

ORIGINAL ARTICLE

Perception of nurses' workload in a Medical-Surgical Emergency Service*

HIGHLIGHTS

1. Emergency services are highly dynamic environments.
2. A moderate overall perception of workload was observed.
3. Perceived workload was associated with different variables.
4. Assess workload guides measures for positive environments.

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ABSTRACT

Objective: To assess the perception of individual workload among nurses in the Medical-Surgical Emergency Service of a Local Health Unit in Northern Portugal and to explore the relationship between the perception of workload and sociodemographic and professional variables. **Method:** This is a descriptive-correlational and quantitative cross-sectional study. The Individual Workload Perception Scale-Revised was used to assess workload perception. The analysis used the Mann-Whitney t-test or U test, analysis of variance, or Kruskal-Wallis test. **Results:** The mean overall score on the scale was 73.73 (SD=9.21), indicating a moderately positive perception. The "Nurse manager support" dimension had the lowest mean score per item (3.01). Statistically significant differences were found based on professional experience ($p=0.001$) and current job experience ($p < 0.001$). **Conclusion:** The perceived workload has room for improvement through more positive and sustainable environments.

DESCRIPTORS: Nurses, Male; Perception; Emergency Service, Hospital; Workload; Working Conditions.

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INTRODUCTION

Emergency services are dynamic and multitasking environments, with high and unpredictable demands and levels of complexity¹. Nursing workload is defined as “the amount of time and care a nurse devotes - directly and indirectly - to patients, the workplace, and professional development”².

Among nurses, the job demands and the time required for its execution can directly impact the negative perception of their own health at both physical and psychological levels³. A study involving nurses working in an emergency service, which sought to assess the perception of stress, found that workload and death were the two main sources of stress among the nurses in the sample⁴.

Work overload and inadequate staffing levels to meet critically ill patients' needs can be associated with many adverse events and incidents attributed to nursing interventions⁵.

The physical and mental burdens associated with workload are related and can influence each other⁶. Nurses' work in hospitals should be investigated in its multiple factors, in order to propose solutions for its improvement³.

Nursing working conditions have been a source of concern in research and management, which seek to assess levels of job satisfaction, safety, and quality of care. Results reveal that healthy work environments contribute to maintaining a stable and sufficient workforce, encourage greater productivity, and promote hospital safety, among other things⁷. Available literature reveals that the quality of nursing care and the performance of healthcare services are influenced by job satisfaction⁸. Job dissatisfaction, coupled with higher levels of absenteeism, is a strong predictor of future turnover⁹.

Positive nursing practice environments are fundamental to promoting professionals' health and well-being and to organizational performance¹⁰, as they increase nurses' intention to remain in the institutions¹¹.

In Portugal, the lack of validated instruments to assess workload perception led to the translation and validity of the Individual Workload Perception Scale-Revised (IWPS-R)¹². The original version of the Individual Workload Perception Scale (IWPS) was developed in the United States of America in 2002, with 46 items, and was subsequently revised in 2010¹².

The Portuguese version was named *Escala de Percepção Individual da Carga de Trabalho* (IWPS-R-PT), and was reduced to 21 items and five dimensions (Nurse manager support; Team support; Organizational resources; Workload; and Intent to stay), making it applicable in any healthcare setting. IWPS-R is a useful instrument for collecting essential data for nursing management and research¹².

Considering that the application of the instrument in emergency services is of particular interest, since it is a context marked by high demand and unpredictability, which requires quick decision-making and in which workload tends to be intense, the following guiding question was formulated: what is the perception of nurses in a Medical-Surgical Emergency Service (MSES) of a Local Health Unit in Northern Portugal (LHUNP) regarding their individual workload and its relationship with sociodemographic and professional variables? To answer this question, the following objectives were outlined: to assess the perception of individual workload among MSES nurses in a LHUNP; and to explore the relationship between workload perception and sociodemographic and professional variables.

METHOD

This is a descriptive-correlational cross-sectional study of a quantitative nature. The target population included all nurses working in the emergency service of USLNP (95 nurses). A non-probabilistic convenience sampling technique was used to define the sample. The inclusion criterion was nurses who were working in the emergency service of the aforementioned USLNP, regardless of their type of contractual relationship. Nurses holding management positions were excluded. Participation was voluntary, and data collection took place in November 2024.

