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PREVALENCE OF MUSCULOSKELETAL INJURIES IN NURSES AT A HOSPITAL IN THE CENTRAL REGION OF PORTUGAL

*PREVALÊNCIA DE LESÕES MÚSCULO-ESQUELÉTICAS NOS ENFERMEIROS DE UM
HOSPITAL DA REGIÃO CENTRO DE PORTUGAL*

*PREVALENCIA DE LESIONES MUSCULOESQUELÉTICAS EN LOS ENFERMEROS
DE UN HOSPITAL DE LA REGIÓN CENTRO DE PORTUGAL*

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RESUMO

Introdução: As Lesões Músculo-esqueléticas Relacionadas com o Trabalho (LMERT) são uma das principais causas de absentismo e incapacidade laboral, sendo um problema que afeta a saúde dos enfermeiros.

Objetivo: Identificar a prevalência de sintomas musculoesqueléticos nos enfermeiros de um hospital da região centro de Portugal.

Metodologia: Estudo descritivo de natureza quantitativa, transversal, realizado através de amostra de conveniência. Na recolha dos dados foi aplicado o Questionário Nórdico Músculo-Esquelético durante o primeiro trimestre de 2023. O tratamento e análise dos dados foi realizado com recurso ao SPSS, versão 28 ($p < 0,05$). Assegurados os pressupostos éticos.

Resultados: Obtiveram-se 837 respostas correspondendo a 26,1% da população, com média de idades de $43,8 \pm 10,23$. Verificámos uma prevalência elevada de sintomas, com ênfase na região lombar (77,5% nos últimos 12 meses, 49,6% nos últimos 7 dias) e 55% com limitações nas atividades nos últimos 12 meses. Nos últimos 7 dias, 55,7% dos participantes referiram intensidade da dor média de $3,95 \pm 1,88$. Encontradas associações estatisticamente significativas entre prevalência de sintomas por localização anatómica nos últimos 12 meses e: i) idade; ii) tempo de atividade profissional; iii) atividades de enfermagem/posturas corporais adotadas durante o turno.

Conclusão: Os resultados vão ao encontro de diversos estudos realizados em contexto nacional e internacional, revelando uma prevalência elevada de sintomas músculo-esqueléticos nos enfermeiros, com impacto negativo na sua saúde e qualidade de vida, bem como na sustentabilidade do sistema nacional de saúde. Enfatiza-se, deste modo, a necessidade de desenvolver, implementar e avaliar programas de prevenção de LMERT para minimização do problema.

Descritores: Transtornos traumáticos cumulativos, Enfermeiros, Dor Musculoesquelética

ABSTRACT

Introduction: Work-Related Musculoskeletal Disorders (WRMDs) are one of the main causes of absenteeism and work disability, being a problem that affects nurses.

Objective: To identify the prevalence of WRMSDs among nurses in a hospital in the central region of Portugal.

Methodology: A descriptive, quantitative, cross-sectional study was conducted using a convenience sample. Data collection was carried out using the Nordic Musculoskeletal Questionnaire during the first quarter of 2023. Data processing and analysis were performed using SPSS, version 28 ($p < 0.05$). Ethical principles were ensured.

Results: A total of 837 responses were obtained, corresponding to 26.1% of the population, with a mean age of 43.8 ± 10.23 . A high prevalence of symptoms was observed, with an emphasis in the lower back region (77.5% in the last 12 months, 49.6% in the last 7 days), with 55% reporting activity limitations in the last 12 months. Over the past 7 days, 55.7% of participants reported a mean pain intensity of 3.95 ± 1.88 . Statistically significant associations were found between the prevalence of symptoms by anatomical location in the last 12 months and: i) age; ii) professional activity duration; iii) nursing activities/body postures adopted during shifts.

Conclusion: The results align with several national and international studies, revealing a high prevalence of musculoskeletal symptoms among nurses, which negatively impacts their health and quality of life as well as the sustainability of the national healthcare system. This highlights the need to develop, implement, and evaluate WMSD prevention programs to mitigate the issue.

Descriptors: Cumulative Trauma Disorders, Nurses, Musculoskeletal Pain

RESUMEN

Introducción: Las Lesiones Músculo-esqueléticas Relacionadas con el Trabajo (LMERT) son una de las principales causas de absentismo e incapacidad laboral, siendo un problema que afecta a los enfermeros.

Objetivo: Identificar la prevalencia de las LMERT en los enfermeros de un hospital de la región centro de Portugal.

Metodología: Estudio descriptivo de naturaleza cuantitativa, transversal, realizado mediante una muestra de conveniencia. Para la recolección de los datos, se aplicó el Cuestionario Nórdico Músculo-Esquelético durante el primer trimestre de 2023. El tratamiento y análisis de los datos se llevó a cabo utilizando SPSS, versión 28 ($p < 0,05$). Se aseguraron los principios éticos.

