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Skin care practices for full-term newborns reported by nursing professionals: a cross-sectional survey**

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ABSTRACT

Objective: To analyze skin care practices for healthy full-term newborns reported by nursing professionals and investigate their associations with sociodemographic variables. **Method:** A quantitative, descriptive, and analytical cross-sectional survey was conducted from August to October 2023 with 438 nursing professionals in the state of São Paulo. Participants were recruited through professional networks and the Regional Nursing Council of São Paulo. Data were collected using a questionnaire on sociodemographic characteristics and newborn skin care practices. Descriptive and inferential statistics were used, with significance set at 5%. **Results:** Most participants were nurses (87.2%) and women (91.1%), with a mean age of 40.5 years. Most reported assessing newborn skin (80.1%) and the perineal area (92.5%), without using specific assessment tools. Among soap users, 78.8% reported using liquid soap, and 72.1% reported not using moisturizers. Age, sex, educational background, postgraduate education, and professional experience were associated with skin assessment, skin moisturization, and perineal-area care practices ($p < 0.05$). **Conclusion:** Reported newborn skin care practices varied and were guided mainly by institutional protocols, professional experience, and national recommendations. Some practices diverged from scientific evidence and expert recommendations, indicating the need for continuing education to improve neonatal care.

KEYWORDS: Nursing care. Neonatal nursing. Skin hygiene. Skin. Newborn.

Práticas de cuidado da pele em recém-nascidos a termo pela enfermagem: estudo por inquérito**

RESUMO

Objetivo: Analisar as práticas de cuidado com a pele de recém-nascidos a termo saudáveis realizadas por profissionais de enfermagem e investigar a associação entre essas práticas e variáveis sociodemográficas. **Método:** Estudo quantitativo, transversal, descritivo e analítico, do tipo inquérito, realizado entre agosto e outubro de 2023. Participaram 438 profissionais de enfermagem atuantes no estado de São Paulo, recrutados por divulgação eletrônica em redes profissionais e pelo Conselho Regional de Enfermagem de São Paulo. A coleta de dados ocorreu por meio de questionário estruturado, composto por informações sociodemográficas e questões relacionadas às práticas de cuidado com a pele do recém-nascido. Os dados foram analisados por estatística descritiva e inferencial, adotando-se o nível de significância de 5%. **Resultados:** A amostra foi composta predominantemente por enfermeiros (87,2%), do sexo feminino (91,1%), com média de idade de 40,5 anos. A maioria relatou avaliar a pele do recém-nascido (80,1%) e a região perineal (92,5%), porém sem uso de

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instrumentos específicos. Quanto às práticas de higiene, observou-se predomínio do uso de sabonete líquido (78,8%). A maioria dos participantes referiu não utilizar hidratantes na pele do recém-nascido (72,1%). Foram identificadas associações estatisticamente significativas entre idade, sexo, formação acadêmica, pós-graduação e tempo de experiência profissional e práticas relacionadas à avaliação da pele, hidratação e cuidados da região perineal (p<0,05). **Conclusão:** As práticas de cuidado com a pele do recém-nascido realizadas pelos profissionais de enfermagem mostraram-se heterogêneas e influenciadas principalmente por protocolos institucionais, experiência profissional e recomendações nacionais. Algumas práticas observadas divergem das evidências científicas atuais e das recomendações de especialistas, evidenciando a necessidade de estratégias educativas e de atualização profissional para qualificar a assistência neonatal.

DESCRITORES: Cuidados de enfermagem. Enfermagem neonatal. Higiene da pele. Pele. Recém-nascido.

Prácticas de cuidado de la piel en recién-nacidos a término por parte de enfermeros: un estudio de encuesta**

RESUMEN

Objetivo: Analizar las prácticas de cuidado de la piel de recién nacidos a término saludables realizadas por profesionales de enfermería e investigar la asociación entre dichas prácticas y las variables sociodemográficas. **Método:** Estudio cuantitativo, transversal, descriptivo y analítico, tipo encuesta, realizado entre agosto y octubre de 2023. Participaron 438 profesionales de enfermería del estado de São Paulo. La recolección de datos se realizó mediante un cuestionario estructurado sobre características sociodemográficas y prácticas de cuidado de la piel neonatal. **Resultados:** La muestra estuvo compuesta predominantemente por enfermeros (87,2%), mujeres (91,1%), con edad media de 40,5 años. La mayoría informó evaluar la piel del recién nacido (80,1%) y la región perineal (92,5%), aunque sin utilizar instrumentos específicos. El jabón líquido (78,8%) fue la práctica de higiene más frecuente. La mayoría no utilizaba hidratantes en la piel neonatal (72,1%). Se identificaron asociaciones significativas entre edad, sexo, formación académica, posgrado y experiencia profesional con las prácticas de evaluación cutánea, hidratación y cuidado perineal (p<0,05). **Conclusión:** Las prácticas de cuidado de la piel neonatal realizadas por profesionales de enfermería fueron heterogéneas y estuvieron influenciadas principalmente por protocolos institucionales, experiencia profesional y recomendaciones del ministerio de salud. Algunas prácticas divergieron de las evidencias científicas actuales y de las recomendaciones de especialistas, evidenciando la necesidad de estrategias educativas y actualización profesional.

