

PROFILE OF SKIN LESIONS IN INDIVIDUALS RECEIVING HEALTHCARE IN THE AMAZON REGION
PERFIL DAS LESÕES DE PELE DE USUÁRIOS ASSISTIDOS NA ATENÇÃO À SAÚDE NA REGIÃO AMAZÔNICA
PERFIL DE LAS LESIONES CUTÁNEAS EN PERSONAS ATENDIDAS EN LA ATENCIÓN DE SALUD EN LA REGIÓN AMAZÓNICA
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ABSTRACT

Objective: To outline the clinical, social, and epidemiological profile of individuals with skin lesions receiving care at health services in the Amazon region. **Method:** A multi-stage study; the initial phase consisted of a cross-sectional, descriptive design conducted in primary and specialized care settings. The preliminary sample comprised 23 adult individuals with skin lesions under monitoring at these services. Data collection took place between November 2025 and January 2026 using a structured instrument covering sociodemographic and clinical variables, as well as lesion characteristics. Data were analyzed using descriptive statistics. The study was approved by a Research Ethics Committee. **Results:** The majority of the study participants were male (56.52%), aged over 50 (78.25%), without a partner (56.52%), and had low levels of education (65.21%) and an income of up to one minimum wage (78.26%). High frequencies of hypertension and diabetes (39.10%), reduced mobility (82.61%), incontinence (56.52%), and overweight status (39.13%) were observed. More than half exhibited fluid intake of less than 2 liters/day (52.17%) and dry skin (47.83%). The lesions were predominantly pressure injuries (43.48%), located in the sacral region and lower extremities (47.83%), with a duration exceeding 90 days (69.57%). Small (43.48%) and superficial (60.87%) lesions predominated. **Conclusion:** The findings reveal a profile of clinical and social vulnerability associated with the occurrence and persistence of skin lesions, supporting the planning of care strategies and future low-cost therapeutic interventions within the health system context.

Keywords: Health Care; Wounds and Injuries; Health Profile; Epidemiology.

RESUMO

Objetivo: delinear o perfil clínico, social e epidemiológico de pessoas com lesões de pele assistidas em serviços de saúde da região Amazônica. **Método:** Estudo de múltiplas etapas, cuja fase inicial consistiu em delineamento transversal e descritivo, realizado em serviços de atenção primária e especializada. A amostra preliminar foi composta por 23 indivíduos adultos com lesões cutâneas em acompanhamento nos serviços. A coleta de dados ocorreu entre novembro de 2025 a janeiro de 2026, por meio de instrumento estruturado contemplando variáveis sociodemográficas, clínicas e características das lesões. Os dados foram analisados por estatística descritiva. O estudo foi aprovado por Comitê de Ética em Pesquisa. **Resultados:** Predominaram indivíduos do sexo masculino (56,52%) e com idade superior a 50 anos (78,25%), sem companheiro(a) (56,52%), com baixa escolaridade (65,21%) e renda de até um salário mínimo (78,26%). Observou-se elevada frequência de hipertensão e diabetes (39,10%), mobilidade reduzida (82,61%), incontinência (56,52%) e sobrepeso (39,13%). Mais da metade apresentou ingestão hídrica inferior a 2 litros/dia (52,17%) e ressecamento cutâneo (47,83%). As lesões foram predominantemente lesões por pressão (43,48%), localizadas na região sacral e em extremidades inferiores (47,83%), com tempo de evolução superior a 90 dias (69,57%). Predominaram lesões de pequeno porte (43,48%) e superficiais (60,87%). **Conclusão:** Os achados evidenciam um perfil de vulnerabilidade clínica e social associado à ocorrência e persistência de lesões de pele, subsidiando o planejamento de estratégias assistenciais e futuras intervenções terapêuticas de baixo custo no contexto do sistema de saúde.

Palavras-chave: Atenção a Saúde; Ferimentos e Lesões; Perfil de Saúde; Epidemiologia.