Resultados: Se obtuvieron 837 respuestas, que corresponden al 26,1% de la población, con una edad media de $43,8 \pm 10,23$. Se observó una elevada prevalencia de síntomas, con énfasis en la región lumbar (77,5% en los últimos 12 meses y 49,6% en los últimos 7 días), y el 55% reportó limitaciones en las actividades durante los últimos 12 meses. En los últimos 7 días, el 55,7% de los participantes refirieron una intensidad media del dolor de $3,95 \pm 1,88$. Se encontraron asociaciones estadísticamente significativas entre la prevalencia de síntomas por localización anatómica en los últimos 12 meses y: i) la edad; ii) el tiempo de actividad profesional; iii) las actividades de enfermería/posturas corporales adoptadas durante el turno.

Conclusión: Los resultados concuerdan con diversos estudios realizados en contextos nacionales

e internacionales, revelando una alta prevalencia de síntomas musculoesqueléticos en los enfermeros, con un impacto negativo en su salud y calidad de vida, así como en la sostenibilidad del sistema nacional de salud. Se enfatiza, por lo tanto, la necesidad de desarrollar, implementar y evaluar programas de prevención de LMERT para minimizar este problema.

Descriptores: Trastornos de Traumas Acumulados, Enfermeros, Dolor Musculoesquelético

INTRODUCTION

Work-related musculoskeletal disorders (WMSDs) are inflammatory and degenerative conditions of the musculoskeletal system, affecting muscles, tendons, ligaments, joints, peripheral nerves and blood vessels, caused or aggravated by occupational activity and the working environment⁽¹⁾.

Most LMERTs are cumulative injuries resulting from repeated exposure to strain over a prolonged period of time. However, they may also result from acute trauma, such as fractures caused by accidents⁽¹⁾. They are considered one of the main problems faced by healthcare professionals in the course of their work, particularly nurses^(2, 3, 4). These professionals are subject to working conditions involving physical demands, such as repositioning and transferring patients, and exhausting shift work, as well as other biomechanical and organisational factors that can lead to physical and emotional overload, contributing to the adoption of incorrect postures and, consequently, to the development of musculoskeletal disorders⁽²⁾. Some authors highlight that the use of obsolete equipment and/or the lack of necessary technical aids for positioning and mobilising patients are risk factors for the development of MSDs^(2,5,6).

The prevalence of WMSDs among healthcare professionals varies across different national and international studies, ranging from 25 to 98 per cent, with symptoms most commonly affecting the lumbar region⁽⁷⁾. The prevention of LMERT involves adopting a set of preventive measures that reduce the risk; the participation of all staff, including those in strategic and operational management roles within organisations⁽⁸⁾, is essential.

Taking into account the specific competencies of the Specialist Nurse in Rehabilitation Nursing (EEER) and relating these to the issue at hand, “their intervention aims to promote early diagnosis and preventive rehabilitation nursing measures, in order to ensure the maintenance of functional abilities (...), prevent complications and avoid disability.” (p. 13565)⁽⁹⁾, this professional must play a key role in the implementation of programmes to prevent LMERT.

These programmes may contribute to improving the quality and safety of the environments in which nurses work, reducing absenteeism and

lowering the social and economic costs associated with work capacity.

The main objective of this study was to identify the prevalence of musculoskeletal symptoms among nurses at a hospital in the central region of Portugal.

MATERIALS AND METHODS

A descriptive, quantitative, cross-sectional study was conducted. The target population comprised all nurses holding the status of ‘nurse’ or ‘specialist nurse’ and working at a hospital in the central region of Portugal (N=3,206), who were asked by the Nursing Management Department, between January and March 2023, to complete an *online* data collection tool comprising four dimensions: (i) sociodemographic characteristics; (ii) self-reported symptoms of LMERT (pain, discomfort, numbness); (iii) identification of tasks and their relationship to symptoms; and (iv) health status. For the self-reported assessment of LMERT symptoms, we used the Nordic Musculoskeletal Questionnaire (NMQ) (a version adapted for the Portuguese population⁽¹⁰⁾ of the *Nordic Musculoskeletal Questionnaire – NMQ*⁽¹¹⁾). In Portugal, this instrument has already been used in several studies^(2, 3,4,12).

Data analysis, using the *Statistical Package for Social Sciences (SPSS, version 28)*, involved descriptive and inferential statistical measures (*Chi-square test – χ^2*), with a significance level of $p \leq 0.05$ ⁽¹³⁾. The study received approval from the hospital’s Ethics Committee (Ethics Committee Opinion – OBS. SF.133-2022), and the ethical principles set out in the Declaration of Helsinki were upheld, notably the guarantee of data protection and the informed consent of participants, the latter being a prerequisite for completing the questionnaire.

