PRESSURE ULCER PREVALENCE: CROSS SECTIONAL STUDY IN A HOSPITAL OF THE AZORES

Prevalência de úlceras por pressão: estudo transversal num hospital dos Açores

Prevalencia de úlceras por presión: estudio tranversal en un hospital de las Azores

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ABSTRACT

Background: pressure ulcers are complex, multifactorial and often debilitating injuries. They entail economic and social costs, having a direct impact on quality of life. Given the progressive aging of the population and the consequent increase in chronic diseases, an increase in the prevalence of wounds, particularly pressure ulcers, has been observed. **Objectives:** to determine the prevalence rate of pressure ulcers in a hospital in the Azores; to characterize the sample from a sociodemographic point of view, associated pathologies, risk assessment of pressure ulcer development and preventive measures applied. **Methodology:** quantitative, cross-sectional and correlated study. The SPSS software (version 30) was used for the statistical processing of the data. **Results:** the sample consisted of 115 patients. The results indicated a prevalence rate of 12.77%, with the majority of the ulcers (57,14%) being acquired in a hospital environment. Risk assessment revealed that 26.96% of participants were at high risk of developing pressure ulcers. **Conclusion:** the prevalence rate is similar to that described in studies of the same nature. The importance of prevention, continuous training, and proper allocation of resources stands out as fundamental elements in managing these injuries.

Keywords: pressure ulcer; prevalence; risk assessment

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RESUMO

Enquadramento: as úlceras por pressão são lesões complexas e debilitantes. Acarretam custos económicos e sociais, com impacto na qualidade de vida. Com o envelhecimento da população e aumento de doenças crónicas, tem-se observado um aumento da prevalência de feridas, nomeadamente de úlceras por pressão. **Objetivos:** determinar a taxa de prevalência de úlceras por pressão num hospital dos Açores; caracterizar a amostra do ponto de vista sociodemográfico, patologias associadas, risco de desenvolvimento de úlceras por pressão e aplicação de medidas preventivas. **Metodologia:** estudo quantitativo, transversal e correlacionado. Para o tratamento estatístico dos dados utilizou-se o software SPSS (versão 30). **Resultados:** foram incluídos 115 utentes. Os resultados indicaram uma taxa de prevalência de 12,77%, com a maioria das úlceras (57,14%) adquiridas em ambiente hospitalar. A avaliação do risco revelou que 26,96% dos participantes apresentavam alto risco de desenvolver úlceras por pressão. **Conclusão:** a taxa de prevalência é semelhante à descrita em estudos da mesma natureza. Destaca-se a relevância da prevenção, formação contínua e alocação adequada de recursos como elementos fundamentais na gestão destas lesões.

Palavras-chave: úlcera por pressão; prevalência; avaliação de risco

RESUMEN

Marco contextual: las úlceras por presión son lesiones complejas y debilitantes. Conllevan costos económicos y sociales tiendo impacto directo en la calidad de vida. Dado el envejecimiento de la población y el aumento de las enfermedades crónicas, se ha observado un aumento de la prevalencia de heridas, en particular de las úlceras por presión. **Objetivos:** determinar la prevalencia de úlceras por presión en un hospital de las Azores; caracterizar la muestra sociodemográficamente, patologías associadas, evaluación de riesgo y aplicación de medidas preventivas. **Metodología:** estudio cuantitativo, transversal y correlacionado. Para el procesamiento estadístico de los datos se utilizó el software SPSS (versión 30). **Resultados:** se evaluaron 115 usuarios hospitalizados. Los resultados indicaron una prevalencia de 12,77%, siendo la mayoría de las úlceras (57,14%) adquiridas en el ambiente de hospital. La valoración de riesgo reveló que 26,96% de los participantes tenían un alto riesgo de desarrollar úlcera por presión. **Conclusión:** la tasa de prevalencia es similar a la descrita en estudios de la misma naturaleza. Se destaca la relevancia de la prevención, la formación continua y la asignación adecuada de recursos como elementos fundamentales en la gestión de estas lesiones.