RESUMEN

Objetivo: Delinear el perfil clínico, social y epidemiológico de personas con lesiones cutáneas atendidas en servicios de salud de la región Amazónica. **Método:** Estudio de múltiples etapas, cuya fase inicial consistió en un diseño transversal y descriptivo, realizado en servicios de atención primaria y especializada. La muestra preliminar estuvo compuesta por 23 individuos adultos con lesiones cutáneas en seguimiento en los servicios. La recolección de datos se llevó a cabo entre noviembre de 2025 y enero de 2026, mediante un instrumento estructurado que incluyó variables sociodemográficas, clínicas y características de las lesiones. Los datos fueron analizados mediante estadística descriptiva. El estudio fue aprobado por un Comité de Ética en Investigación. **Resultados:** Predominaron individuos del sexo masculino (56,52%) y mayores de 50 años (78,25%), sin pareja (56,52%), con bajo nivel educativo (65,21%) y con ingresos de hasta un salario mínimo (78,26%). Se observó una alta frecuencia de hipertensión y diabetes (39,10%), movilidad reducida (82,61%), incontinencia (56,52%) y sobrepeso (39,13%). Más de la mitad presentó ingesta hídrica inferior a 2 litros/día (52,17%) y sequedad cutánea (47,83%). Las lesiones fueron predominantemente lesiones por presión (43,48%), localizadas en la región sacra y en extremidades inferiores (47,83%), con un tiempo de evolución superior a 90 días (69,57%). Predominaron las lesiones de pequeño tamaño (43,48%) y superficiales (60,87%). **Conclusión:** Los hallazgos evidencian un perfil de vulnerabilidad clínica y social asociado a la aparición y persistencia de lesiones cutáneas, lo que respalda la planificación de estrategias asistenciales y futuras intervenciones terapéuticas de bajo costo en el contexto del sistema de salud.

Palabras clave: Atención Sanitaria; Heridas y Lesiones; Perfil de Salud; Epidemiología.

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INTRODUCTION

Skin lesions correspond to the loss of skin integrity, characterized by a disruption in the continuity of the integument. They occur when the layers of the skin are damaged, affecting structures ranging from superficial layers to deeper tissues⁽¹⁾. Their development is believed to result from intrinsic factors, such as the presence of comorbidities, as well as extrinsic factors, including physical, chemical, and/or biological trauma⁽²⁾.

From an epidemiological perspective, the incidence of skin lesions varies considerably and may reach up to 28% among patients at higher health risk⁽³⁾. In developed countries, it is estimated that 1–2% of the population will develop a chronic wound during their lifetime. In the United States alone, chronic wounds affect approximately 6.5 million individuals⁽⁴⁾.

In Asia, a Global Burden of Disease study encompassing more than 50 countries revealed that Asian nations, particularly high-income countries, exhibited a high incidence of inflammatory skin disorders, including acne, alopecia, atopic dermatitis, contact dermatitis, pressure ulcers, psoriasis, pruritus, and seborrheic dermatitis. Infectious skin diseases, however, were more prevalent in low-income Asian countries⁽⁵⁾. In Europe, a population-based study involving more than 44,689 participants from 27 countries found that the most common skin conditions were fungal skin infections (8.9%), acne (5.4%), and atopic dermatitis or eczema (5.5%). Alopecia, acne, eczema, and rosacea were

more common among women, whereas men were more likely to present with psoriasis and sexually transmitted infections⁽⁶⁾.

In Brazil, studies indicate that 23.4% of skin lesions among patients treated within the Brazilian Unified Health System (SUS) are associated with impaired venous return. Furthermore, it is estimated that by 2050, approximately 25% of the older adult population will have chronic skin lesions^(7,8). Another relevant finding from a hospital-based cross-sectional study involving 40 hospitalized patients showed that acute wounds were less frequent, consisting mainly of complicated surgical wounds (2.7%) and skin tears (0.9%). In contrast, chronic wounds were the most prevalent, particularly pressure injuries (40%), venous ulcers (15%), and complex traumatic ulcers (10%)⁽⁹⁾. In the Brazilian Amazon, especially in the Northern region, chronic wounds predominate, particularly pressure injuries and diabetic ulcers, placing a substantial burden on the healthcare system⁽¹⁰⁾.