RESULTS

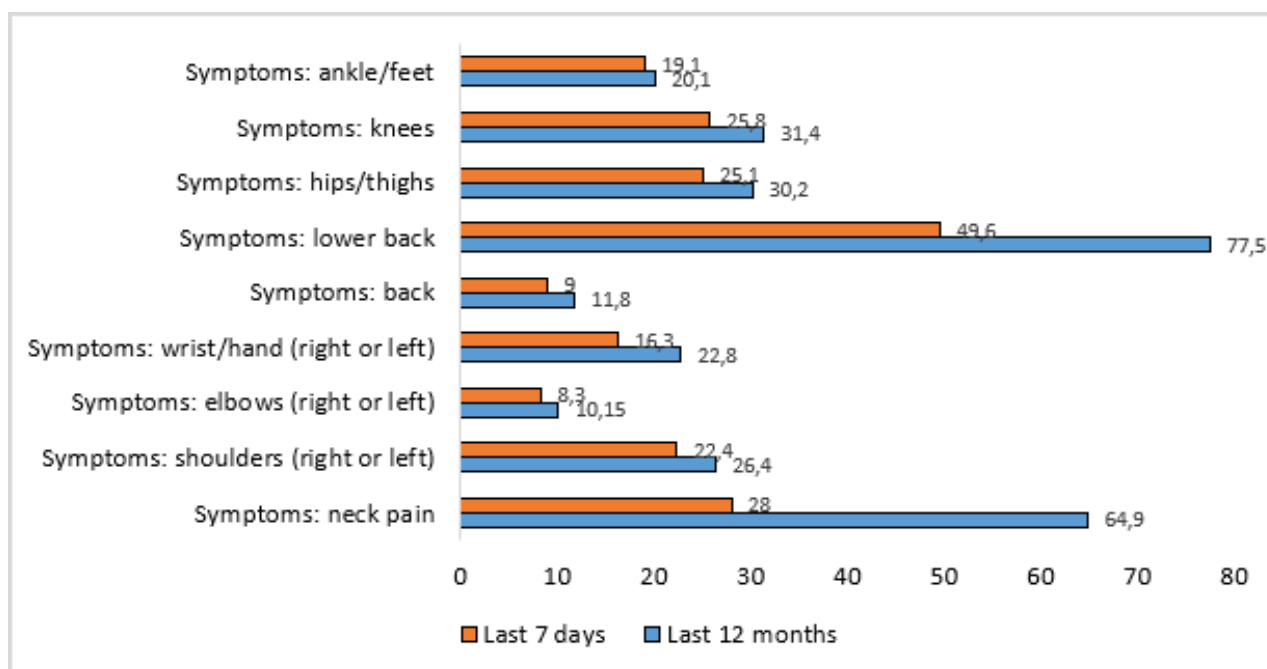
The sample consists of 837 nurses, representing 26.1% of the study population. The mean age of the participants is 43.8 ± 10.23 years (min 22 – max 66) and the mean length of professional practice (years) is 20.8 ± 9.96 . The majority are female [n=660 (78.9%)] and hold the rank of nurse [n=492 (58.8%)]. As for specialist nurses [n=345 (41.2%)], 37.7% of these specialise in rehabilitation. The majority work shifts (72.5%), 50.2% report not engaging in physical activity, 80.3% are non-smokers and 42.2% of respondents report having comorbidities. Around one-third have a previous diagnosis of LMERT (33.1%), and 84.8% reported not having attended any training on ergonomics in the last 5 years.

Figure 1 shows the prevalence of symptoms by body area over the last 12 months and the last 7 days. We can see that nurses report more severe symptoms over the past 12 months compared with the past 7 days, with the most affected body areas

being the lower back (77.5% and 49.6%, respectively), followed by the neck (64.9% and 28%, respectively). The lumbar and cervical regions are also

the most frequently cited as causing limitations in activities of daily living over the past 12 months, at 55% and 27.5% respectively.

Figure 1 – Prevalence of symptoms by anatomical location and related limitations



Of the nurses surveyed, 55.7% reported experiencing pain in the last 7 days, with an average intensity of this symptom (visual analogue scale: 1–10) of 3.95 ± 1.88 .

Figure 2 shows the distribution of nurses by pain intensity over the past 7 days. We can thus see that 37.1% of participants reported pain at levels between 5 and 10 (moderate to severe).

