

KNOWLEDGE AND CLINICAL PRACTICE OF NURSING PROFESSIONALS ON THE ASSESSMENT AND TREATMENT OF SKIN INJURIES

CONOCIMIENTO Y PRÁCTICA CLÍNICA DE LOS PROFESIONALES DE ENFERMERÍA SOBRE LA EVALUACIÓN Y TRATAMIENTO DE LAS LESIONES DE LA PIEL

CONHECIMENTO E PRÁTICA CLÍNICA DOS PROFISSIONAIS DE ENFERMAGEM SOBRE AVALIAÇÃO E TRATAMENTO DE LESÕES DE PELE

¹Ithiele Carolina Rothmann Knechtel²Edna Jeremias Martins³Gabriela Camponogara Rossato

¹Faculdades Integradas de Taquara (FACCAT). Taquara, RS, Brazil.
ORCID: <https://orcid.org/0009-0009-4662-6491>

²Faculdades Integradas de Taquara (FACCAT). Taquara, RS, Brazil.
ORCID: <https://orcid.org/0000-0002-2546-2987>

³Faculdades Integradas de Taquara (FACCAT). Taquara, RS, Brazil.
ORCID: <https://orcid.org/0000-0003-4371-0590>

Corresponding Author

Ithiele Carolina Rothmann Knechtel

Rua Anita Garibaldi, 840, Figueiras -
Igrejinha/RS, Brazil. CEP: 95650-000.

Contact: +55 51 99830-6677. E-mail:

ithielekne@sou.faccat.br.

Submission: 05-11-2024

Approval: 14-07-2025

ABSTRACT

Introduction: The skin, composed of the epidermis, dermis, and hypodermis, acts as a protective barrier against trauma and external agents. Disruptions in this barrier result in injuries ranging from superficial to deep, caused by factors such as trauma or ischemia. Primary health care is essential in this context, being the closest point of contact to the community. Nursing professionals play a central role in wound care, from prevention to choosing the appropriate treatment, leveraging their theoretical and practical knowledge to ensure comprehensive care. **Objective:** To assess the knowledge and clinical practice of nursing professionals in the Primary Care network of the Paranhana Valley regarding the care of patients with skin lesions. **Method:** This quantitative, cross-sectional, and descriptive study was conducted from March to November 2024. It consisted of a census-type sample. Participants were invited to complete an electronic questionnaire comprising 58 questions that addressed sociodemographic data, training, and clinical practice. **Results:** Females predominated (90.9%), mean age 39 years; 40% had graduated up to 10 years ago and had worked in Primary Care for up to 2 years (36.4%). Among the therapeutic methods, silver sulfadiazine was the most well-known and widely used. Regarding specific cognitive knowledge in wounds, a higher score was observed in the neuropathic ulcers category and a lower score in relation to venous and arterial ulcers. **Conclusion:** The study identified gaps in knowledge, professional development, and treatment technologies, suggesting the need for continuing education and investment in innovative materials and dressings.

Keywords: Wounds and Injuries, Primary Nursing, Knowledge.

RESUMEN

Introducción: La piel, compuesta por epidermis, dermis y hipodermis, actúa como barrera protectora frente a traumatismos y agentes externos. Las interrupciones de barrera provocan lesiones que van desde superficiales hasta profundas, provocadas por factores como traumatismos y isquemia. La atención primaria es fundamental en este contexto, siendo el punto más cercano a la comunidad. Los profesionales de enfermería desempeñan un papel central en el cuidado de las heridas, desde la prevención hasta la elección del tratamiento adecuado, aprovechando sus conocimientos teóricos y prácticos para garantizar una atención integral. **Objetivo:** Evaluar conocimiento y la práctica clínica de los profesionales de enfermería de la red de Atención Primaria del Vale do Paranhana sobre el cuidado de pacientes con lesiones cutáneas. **Método:** Estudio cuantitativo, transversal y descriptivo, realizado de marzo a noviembre de 2024, consistente en una muestra tipo censal, donde se invitó a los participantes a responder un cuestionario electrónico con 58 preguntas, que abarcaban datos sociodemográficos, formación y práctica clínica. **Resultados:** Predominio del sexo femenino (90,9%), edad promedio 39 años; formado hasta 10 años (40%) y trabajando en Atención Primaria hasta 2 años (36,4%). Entre los métodos terapéuticos, la sulfadiazina de plata fue más conocida y utilizada. En cuanto conocimiento cognitivo específico en heridas, se observó mayor puntuación en la categoría de úlceras neuropáticas y menor puntuación en relación a las úlceras venosas y arteriales. **Conclusión:** El estudio identificó lagunas en conocimiento, actualización profesional y tecnologías de tratamiento, sugiriendo la necesidad de educación continua e inversión en materiales y revestimientos innovadores. **Palabra clave:** Heridas y Laciones; Enfermería Primaria; Conocimiento