DESCRIPTORES: Atención de enfermería. Enfermería neonatal. Higiene de la piel. Piel. Recién nacido.

INTRODUCTION

Newborn skin has structural and functional characteristics that differ from those of adult skin and remains in the process of maturation during the first months of life. It is thin, fragile, and sensitive, with greater transepidermal water loss, lower thermoregulatory capacity, and still-immature immune function[1,2].

Because of these characteristics, newborn skin is more susceptible to skin changes such as dryness, desquamation, contact dermatitis, incontinence-associated dermatitis, atopic dermatitis, allergies, and skin infections[3-5]. In this context, care provided by nursing professionals plays a fundamental role in maintaining skin integrity and preventing skin injuries.

Neonatal skin care practices include skin assessment, body cleansing, perineal-area care, skin moisturization, and umbilical cord stump care. However, these practices are not always performed in accordance with the available scientific evidence or the recommendations of specialized societies[6].

A systematic review[7] found no significant difference between the use of liquid soap appropriate for newborns and water alone in maintaining skin barrier function. Regarding skin moisturization, the authors found no robust evidence of

benefits from the routine use of emollients in healthy newborns, although some studies showed improved skin hydration. Evidence on perineal-area care remains limited, particularly regarding the use of wet wipes and barrier products.

In addition to scientific evidence, national and international agencies and scientific societies have developed recommendations to guide parents, caregivers, and healthcare professionals on safe neonatal skin care practices[5,8-10]. However, the implementation of these recommendations in clinical practice remains heterogeneous.

Although skin care is recognized as an essential aspect of neonatal care, studies investigating the practices adopted by nursing professionals remain scarce, particularly in the Brazilian context[6]. A study conducted in Malaysia identified gaps in nurses' theoretical and practical knowledge of skin care for preterm newborns[11].

Given the relevance of the topic and the limited number of Brazilian studies on neonatal skin care practices performed by nursing professionals, it is important to understand how this care has been implemented in clinical practice.

OBJECTIVES

To analyze skin care practices for healthy full-term newborns performed by nursing professionals and investigate the association between these practices and sociodemographic variables.

METHODS

Study design and period

A quantitative, cross-sectional, descriptive, and exploratory survey was conducted from August to October 2023.

Population and sample

The study population consisted of nursing professionals registered with the Federal Nursing Council (COFEN). According to COFEN data for 2022, Brazil had 2,786,240 nursing professionals, comprising nursing assistants, nursing technicians, and nurses[12]. The study used a convenience sample. The sample size was calculated based on the total population of 2,786,240 professionals, a 95% confidence level, and a 5% margin of error, resulting in a required sample of 385 participants. Allowing for a potential 30% loss during the study, the minimum recruitment target was adjusted to approximately 550 participants.

Eligibility criteria

Nurses, nursing technicians, and nursing assistants aged 18 years or older who worked in the state of São Paulo and had active registration with COFEN were included. Professionals who were away from work during the data collection period because of medical leave, vacation, or maternity leave were excluded.

Data collection instrument

Data were collected using a structured questionnaire developed by the researchers based on the scientific literature on neonatal skin care.

The instrument consisted of two sections. The first covered sociodemographic and professional variables, including sex, age, race/skin color, marital status, educational background, postgraduate education, income, time since graduation, professional experience, area of practice, and employment status. The second section addressed newborn skin care practices, including skin assessment, body cleansing, use of cleansing products, skin moisturization, umbilical cord stump care, and perineal-area care.

The questions were primarily closed-ended, with multiple-choice response options and space for additional responses in open-ended fields when appropriate.

The instrument underwent content validation by a panel of six experts in the field. They were selected through the Lattes Platform based on the following criteria: a doctoral degree, scientific output in the field within the previous five years, and at least two years of practical experience in the subject area. The experts were contacted by email; those who agreed to participate received a formal invitation letter and the validation form.