Regarding healthcare expenditures, a study conducted in Singapore estimated that chronic skin diseases generate annual costs of approximately US\$350 million. Additionally, these conditions accounted for 168,503 acute-care hospital bed-days per year, resulting in hospitalization costs of US\$139 million⁽¹¹⁾. In Brazil, research has shown that expenditures related to skin lesions continue to increase. One study reported total costs of R\$8,465.02 for the treatment of chronic wounds, with a mean cost of approximately R\$384.78 per patient, highlighting that the greatest expenses were associated with the

number of clinical visits and the use of technologies such as laser therapy and advanced wound dressings⁽¹²⁾.

Given this scenario, therapeutic technologies for the management of skin lesions have advanced considerably. For example, a multicenter cohort study involving 1,036 patients evaluated the effectiveness of an antimicrobial dressing containing 1% silver sulfadiazine in the treatment of non-healing chronic wounds. The findings demonstrated complete wound healing in 70% of patients, of whom 56% achieved wound closure within 11 weeks. However, the cost of the product was considered high⁽¹³⁾.

Similarly, a multicenter randomized clinical trial conducted in India evaluated the efficacy of a combination therapy containing trypsin and bromelain in the management of surgical wounds. The results demonstrated that the therapy significantly improved all clinical parameters of wound healing, including erythema, edema, exudate, and tenderness ($p < 0.001$), while reducing pain scores by more than 85% after seven days of treatment⁽¹⁴⁾.

Collectively, these findings demonstrate substantial evidence supporting the effectiveness of several therapeutic approaches for the management of skin lesions. Nevertheless, important challenges remain regarding the cost of these interventions for healthcare systems. Available evidence indicates that many therapeutic devices are expensive, directly affecting the sustainability of healthcare services. Consequently, there is growing interest in

identifying effective alternatives that minimize both economic and healthcare burdens.

In this context, the use of more affordable therapies, such as papain, bromelain, vitamin C, and methylene blue, has emerged as a promising strategy, although important challenges remain and are gradually being addressed as new evidence becomes available. Furthermore, it is essential that, before implementing any intervention, studies establish databases capable of characterizing the demographic, clinical, and epidemiological profiles of patients receiving care, regardless of the geographical setting (municipality, state, or region). Such databases facilitate the generation of robust information on skin conditions, providing an evidence base for planning and strengthening healthcare policies and clinical practice.

Within this context, the primary objective of the present study was to evaluate the effectiveness of ascorbic acid in the treatment of skin lesions. However, based on the premise that understanding patient characteristics is fundamental, the initial objective of the study was to characterize the clinical, social, and epidemiological profile of individuals with skin lesions receiving care in healthcare services across the Brazilian Amazon region.

METHODS

This is a multi-stage study, the final phase of which involves analyzing the effectiveness of using ascorbic acid on skin lesions. The first stage consists of a descriptive, cross-sectional study conducted within primary and specialized

healthcare services in a municipality in southeastern Pará. The decision to focus on these two settings is justified by service demand, as the number of lesion cases in these contexts exceeds that observed in hospital units. The study population was defined in coordination with municipal epidemiological surveillance and home care services to identify the territories and facilities with the highest incidence of skin lesions.

Based on this process, a participant recruitment map was created, covering ten primary healthcare units and one specialized care service. Within primary care, the population estimate was based on lesion-related consultations per micro-area; three priority micro-areas were identified, each recording two consultations for individuals with lesions. For specialized care, the population was estimated based on the mean monthly number of consultations for patients with lesions, amounting to approximately four visits per month.