Data were collected using a structured questionnaire, composed of IWPS-R, validated for the Portuguese context of Portugal, and a sociodemographic, academic, professional, and work-related questionnaire. Each item of IWPS-R is assessed on a Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Thus, the overall scores on the scale range from 21 (minimum) to 105 (maximum), with higher scores reflecting more positive perceptions regarding workload. The Portuguese version¹² (IWPS-R-PT) showed good internal consistency (Cronbach's alpha of 0.88), similar to that observed in other cultural validity, such as the version validated in Mandarin (0.93)¹³ and in Greek (0.88)¹².

The questionnaires were administered in printed format and distributed personally by the service's head nurse. Data collection was anonymous and confidential. All participants received prior information about the study's objectives and signed the Informed Consent Form. Data analysis was performed using Jamovi software for Mac (version 2.6.44.0). Descriptive (frequencies, means, and standard deviations) and inferential statistics were used. To explore associations between variables, parametric and non-parametric tests were applied (when the assumptions were not met). For dichotomous variables, t-test or, alternatively, the non-parametric Mann-Whitney U test was used. For variables with three or more categories, it was necessary to resort to analysis of variance or, alternatively, the non-parametric Kruskal-Wallis H test¹⁴. When statistical significance was identified, appropriate *post-hoc* tests were applied to verify between which groups differences existed. The significance level adopted in the statistical analysis was 5%.

The study was approved by the institution's Research Ethics Committee (Opinion 61/2024 of LHUNP) and conducted in accordance with the Declaration of Helsinki, national legislation, and international bioethical standards. Participant autonomy, data confidentiality, and free and informed consent were guaranteed.

RESULTS

The sample consisted of 85 nurses, of whom 62 (72.9%) were female, and 40 (47.1%) were in the 30-39 age range. Regarding marital status, 40 (47.1%) were single, and 35 (41.2%) were married. Among participants with children, 40 (47.1%) had children under 18 years of age under their care. Concerning education level, 55 (83.5%) had an undergraduate degree. Table 1 presents the results concerning participants' sociodemographic and professional characteristics.

Table 1. Sample sociodemographic and professional characterization (n=85). Northern Region, Portugal, 2024

Variable	n	%
Sex		
Female	62	72.9
Male	23	27.1
Age group		
21-29 years	28	32.9
30-39 years	40	47.1
≥ 40 years	17	20.0
Marital status		
Single	40	47.1
Married	35	41.2
Other	10	11.8
Number of children		
0 children	46	54.1
1 child	19	22.4
2 children	17	20.0
3 children	3	3.5
Do you have children under your care (<18 years)?		
No	45	52.9
Yes	40	47.1
Level of education		
Undergraduate degree	55	64.7
Specialization	16	18.8
Master's degree	14	16.5
Professional category (nursing)		
Generalist nurse	74	87.1
Specialist nurse	11	12.9
Length of professional experience		
1-4 years	19	22.4
5-9 years	29	34.1
10-14 years	14	16.5
≥ 15 years	23	27.1
Length of professional experience in current job (MSES)		
< 1 year	15	17.6
1-4 years	30	35.3
5-9 years	27	31.8
10-14 years	3	3.5
≥ 15 years	10	11.8
Type of shifts		
Fixed	5	5.9
Rotating (<i>roulement</i>)	80	94.1
Total	85	100.0

Note: n – sample; % – percentage; MSES –Medical-Surgical Emergency Service.

Source: The authors (2024).

Within the scope of the first objective outlined, Table 2 presents the descriptive statistics regarding the overall scale score and its respective dimensions. In relation to the overall scale score, the mean was 73.73 (SD=9.21), which corresponds to a moderately positive perception of the workload.

The results indicate higher mean scores per item in the "Intent to stay" and "Team support" dimensions, with 3.89 and 3.87, respectively. In contrast, the lowest mean score per item, of 3.01, is observed in the "Nurse manager support" dimension, which also shows the greatest dispersion (SD=4.61), indicating greater variability in participants' perceptions.