Figure 2 – Distribution of nurses by pain intensity over the past 7 days (n=467)

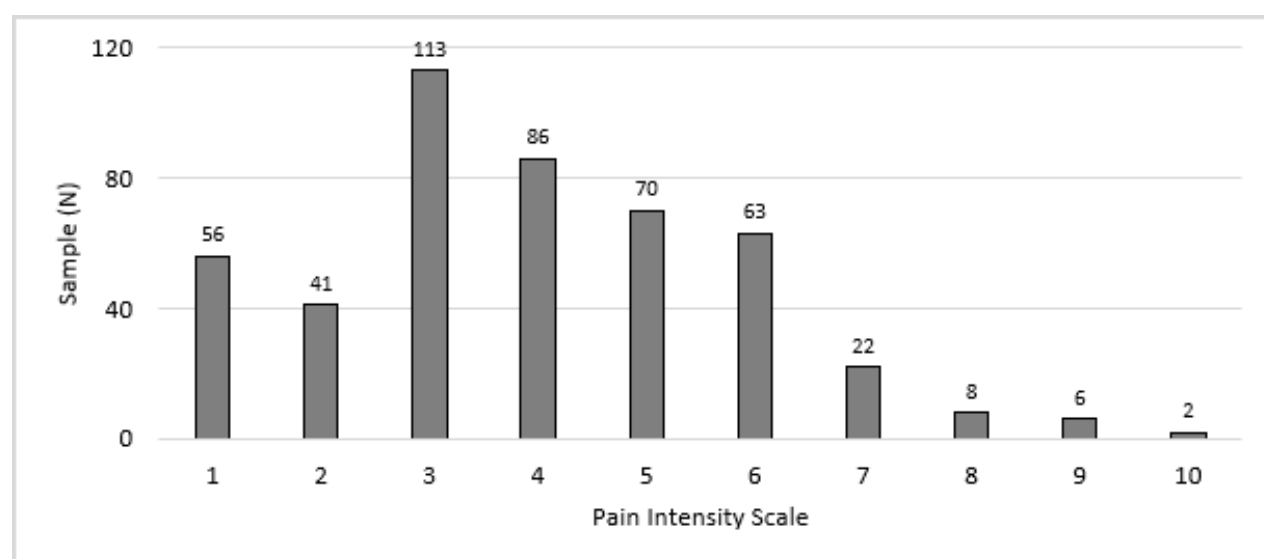


Table 1 presents the prevalence of musculoskeletal symptoms over the past 12 months, broken down by anatomical location, and their association with age (*Median* = 43 years) and length of professional practice (*Median* = 21 years).

The prevalence of musculoskeletal symptoms in the cervical (57.3%), shoulder (56.3%), wrist/hand (53.6%) and lumbar (56.1%) regions mainly affects nurses aged 43 or under. On the other hand, the prevalence of symptoms in nurses aged over 43 years is most common in the elbows (60.9%), back (51.5%), hips/thighs (54.5%), knees (55.9%) and ankles/feet (56.5%). Using the *chi-squared test* (χ^2), statistically significant associations were found between the prevalence of musculoskeletal symptoms and age group in the elbow region ($p=0.003$), wrists/hands ($p=0.007$), hips/thighs ($p<0.001$), knees ($p<0.001$) and ankles/feet ($p<0.001$).

With regard to length of professional practice, it was found that the prevalence of musculoskeletal symptoms in the cervical (59.1%), shoulder (59%), wrist/hand (56.5%), thoracic (53.5%) and lumbar (58.2%) regions is predominantly found among nurses with shorter periods of professional practice (≤ 21 years). In the other anatomical locations, the prevalence of symptoms was found to be higher in the group of nurses with longer professional experience (>21 years): elbows (59.4%), hips/thighs (51.8%), knees (54.8%) and ankles/feet (53%). The use of the *chi-square test* (χ^2) revealed statistically significant associations ($p<0.05$) between the prevalence of musculoskeletal symptoms and length of professional practice in the following regions: the elbows ($p=0.001$), wrists/hands ($p=0.006$), hips/thighs ($p<0.001$), knees ($p<0.001$) and ankles/feet ($p=0.002$).

Table 1 – Association between the prevalence of symptoms by anatomical location over the last 12 months, and age and duration of professional activity – non-parametric *chi-square test* ($p<0.05$).