Each expert independently assessed the items for three aspects: clarity, pertinence, and relevance. A four-point Likert scale was used for each aspect:

1 = not clear/not representative/not relevant;

2 = requires major revisions;

3 = requires minor revisions; and

4 = clear/pertinent/relevant.

To quantify agreement among the experts, the Content Validity Index (CVI) was calculated for each item and each aspect based on the proportion of experts who assigned a score of 3 or 4. A minimum cutoff of 0.80 was adopted. Items with a CVI below 0.80 were revised based on the experts' qualitative suggestions, as were items that received a score of 1 or 2. The instrument had a mean overall CVI of 0.98, indicating excellent content validity.

Discrepancies were resolved electronically. The principal investigator consulted the experts regarding the proposed revisions to the instrument, which were implemented when at least four of the six experts agreed. Once the discrepancies among the experts had been resolved, the final validated version of the instrument was obtained.

After content validation, the questionnaires were set up on Microsoft Forms® through a corporate account linked to the University, and the survey was made available via an electronic link.

Data collection procedure

Data were collected remotely through an electronic form available on a digital platform.

The study was disseminated through professional nursing networks, including the Brazilian Society of Pediatric Nurses (SOBEP), the Brazilian Association of Stomatherapy (SOBEST), other nursing specialty societies, and the Regional Nursing Council of the State of São Paulo (COREN-SP).

A nonprobability snowball sampling technique was also used, in which participants were encouraged to share the study invitation with other nursing professionals.

Upon accessing the electronic link, participants were given information about the study objectives, the researchers responsible for the study, the average completion time, and the informed consent form. After reading the informed consent form, participants indicated their agreement or refusal to participate in the study.

Ethical aspects

The study complied with the ethical principles established in National Health Council Resolution No. 466/12 and the Brazilian General Data Protection Law (Law No. 13,709/18), ensuring participant confidentiality and anonymity, secure handling of the data collected, and the signing of the informed consent form. The project was submitted to and approved by the Research Ethics Committee of the University of Guarulhos under Opinion No. 6,030,118.

Data analysis

The data were organized in a Microsoft Excel® spreadsheet and analyzed using the Statistical Package for the Social Sciences (SPSS®), version 21.0. Descriptive analysis was performed using absolute and relative frequencies for categorical

variables; for numerical variables, measures of central tendency, such as the mean and standard deviation (SD), were used. Pearson's chi-square test and Fisher's exact test were used in the inferential analysis to assess the relationship between sociodemographic variables and neonatal skin care practices, with statistical significance set at 5% ($p < 0.05$).

RESULTS

Sociodemographic profile

Of the 584 professionals who accessed the electronic questionnaire, 535 (91.6%) agreed to participate in the study. After the eligibility criteria were applied, 438 professionals residing in the state of São Paulo were included in the analyses. Participants ranged in age from 23 to 69 years, with a mean age of 40.5 years (SD = 9.1); the predominant age group was 31 to 50 years.

Regarding sociodemographic characteristics, most participants were women, self-identified as White, and had an income between two and four minimum wages. Most were employed at the time of data collection, primarily in the public sector, and reported having a single employment relationship.

Regarding professional qualifications, participants with a bachelor's degree in Nursing constituted the largest group. Most had postgraduate education, primarily at the specialization level.

The mean time since professional qualification was 11 years (SD = 8.6), whereas the mean length of professional experience was 12.8 years (SD = 9.3). Table 1 presents the participants' sociodemographic and professional characteristics.

Newborn skin care practices

Newborn skin assessment

Most professionals reported performing daily assessments of newborn skin (80.1%) and the perineal area (92.5%). However, 84.4% did not use specific tools for general skin assessment, and 90.4% did not use specific tools for perineal-area assessment.

The main reasons for not using these tools were lack of knowledge of specific tools (45.5%), absence of an institutional protocol (22.8%), and the perception that their use was unnecessary (20.0%).

Regarding knowledge of the specific characteristics of newborn skin, 63.0% of the professionals reported complete knowledge, 30.7% reported partial knowledge, and 6.3% reported no knowledge.

Regarding vernix caseosa, most participants (84.8%) reported not removing it.

Newborn skin cleansing

The most commonly reported body cleansing practices were the use of soap (49.3%) and cotton pads and water (39.3%). Among participants who used soap, liquid soap was the most frequently reported type (78.8%).

The main reasons for choosing cleansing products were an institutional protocol (43.1%) and professional experience (20.5%).