Thus, the reference population (N) was estimated by combining the mean number of consultations resulting from lesion incidence in the selected micro-areas with the monthly demand at the specialized service over the past year (2025), totaling approximately 120 consultations per year. Sample size determination relied on the calculation for finite populations using OpenEpi, a tool widely employed in epidemiological studies due to its accuracy and free accessibility. Statistical parameters recommended for situations lacking prior estimates of the outcome under study were adopted: a 95% confidence level, a

maximum sampling error of 5%, and an expected proportion (p) of 50%, since this value maximizes variability and ensures greater rigor in the sample size calculation. The sample size was estimated using the formula for finite populations, resulting in a minimum of approximately 92 participants, thereby ensuring adequate statistical representativeness and precision of the results.

Although the estimated minimum sample size was 92 participants, it should be noted that the present stage, corresponding to the initial characterization of the clinical, social, and epidemiological profile, was conducted using a preliminary sample of 23 participants. This sample reflects the initial phase of data collection, comprising eligible individuals receiving monitoring care in the participating health services during the early study period. The study was designed to include multiple stages, with progressive expansion of the sample until the estimated sample size required for the final effectiveness analysis is achieved.

The sample consisted of individuals aged 18 years or older who presented with any type of skin lesion identified and documented during care provided in primary or specialized healthcare services within the established data collection period, in addition to having an active medical record and ongoing monitoring at these services. Participants whose lesions had completely healed at the time of data collection and those presenting exclusively with lesions resulting from recent surgical procedures (acute surgical wounds) unrelated to the epidemiological scope of the study were excluded.

The data presented were collected between November 2025 and January 2026. However, for the present stage, which focused on the preliminary analysis of the clinical, social, and epidemiological profile, only data obtained during the initial phase of collection were considered, corresponding to the first participants recruited, totaling 23 individuals. Data collection is still ongoing, with the sample expected to increase until the estimated sample size is reached.

Data were collected using a structured instrument specifically developed for this study, based on technical documents issued by the Brazilian Ministry of Health and national and international scientific references related to the clinical assessment of patients with skin lesions and associated risk factors, including guidelines for the prevention and treatment of pressure injuries and the management of chronic wounds^(15–18). The instrument was jointly developed by two PhD researchers, each with more than three years of experience in the field, through a systematic process involving item discussion, assessment of clinical relevance, and successive revisions until consensus was reached regarding its structure and content, thereby ensuring theoretical consistency and applicability in clinical practice.

It should be emphasized that the instrument has not yet undergone formal methodological validation procedures, such as content validation, face validity assessment, reliability testing, internal consistency analysis, or reproducibility evaluation. Therefore, its use should be considered preliminary, and this stage

of the study also provides important evidence to support future instrument validation studies.

The instrument was organized into two main domains. The first included sociodemographic and clinical variables as well as risk factors, including age, sex, marital status, number of living children, race/ethnicity, years of schooling, educational level, individual income, presence of comorbidities, reduced mobility, use of medical devices (such as feeding tubes, catheters, and orthotic devices), urinary and/or fecal incontinence, nutritional status, smoking status, and hydration conditions, including the estimated daily water intake (mL), calculated based on body weight multiplied by 35 mL/kg.

The second domain focused on the clinical characterization of skin lesions, including the identification of lesion presence, predominant lesion type, anatomical location, duration, lesion area (cm²), depth, predominant tissue type in the wound bed, and overall skin condition. Lesion area was measured in square centimeters by determining the greatest length and the greatest perpendicular width using a millimeter ruler, with the area calculated as length × width. Lesion depth was assessed by gently inserting a sterile probe into the deepest portion of the wound and recording the measurement in centimeters. For classification purposes, lesion depth was categorized as superficial (involving only the epidermis), partial-thickness (involving the epidermis and part of the dermis), or deep (extending into deeper tissue layers, potentially involving subcutaneous tissue or adjacent structures)⁽¹⁹⁾.