RESUMO

Introdução: A pele, composta por epiderme, derme e hipoderme, atua como uma barreira protetora contra traumas e agentes externos. As interrupções nessa barreira resultam em lesões que variam de superficiais a profundas, causadas por fatores como traumas ou isquemia. A atenção primária à saúde é essencial nesse contexto, sendo o ponto mais próximo da comunidade. Os profissionais de enfermagem têm um papel central no cuidado com feridas, desde a prevenção até a escolha do tratamento adequado, aproveitando seu conhecimento teórico e prático para garantir uma assistência integral. **Objetivo:** Avaliar o conhecimento e a prática clínica dos profissionais de enfermagem da rede de Atenção Básica do Vale do Paranhana sobre o cuidado de pacientes com lesões de pele. **Método:** Estudo quantitativo, transversal, e descritivo, realizado de março a novembro de 2024, composto por uma amostra do tipo censo, onde os participantes foram convidados a responder um questionário eletrônico com 58 perguntas, abordando dados sociodemográficos, formação e prática clínica. **Resultados:** Predominância do sexo feminino (90,9%), média de idade 39 anos; formados até 10 anos (40%) e atuantes na Atenção Primária até 2 anos (36,4%). Entre métodos terapêuticos a sulfadiazina de prata foi a mais conhecida e utilizada. Quanto ao conhecimento cognitivo específico em feridas, foi observada maior pontuação na categoria úlceras neuropáticas e menor pontuação em relação a úlceras venosas e arteriais. **Conclusão:** O estudo identificou lacunas de conhecimento, atualização profissional e tecnologias de tratamento, sugerindo necessidade de educação permanente e investimento em materiais e coberturas inovadoras.

Palavras-chave: Ferimentos e Lesões, Enfermagem Primária, Conhecimento.



INTRODUCTION

The skin is a complex organ composed of different layers - the epidermis, dermis, and hypodermis - that play a vital role as a protective barrier against various external factors, such as trauma and biological and chemical agents. Any disruption of this barrier can result in injuries ranging from superficial to deeper, and can be caused by a variety of factors, including intentional or accidental trauma or ischemia ⁽¹⁾. Disruptions of this barrier result in injuries from the epidermis to deeper layers, and can be caused intentionally, by trauma or ischemia ⁽²⁾.

Primary Health Care (PHC) plays a crucial role in this context, being the closest access point to the community, where nursing professionals routinely manage wound care in both primary care and hospital settings ⁽³⁾. Wound care is routine for nursing professionals in both primary care and hospital settings ⁽⁴⁾. Among health professionals, nurses play a crucial role in wound care, working in prevention, assessment, and the indication of appropriate treatment ⁽⁵⁾.

In this context, nurses play a fundamental role, involving themselves in the prevention, assessment, and recommendation of appropriate wound treatment. Continuous training of these professionals is essential to provide individualised and comprehensive care to patients and their families, leveraging the theoretical and practical knowledge acquired throughout their training and professional experience ⁽⁶⁾. Because nurses are in direct

contact with patients, they have significant expertise in wound care, based on their curricular training and professional practice ⁽⁷⁾. PHC is crucial for the care of skin lesions, being the level closest to the patient. PHC professionals coordinate care, perform assessments, propose personalised therapies, and promote the strengthening of support networks ⁽⁸⁾.

Recognising the relevance of this topic, the objective of this study is to evaluate the knowledge and clinical practice of nursing professionals in the Primary Care (PC) network of the Paranhana Valley regarding the care of patients with skin lesions. It assesses whether there is a search for scientifically evidence-based knowledge for the assessment of skin lesions, dressings, and coverings. It also assesses whether professional development is ongoing and how it occurs. It also describes the known and commonly used therapeutic methods for wounds, outlines the sociodemographic profile of nurses and nursing technicians, characterises their professional training, and identifies their specific knowledge about skin wounds. Therefore, the aim is to contribute to improving care for patients with wounds by promoting more effective and personalised care aligned with the needs of community service. It is believed that healthcare professionals' in-depth knowledge in this area will result in better management of skin lesions and, consequently, an improved quality of life for patients ⁽⁹⁾.



METHODS

This is a quantitative, cross-sectional, descriptive study conducted from March to November 2024 to analyse nursing professionals' knowledge and clinical practice regarding the assessment and treatment of skin lesions in the primary care network of two cities in the Paranhana Valley, Rio Grande do Sul. The research followed the *Strengthening of the Reporting of Observational Studies in Epidemiology (STROBE)* criteria.

The sample was a census-type sample composed of nursing professionals, both technical and undergraduate, working in 21 different Basic Health Units (UBS) or Family Health Strategies (ESF). The inclusion criteria were nursing technicians, nurses, or nursing interns working in direct patient care within the primary care network. Exclusion criteria included professionals on vacation, sick leave, or absence during the data collection period.

After meeting the eligibility criteria, professionals were invited to sign the Free and Informed Consent Form (FICF) and then answer the questionnaire, which took an average of 15 minutes. The questionnaire was self-administered, even if answered in the presence of the researcher, by scanning a board with a QR code, during the pre-scheduled team meeting with the nurses of the health units, during their working hours, which occurs in all health units. This way, there was no interruption of care for users of the Unified Health System (SUS) ⁽¹⁰⁾.

The data collection instrument consisted of a single electronic questionnaire, via Google Form, with mostly multiple-choice questions, built based on a structured questionnaire, prepared by two experts, for a dissertation presented to the Faculty of Medicine, São Paulo State University “Júlio de Mesquita Filho”, Botucatu Campus, to obtain the degree of Master in Nursing, according to systematic reviews and specific and updated guidelines, but adapted to the reality of the region ⁽¹¹⁾. The questionnaire has 58 questions, of which 7 are sociodemographic questions and 51 questions related to training/updating of knowledge, information on clinical practice in wounds and specific knowledge regarding wounds, dressings and dressings.