Palabras clave: úlcera por presión; prevalência; medición de riesgo

INTRODUCTION

The success of any quality improvement project begins with recognising the problems, defining and addressing each issue in detail, and setting goals. In the case of pressure ulcers (PU), the answer is quite simple. Reduce the number of ulcers and improve quality of life. However, the process that produces a "means to an end" is quite complex. It requires continuous effort on the part of the interdisciplinary healthcare team and leaders to ensure success. Although this issue has been gaining visibility and is included in the goals of the portuguese National Plan for Patient Safety 2021-2026, the lack of strategy and planning leads to fragmented data production. In most cases, studies conducted in Portugal are limited to regions or institutions, which makes it difficult to compare and generalise results (Lopes et al., 2020). Only by understanding the scale of the issue can person-centred care plans based on scientific evidence be implemented.

In this article, we describe the first stage of an improvement project, which consisted of diagnosing the problem. An epidemiological study was conducted to answer the research question: "What is the prevalence of PU in hospitalised patients and how does it relate to risk factors and preventive measures adopted?". The prevalence rate is a measure widely used as a tool for monitoring the quality of care and developing strategies to reduce the occurrence of these injuries. This was the starting point for our study, applying a tested and validated data collection tool.

The following objectives were defined: a) to determine the prevalence rate of PU in a hospital in the Autonomous Region of the Azores; b) to characterise the sample from a sociodemographic point of view; associated pathologies; assessment of the risk of developing PU; application of preventive measures.

BACKGROUND

A PU is defined as a localised injury to the skin and/or underlying tissues, usually over a bony prominence, as a result of pressure or a combination of pressure and shear forces (European Pressure Ulcer Advisory Panel [EPUAP] et al., 2019). These are complex, multifactorial, often debilitating injuries that occur mainly in elderly individuals with physical and cognitive limitations.

There is currently a vast body of knowledge and scientific advances in the field of tissue viability and the pathophysiological study of PU. International guidelines, in a joint effort between different associations, bring together the best available scientific evidence and define the clinical relevance for each recommendation (EPUAP et al., 2019). Although on a downward trend, the disparities between the strength of evidence and the strength of opinion (content validity) continue to challenge research and training.

The prevention of UPP is a concept that is gaining ground and becomes even more relevant when we consider that, over the last 50 years, in all countries of the Organisation for Economic Co-operation and Development (OECD), the demographic profile of the European population indicates a trend towards progressive ageing, leading to an increase in the prevalence of chronic diseases (OECD, 2016; OECD & European Observatory on Health Systems and Policies, 2017; OECD, 2019, 2021) in the form of multimorbidity. It is estimated that around 50 million citizens of the European Union suffer from two or more chronic diseases (European Commission, 2016).

Multimorbidity associated with ageing has contributed to an increase in the prevalence of wounds, particularly pressure ulcers (Jacq et al., 2021; Poldrugovac et al., 2021) in all care settings. The impact of these on quality of life (Gorecki et al., 2012), and the scale of the associated economic and social repercussions now constitute a serious public health problem due to their magnitude (Goodall et al., 2020; McEvoy et al., 2021; Triantafyllou et al., 2021).

Healthcare professionals, particularly nurses, play a key role in performing effective interventions to prevent PU, such as skin inspection, risk assessment, skin hygiene and care, head of bed elevation control, early positioning and mobilisation, nutritional management and hydration, use of pressure relief surfaces, incontinence and moisture management (Lin et al., 2020, citado por Alves, 2024, p.8). The implementation of consistent, evidence-based practices is essential and should be encouraged and monitored by institutions for the purpose of continuous improvement in care.

METHODOLOGY

In order to meet the defined objectives and address the issue under analysis, a quantitative, cross-sectional and correlated study was conducted, with census sampling and data collection taking place in a hospital setting in May 2023.

The study protocol was reviewed and approved by the institution's Ethics Committee (Opinion No. 6/2023 of 05-04-2023). Free and informed consent was requested from the participant or legal representative.

The data collection instrument used was developed by EPUAP (Defloor et al., 2005). Its construction was assigned to a panel of experts from different European countries, formed by researchers with experience in the subject under analysis, who identified the items relevant to the intended objectives, ensuring the relevance and appropriateness of the questions. These experts participated in a content validation process, evaluating each item for clarity, relevance and methodological adequacy (Vanderwee et al., 2007). The final selection of questions was the result of consensus among the panel members, ensuring that the instrument reflects the most relevant theoretical and practical constructs. In the present study, the version adapted by ELCOS – Wound Society was used which comprises the following parameters: sociodemographic assessment; PU risk assessment by the Braden Scale; incontinence; identification and location of the most severe lesion; preventive measures implemented and place of acquisition of the PU.