Before data collection, the instrument underwent a pilot test involving 10 participants to assess the clarity, comprehensibility, and applicability of its items in the clinical setting, as well as to identify any necessary modifications, thereby contributing to instrument refinement and reducing operational inconsistencies. However, no structural modifications were required following the pilot test⁽²⁰⁾. Each assessment lasted approximately 20 minutes, during which participants were welcomed, underwent a physical examination, had their information systematically recorded, and received clarification regarding any questions.

The data were entered into an electronic database using Microsoft Excel and analyzed using descriptive statistics. Qualitative variables were presented as absolute and relative frequencies, whereas quantitative variables were summarized using measures of central tendency and dispersion. For descriptive purposes, variables with a relative frequency of 50% or higher were considered the most relevant.

This stage of the study was conducted in accordance with the recommendations of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement, ensuring methodological rigor, transparency, and high-quality reporting of the study methods and findings. Furthermore, the study was approved by the Research Ethics Committee under CAAE number 85091824.0.0000.0018, and all participants provided written informed consent in accordance with Brazilian National Health Council Resolution 466/2012.

RESULTS

The study's preliminary sample consisted of 23 patients receiving care from primary or specialized health services. Table 1 presents the sociodemographic characteristics.

Table 1 – Sociodemographic characteristics of patients treated at the aforementioned health services. Brazil, 2026 (n = 23)

Variable	Category	n	%
Sex	Male	13	56.52
	Female	10	43.48
Age group	≤ 30 years	02	8.70
	31–40 years	01	4.35
	41–50 years	02	8.70
	> 50 years	18	78.25
Marital status	With partner	13	56.52
	Without partner	10	43.48
Children	0 to 2 children	10	43.48
	3 to 5 children	05	21.74
	6 or more children	08	34.78
Color/Race	White	13	56.52

Education	Brown	07	30.44
	Black	03	13.04
	Completed elementary education	02	8.70
	Incomplete elementary education	15	65.21
	Completed high school	04	17.39
	Incomplete high school	01	4.35
	Completed higher school	01	4.35
	≤ 1 minimum wage	18	78.26
Individual income	1–2 minimum wage	03	13.04
	> 2 minimum wage	01	4.35
	Without income	01	4.35

Source: Research data, 2026.

Data from Table 1 reveal a predominance of males (56.52%) aged over 50 (78.25%). Regarding marital status, the majority of respondents reported not having a partner (56.52%). As for the number of children, having up to two children was the most common finding (43.48%). Regarding ethnic-racial identity, 56.52% self-identified as white, followed by mixed-race/brown (30.44%) and Black (13.04%). The sample exhibited a low level of education, with incomplete elementary education being the predominant status (65.21%).

Regarding the economic profile, a scenario of low income and reliance on social benefits is evident. The majority of participants (78.26%) had an income of up to one minimum wage, while only 4.35% reported an income exceeding two minimum wages.

Furthermore, it is essential to analyze clinical conditions and habits, as these factors are directly related to individual vulnerability and the risk of health complications, as shown in Table 2.

Table 2 - Distribution of clinical conditions and health habits of the sample, according to comorbidity profile, functional and clinical conditions, and health and self-care habits. Brazil, 2026 (n= 23)

Variable	Category	n	%
Domain: Profile of Comorbidities			
Presence of comorbidities	Hypertension + Diabetes	09	39.10
	Hypertension + Diabetes + Obesity	02	8.70
	Isolated diabetes	01	4.35
	Hypertension + Peripheral vascular disease + heart disease	01	4.35
	Alzheimer + Parkinson	01	4.35
	Hypertension + Diabetes + Parkinson	01	4.35
	Hypertension + Diabetes + chronic kidney disease + heart	01	4.35