Most professionals reported using fragrance-free products (76.3%) and dye-free products (77.4%). Regarding bathwater temperature, lukewarm water was most commonly used (97.5%).

Reading the information on product labels was reported by 75.6% of participants, mainly because they considered it important for the proper use of the products.

Table 2 presents the cleansing practices reported by the professionals.

Table 1. Sociodemographic and professional characteristics of participants (n = 438). Guarulhos, São Paulo, Brazil, 2023.

Characteristics	n (%)
Age group (years)	
Up to 30	61 (13.9)
31–50	322 (73.5)
More than 51	55 (12.6)
Sex	
Female	398 (91.1)
Male	37 (8.5)
Not reported	3 (0.4)
Self-reported race/skin color	
White	242 (55.3)
Brown	134 (30.6)
Black	56 (12.8)
Asian	6 (1.4)
Municipality of residence	
City of São Paulo	203 (46.3)
Other municipalities in the state of São Paulo	235 (53.7)
Employment status	
Employed	356 (81.3)
Unemployed	82 (18.7)
Number of employment relationships	
One	269 (75.6)
Two	73 (20.5)
Three	10 (2.8)
Four	4 (1.1)
Employment sector	
Public	204 (57.3)
Private	152 (42.6)
Monthly income (minimum wages)	
1–2	65 (14.8)
2–3	114 (26.0)
3–4	105 (24.0)
4–5	69 (15.8)
>5	85 (19.4)
Professional qualification	
Nursing assistant	3 (0.7)
Bachelor's degree in Nursing	382 (87.2)
Teaching degree in Nursing	30 (6.8)
Nursing technician	23 (5.2)
Postgraduate education	
Yes	361 (82.4)
No	77 (17.6)
Type of postgraduate education	
Specialization	307 (58.0)
Master's degree	40 (11.1)
Doctoral degree	14 (3.9)
Age, years, mean (SD)	40.5 (9.1)
Time since professional qualification, years, mean (SD)	11 (8.6)
Professional experience, years, mean (SD)	12.8 (9.3)

SD: standard deviation.
Source: Prepared by the authors.

Table 2. Newborn skin cleansing practices reported by nursing professionals (n = 438). Guarulhos, São Paulo, Brazil, 2023.

Question	n (%)
What do you use to cleanse the newborn's body?	
Soap	216 (49.3)
Cotton pads and water	172 (39.3)
I do not cleanse the newborn's body	9 (2.1)
Antiseptic	4 (0.9)
Chlorhexidine	4 (0.9)
Glycerin	3 (0.7)
What type of soap do you use?	
Liquid soap	345 (78.8)
Liquid and bar soap	25 (5.7)
Bar soap	22 (5.0)
Does not use soap	19 (4.3)
Cleansing foam	8 (1.8)
Cleansing gel	5 (1.1)
Whatever is available	5 (1.1)
Chlorhexidine	3 (0.7)
Neutral soap	3 (0.7)
Glycerin soap	3 (0.7)
If so, why?	
Institutional protocol	231 (43.1)
Professional experience	110 (20.5)
Clinical decision	52 (99.7)
Professional experience combined with other reasons	40 (7.4)
Ministry of Health recommendation	38 (7.1)
Scientific evidence	25 (4.6)
Product advertising	2 (0.3)
Other	37 (6.9)
Does the product you use contain fragrance?	
No	334 (76.3)
Yes	104 (23.7)
Does the product you use contain dyes?	
No	339 (77.4)
Do not know	71 (16.2)
Yes	28 (6.4)
How would you rate the ease of rinsing the product off?	
Easy	359 (82.0)
Moderate	72 (16.4)
Difficult	7 (1.6)
Do you usually read the information on the product label?	
Yes	331 (75.6)
No	107 (24.4)
If you usually read the label information, why?	
Consider it important for proper product use	290 (60.5)
All of the above	129 (26.9)
The information is easy to understand	49 (10.2)
Other	11 (2.3)

It continues...

Table 2. Continuation.

Question	n (%)
If you do not usually read the label information, why?	
No time	100 (18.0)
The information is difficult to read	67 (12.0)
Do not consider it important	34 (6.1)
Do not understand the information	23 (4.1)
All of the above	60 (10.8)
Other	271 (48.8)
What is the temperature of the water you use to bathe the newborn?	
Lukewarm	427 (97.5)
Hot	10 (2.3)
Cold	1 (0.2)
Do you measure the water temperature?	
Yes	314 (71.7)
No	124 (28.3)
How do you measure the temperature?	
Forearm	243 (77.4)
Water thermometer	68 (21.7)
Back of the hand	1 (0.3)
Other	2 (0.6)
If not, why?	
No thermometer is available at the institution	85 (68.5)
Do not consider it necessary	27 (21.8)
Do not consider it important	6 (4.8)
Do not know how to measure the temperature	6 (4.8)

Source: Prepared by the authors.