Table 2. Descriptive statistics of the overall score of the Individual Workload Perception Scale-Revised and its respective dimensions (n = 85). Northern Region, Portugal, 2024

Overall score and dimensions	N° of items	Total mean (M)	Mean per item (M/I)	Interval (Min.-Max.)	SD
Overall score	21	73.73	3.51	48 – 96	9.21
Nurse manager support	7	21.11	3.01	7 - 32	4.61
Team support	6	23.25	3.87	15 - 29	3.11
Organizational resources	3	11.02	3.67	6 - 15	1.88
Workload	3	10.58	3.53	6 - 13	1.73
Intent to stay	2	7.78	3.89	2 - 10	1.67

Note: SD - standard deviation; M - mean; Min. - minimum; Max. - maximum; M/I - mean per item.

Source: The authors (2024).

Table 3 presents the study results on the relationship between the overall IWPS-R score and sociodemographic and professional variables. Statistically significant differences were identified with total professional experience time ($p=0.001$), as well as with length in current job, MSES ($p<0.001$). As for total professional experience time, Tukey's *post-hoc* tests showed differences between the group with 1-4 years and the rest, namely: 5-9 years ($p=0.009$), 10-14 years ($p=0.032$) and ≥ 15 years ($p=0.001$).

In relation to the length of service in current job, Tukey's *post-hoc* tests showed differences between the <1 year group and the 1-4 years ($p=0.015$) and 5-9 years ($p<0.001$) groups, as well as between the 5-9 years and ≥ 15 years groups ($p=0.035$), with higher means in the <1 year group and the ≥ 15 years group on the MSES.

Table 3. Association between the overall score on the Individual Workload Perception Scale-Revised and sociodemographic and occupational variables. Northern Region, Portugal, 2024

Variable	IWPS-R overall score		Test value and significance (p-value)
	M (SD)	Med	
Sex			
Female	73.24 (09.47)	73.50	t=0.80
Male	75.04 (08.54)	74.00	p=0.427
Age group			
21-29 years	76.43 (07.84)	78.00	F=1.83 p=0.167
30-39 years	72.35 (08.54)	70.50	
≥ 40 years	72.53 (12.05)	72.00	

(continue)

Table 3. Association between the overall score on the Individual Workload Perception Scale-Revised and sociodemographic and occupational variables. Northern Region, Portugal, 2024

Variable	IWPS-R overall score		Test value and significance (p-value)
	M (SD)	Med	
(conclusion)			
Marital status			
Single	73.50 (09.04)	73.50	F=0.36 p=0.697
Married	74.54 (09.18)	73.00	
Other	71.80 (10.64)	74.50	
Minor child?			
No	75.31 (09.00)	75.00	t=1.70
Yes	71.95 (09.24)	71.00	p=0.093
Level of education			
Undergraduate degree	74.36 (08.93)	74.00	** H=1.13 p=0.569
Specialization	73.88 (10.92)	70.00	
Master's degree	71.07 (08.40)	72.50	
Professional category (nursing)			
Generalist nurse	73.30 (09.25)	73.00	t=-1.121
Specialist nurse	76.64 (08.83)	78.00	p=0.265
Length of professional experience			
1-4 years	80.68 (04.58)	80.00	F=5.70 p=0.001
5-9 years	72.42 (08.69)	71.00	
10-14 years	72.29 (07.71)	71.00	
≥ 15 years	70.43 (10.92)	69.00	
Length of professional experience in current job (MSES)			
< 1 year	81.47 (05.71)	82.00	F=6.47 p < 0.001
1-4 years	73.07 (07.78)	72.50	
5-9 years	68.70 (09.17)	70.00	
10-14 years	74.00 (06.56)	73.00	
≥ 15 years	77.60 (10.04)	78.50	
Type of shifts			
Fixed	75.20 (10.87)	79.00	*U=169.50
Rotating (<i>roulement</i>)	73.64 (09.17)	73.00	p=0.575

Note: IWPS-R - Individual Workload Perception Scale-Revised; M - mean; Med - median; SD - standard deviation; t - Student's t-test; *U - Mann-Whitney U test; F - analysis of variance; **H - Kruskal-Wallis; p - probability value (statistical significance).

Source: The authors (2024).