	disease		
	Isolated heart disease	01	4.35
	Malnutrition + Lung cancer	01	4.35
	Chronic venous insufficiency + Dementia	01	4.35
	Hypertension + hemorrhagic stroke	01	4.35
	No comorbidities	03	13.05
Domain: Functional and Clinical conditions			
	No	04	17.39
Reduced mobility	Partial	09	39.13
	Full	10	43.48
	No	17	73.91
Use of medical devices	Yes	06	26.09
	No	10	43.48
Urinary/fecal incontinence	Yes	13	56.52
	Malnutrition	08	34.78
Nutritional status	Eutrophic	06	26.09
	Overweight	09	39.13
Domain: Habits and Self-care			
Smoking	No	23	100
	Yes	00	0.00
Daily hydration	<2L/day	12	52.18
	2L/day	08	34.78
	>2L/day	03	13.04
	1300–1900 ml	04	17.39
Estimated water intake	2000–2900 ml	08	34.78
	≥3000 ml	05	21.74
	The person did not provide the information.	06	26.09
Skin conditions	Intact skin / no significant changes	05	21.74
	Mild changes (dryness)	11	47.83
	Associated/multiple changes	07	30.43

Source: Research data, 2026.

Data from Table 2 reveal that hypertension and diabetes constitute the most frequent condition, affecting 39.10% of participants, and that 82.61% have some degree of reduced mobility, with total immobility affecting 43.48% of the sample. Despite this high rate of physical

restriction, only 26.09% use medical devices (feeding tubes, catheters, or orthoses), suggesting that most care focuses on the direct management of dependency.

Urinary or fecal incontinence is present in 56.52% of the sample. Regarding nutritional

status, a polarization is observed: while 39.13% are overweight, a significant 34.78% are malnourished. Water intake is inadequate; more than half the sample (52.17%) consumes less than 2 liters of water per day—a critical factor considering that the calculated ideal fluid intake for the majority, based on body weight, suggests volumes exceeding 2,500 ml.

Skin conditions show clear signs of vulnerability. Mild alterations, such as dryness, are present in 47.83% of the sample and are associated with skin lesions. Table 3 presents the main characteristics of the skin lesions, covering aspects related to lesion type, anatomical location, duration, and clinical assessment parameters.

Table 3 - Characterization of participants' skin lesions according to lesion type, anatomical location, duration, and clinical aspects. Brazil, 2026 (n=23).

Variable	Category	n	%
Predominant type of lesion	Pressure injury	10	43.48
	Chronic injuries	07	30.43
	Other injuries	06	26.09
Anatomical location	Sacral region and trunk	11	47.83
	Lower limbs	11	47.83
	Other locations	01	4.35
Duration of the condition	> 90 days	16	69.57
	30–90 days	06	26.08
	The person did not provide the information.	01	4.35
Lesion area (cm ²)	Small (≤ 5 cm ²)	10	43.48
	Medium (6–15 cm ²)	09	39.13
	Large (> 15 cm ²)	04	17.39
Wound depth	Superficial	14	60.87
	Partial	08	34.78
	Deep	01	4.35

Source: Research data, 2026.

Data regarding skin lesion characteristics reveal a scenario of marked chronicity and high clinical complexity within the studied group. The predominant etiology is pressure injury, affecting 43.48% of the sample. Regarding anatomical location, the sacral region and the lower extremities, specifically the dorsum of the foot and the phalanges, account for 47.83% of cases.

In terms of duration, the vast majority of wounds (approximately 70%) have persisted for more than 90 days. Regarding physical

dimensions, significant variation in lesion area is observed; while the highest concentration consists of small wounds (43.48%), there are cases reaching up to 30 cm². As for depth, the majority of lesions are classified as superficial, comprising 60.87% of the sample.

DISCUSSION

The predominance of male participants and individuals older than 50 years observed in this study indicates an aging profile associated

with an increased occurrence of chronic skin lesions, as widely described in the literature^(21–23). Advancing age is accompanied by structural and functional changes in the skin, including reduced elasticity, decreased vascularization, and impaired cellular regeneration, all of which contribute to the development and persistence of skin lesions⁽²⁴⁾. Similar findings were reported in a cross-sectional study conducted in Finland involving 552 individuals aged 70 years or older, which demonstrated a high prevalence of skin diseases and reinforced aging as an important factor associated with the occurrence of these conditions⁽²⁵⁾. Furthermore, the higher proportion of men may be related to behavioral and social factors, such as lower healthcare utilization and poorer adherence to self-care practices⁽²⁶⁾.