Newborn umbilical cord stump care

The most frequently used product for umbilical cord stump care was 70% alcohol (89.5%), followed by chlorhexidine (4.6%). The main reasons for choosing the products were an institutional protocol (43.2%) and recommendations from the Ministry of Health (28.5%).

The most frequently reported times for providing this care were during diaper changes (51.1%) and after bathing (42.9%).

Regarding the application sites, which were assessed through a multiple-choice question, the most frequently reported were the base of the umbilical cord stump (50.1%), the length of the umbilical cord stump (33.3%), the skin surrounding the umbilical cord stump (30.8%), and the clamp (30.8%). In addition, 43.1% of participants selected "all of the above."

Newborn skin moisturization

Most professionals (72.1%) reported not using moisturizers on newborn skin. The main reasons for not using moisturizers were an institutional protocol (30.7%) and professional experience (27.2%).

Among participants who used moisturizers, the main reasons were a clinical decision based on skin assessment (27.7%) and an institutional protocol (22.3%). Moisturizers were used mainly after bathing (39.8%) or when desquamation and skin dryness were present (30.4%).

Most professionals reported using fragrance-free moisturizers (69.7%) and dye-free moisturizers (72.1%). Table 3 presents the skin moisturization practices reported by the professionals.

Table 3. Newborn skin moisturization practices reported by nursing professionals (n = 438). Guarulhos, São Paulo, Brazil, 2023.

Question	n (%)
Do you use moisturizer on the newborn's skin?	
No	316 (72.1)
Yes	122 (27.9)
Why do you not use moisturizer?	
Institutional protocol	97 (30.7)
Professional experience	86 (27.2)
Ministry of Health recommendation	45 (14.2)
Other	88 (27.8)
Why do you use moisturizer?	
Clinical decision based on skin assessment	41 (27.7)
Institutional protocol	33 (22.3)
Professional experience	32 (21.6)
Scientific evidence	10 (6.8)
Ministry of Health recommendation	9 (6.1)
Other	23 (15.5)
When do you use moisturizer on the newborn's skin?	
After bathing	59 (39.8)
When skin desquamation or dryness is detected	45 (30.4)
When prescribed by a healthcare professional	4 (2.7)
All of the above	11 (7.4)
Other	29 (19.6)
How many times a day do you apply moisturizer?	
1	70 (57.4)
2	27 (22.1)
3	16 (13.1)
More than 4	2 (1.6)
As needed	7 (5.7)
Does the moisturizer you use contain fragrance?	
No	86 (69.7)
Yes	37 (30.3)
Does the moisturizer you use contain dyes?	
No	88 (72.1)
Do not know	32 (26.2)
Yes	2 (1.6)
Do you usually read the information on the product label?	
Yes	313 (71.5)
No	125 (28.5)
If you do not usually read the label information, why?	
No time	45 (36.0)
The information is difficult to read	15 (12.0)
Do not consider it important	12 (9.6)
Other	53 (42.4)
If you usually read the label information, why?	
Consider it important for proper product use	212 (67.7)
The information is easy to understand	8 (2.6)
All of the above	59 (18.8)
Other	34 (10.9)

Source: Prepared by the authors.

Newborn perineal-area skin care

Regarding perineal-area cleansing, most professionals reported not using specific products for cleansing the area (68.7%). The most frequently reported reasons for not using these products were an institutional protocol and the perception that they were unnecessary.

Among professionals who reported using a product for perineal-area cleansing, the most frequently cited products were cotton pads and water, wipes formulated for newborns, and the same soap used for body cleansing. The main reasons for choosing these products were an institutional protocol and professional experience. Among participants who used soap in the perineal area, liquid soap was the predominant type.

Regarding protection and moisturization of the skin in the perineal area, slightly more than half of the professionals reported not using specific products. Among participants who used skin protectants, zinc oxide- and dexpanthenol-based ointments were the most frequently cited.

Disposable diapers with absorbent gel were the most commonly used type, followed by standard disposable diapers. The main reasons for choosing the type of diaper were an institutional protocol and product availability at the institution. Diapers were most commonly changed as needed, followed by changes every three hours. In addition, most participants reported not providing any additional perineal-area care.