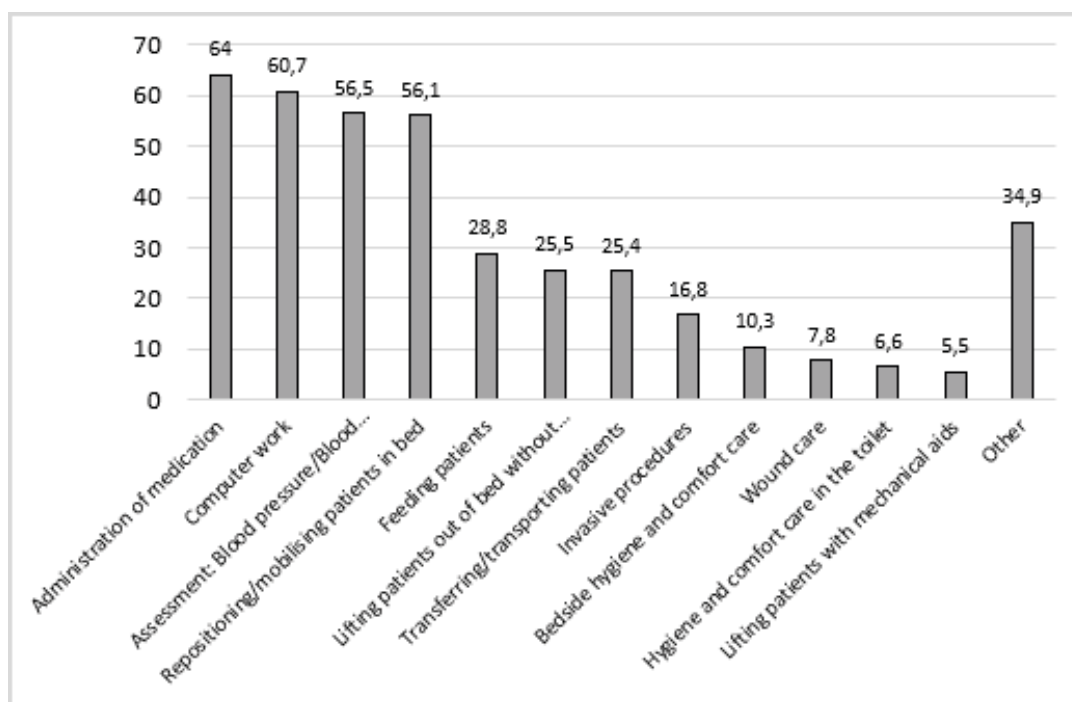
Localização anatómica	Idade (<i>Med</i> =43 anos)		p	Tempo atividade profissional (<i>Med</i> =21 anos)		p
	≤ 43 anos n (%)	> 43 anos n (%)		≤ 21 anos n (%)	> 21 anos n (%)	
Cervical	311 (57,3)	232 (42,7)	0,122	321 (59,1)	222 (40,9)	0,160
Ombros	129 (56,3)	100 (43,7)	0,151	135 (59,0)	94 (41,0)	0,324
Cotovelos	27 (39,1)	42 (60,9)	0,003	28 (40,6)	41 (59,4)	0,001
Punhos/mãos	74 (53,6)	64 (46,4)	0,007	78 (56,5)	60 (43,5)	0,006
Dorsal	48 (48,5)	51 (51,5)	0,145	53 (53,5)	46 (46,5)	0,414
Lombar	364 (56,1)	285 (43,9)	0,405	378 (58,2)	271 (41,8)	0,330
Ancas/coxas	115 (45,5)	138 (54,5)	<0,001	122 (48,2)	131 (51,8)	<0,001
Joelhos	116 (44,1)	147 (55,9)	<0,001	119 (45,2)	144 (54,8)	<0,001
Tornozelos/pés	73 (43,5)	95 (56,5)	0,001	79 (47,0)	89 (53,0)	0,002

Figure 3 shows the interventions that nurses report carrying out most frequently (≥ 6 times per shift), which are, in descending order: administering medication (64%), computer work (60.7%), monitoring blood pressure/capillary blood glucose, amongst other parameters (56.5%) and repositioning/mobilising patients in bed (56.1%).

When examining possible associations between musculoskeletal symptoms (pain, discomfort, numbness) experienced over the past 12 months in different anatomical locations and the type of tasks performed during the working day/shift, using the *Chi-squared test* (χ^2), the results confirm the existence of statistically significant associations, namely: i) between the cervical region and the administration of medication ($p=0.034$); ii) between the cervical region and the repositioning/mobilisation of residents in bed ($p=0.023$); iii)