Categorical variables were presented as absolute and percentage frequencies. To assess the overall score on the knowledge questionnaire, the following scoring and classification were adopted: less than 25% correct answers were considered poor, 26% to 50% fair, 51% to 75% good, and above 75% excellent, according to the performance categorisation scale based on the percentage of correct answers.

The study was submitted to the Research Ethics Committee of the Integrated Colleges of Taquara - FACCAT for analysis and assessment and, after its approval under opinion no. 6,964,754 and CAAE 80793424.5.0000.8135, the research was developed, following all the



ethical standards recommended by resolution 510/2016 of the National Health Council (CNS).

RESULTS

Fifty-five nursing professionals participated in the study, 38.2% of whom were

nurses, 52.7% had technical training, and 5% were nursing interns. The sample was predominantly made up of women (90.9%), with an average age of 39 years, who had graduated up to 10 years ago (40%), and had worked in PC for up to 2 years (36.4%), as shown in Table 1.

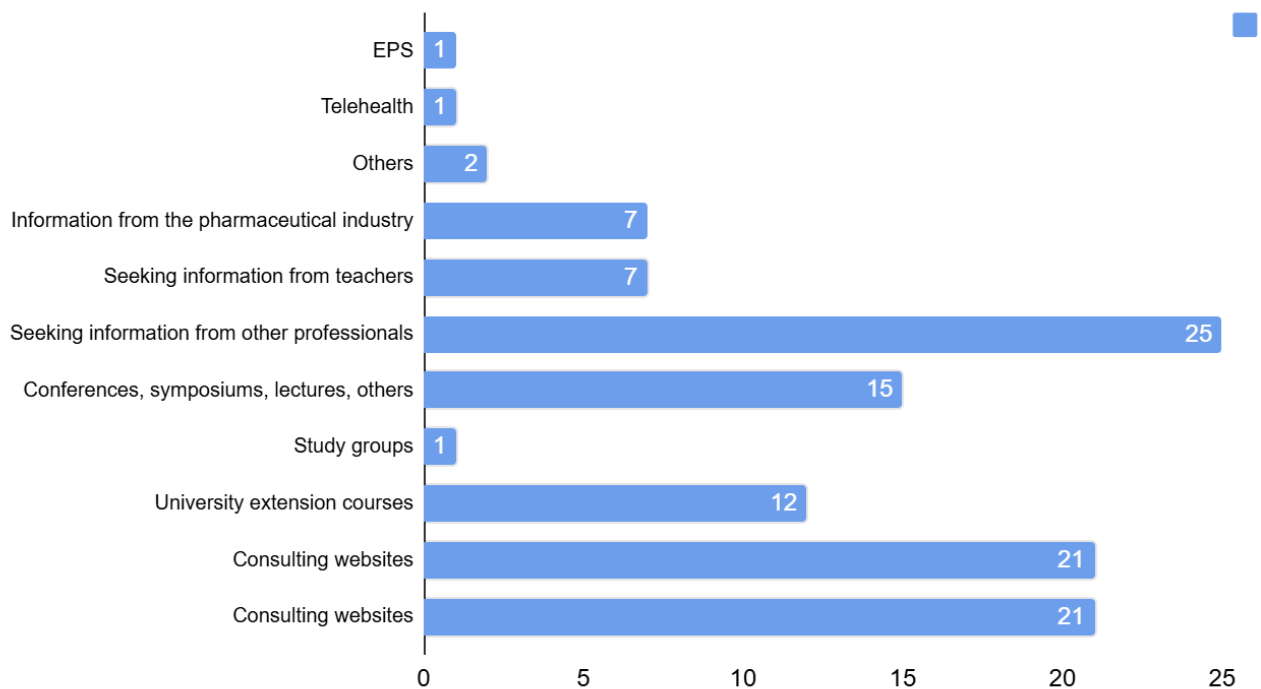
Table 1 - Sociodemographic profile of nursing professionals in the Primary Care network of two municipalities in the Paranhana Valley

Variables	n	%
Profession		
Nurse	21	38.2
Technical	29	52.7
Nursing academic intern	5	9.1
Sex		
Feminine	50	90.9
Masculine	5	9.1
Age		
Up to 39 years old	28	50.9
40 years or older	27	49.1
Training time		
In formation	5	9.1
Up to 10 years	22	40.0
11 to 20 years old	21	38.2
21 years or older	7	12.7
Time of operation ESF/UBS		
Up to 2 years	20	36.4
2 to 5 years	13	23.6
6 years or older	16	29.1

ESF = Family Health Strategy. UBS = Basic Health Unit

Among the possible forms of professional updating, the most frequent was the search for information with other professionals 25 (58.1%), followed by consulting electronic websites 21 (48.8%) and reading scientific articles 21 (48.8%), as represented in Graph 1.