The high prevalence of individuals without a partner, with up to two children, low educational attainment, and low income reflects a context of social vulnerability. These factors are associated with poorer health conditions and greater barriers to healthcare access, compromising self-care and adherence to treatment. An epidemiological study conducted in Europe found that low levels of education and income contribute to both the occurrence and worsening of skin lesions, as these conditions limit access to health information and continuity of healthcare services⁽²⁷⁾. In Brazil, a study conducted in the primary healthcare setting showed that social determinants, such as low income and limited education, are associated with delayed access to healthcare services, thereby contributing to the persistence and progression of skin lesions⁽²⁸⁾.

Regarding the clinical profile, chronic conditions predominated, particularly the coexistence of arterial hypertension and diabetes mellitus. These conditions are associated with impaired tissue perfusion and altered inflammatory responses, compromising the wound-healing process and favoring lesion persistence^(29,30). In individuals with diabetes mellitus, chronic hyperglycemia is associated with microvascular dysfunction, reduced peripheral blood flow, and impaired inflammatory cell function, which weaken the immune response and delay tissue repair⁽³⁰⁾. Likewise, arterial hypertension contributes to microcirculatory dysfunction and impaired oxygen delivery to tissues, reducing local oxygenation and the supply of nutrients essential for wound healing⁽²⁹⁾. Together, these conditions create an unfavorable environment for adequate skin repair, resulting in lesion progression.

The high frequency of reduced mobility observed in this study, particularly complete immobility, represents an important factor associated with impaired skin integrity. Continuous exposure of tissues to mechanical loading without adequate pressure relief triggers cellular deformation, microvascular impairment, and progressive tissue damage, even before visible clinical manifestations of lesions become apparent⁽³¹⁾. This mechanism explains the findings of the present study, in which pressure injuries were highly prevalent, particularly in areas exposed to greater pressure and limited mobility, such as the sacral region. These findings are consistent with the model described in the

literature, in which impaired mobility is recognized as one of the primary factors contributing to the development of skin lesions, acting synergistically with other clinical conditions and care-related factors⁽³²⁾.

Urinary and/or fecal incontinence, present in more than half of the participants, is another important factor contributing to skin integrity deterioration. Continuous skin exposure to moisture, combined with irritant substances, alters skin pH and compromises the barrier function, promoting maceration and increasing susceptibility to skin damage⁽³³⁾. This effect is exacerbated when associated with reduced mobility. A multicenter study involving more than 5,000 adult patients in acute care settings demonstrated a high frequency of coexistence between incontinence-associated dermatitis and pressure injuries, particularly in the sacral region and heels, indicating that moisture and skin irritants reduce skin resistance and increase vulnerability to mechanical injury⁽³⁴⁾.

Regarding nutritional status, the prevalence of overweight observed in this study represents another relevant factor associated with impaired skin integrity. Obesity promotes chronic inflammation, reduces vascularization, and causes tissue hypoxia, thereby impairing fibroblast function, collagen synthesis, and the different phases of wound healing, ultimately delaying tissue repair and compromising scar quality⁽³⁵⁾. This process contributes to cutaneous microcirculatory dysfunction, increased transepidermal water loss, alterations in collagen synthesis, and elevated oxidative stress, resulting

in impaired skin integrity and delayed wound healing⁽³⁶⁾.