Pairs of assessors were formed (one nurse from each ward and one member of the research team), who received training on the data collection instrument in order to standardise data collection. The questionnaire was applied to all hospitalised patients who met the inclusion criteria (aged over 18; hospitalisation for more than 24 hours and signed informed consent). Individuals under the age of 18, with a hospitalisation time of under 24 hours or who did not have signed consent were excluded. Direct skin observation of the study participants was performed by the two evaluators simultaneously.

Data were statistically analysed using SPSS software (version 30). The statistical measures used included absolute and relative frequencies and measures of central tendency and dispersion. For statistical inference, the non-parametric Mann Whitney U test and Spearman's correlations were used.

RESULTS

The study included 130 people who had been hospitalised for at least 24 hours in the medical, surgical, and obstetrics/gynaecology wards. After applying the inclusion and exclusion criteria, a sample of 115 participants was obtained, of whom 14 had PU, with a margin of error of 5% for a 95% confidence interval.

With regard to the sociodemographic characteristics of the sample, Table 1 shows that 73 (63,48%) of the evaluated patients were admitted to medical wards, 35 (30,43%) to surgical wards, and 7 (6,09%) to obstetrics/gynaecology. The majority (53,04%) were male, and the average age was 65,43 years (+-18,64 years), with the youngest patient being 18 years old and the oldest 96 years old. Most patients were married (56,52%), followed by widows/widowers (24,35%). The nuclear family was dominant (67,83%), followed by the extended family (16,52%).

Table 1

Sociodemographic characteristics of the sample

Place of registration	**n.**	**%**
Medical ward	73	63,48
Surgical ward	35	30,43
Obstetrics/Gynaecology	7	6,09
Total	115	100,00
Gender	**n.**	**%**
Male	61	53,04
Female	54	46,96
Total	115	100,00
Marital Status	**n.**	**%**
Married	65	56,52
Single	15	13,04
Widowed	28	24,35
Divorced/Separated	7	6,09
Total	115	100,00
Family Type	**n.**	**%**
Nuclear	78	67,83
Extended	13	11,30
Single parent	4	3,48
Single	19	16,52
Other	1	0,87
Total	115	100,00

With regard to educational qualifications (Table 2), the majority of patients (57,39%) had less than 1st Cycle Basic Education (<4 years of schooling), followed by 2nd Cycle Basic Education (6 years of schooling) and 3rd Cycle Basic Education (9 years of schooling) with approximately 23,48% of the sample.

Table 2

Educational qualifications

Educational qualifications	n.	%
Less than 1st Cycle Basic Education	66	57,39
2nd Cycle Basic Education	17	14,78
3rd Cycle Basic Education	10	8,70
Highschool	7	6,09
Polytechnic/University	15	13,04
Total	115	100,00

Concerning associated pathologies, it was observed that a large part of the sample consisted of polypathological patients. The most frequent comorbidities were cardiac pathology, present in 63,48% of the studied sample, endocrinological pathology in 44,35% and renal pathology in 27,83%.

Although about half of the sample (51,30%) was free of adverse circumstances that could lead to the development of PU, 16,53% of cases presented malnutrition and 32,17% presented immobility.

Regarding the risk of developing PU assessed by the Braden Scale, it was observed that 26,96% presented a high risk of developing PU (Figure 1) according to the risk stratification wich appears in the Orientação 017/2011 da Direção-Geral de Saúde (DGS, 2011).

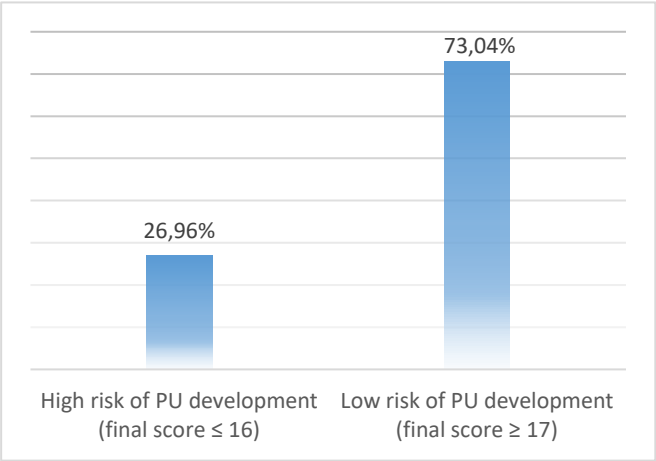

Figure 1

Risk of PU stratified by the Braden Scale

Regarding the use of prevention equipment, it was observed that 38 (33,04%) of the patients used prevention equipment in bed and 1 (0,87%) patient used prevention equipment in a chair. Repositioning in bed every three hours was applied to 15 (13,04%) and 10 (8,70%) users were repositioned in the chair every 3 hours (Table 3).