Graph 1 - Resources used in professional development – in relation to skin wounds – by nursing professionals in the Primary Care network of two municipalities in the Paranhana Valley

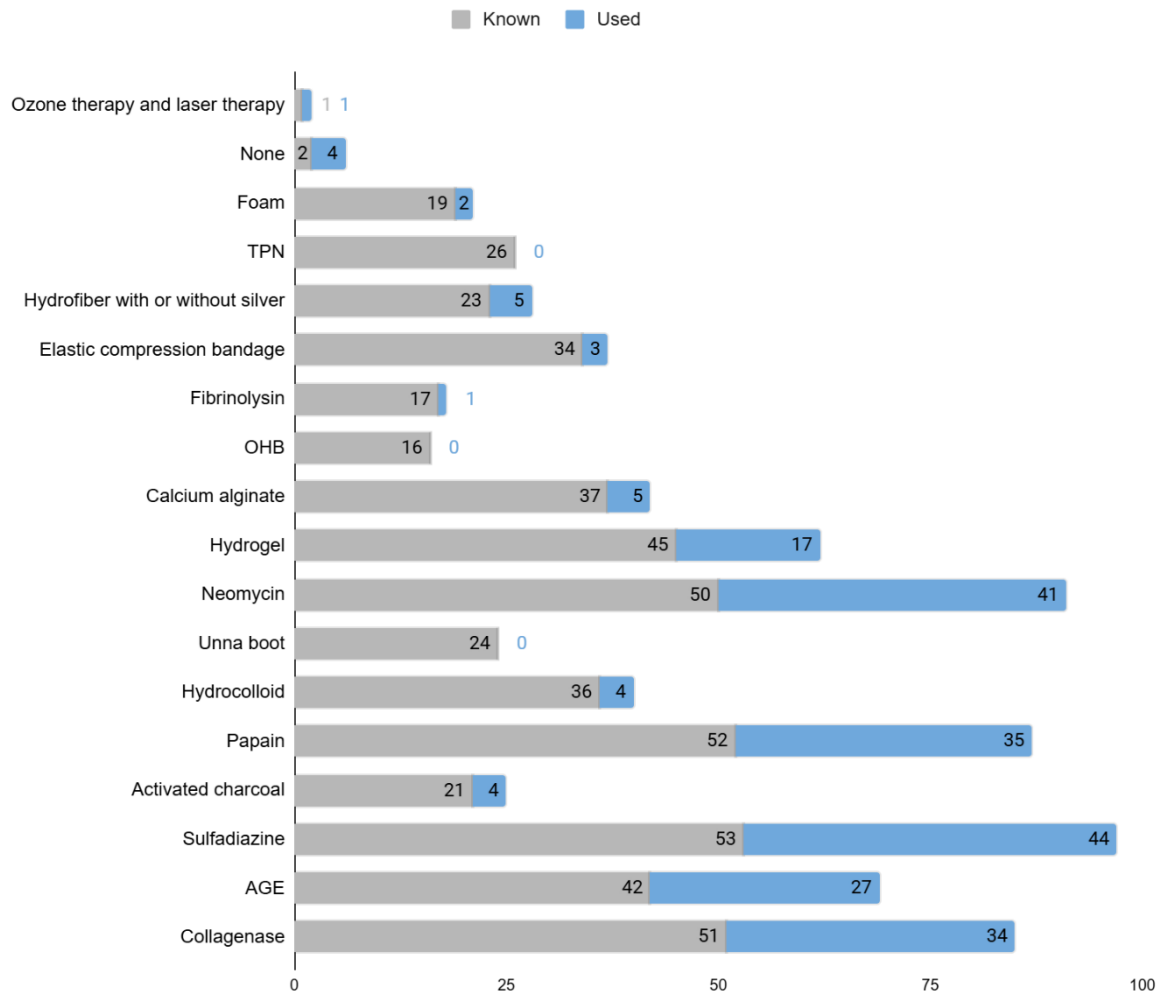


EPS= Permanent Education in Health.

Regarding the known and used therapeutic methods for wound treatment, it was possible to mark more than one option. Significantly, in Graph 2 it can be observed that the best-known coverage is silver sulfadiazine, known by 53 (96.4%) and used by 44 (80%). As well as papain, known by 52 (94.5%) and used by 35 (63.6%), collagenase, known by 51 (92.7%) and used by 34 (61.8%) and Essential

Fatty Acids (EFA), known by 50 (90.9%) and used by 27 (49.1%). After silver sulfadiazine, the most used method is neomycin 41 (74.5%) and known by 50 (90.9%), while the least used methods are the Unna boot 0 (0%), but known by 24 (43.6%); Hyperbaric Oxygen Therapy (HBOT) 0 (0%), but known by 16 (29.1%) and Negative Pressure Therapy (NPT) 0 (0%), but reported as known by 26 (47.3%).

Graph 2 - Distribution of therapeutic methods known and used by nursing professionals in the Primary Care network of two municipalities in the Paranhana Valley



EFA = Essential Fatty Acids. HBOT = Hyperbaric Oxygen Therapy. NPT = Negative Pressure Therapy.

Table 2 shows the topics of the 37 questions and the number of correct/incorrect answers. The results show that, of the 37 questions evaluated, only 17 had a correct rate above 50%. The best-performing topics were related to hydrogel dressings, the Braden scale, neuropathic wounds, pressure injuries (PUs), EFA, mechanical debridement, among others. Among the incorrect answers, 19 questions had 50% or more incorrect answers, covering topics such as wound healing environment, swab

technique, differentiation between colonized and infected wounds, hydrocolloid dressings, among others. It is noteworthy that the questions with the highest correct scores were related to neuropathic wounds and nutritional assessment, both with 94.55% correct answers, while those with the highest error rates were about PUs in the sacral region (92.73%) and the differentiation between colonized and infected wounds (90.91%).