Lastly, most professionals (86.3%) reported that there had been no changes in newborn skin care due to the COVID-19 pandemic. Table 4 details the practices related to perineal-area care.

Associations between skin care practices and sociodemographic variables

Statistically significant associations were identified between sociodemographic variables and neonatal skin care practices. Regarding skin assessment, age, sex, educational background, postgraduate education, and length of professional experience were significantly associated with skin assessment and the use of specific tools.

Regarding skin moisturization, age was associated with the habit of reading product labels, whereas sex was associated with moisturizer use. Regarding perineal-area care, sex, income, postgraduate education, and length of professional experience were significantly associated with the use of products for cleansing and skin protection.

Table 5 presents the associations identified.

DISCUSSION

This study aimed to analyze newborn skin care practices as reported by nursing professionals. The findings showed that the reported practices varied and were often influenced by institutional protocols and professional experience.

Most respondents were women, reinforcing that nursing remains a predominantly female profession, possibly because of sociocultural influences and the historical association of caregiving with women[12,13]. The mean length of professional experience was 12.8 years (SD = 9.3). Although clinical experience contributes to skill development and decision-making[14], studies indicate that length of service alone does not ensure excellence in care; practical experience must be integrated with up-to-date scientific knowledge and reflective practice[15,16].

The development of nursing competencies combines theoretical and practical knowledge[17]. Theoretical knowledge, acquired through formal education and continuing education, enables professionals to critically examine care practices[18]. Practical knowledge, developed through day-to-day experience, is essential to consolidating specialized competencies[19]. However, years of service alone do not guarantee excellence, and professionals with more years of experience may also make errors more frequently[20,21]. Clinical excellence requires the integration of practical experience, current scientific knowledge, and reflective practice[22]. This study found no statistically significant association between length of professional experience and the adoption of evidence-based practices.

Although most participants reported knowledge of the specific characteristics of newborn skin, a considerable proportion reported partial or no knowledge, which may reflect the limited instructional time devoted to the topic in

Table 4. Perineal-area care practices for newborns reported by nursing professionals. Guarulhos, São Paulo, Brazil, 2023.

Question	n (%)
Do you use any topical product for perineal-area cleansing?	
No	301 (68.7)
Yes	137 (31.3)
Why do you not use a topical product for perineal-area cleansing?	
Institutional protocol	95 (31.6)
Do not consider it necessary	67 (22.3)
Professional experience	55 (18.3)
Other reasons	84 (27.96)
Why do you use a topical product for perineal-area cleansing?	
Institutional protocol	56 (40.9)
Professional experience	29 (21.2)
Clinical decision based on skin assessment	24 (17.5)
Other reasons	28 (20.4)
What type of product do you use?	
Cotton pads and water	48 (35.0)
Wipes formulated for newborns	15 (10.9)
The same soap used for body cleansing	12 (8.8)
Other	62 (45.3)
What type of soap do you use?	
Liquid	104 (75.9)
Bar	5 (3.6)
Other	28 (20.5)
Do you use any product to protect or moisturize the perineal area?	
No	228 (52.1)
Yes	210 (47.9)
Why do you not use a product to protect or moisturize the perineal area?	
Institutional protocol	69 (30.3)
Do not consider it necessary	62 (27.2)
Other	97 (42.5)
Why do you use a product to protect or moisturize the perineal area?	
Institutional protocol	189 (43.2)
Ministry of Health recommendation	125 (28.5)
Scientific evidence	60 (13.7)
Other	64 (14.6)
What type of product do you use to protect or moisturize the perineal area?	
Zinc oxide ointment	58 (27.6)
Barrier cream	19 (9.0)
Dexpanthenol ointment	36 (17.1)
Other	97 (46.2)
What type of diaper do you use?	
Disposable diaper with absorbent gel	211 (48.2)
Standard disposable diaper	205 (46.8)
No response	1 (0.2)
Other	21 (4.8)

It continues...

Table 4. Continuation.

Question	n (%)
Why do you choose this type of diaper?	
Institutional protocol	171 (39.0)
Product availability	138 (31.5)
Professional experience	82 (18.7)
Other	47 (10.7)
How often do you change the diaper?	
As needed	284 (64.8)
Every 2 hours	45 (10.3)
Every 3 hours	86 (19.6)
Other intervals	23 (5.3)
Do you provide any additional perineal-area care not covered above?	
No	375 (85.6)
Yes	63 (14.4)

Source: Prepared by the authors.

Table 5. Associations between neonatal skin care practices and nursing professionals' sociodemographic characteristics (n = 438). Guarulhos, São Paulo, Brazil, 2023.