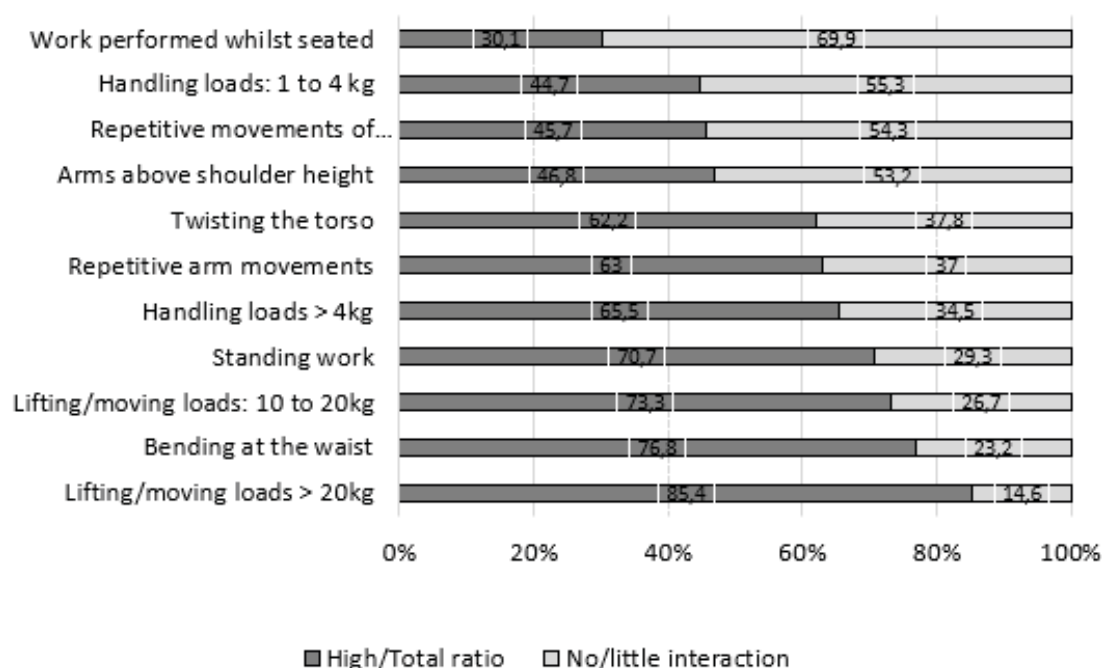
between the shoulder region and lifting the patient without mechanical assistance ($p=0.028$); iv) between the shoulder region and feeding patients ($p<0.001$); v) between the dorsal region and hygiene care in the toilet ($p=0.037$); vi) between the lumbar region and feeding residents ($p=0.006$) and, finally, vii) between the hip region and lifting the resident out of bed without mechanical assistance ($p=0.022$).

The results show that activities requiring greater physical effort, such as repositioning, mobilisation and interventions involving direct interaction with patients, are associated with the occurrence of musculoskeletal symptoms in various anatomical regions.

Figure 3 – Nursing interventions performed most frequently per shift (≥ 6 times)

The results presented in Figure 4 highlight the relationship perceived by nurses between musculoskeletal symptoms and the various nursing activities carried out throughout the working day. The activities identified as having the strongest association with the prevalence of WMSDs (classified as

‘strong’ or ‘very strong’ association) are: i) lifting/moving loads $>20\text{kg}$ (85.4%); ii) bending the trunk (76.8%); iii) lifting/moving loads of 10–20 kg (73.3%); iv) working whilst standing (70.7%); v) handling loads $>4\text{ kg}$ (65.5%); vi) repetitive arm movements (63%); and vii) twisting the torso (62.2%).

Figure 4 – Nurses’ perceptions of the relationship between the type of activities and the prevalence of musculoskeletal symptoms.

Using the *chi-square* test (χ^2), associations were found between the musculoskeletal symptoms self-reported by nurses over the past 12 months, in different anatomical locations, and the body postures adopted during their shift. Table 2 shows the

statistically significant results ($p < 0.05$) of the associations between the different variables, revealing that it is in the cervical, shoulder, lumbar and hip/thigh regions where associations are found with the majority of nursing tasks and body postures.

Table 2 – Association between symptoms by anatomical location over the past 12 months and body postures adopted during the working day/shift – non-parametric *chi-square* test ($p < 0.05$).

Localização anatómica (região)	Trabalho sentado	Trabalho pé	Braços acima altura dos ombros	Inclinar tronco	Rodar tronco	Movimentos repetidos s braços	Movimentos repetidos mãos/dedos	Aplicar força com mãos ou dedos	Manipular cargas entre 1 e 4kg	Manipular cargas > 4kg	Levantar/deslocar cargas entre 10 e 20kg	Levantar/deslocar cargas > 20kg
Cervical	-	$p < 0,001$	$p < 0,001$	$p < 0,001$	$P = 0,002$	$p < 0,001$	$p < 0,001$	-	$p < 0,001$	$p < 0,001$	$P = 0,001$	$P = 0,001$
Ombros	-	$P = 0,001$	$p < 0,001$	$P = 0,003$	$P = 0,009$	$p < 0,001$	$p < 0,001$	-	$P = 0,012$	$P = 0,039$	-	$P = 0,038$
Cotovelos	-	-	$P = 0,008$	-	-	$p < 0,001$	$p < 0,001$	$P = 0,010$	-	-	-	-
Punhos/mãos	-	$P = 0,015$	$P = 0,024$	-	-	$p < 0,001$	$p < 0,001$	-	-	$P = 0,012$	-	-
Dorsal	$P = 0,028$	-	-	$P = 0,003$	$P = 0,001$	-	-	-	-	-	-	-
Lombar	-	$p < 0,001$	-	$p < 0,001$	$p < 0,001$	-	-	$p < 0,001$	$P = 0,046$	$p < 0,001$	$P = 0,001$	$p < 0,001$
Ancas/coxas	-	$p < 0,001$	$P = 0,012$	-	$P = 0,001$	$P = 0,011$	$P = 0,011$	-	$P = 0,003$	$P = 0,007$	$P = 0,002$	-
Joelhos	-	$P = 0,007$	-	-	$P = 0,018$	$P = 0,004$	$P = 0,002$	-	-	-	-	-
Tornozelos/pés	$P = 0,002$	$p < 0,001$	-	$P = 0,026$	$p < 0,001$	-	$P = 0,003$	-	-	-	-	-

DISCUSSION

In Portugal, the costs associated with occupational diseases and work-related accidents among healthcare professionals, whilst significant, may be underestimated⁽²⁾. In the present study, the results demonstrate a high prevalence of WMSD symptoms, reflecting a serious occupational and health problem among the nurses who participated in the study, and emphasising the importance of preventive strategies.