Table 2 - Distribution of question themes according to the percentage of correct and incorrect answers by nursing professionals in the Primary Care network of two municipalities in the Paranhana Valley

Variables	Hits		Error	
	n	%	n	%
Topic of the question				
Q.1 Wound healing environment	27	49.09	28	50.91
Q.2 Swab technique	18	32.73	37	67.27
Q.3 Difference between colonized and infected wounds	5	9.09	50	90.91
Q.4 Hydrogel dressings	30	54.55	25	45.45
Q.5 Hydrocolloid dressings	27	49.09	28	50.91
Q.6 Silver-activated charcoal dressings	19	34.55	36	65.45
Q.7 Unna's Boot	17	30.91	38	69.09
Q.8 Braden Scale	38	69.09	17	30.91
Q.9 Neuropathic wounds	52	94.55	3	5.45
Q.10 Chronic wounds	16	29.09	39	70.91
Q.11 Topical antibiotics	21	38.18	34	61.82
Q.12 Biofilms	23	41.82	32	58.18
Q.13 Systemic antibiotics	8	14.55	47	85.45
Q.14 Pressure injury	37	67.27	18	32.73
Q.15 Critical Colonization	6	10.91	49	89.09
Q.16 Clinical features of plantar perforating disease	24	43.64	31	56.36
Q.17 Essential fatty acids	32	58.18	23	41.82
Q.18 Mechanical debridement	44	80.00	11	20.00
Q.19 Devitalized tissue and debridement	37	67.27	18	32.73
Q.20 Compression therapy	23	41.82	32	58.18
Q.21 Antiseptics	21	38.18	34	61.82
Q.22 Venous ulcers and pressure injuries	43	78.18	12	21.82
Q.23 Granulation tissue	51	92.73	4	7.27
Q.24 Chronic wounds	48	87.27	7	12.73
Q.25 Combination dressings	9	16.36	46	83.64
Q.26 Chronic wounds and dressing indications	36	65.45	19	34.55
Q.27 Chronic wounds and cleaning	24	43.64	31	56.36

Q.28 Nutritional assessment	52	94.55	3	5.45
Q.29 Pressure ulcer in the sacral region	4	7.27	51	92.73
Q.30 Pressure ulcer in the calcaneal region	16	29.09	39	70.91
Q.31 Plantar perforating disease	42	76.36	13	23.64
Q.32 Pressure-reducing devices	45	81,82	10	18,18
Q.33 Cleaning with 0.9% saline solution	50	90,91	5	9.09
Q.34 Cleaning with running water	34	61.82	21	38.18
Q.35 Potassium permanganate compresses	10	18,18	45	81,82
Q.36 Use of sugar	43	78.18	12	21.82
Q.37 Arterial ulcer	29	52.73	26	47.27

Q = Question

Regarding the specific topics, categorized by subject into six subgroups, it was possible to determine the average percentage of correct answers. The highest percentage of correct answers, at 70.90%, was for neuropathic ulcers; and the lowest, at 34.18%, for venous and

arterial ulcers. According to the overall score achieved, none of the specific topics received poor or excellent results. Venous and arterial ulcers and clinical evaluation of wounds were classified as "fair" knowledge, and PU, neuropathic ulcers, and dressings were classified as "good."

Table 3 - Average percentage of correct answers and classification of knowledge by specific topics of the responses of nursing professionals from the Primary Care network of two municipalities in the Paranhana Valley

Variables	Average percentage of hits (%)	Knowledge Classification
Pressure injuries	58.48	Good
Venous and arterial ulcers	34.18	Regular
Neuropathic ulcers	70.90	Good
Clinical evaluation of wounds	40.80	Regular
Concepts of cleaning, antisepsis and debridement	62.82	Good
Dressings	52.36	Good

DISCUSSION

Nursing in Brazil is marked by the feminisation of the profession, reflecting a historical association between the act of caring

and female work, with women representing 90.9% in this study. However, men are making their way into nursing, gradually initiating a transformation in reality⁽¹²⁾.



Regarding the general age of health professionals, an average age of 39 years was identified, characteristics that are also evident in a study carried out in the states of Mato Grosso do Sul and São Paulo, in 2022, where the average age was 39.1 years. Regarding training, the present study highlights a higher proportion of professionals with technical training (52.7%), while the study carried out in 2022 indicates a more balanced distribution, with 27% of workers having a technical level and 29.7% a bachelor's degree, suggesting differences in the qualification of health professionals in different scenarios ⁽¹³⁾.

This study reveals that 36.4% of professionals have worked in primary care for two years or less, which may indicate high turnover or recent new hires. On the other hand, a 2022 study that analyzed the profile of primary care workers showed that a significant portion of professionals worked long hours, 44 hours per week, and had multiple employment relationships, pointing to additional challenges faced during this period ⁽¹³⁾.

Caring for patients with skin wounds is a common practice among nursing professionals in primary and hospital care settings. Nurses play a fundamental role in guiding, monitoring, and coordinating the nursing team in applying dressings, and are responsible for prevention, assessment, and prescribing appropriate treatment. Given the high prevalence of acute and chronic skin wounds, healthcare professionals must possess the knowledge and

technical skills necessary to prevent, assess, and treat these injuries ⁽¹⁴⁾.

