no positive culture for MRSA in patients who had negative culture at the admission.
Happ MB, Tate JÁ, Swigart VA, DiVirgilio-Thomas D, Hoffman LA[28], 2010	Describe the practices and beliefs involved in patient bathing during weaning from prolonged mechanical ventilation (PMV). A qualitative study. N=30 patients.	-	The clinical manifestations of patients in response to bed bath are varied and there is no evidence on the best moment of the bath.
Larson EL, Ciliberti T, Chantler C, Abraham J, Lazaro EM, Venturanza M, et al.[29], 2004	Compare traditional bed bath (using a basin) to the bed bath using pre-packaged disposable towels. A quasi-experimental study. N=40 patients.	III	When comparing the two bath methods, no statistically significant difference was observed between the quality (p=0.25), the mean duration (p=0.08) and the microbiota count (p=0.25). However, nurses prefer the disposable bath because it presents a better cost-effective ratio.
Lima DVM, Lacerda RA[30], 2010	Identify scientific evidence on the oxy-hemodynamic impact of the bath in critically ill patient; analyze the possibility of setting criteria for the indication of the bath to these patients. A systematic review. N=6 studies.	I	Patients in critical care may benefit from baths that are avoided in the first 4 hours after cardiac surgery, which do not keep the patient in lateral decubitus position for extended periods and whose duration is max. 20 minutes. The water temperature at 40º C was considered a protective factor for oxy-hemodynamic changes during bathing.

Chart 3 – Summary of studies describing and evaluating bed bath procedure in adult patients in critical care. Viçosa, Minas Gerais, Brazil – 2016 (conclusion)

Author/ year	Objective/study design/ sample	Level of evidence	Conclusion
Lopes JL, Nogueira-Martins LA, Andrade AL, Barros ALBL[31], 2011	Construct and validate a semantic differential scale that evaluates patient perception of the bath. A methodological study. N=130 patients.	-	A validated scale with 18 pairs of adjectives was obtained, which evaluates the patient perception of the bath. The reliability coefficients of the factors (Acceptance and Evaluation) were all high.
Sereika SM, Tate JA, DiVirgilio-Thomas D, Hoffman LA, Swigart VA, Broyles L, et al.[32], 2011	Describe bathing care standards for patients who are weaning from prolonged mechanical ventilation (PMV) and explore the association between baths and duration of weaning. A descriptive study. N=30 patients.	VI	According to this study, 96.7% of the patients received at least one bath during the weaning period and, in 80% of the cases, the bath was performed at night (2 am to 5 am). The bath did not present a negative impact; on the contrary, it prolonged the time out of ventilation by almost 3 hours ($p<0.0001$).
Vollman KM[33], 2013	Describe the problems with the current practice of basic nursing care and present a model of interventional hygiene care. A descriptive study.	VI	The study discusses the importance of evidence-based practices. It shows scientific evidence should permeate the work process of nurses. The example mentioned in the study is bath basins replaced with towels impregnated with 2% chlorhexidine, due to possible basin contamination.

Source: Created by the authors.

Two studies[28,30] could not be classified in terms of level of evidence, since they did not fit the methodology used in this study to classify this aspect[12]; one study was qualitative[28] and one was a methodological study[30]. However, since both met the inclusion criteria for this study, they were considered for the presentation of the results.

Discussion

Bed bath of patients in critical care can be understood as a procedure of nursing responsibility due to the physical conditions of these patients, which do not allow self-care. As a bed bath, this procedure aims to promote individual comfort and maintain skin integrity by promoting circulation and physiological hydration[7,34-35]. It is a complex technique to be conducted in a humanized and safe way to ensure its objectives are achieved without patient harm[35].

Considering the procedure complexity and the patient vulnerability, a theoretical basis gains relevance when performing this practice to reduce any negative impact on the patient, such as the reduction of temperature, increase of oxygen consumption and heart rate[9,30,36]. In this context, studies are justified with high levels of scientific evidence, such as those found in this review. Although a small number of studies was found, most of them (57.14% - 12) were meta-analysis (level of evidence I), randomized clinical study (level of evidence II), or non-randomized clinical study (level of evidence III)[10].

It is noteworthy that 61.9% (13) of the studies were focused on the relationship between bed bath and the prevention and control of healthcare-associated infections (HAIs). Among the infections identified in critical care patients,

the most prevalent were those related to the use of central venous catheter (CVC), urinary tract infections (UTIs) related to the use of indwelling urinary catheter (IUC), and ventilation-associated pneumonia (VAP)[13,15,18-21,23-25]. In a retrospective study conducted at a hospital in the capital of Minas Gerais, VAP accounted for 41.9% of the infections, followed by bloodstream infection (22.86%), and UTI (15.24%), in agreement with the findings of this review[37].

The nursing team plays a significant role in the reduction of these infections as nurses are responsible for adopting preventive measures, such as hand hygiene, cleaning, and asepsis of the bath devices[38]. The presence of infectious agents on the body surface, in objects or in the environment is a public health problem, due to the increase of multidrug-resistant microorganisms and its relation with the worst prognosis of the patients[39]. Procedures such as bed bath have been scientifically analyzed in order to identify alternative ways to reduce infection rates.

When comparing the chlorhexidine bath to the traditional soap and water bath, a reduction in HAI rates was observed in patients submitted to daily chlorhexidine bath. However, its use requires caution, due to potential development of bacterial resistance[13-16,18-19,21-24]. A randomized clinical study showed a divergent result; however, it presented limitations, such as low infection rate in the ICUs analyzed and the impossibility of protecting the professionals who performed the different types of baths[20].