In addition, low water intake was observed and was associated with a high frequency of dry skin. An experimental study conducted in Europe involving 49 participants demonstrated that increased water intake was significantly associated with improved hydration of the stratum corneum and enhanced biomechanical properties of the skin, particularly among individuals with previously low water consumption, highlighting that systemic hydration directly influences skin function and resilience⁽³⁷⁾. Furthermore, inadequate hydration directly impairs the wound-healing process because a dehydrated environment hinders cell migration, enzymatic activity, and tissue regeneration, compromising the different phases of tissue repair. Therefore, adequate hydration is considered essential for maintaining a favorable microenvironment for wound healing⁽³⁸⁾.

Another relevant finding was the presence of dry skin in a substantial proportion of the participants. From a physiological perspective, this alteration results primarily from disruption of intercellular lipids, particularly ceramides, cholesterol, and fatty acids, which are responsible for maintaining the integrity of the skin barrier. This disruption leads to increased transepidermal water loss (TEWL) and reduced skin hydration⁽³⁹⁾. Tissue dehydration compromises the function of the stratum corneum by altering cellular cohesion and reducing the efficiency of keratinocyte migration, a critical stage in wound re-epithelialization⁽⁴⁰⁾. Moreover, reduced local

hydration may impair fibroblast activity and extracellular matrix synthesis, directly affecting granulation tissue formation and the tissue repair process^(38,40).

Taken together, the findings of the present study provide important evidence to support the planning and organization of healthcare for individuals with skin lesions, particularly within primary and specialized healthcare services in the Amazon region. Characterizing the clinical, social, and epidemiological profile of affected individuals makes it possible to identify the most vulnerable groups and the factors associated with lesion persistence and progression, thereby supporting the development of more effective, targeted, and context-specific care strategies.

In this regard, the data presented can guide health managers and professionals in developing care protocols, health education initiatives, and public policies aimed at the prevention, management, and monitoring of skin lesions, with an emphasis on low-cost, highly accessible approaches. Furthermore, by highlighting the importance of clinical and behavioral factors in the healing process, the study reinforces the need for integrated interventions that address not only lesion treatment but also the individuals' systemic and social conditions.

Finally, the findings from this initial phase provide a fundamental basis for the development of subsequent research stages, particularly regarding the analysis of ascorbic acid's effectiveness as a therapeutic alternative, thereby contributing to the advancement of evidence-

based practices with potential application within the Unified Health System.

CONCLUSIONS

The preliminary sample allowed for the identification of potential sociodemographic determinants and the clinical characterization of skin lesions, revealing a predominance of males over 50 years of age who were single (without a partner), had up to two children, self-identified as white, had low levels of education (incomplete primary education), and earned up to one minimum wage. Regarding the clinical profile, arterial hypertension and diabetes mellitus stood out, associated with reduced mobility, urinary and/or fecal incontinence, overweight status, and water intake of less than two liters per day, alongside mild skin changes such as dryness. The skin lesions were predominantly pressure injuries located mainly in the sacral region and on the lower extremities; they had persisted for over 90 days and were mostly small in size—though some reached up to 30 cm² and generally superficial.

Limitations include the preliminary nature of the sample, which comprised a small number of participants, potentially restricting the generalizability of the findings, as well as the cross-sectional design, which precludes the establishment of causal relationships. Additionally, the use of a tool that has not yet been methodologically validated may influence the precision of certain analyzed variables. On the other hand, the study offers significant potential by addressing a relevant topic that remains under-

explored in the Amazonian context and by establishing a novel database that enables an integrated understanding of the clinical, social, and epidemiological aspects of skin lesions. Constructing this profile is a fundamental stage toward supporting more targeted, evidence-based interventions.

Regarding the impact on health services, the findings provide a basis for planning more effective care strategies, particularly in primary care and specialized services, thereby enabling the identification of priority groups and modifiable risk factors.

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Conflict of interest statement

None to declare.

Authorship criteria (author contributions)

Vinicius Lino de Souza Neto: 1. Substantial contribution to the conception and/or planning of the study; 2. acquisition, analysis, and/or interpretation of data; 3. drafting and/or critical revision and final approval of the published version.

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