Staying up to date on wound care contributes to improving nursing care; however, it represents an ongoing challenge in both the care and management spheres. Acquiring knowledge about the prevention and treatment of patients with wounds, in addition to staying aligned with evidence-based practices, is a constant task ⁽¹²⁾. This study reveals that the most frequent form of professional updating on skin wound care among nursing professionals in the primary care network is sharing information with other professionals (58.1%), followed by consulting websites (48.8%) and reading scientific articles (48.8%). These findings are like those of a 2015 cross-sectional study conducted in Bauru, São Paulo, in which 58.0% of nurses also reported interacting with other professionals as the primary means of seeking information. In the 2015 study, consulting electronic websites was reported by 40.0% of respondents and reading scientific articles by 21.0%, indicating that, in the current context, there is an increase in the use of digital and scientific sources for updating ⁽⁹⁾.

The data suggests a growing trend in the use of electronic resources and scientific literature for professional development, reflecting a possible greater appreciation for scientific evidence and digital technologies. However, the higher percentages of website use indicate a change in behaviour influenced by the greater availability of digital resources and the

advancement of Information and Communication Technology (ICT) ⁽⁹⁾.

It is important that professionals critically evaluate all information received, whether through the pharmaceutical industry or the exchange of multidisciplinary experiences, since these sources of updating may contain biases ⁽¹⁵⁾. This does not rule out the need for permanent education in health and continuing education, as it is believed that improvements in the quality of care will only be achieved if there is adequate professional training ⁽¹²⁾.

A study published in 2024 on the use of ICT in health in Brazil indicated that the prevalence of Telehealth use in clinical practice increased from 32.7% in 2014 to 54.6% in 2018, with emphasis on the South region, where 66.5% of teams adopted this practice. Tele-education was the most used modality, bringing a continuous focus on training, with a prevalence of 69.5% in 2014 and 73.8% in 2018. This reflects a growing appreciation for scientific evidence and digital technologies to improve knowledge ⁽¹⁷⁾.

The current research reinforces this trend by showing that nursing professionals in the Primary Care network have been using electronic websites. These data highlight the importance of promoting and expanding the use of ICT in clinical practice and continuing education, leveraging digital platforms and Telehealth as tools to improve the quality of care and provide new strategies for continuing education in health ⁽¹⁸⁾.

Regarding the identification data on the known and used therapeutic methods, they demonstrate a pattern that resembles that found in the study carried out in 2015 in Bauru. It is noteworthy that silver sulfadiazine is the most known (96.4%) and used (80%) coverage by professionals ⁽⁹⁾. Similarly, collagenase ointment, which was widely recognized (96.4%) and used (78.9%) in the previous study, is currently known by 92.7% of professionals, although its use rate has decreased to 61.8%.

Other methods, such as papain and EFA, also show high rates of knowledge and use, which raises questions about the intersection between knowledge and resources available in the public network for wound treatment ⁽⁹⁾. There is no evidence in the literature to support the use of these options in local wound treatment as the most indicated, suggesting that these are the resources accessible in institutions ⁽¹⁶⁾.

However, less widely used methods, such as the Unna boot, hyperbaric oxygen therapy, and negative pressure therapy, have seen a significant decline in use, despite being recognized by some professionals ⁽⁹⁾. More modern wound care methods, such as hydrocolloids and hydrogels, which have some proven efficacy, are familiar to most professionals but remain underutilized. This supports the hypothesis that there is a lack of investment in the treatment of cutaneous wounds ⁽¹⁶⁾. Although there is a good level of knowledge about various therapeutic options, the effective use of some of them is still limited, reflecting challenges related to clinical practice, a lack of

specific training, and issues related to the implementation of therapies. It is essential to promote initiatives that encourage the appropriate use of existing methods, aiming to improve the quality of care provided to patients with wounds ⁽¹²⁾.

Regarding the specific questions, the data obtained allow for comparison with the results of a previous study conducted in Bauru, where, of the 37 questions evaluated, only 13 had less than 50% correct answers. The topics with the lowest performance included the swab technique, Unna's boot, use of topical antibiotics in colonized ulcers, biofilm, and compression therapy. The question with the highest correct answer rate was the one stating that diabetic patients have a higher risk of neuropathic foot wounds, with 96.9%, while the one with the lowest correct answer referred to the treatment of highly exuding wounds, where only 11.2% of participants correctly agreed on the need for systemic antibiotics ⁽⁹⁾.

Regarding the correct answer rate for specific topics, the lowest percentage was observed for venous and arterial ulcers (34.18%), while the highest percentages were recorded for neuropathic ulcers (70.90%). An observational, longitudinal, retrospective study with a randomized sample, conducted with patients treated at the Chronic Wounds Outpatient Clinic of the Plastic Surgery Division of the Hospital das Clínicas of the University of São Paulo School of Medicine (HCFMUSP), from 2011 to 2013, observed a predominance of vascular causes (69.2%) as the underlying

diseases for chronic ulcers, with a higher incidence of ulcers of venous etiology (67.7%) and ulcers resulting from arterial obstruction (1.5%) ⁽¹⁸⁾. In view of the result obtained regarding the low knowledge about venous and arterial ulcers, it is emphasized that the search for and updating of knowledge on this specific topic is a priority.

Neuropathic ulcers and PUs are highly prevalent, and the higher frequency of correct answers on these topics can be attributed to the fact that, historically, these injuries have been addressed with emphasis in nursing practice ^(19,20). According to the evaluation of the results obtained in relation to knowledge, the need to focus efforts on the prevention, management and rehabilitation of patients with skin injuries is highlighted, reflecting the relevance of the specialized knowledge of nursing professionals in wound care and in the implementation of effective strategies to minimize complications.