Regarding the bacteria found in patients from the studies included in this review, *Staphylococcus aureus*, *Acinetobacter Baumannii*, and *Enterococcus* were predominant, presenting higher resistance to conventional treatments[14-16,18-19,23,25,27,29]. The indiscriminate use of broad-spectrum antimicrobials may be one of the factors associated with the development of such resistance. Health professionals have been concerned about increased bacterial resistance and how to prevent it[40]. Therefore, one of the studies analyzed in this review proposed the use of octenidine as an alternative to chlorhexidine in bed bath to reduce MRSA[25]. However, further studies using a strong level of evidence are required before it is incorporated into the nursing practice.

The analysis of different types of bed bath is not only related to the effectiveness in the prevention and control of infections, but also to the cost attributed to each one and to the individual impact on the patient. Each patient can present different changes in physiological parameters resulting from bed bath[28]. Then, the precise and detailed identification of this moment has a special meaning for nurses, who consider bathing a procedure to be conducted in a humanized and safe manner, seeking to promote hygiene and individual comfort[35].

In terms of cost, when comparing the traditional bed bath to the bath with disposable towels impregnated with chlorhexidine, the cost of disposable towels was higher (US$ 4.94 to US$ 5.10). On the other hand, when analyzing the cost of the material and the time saved and the salary of the nursing professionals, the bath with disposable towels presented a better cost-benefit ratio[24,27,29], besides being the preferred method indicated by the nurses[29].

Bed bath as a nursing care procedure is not free from risks, especially in terms of degree of patient exposure during the procedure. The systematic review showed bathing in the first four hours after cardiac surgery represents a risk factor for oxyhemodynamic changes. These changes may also be influenced by baths lasting more than 20 minutes or when the patient is exposed to lateral decubitus for an extended period[30].

The clinical response of patients during bed bath is varied, with nurses evaluating the patient and deciding whether or not to perform bed bath, and the time it should be performed[28]. For a proper evaluation, the ICU should have enough nursing personnel for constant monitoring of patient progress, which is crucial for the good care outcome[41]. This evaluation should identify patients with severe hemodynamic instability, which is considered contraindication for bed bath[42].

Besides the individual evaluation, seeking changes in the bath practice by adopting measures that minimize changes in the physiological parameters (oxygen consumption, body temperature, and heart rate) should be taken into account in the daily routine of the nurse and be evaluated in studies. Of note, the protective effects of controlling the water temperature and the environment during the bath have been scientifically discussed[30,34,36].

A quasi-experimental study showed the variation of arterial oxygen saturation (SpO2) in patients submitted to bed bath is lower when the water temperature remains at 40 ºC. However, it is assumed the variation in tissue oxygenation depends on additional factors to the analyzed. The patient mobilization by the nursing team, the exposure to low ambient temperatures in the ICU, skin massage, sedation, state of alert or use of vasoactive drugs may be factors that influence such variation[36].

Recently, a randomized clinical study, based on the quasi-experimental study mentioned above, analyzed the SpO2, heart rate and axillary temperature of patients in critical care at three moments: before, during and after bed bath at two water temperatures: 40 ºC and 42.5 ºC. Clinically, the results indicate that both interventions did not offer risks regarding the studied variables. However, the bath with water at 42.5 ºC was associated with reduced heart rate, increased SpO2 and axillary temperature, presenting more benefits to the patient[9].

Despite the few studies found in the literature on bed bath for critical care patients, these studies emphasize the need to develop a safe practice while minimizing its risks. In addition to safety in the procedure, the promotion of comfort is included in the analysis of bed bath and, for this purpose, the perception of the person receiving the bed bath is relevant. In this sense, researchers developed a semantic differential scale on the perception of patients submitted to this procedure. This scale allows a numerical and statistical differentiation in relation to the degree of satisfaction with the bath, based on psychometry[31].

A positive perception of bed bath does not depend only on its technical execution, but also on the involvement and availability of the caregiver when providing the bath with attention and dignity[43]. These are inherent values to the nursing care process, which should support the performance of a more humane nursing practice, viewing the patient as a holder of own experiences, even when these experiences cannot be expressed in words[44].

The main limitation of this study was the choice of Mesh terms and descriptors and non-association of terms considered synonyms, restricting the studies found in the literature. However, the studies not included in the sample of this review were used as support for the discussion of the results and reflect a knowledge gap on the theme.

Considering the above, further studies are required, which should evaluate the effects of bed bath on the physiological aspects of critical care patients and the multiplicity of factors involved in this context.

Conclusion

This study showed knowledge produced on bed bath in adult patients in critical care. An increase is observed in the number of published studies on the theme starting in 2010.

Studies that relate bed bath with the prevention and control of healthcare-associated infections have investigated the outcome of reduced incidence of infections with the use of antiseptic substances, such as chlorhexidine. However, the conclusions about the efficacy of this product are conflicting and its recommendation requires caution, due to its potential increase of multidrug-resistant bacteria.

The analysis of the studies focused on describing and evaluating the bed bath procedure in critically ill adult patients indicates that there is still a knowledge gap in the literature in terms of the best bed bath technique, and that bed bath may cause changes in the physiological parameters in adult patients in critical care.

Then, bed bath in adult patients in critical care should be further analyzed, since it is part of the nursing care and, as such, should be performed in a precise and safe way in order to minimize the negative impact on patients.

Collaborations:

1. conception, design, analysis and interpretation of data: Geisiane Souza Costa, Cristiane Chaves de Souza, Flavia Batista Barbosa de Sá Diaz and Luana Vieira Toledo;

2. writing of the article and relevant critical review of the intellectual content: Geisiane Souza Costa, Cristiane Chaves de Souza, Flavia Batista Barbosa de Sá Diaz and Luana Vieira Toledo;

3. final approval of the version to be published: Geisiane Souza Costa, Cristiane Chaves de Souza, Flavia Batista Barbosa de Sá Diaz and Luana Vieira Toledo.

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