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Table 3

Preventive measures

Preventive equipment in bed	**n.**	**%**
No specific equipment	77	66,96
Non-electrical device	25	21,74
Electrical device	13	11,30
Total	115	100,00
Preventive equipment in the chair	**n.**	**%**
No specific equipment	114	99,13
Non-electrical device	1	0,87
Total	115	100,00
Repositioning in bed	**n.**	**%**
None planned / Irregular	98	85,22
Every 2 hours	1	0,87
Every 3 hours	15	13,04
Every 4 hours	1	0,87
Total	115	100,00
Repositioning in the chair	**n.**	**%**
None planned / Irregular	104	90,43
Every 2 hours	1	0,87
Every 3 hours	10	8,70
Total	115	100,00

Analysing the relationship between the risk of pressure ulcers (Braden Scale) and preventive measures, it was observed that the higher the risk, the more preventive measures were adopted (Spearman correlations). The only exception observed was in the correlation between the risk of pressure ulcers (Braden Scale) and the use of preventive equipment on the chair. Although negative correlations were identified, they were very weak and statistically insignificant. Negative and statistically significant correlations ($p<0,05$) indicate that the higher the risk (Braden Scale), the more preventive measures are taken.

At least one pressure ulcer was identified in 14 (12,13%) of the patients. Most of these lesions were hospital acquired, in the ward where the patient was admitted (21,43%) or in another ward (35,71%). When it comes to depth, 9 cases (7,83%) corresponded to "Deep ulcer/Necrosis" (Table 4).

Table 4

Prevalence, place of acquisition, skin observation

Pressure ulcers	**n.**	**%**
No pressure ulcers	101	88,70
With pressure ulcers	14	11,30
Total	**115**	**100,00**
Place of acquisition	**n.**	**%**
Home	6	42,86

Ward where patient is admitted	5	35,71
Other hospital ward	3	21,43
Total	**14**	**100,00**
Skin observation	**n.**	**%**
Deep ulcer/Necrosis (Grade IV)	9	7,83
Blister/Abrasion (Grade II)	4	3,48
Non-blanchable erythema (Grade I)	1	0,87
No findings	101	87,83
Total	**115**	**100,00**

Regarding location, Figure 2 shows that the foot and heel (in 21,43% and 14,29% of cases) and the sacrum (28,57%) are the predominant areas for the development of these injuries. The lower limb (leg) was the location found in 14,29% of ulcers, followed by the buttock, hand and ear in 7,14% of cases, respectively.

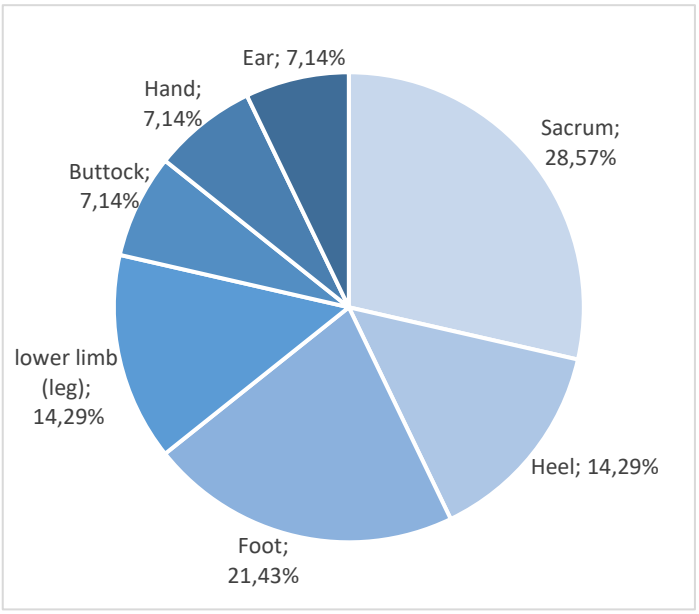

Figure 2

Pressure ulcer location

In the relationship between the risk of PU (Braden Scale) and the presence of PU it was observed that fewer occurrences of PU were associated with lower risk of PU (higher scores on the Braden Scale), with statistically significant differences (U=120.000; p<0.001).