This panorama suggests deficiencies related to skin lesions, demonstrating that ongoing, continuous, and in-service education is essential for the development and improvement of professionals' skills, in its various forms, a practice that has been little observed as a method of professional development. Therefore, this research does not exhaust the need for more in-depth studies on the topic and can serve as a basis for developing new educational approaches and teaching strategies for wound care.

It should be noted that this study has important limitations, such as the use of a data collection instrument not validated in the



literature, although it was based on previous research and national and international reference documents on the topic. Furthermore, there may be biases regarding access to information from other sources when completing the questionnaire. This study also has a limitation regarding the geographic area and the generalizability of the results. The sample may not represent the diversity found in other regions, limiting the ability to extrapolate the findings to different contexts. Despite these limitations, the study was able to identify deficiencies related to skin lesions.

CONCLUSIONS

This study provided a comprehensive analysis of the knowledge and practice of primary care nursing professionals in Paranhana Valley regarding the management of skin lesions. It was observed that, although professionals possess theoretical knowledge of various therapeutic methods, the practical application of these techniques remains limited, especially in more complex treatments, such as the use of the Unna boot and negative pressure therapy. Silver sulfadiazine and collagenase stood out as the most well-known and widely used resources, reflecting both the availability of materials and established practices in local health services.

The results indicate the need to strengthen permanent and continuing health education strategies to improve wound management and the implementation of evidence-based practices. The predominance of

traditional therapeutic methods may be associated with a lack of training and limited resources in public health services. Therefore, promoting specific training and encouraging knowledge exchange among professionals can significantly improve the quality of care.

The findings of this study suggest the need for public policies that guarantee access to quality materials and promote continuing education for nursing professionals. Incorporating new ICTs into health education can facilitate access to updated content and innovative practices, supporting improved care for skin lesions.

Future research could explore specific interventions to improve the application of advanced wound care methods, as well as evaluate the effectiveness of continuing education programs in clinical practice. Furthermore, comparative studies across different regions could provide insights into the variability in wound care practices and identify factors that contribute to better implementation of recommended therapies.

In summary, the study highlights gaps in knowledge and practice regarding the management of skin lesions in primary care, highlighting the importance of continuing education as an essential tool for improving the skills of nursing professionals. Investment in innovative materials and dressings, ongoing training, and the implementation of evidence-based strategies are essential to improving the quality of care and, consequently, the clinical outcomes of patients with skin lesions.

REFERENCES

1. Hinkle JL, Cheever KH. Brunner & Suddarth - Tratado de Enfermagem Médico-Cirúrgica - 2 Vols [Internet]. 2020. Available from: https://books.google.com/books/about/Brunner_Suddarth_Tratado_de_Enfermagem_M.html?hl=&id=cPv2zwEACAAJ
2. Silva ES da, Castro DS de, Garcia TR, Romero WG, Primo CC. Care technology to people with colostomy: Diagnosis and nursing interventions. REME [Internet]. 2016;20. Available from: <http://www.gnresearch.org/doi/10.5935/1415-2762.20160001>
3. Plataforma Espaço Digital. Plataforma Espaço Digital. [cited 2024 Sep 20]. O cuidado com feridas na atenção primária à saúde: uma revisão da literatura. Available from: <https://editorarealize.com.br/artigo/visualizar/27909>
4. View of Avaliação clínica de úlceras de perna em idosos [Internet]. [cited 2024 Sep 20]. Available from: <http://periodicos.ufc.br/rene/article/view/3916/3110>
5. Torres GV, Mendes FRP, Mendes AFRF, Torres SMSGSO, Viana DMO, Simões MEP. Primary Health Care in Evora, Portugal: knowledge of people with venous ulcers and evaluation of assistance. Rev Enferm UFPE On Line [Internet]. 2011 Mar 26;5(2):360. Available from: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/6683>
6. Mascarenhas NB, Pereira Á, Silva RS, Silva MG. Sistematização da Assistência de Enfermagem ao portador de Diabetes Mellitus e Insuficiência Renal Crônica. Rev Bras Enferm [Internet]. 2011 Feb [cited 2024 Sep 20];64(1):203–8. Available from: <https://www.scielo.br/j/reben/a/8WphgsLD9wgZWh6gwKTFXxB/?lang=pt&format=pdf>
7. Morais GF da C, Oliveira SH dos S, Soares MJGO. Avaliação de feridas pelos enfermeiros de instituições hospitalares da rede pública. Texto contexto - enferm [Internet]. 2008 Mar [cited 2024 Sep 20];17(1):98–105. Available from: <https://www.scielo.br/j/tce/a/vpfJ5vXCGSqxQ5yv6pr8NDt/?lang=pt&format=pdf>
8. Bandeira LA, Santos MC, Duarte ÊRM, Bandeira AG, Riquinho DL, Vieira LB. Social networks of patients with chronic skin lesions: nursing care. Rev Bras Enferm [Internet]. 2018 [cited 2024 Sep 20];71:652–9. Available from: <https://www.scielo.br/j/reben/a/wxM4wmBYq7D4qvPzgJ5dsqp/?lang=en&format=pdf>
9. Hoelz CM. Avaliação do conhecimento de enfermeiros da rede de atenção à saúde no município de Bauru (SP) sobre cuidado aos pacientes com feridas: um estudo transversal [dissertação]. Botucatu (SP): Faculdade de Medicina, Universidade Estadual Paulista “Júlio de Mesquita Filho”; 2015. 132 pág. Disponível em: <https://re.você.br/ser/um/co/b/91d4ea-a1-4c-985f-6f667/c>.
10. Brasil. Resolução n° 580, de 22 de março de 2018. Estabelece especificidades éticas das pesquisas de interesse estratégico para o Sistema Único de Saúde (SUS). Conselho Nacional de Saúde; 2018. Disponível em: <https://cep.ensp.f.br/site/padrão/f/res.pd>.
11. da Rocha Hoelz CM, Saranholi TL, Abbade LPF. Conhecimento e Prática de Enfermeiros sobre Feridas: Um estudo transversal [Internet]. 2017. 100 p. Available from: https://books.google.com/books/about/Conhecimento_e_Pr%C3%A1tica_de_Enfermeiros_s.html?hl=&id=sfEHtAEACAAJ
12. Kobayashi RM, Leite MMJ. Desenvolvendo competências profissionais dos enfermeiros em serviço. Rev Bras Enferm [Internet]. 2010 Apr [cited 2024 Sep 29];63(2):243–9. Available from: <https://www.scielo.br/j/reben/a/4vLfnVsTWDyTxz6Gwd87hhL/?lang=pt&format=pdf>