Variable	Practice assessed	*p* value*
Age	Use of a skin assessment tool	0.043
	Reading information on the moisturizer label	0.020
Sex	Newborn skin assessment	0.009
	Perineal-area assessment	0.056
	Use of moisturizer on the newborn's skin	0.017
	Use of a topical product for perineal-area cleansing	0.030
	Use of a product to protect or moisturize the perineal area	0.046
Educational background	Newborn skin assessment	< 0.001
	Removal of vernix caseosa	0.010
Postgraduate education	Newborn skin assessment	< 0.001
	Perineal-area assessment	0.001
	Use of a product to protect or moisturize the perineal area	0.031
Length of professional experience	Use of a skin assessment tool	0.004
	Use of a specific tool for perineal-area assessment	0.001
	Use of a topical product for perineal-area cleansing	0.009
	Type of soap used for skin cleansing	0.008
	Changes in skin care during the COVID-19 pandemic	0.011
Income	Use of a topical product for perineal-area cleansing	0.027
	Type of soap used for skin cleansing	0.039

* $p < 0.05$.
Source: Prepared by the authors.

undergraduate and postgraduate nursing programs. Most professionals recognized the importance of preserving vernix caseosa, but some reported removing it from the newborn's skin. Studies have demonstrated the benefits of not removing vernix caseosa, particularly during the first 24 hours of life, including skin protection and hydration, thermoregulation, and skin healing[23,24].

Regarding skin assessment, most professionals reported performing it without using specific tools, and a lack of knowledge of these tools was among the main reasons cited. Standardized tools support the early identification of skin changes. The Neonatal Skin Condition Score (NSCS), which assesses dryness, erythema, and skin breakdown or injury, has been adapted and clinically validated for use in Brazil[25]. In this context, continuing education strategies for nursing professionals are essential to better prepare them and improve care practices.

Regarding newborn skin cleansing, most professionals reported using soap, followed by cotton pads and water. These findings indicate that soap remains the main product used for neonatal skin cleansing. Regarding water use, a randomized controlled trial[26] of 307 healthy full-term newborns compared soap with water alone, assigning participants to two groups (n = 159 and n = 148). After 14 days of follow-up, soap was not inferior to water alone with respect to transepidermal water loss (p = 0.79)[26]. Although water is widely used for neonatal skin cleansing, water alone may have limitations in removing organic residues, particularly with greater exposure to urine, feces, and other soiling. Accordingly, products used to cleanse newborn skin should be selected based on their cleansing ability, safety, skin tolerability, and compatibility with the physiological characteristics of neonatal skin.

Although liquid soap was the predominant product reported for newborn skin cleansing, professionals also reported practices inconsistent with the evidence, including the use of bar soap, chlorhexidine, and products containing fragrances or dyes. These findings point to gaps in the implementation of international recommendations, which favor products in liquid form that are free of irritants, fragrances, and dyes, have a mildly acidic pH, and are nonirritating to the eyes[7,10].

A study comparing liquid and bar soap among 100 healthy full-term newborns found that liquid soap helped maintain a more acidic skin pH and higher levels of skin hydration than bar soap[27].

In this study, institutional protocols and professional experience were the main factors associated with product selection. This finding supports the use of continuing education and training strategies for professionals responsible for developing institutional protocols and standardizing clinical supplies, to promote practices aligned with scientific evidence and the use of products suited to the characteristics of neonatal skin.

Some participants reported not reading product labels. Reported barriers included lack of time, difficulty reading and understanding the information, and the perception that reading labels was of little importance. These findings point to opportunities for managers and professionals responsible for standardizing products used in clinical care to develop strategies that make this information easier to access and understand.

Regarding newborn skin moisturization, most professionals reported that they did not routinely use moisturizers, mainly because of institutional protocols and professional experience. One study concluded that robust evidence supporting consistent benefits from universal emollient use in healthy newborns is still lacking[7]. In Brazil, however, the Brazilian Society of Pediatrics recommends selecting products specifically formulated for children and with the potential to restore the skin barrier[8]. The routine use of these products should, however, be directed primarily toward newborns with dry skin, scaling dermatoses, or an atopic predisposition[28].

Regarding umbilical cord stump care, most professionals (89.5%) still reported using 70% alcohol. However, recommendations from the Brazilian Society of Pediatrics[8] indicate that cleaning the stump and keeping it dry, without antiseptics, are sufficient for newborns born in hospitals or in settings with low neonatal mortality. The predominant practice in this sample was therefore not aligned with the best available evidence.