DISCUSSION

Pressure ulcers are considered a public health problem and an indicator of the quality of healthcare provided (Direção-Geral da Saúde, 2011). Their presence continues to be a significant challenge for clinical practice. For this reason, regular assessment of

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prevalence is a recommended measure that can reflect the quality of care at a given point in time.

The primary goal of this study was to determine the prevalence rate of PU and characterise adult hospitalised patients. Our aim was to use the results to implement new preventive measures, make the most of resources and improve the interventions already in place.

Nine acute care services were included, and the results point to a prevalence rate of 12,77%. Although slightly higher, this value is similar to the average prevalence rate obtained in other studies. Moore et al. (2019) point to an average prevalence of 10.8% in a systematic review of studies undertaken in Europe, while Oliveira et al. (2024) report a rate of 10,71%. However, prevalence studies may produce different results depending on the data collection tool used, the care setting, the characteristics of the sample, the rigour of skin observation, among other factors, making generalisation or comparison not always possible.

The training provided to those who collected the data contributed to greater uniformity in skin assessment and in the use of the data collection instrument.

More than half of the sample evaluated consisted of elderly people, about 90 individuals. Altough advanced age is one of the risk factors for the development of PU, the youngest individual with PU in this study was 59 years old.

There was a predominance of male gender, contrary to the trend in studies where the majority are female, due to the higher survival rate of women (Conceição, 2014; Santamaria et al., 2009).

The data collected showed that most PU were acquired in a hospital setting, reinforcing our concern about this issue. The Braden scale assessment revealed that 26,96% of the sample was at high risk of developing PU. This study also sought to ascertain the adequacy of available resources and found that more than half of the sample did not have any specific preventive equipment in bed. However, there was a correlation between the risk obtained on the Braden scale and the use of preventive devices, with higher risk (Braden scale) corresponding to more preventive measures being implemented. In the chair, however, this value is residual, and it was noted that there is a greater lack of equipment for people who remain seated for long periods of time. It should also be noted that a significant percentage of the sample did not have a repositioning plan or had irregular positioning. This is disturbing data, as the guidelines of the EPUAP et al. (2019) recommend alternating positions to prevent PU, given that pressure is an underlying factor in these injuries.

The most frequent location of PU was the sacrum, followed by the foot, heel and leg. This distribution is in line with the trend identified in another study carried out in the Azores region (Carvalhal et al., 2008). None of the users evaluated in this study had more than one PU. However, 7,83% of individuals had grade IV PU, indicating that the problem is far from being resolved and should remain a priority in the context of acute care.

These data provide the institution with important information. They are not limited to determining the prevalence rate. Essentially, it is a matter of understanding the profile of the population that develops these injuries, planning care, managing resources, and also understanding where there is room for improvement.

CONCLUSION

The main objective of this study was to determine the prevalence rate of PU, since no recent studies had been conducted at the institution. We intended to emphasise the importance of preventing and monitoring these injuries in hospitalised patients. The implementation of preventive measures is essential and can significantly improve the quality of care, reduce costs, and improve the quality of life for both patients and caregivers.

Although the prevalence rate is similar to that described in the literature, the demand for better prevention and management of PU remains a concern. These wounds require complex interventions and assessing the degree of risk can lead to a more conscientious use of devices and resources.

Following this diagnostic assessment, several educational sessions on the topic were developed for healthcare professionals and an internal procedure was revised regarding Initial Skin Assessment and Risk Assessment using the Braden Scale.

Continued education is recommended to raise awareness among healthcare professionals regarding correct diagnosis, risk assessment and the adoption of preventive measures, as well as rigorous documentation of the interventions performed.

The study has limitations related to its nature. Being cross-sectional, it only portrays a moment in time, making it difficult to determine a cause-effect relationship between variables. Because it is limited to one institution and has a small sample size, the results cannot be generalised and should be interpreted taking these particularities into account. Although the researchers received training prior to data collection, there is always some risk of bias in skin observation and scale application, which can lead to variations in results.

Nevertheless, it was possible to obtain prevalence data in our hospital unit, which will be useful for future evaluations and comparisons. A similar but multicentre study involving the other two hospitals in the region could provide a better understanding of the phenomenon of PU in a hospital setting in the Azores. This could be a measure to promote cohesion and standardisation of care geared towards the adoption of good practices, resulting in cost reductions and an increase in patients' quality of life.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

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