13. Marinho MR, Silva Neto PK, Mata LRF da, Cunha IP da, Pessalacia JDR. Perfil dos trabalhadores da Atenção Primária à Saúde e proteção de riscos ocupacionais na pandemia da Covid-19 no Brasil. *Trab educ saúde* [Internet]. 2022 Oct 17 [cited 2024 Oct 14];20:e00375195. Available from: <https://www.scielo.br/j/tes/a/LrHJ7CCqm7YStDnt6KLPb4P/?lang=pt&format=pdf>
14. de Azevedo IC, de Souza Costa RK, de Holanda CSM, de Góes Salvetti M, de Vasconcelos Torres G. Conhecimento de Enfermeiros da Estratégia Saúde da Família sobre Avaliação e Tratamento de Feridas Oncológicas. *Rev Bras Cancerol* [Internet]. 2014 Jun 30 [cited 2024 Sep 29];60(2):119–27. Available from: <https://rbc.inca.gov.br/index.php/revista/article/view/476>
15. Palma A, Vilaça MM. Conflitos de interesse na pesquisa, produção e divulgação de medicamentos. *Hist cienc saude-Manguinhos* [Internet]. 2012 Sep [cited 2024 Sep 29];19(3):919–32. Available from: <https://www.scielo.br/j/hcsm/a/jwzXsS4NXLtYNqVDrBdfq6f/?lang=pt&format=pdf>
16. de Souza JM, Vieira ÉC, Cortez TM, Mondelli AL, Miot HA, Abbade LPF. Clinical and microbiologic evaluation of chronic leg ulcers: a cross-sectional study. *Adv Skin Wound Care* [Internet]. 2014 May;27(5):222–7. Available from: <http://dx.doi.org/10.1097/01.ASW.0000445952.83084.a0>
17. Bender JD, Facchini LA, Lapão LMV, Tomasi E, Thumé E. O uso de Tecnologias de Informação e Comunicação em Saúde na Atenção Primária à Saúde no Brasil, de 2014 a 2018. *Ciênc saúde coletiva* [Internet]. 2024 Jan 8 [cited 2024 Oct 14];29(1):e19882022. Available from: <https://www.scielo.br/j/csc/a/RMGFtwjzx55kFM4fNNZtgCy/?lang=pt&format=pdf>
18. Jr A, Isaac C, Nicolosi J, Medeiros M, Paggiaro A, Gemperli R. Analysis of the clinical care of patients with chronic ulcers of the lower limbs. *Rev Bras Cir Plást* [Internet]. 1AD Jan 1 [cited 2024 Oct 23];30(2):258–63. Available from: <http://www.rbc.org.br/details/1629/pt-BR>
19. Ferreira RC. Diabetic Foot. Part 1: Ulcers and Infections. *Rev Bras Ortop (Sao Paulo)* [Internet]. 2020 Aug;55(4):389–96. Available from: <http://dx.doi.org/10.1055/s-0039-3402462>
20. Ferreira RC. Diabetic Foot. Part 2: Charcot Neuroarthropathy. *Rev Bras Ortop (Sao Paulo)* [Internet]. 2020 Aug;55(4):397–403. Available from: <http://dx.doi.org/10.1055/s-0039-3402460>

Funding and Acknowledgments:

This research did not receive funding.

Authorship Criteria (Author Contributions)

The designation of authorship should be based on the deliberations of the ICMJE, which considers an author to be one who: 1. contributes substantially to the conception and/or planning of the study; 2. to the collection, analysis, and/or interpretation of the data; 3. as well as to the writing and/or critical review and final approval of the published version.

Ithiele Carolina Rothmann Knechtel. (1) (2) (3)

Edna Jeremias Martins. (1) (2) (3)

Gabriela Camponogara Rossato. (3)

Declaration of Conflict of Interest

Nothing to declare.

Scientific Editor: Francisco Mayron Morais Soares. Orcid: <https://orcid.org/0000-0001-7316-2519>