Regarding the perineal area, the findings showed that most professionals did not use specific products to cleanse the area. However, the effective removal of feces, urine, and other residues is essential for maintaining skin integrity because prolonged exposure to these substances can compromise the skin and contribute to the development of incontinence-associated dermatitis (IAD)[29]. Feces have an alkaline pH and contain proteolytic enzymes that can alter the epidermal structure, whereas continuous exposure to moisture causes skin maceration and increases the risk of skin injury[30].

IAD is one of the main causes of skin injury among hospitalized newborns. An Italian retrospective study involving 102 infants in a neonatal intensive care unit (NICU) found that IAD accounted for 78.4% of moisture-associated skin damage; most cases involved persistent redness (26.3%) or skin loss (47.5%) without clinical signs of infection[31]. A study of 135 neonates in a NICU in Thailand found an IAD prevalence of 4.4%; associated factors included gestational age

under 32 weeks (p = 0.002), birth weight ≤ 1,500 g (p = 0.003), and a hospital stay longer than 20 days (p = 0.003)[32]. The pathophysiology of IAD involves an interaction among excessive moisture, elevated pH, mechanical friction, and microbial colonization[30].

International studies recommend implementing standardized protocols to prevent IAD. A quality improvement project conducted in a level IV NICU in the United States implemented an algorithm for managing and preventing diaper dermatitis together with a scoring tool. The scoring system and protocol were permanently incorporated into clinical practice to quantify IAD, guide treatment, and document the condition[33]. Another study found that a diaper dermatitis care bundle—including diaper changes every 3 hours and routine application of a skin protectant containing dimethicone and sodium hyaluronate—significantly reduced the incidence of diaper dermatitis compared with usual care (41.65% vs. 6.67%; p = 0.002), with an odds ratio of 0.10 (95% confidence interval [CI], 0.019–0.520; p = 0.006)[34].

Regarding perineal-area care, a randomized controlled equivalence trial involving 280 healthy full-term newborns compared alcohol-free baby wipes with cotton pads and water for cleansing the diaper area. Baby wipes and the combination of cotton pads and water had equivalent effects on skin hydration (p = 0.47), with no evidence of adverse effects. Maternal reports of diaper dermatitis were significantly more frequent in the water group (p = 0.025), suggesting that baby wipes may offer an additional benefit in preventing this condition. The study also found that baby wipes were perceived as providing better cleansing (p = 0.001) and were associated with lower cotton pad use (p < 0.001)[35].

In this study, 52.1% of professionals reported not using specific products to protect the perineal area. This practice may make neonatal skin more vulnerable to damage from prolonged contact with urine and feces. National and international consensus recommendations support the use of creams or barrier products on the gluteal, perineal, and genital areas as a preventive strategy to reduce the risk of IAD[8-29].

Finally, the findings reinforce the need for continuing education strategies, a review of institutional protocols, and closer alignment of care practices with the available scientific evidence to promote neonatal skin health and prevent avoidable skin injuries.

Study contributions

This study contributes to knowledge of neonatal skin care practices reported by nursing professionals in Brazil by identifying practices that align with or diverge from current scientific recommendations.

The findings may inform the development of clinical care protocols, continuing education programs, and professional development strategies to improve neonatal care.

Study limitations

The nonprobability sample limits the generalizability of the results. Although the electronic questionnaire was widely disseminated, responses were concentrated among professionals residing in the state of São Paulo because participation from other Brazilian states was not representative. The findings therefore primarily reflect this regional context. In addition, no specific comparisons were made among nurses, nursing technicians, and nursing assistants; such analyses might have identified differences by professional category. The scarcity of similar Brazilian studies available for comparison was another limitation.

Recommendations

Ongoing educational strategies should be developed for nursing professionals to update their knowledge of scientific evidence on neonatal skin care.

The implementation of standardized clinical care protocols and the use of specific tools for newborn skin assessment are also recommended.

CONCLUSION

Skin care practices for full-term newborns reported by nursing professionals were heterogeneous and influenced mainly by institutional protocols, professional experience, and recommendations from the Ministry of Health.

A high frequency of neonatal skin assessment was reported, although specific assessment tools were used infrequently. Practices that diverged from current scientific recommendations were also identified, particularly in relation to cleansing products, skin moisturization, umbilical cord stump care, and protection of the perineal area.

The associations identified between sociodemographic variables and care practices suggest that professional characteristics may be associated with the care practices adopted.

The findings reinforce the need for continuing education and professional development, as well as the standardization of evidence-based clinical care protocols, to improve newborn care.

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