The results of this research reveal a high prevalence of self-reported symptoms, particularly in the lumbar region (77.5% and 49.6%) and cervical region (64.9% and 27%), in the last 12 months and the last 7 days, respectively. These results, despite variations in prevalence rates across the different affected regions, corroborate a trend similar to that found in other studies^(3,4,14, 15, 16).

In a study carried out across various healthcare facilities in Portugal, involving all nurses in the country – to which 2,140 nurses responded – the prevalence of LMERT was 98 per cent, with the most affected regions being: the lumbar region (60.6%), the cervical spine (48.6%), the thoracic spine (44.5%) and the right wrist (12.76%)⁽²⁾. These results were slightly lower than those of the present study, possibly due to the characteristics of the sample, as it comprised nurses working in hospital settings and in primary healthcare. The average length of service (13 years) was also shorter than that of the sample in this study. In other national studies, we found percentages of symptoms similar to those in the present study, namely for the lumbar and/or cervical regions, respectively: 76.9% and 75.4%⁽¹⁷⁾; 76.2% and 59%⁽⁵⁾; 79.7% and 62.6%⁽¹⁴⁾; 76.4% and 56.4%⁽⁴⁾; 66.3% and 55.8%⁽³⁾.

Research carried out in various hospitals in the Madeira region on a sample of healthcare workers ($n=114$) revealed that 43% of participants had musculoskeletal symptoms in the cervical region and 42.1% in the lumbar region⁽¹²⁾.

An integrative review from 2019⁽⁷⁾, which aimed to determine the prevalence of LMERT among nurses and included 21 studies conducted between 2012 and 2016, highlighted the lumbar region as the most affected. This evidence was corroborated by several international studies reporting a prevalence of symptoms in the lumbar region of 72%⁽¹⁸⁾, 88.33%⁽¹⁹⁾ and 86.7%⁽²⁰⁾.

It should be noted that the difference in results may be related to specific characteristics of the sample; however, the high percentage of nurses who report symptoms of LMERT is evident. Although symptoms experienced in the last 7 days are most likely reported with greater accuracy by participants, due to the recent nature of the complaints mentioned, this study considered figures relating to the last 12 months, as this timeframe was most frequently cited in the various studies consulted.

In the present study, symptoms in the lumbar (55%) and cervical (27.5%) regions were most frequently cited as limiting activities of daily living; this finding is consistent with other national and international studies reporting similar impacts^(2, 21).

Of the 837 nurses in our sample, 55.7% ($n=467$) reported pain in the past 7 days. The mean pain intensity (on a visual scale of 1–10) was 3.95 ± 1.88 . Of these, 37.1% reported pain between 5 and 10 (moderate to severe). Other studies have found a similar mean pain intensity, namely 3⁽¹²⁾ and 4⁽⁴⁾.

In the present study, 42.2% of nurses reported having comorbidities and 33.1% reported a previous diagnosis of LMERT. Similarly, a previous

diagnosis of LMERT has also been reported in other studies, indicating that its prevalence is high amongst nurses^(3, 16).

No statistically significant differences were found with regard to gender and LMERT symptoms. However, some literature suggests that women may be 2.1 times more likely to develop LMERT⁽¹⁶⁾.

With regard to age, the mean (years) was 43.8 years $\pm$ 10.23. Statistically significant associations ($p < 0.05$) were found between ages over 43 years, as well as a duration of professional activity exceeding 21 years, and musculoskeletal symptoms in the lower limb joints (hips, knees, ankles/feet) and elbows. Among those aged under 43 years and those with a duration of professional activity of less than 21 years, statistically significant associations ($p < 0.05$) were found for musculoskeletal symptoms in the wrist and hand.

The mean age of the sample (43.8 years) was slightly higher than that reported in most of the studies found: 39.76 years⁽⁴⁾, 36 years⁽²⁾ and 33.72 years⁽³⁾. However, one study, conducted exclusively with EERs, reported a mean age of 45.9 years⁽¹²⁾.

In a study that correlated age and length of service with musculoskeletal symptoms, it was found that, although LMERT symptoms were more prevalent among older professionals, statistically significant associations were only found between cervical complaints, age and length of service; that is, the older the age and the longer the length of service, the greater the cervical complaints⁽³⁾ — results not observed in our study.

In a systematic review from 2019, the main risk factors mentioned were age, morning fatigue, staff and/or equipment shortages, high patient-to-staff ratios, and nurses' pre-existing health complaints⁽⁷⁾. Another study links being aged 35 or over with an increased prevalence of LMERT⁽¹⁸⁾.

Studies have shown significant associations between LMERT and length of professional practice^(18, 22) and found that nurses with more than 20 years' professional experience are approximately four times more likely to develop LMERT than those with between 11 and 20 years' professional experience⁽²³⁾.

Although age may be considered a risk factor, some studies regard the risks of developing LMERT as multifactorial⁽⁷⁾.

In this study, the activities carried out most frequently during a shift (≥ 6 times) were, in descending order, administering medication (64%), computer work (60.7%), monitoring blood pressure/capillary blood glucose and other parameters (56.5%), and repositioning and mobilising residents in bed (56.1%). When correlating these with the prevalence of symptoms, we found associations for the following regions: cervical (administering medication, repositioning and moving patients in bed); shoulders (lifting patients without mechanical assistance and feeding patients); thoracic (hygiene care in the toilet); lumbar (feeding patients);

and the hip region (lifting patients from bed without mechanical assistance).

In a study carried out among nurses registered with the Portuguese Nursing Council between 2010 and 2011, to which 3.42% of the population responded, the most frequently performed activities were computer-based work, the assessment of vital signs/capillary blood glucose and the administration of medication⁽²⁾. In another study, the activities most frequently reported were: repositioning patients in bed, administering medication, providing hygiene and comfort care in bed, and computer-based work⁽³⁾.

Activities carried out during a shift, such as lifting/handling loads >20 kg (85.4%), bending the trunk (76.8%) and working whilst standing (70.7%), repetitive arm movements (63%) and rotating the trunk (62.2%), were associated with symptoms in various anatomical regions, particularly the neck, lower back, shoulders and hips.

These associations are widely supported by the literature, which describes intense physical activities, extreme joint positions and static postures as significant risk factors for WMSDs^(2, 12). The activities most frequently cited by nurses as contributing to the development of LMERT are lifting and handling loads exceeding 20 kg^(2, 3, 4, 12). Several studies identify lower back pain as one of the consequences most frequently reported by healthcare professionals in relation to working for long periods whilst standing whilst caring for a large number of patients; that is, static postures are one of the factors that contribute most to the prevalence of lower back pain^(18, 22, 24, 25).

CONCLUSION

In this study, the prevalence of musculoskeletal symptoms among the majority of nurses surveyed is high, with the greatest incidence in the lumbar and cervical regions; this is consistent with the national and international literature, confirming the significance of the issue.

It should be noted that the aim of the research was to determine the prevalence of WMSDs among nurses at the healthcare institution under study, which was achieved. However, as this was a convenience sample – with approximately one-quarter (26.1%) of the target population responding to the questionnaire – the study's results must be analysed and interpreted with due regard to the limitations relating to the sample's representativeness of the population. Furthermore, it is possible that the participants may represent the professionals who are most concerned about and aware of this issue, or even those who exhibit the most severe symptoms. Nevertheless, this was the first study of its kind to be conducted at this institution, highlighting its exploratory nature, its importance, and the growing concern amongst healthcare professionals regarding this issue.

It should be noted that this is the first phase of the research carried out by an institutional working group which is providing training for other professionals, identifying key contacts and equipping services with support mechanisms, which have so far been scarce or non-existent, with the aim of contributing to the improvement of working conditions and, at the same time, encouraging reflection within the various teams so that, together, they can implement measures to help prevent and minimise the effects of LMERT on the staff at this institution.

Rehabilitation nurses are the professionals with the most specific and advanced skills – both technical and scientific – to develop, implement and evaluate LMERT prevention programmes within the various teams of which they form part.

At the hospital under study, with a focus on prevention, several initiatives were implemented, including the drafting of a General Procedure for Patient Mobilisation and Transfer, the development of a skills profile, and the appointment and training of designated staff (EEER) per department. Following a prior assessment of the need for support equipment and services, we proceeded with the tendering, selection and procurement of these resources, which are essential for a more professional, effective and safer practice, both for healthcare professionals and for the patients receiving their care. As a cornerstone of our work, we promote safe working conditions, raise awareness and encourage the adoption of measures to prevent LMERT.

Following this assessment of the situation and our intervention, we plan, in the near future, to evaluate the impact of the measures implemented, with the expectation of finding results that reflect a lower prevalence of LMERT, leading to an improved quality of life for nurses, reduced absenteeism from work and, consequently, a positive impact on the sustainability of the national health system.

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Data curation: GC, PG, MR

Formal analysis: FP

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Methodology: GC, PG, MR, LER

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