DISCUSSION

This study analyzed the perception of individual workload among nurses in a MSES at LHUNP, relating it to specific sociodemographic and professional variables. The predominance of females is consistent with data from the Order of Nurses (2024 statistical yearbook), which indicates a female predominance in Portugal (82.80%)¹⁵. Nurses' moderately positive perception of their workload is far from its maximum possible and desirable level, indicating considerable room for improvement in achieving an ideal work environment and a more positive nursing practice, as advocated by several authors^{7,10}, since workload in nursing can impact nurses' health and quality of care¹⁶.

The particularly high values in the "Intent to stay" and "Team support" dimensions reflect a strong identification of professionals with the team and a positive predisposition for continuity in the service. Intent to stay may be related to individual, organizational, and work/contextual factors. A cross-sectional study conducted with nurses, whose objective was to analyze the relationship between psychological resilience, perceived organizational support, and intent to stay, observed that psychological resilience correlates positively with intent to stay, this relationship being partially mediated by perceived organizational support¹⁷.

In the present study, the dimension with the lowest score was "Nurse manager support", associated with the perception of empathy and support from management, as well as workload management and distribution. This finding is consistent with the literature, which highlights overwork in emergency services as resulting from multiple factors, such as increased demand, insufficient staff, the severity or complexity of cases, among others, constituting a significant source of stress¹⁸. Inadequate human resources are associated with greater job dissatisfaction⁹.

Nursing leaders should create and utilize a systematic approach to support the staff allocation process to improve workload distribution and ensure safety of care, as well as enhance outcomes¹⁹. In Portugal, this guidance is advocated by the Order of Nurses in the regulation that establishes the standard for calculating safe staffing levels for nursing care²⁰. Nursing managers should strive to provide a favorable work environment in healthcare organizations, reinforcing organizational support, psychological capital, and overall organizational identification²¹. Educational sessions conducted by accredited professionals can promote nurse empowerment, boost energy, and reduce the perception of burnout²².

Within the analysis of relationships based on sociodemographic and professional variables, the contribution of professional variables stands out. In this regard, the study showed that nurses at the beginning of their careers have more positive perceptions compared to other groups, with a reduction in means as years of experience increased. When considering the length of service in the current department (MSES), the most positive perception was observed in the group with less than one year. This may be associated with the increased responsibilities resulting from higher academic qualifications acquired (specialization and master's degree), which allow access to the category of specialist nurse and imply increased responsibilities²³.

Insufficient appreciation and reduced recognition of nurses' work can significantly impact their commitment and self-esteem, directly affecting their relationship with their professional practice and work identity³, and this is more likely to occur in professionals with more years of experience than in those at the beginning of their careers.

Regarding the limitations of this study, the following stand out: the non-probabilistic convenience sampling technique, the small number of participants, and the fact that the sample consisted only of nurses from a single MSES in a single region of Portugal, which limits the generalizability of results. However, the importance of the findings for the studied context is highlighted, contributing to a better diagnosis of the perception of workload and the factors associated with it.

Considering that IWPS-R was validated in 2022 for Portugal, the absence of studies conducted specifically in the same context (emergency Service), which could assist in the comparison and discussion of results, constituted the main difficulty.

It is suggested that future multicenter studies be developed, with a considerable increase in the sample size and probabilistic sampling, involving MSES from different

regions of Portugal. Subsequently, it is recommended that international studies be carried out in order to support comparative analyses.

CONCLUSION

This study revealed a moderately positive perception regarding nurses' work in a MSES at LHUNP, which was below the maximum possible and desirable level. Among the dimensions, "Team support" and "Intent to stay" stood out, presenting the highest normalized means. The dimension "Nurse manager support" was identified as a critical area, presenting the lowest normalized mean per item. This finding requires attention, highlighting the need to strengthen support and direct leadership, especially regarding the management and distribution of workload, in line with real needs.

Furthermore, a statistically significant association was found between the overall score and the groups defined by the variables length of professional experience and time in current service (MSES), with nurses with less experience showing a more positive perception of their workload.

It is recommended that healthcare institutions invest in strategies to value and provide ongoing support to nursing teams, especially from managers, in order to promote a more positive, sustainable, and attractive work environment, contributing to the retention of professionals and the quality of care provided.

Regarding implications for nursing, the importance of assessing workload perception in dynamic and unpredictable environments, such as emergency and intensive care services, stands out. This assessment is crucial for providing a situational diagnosis and guiding strategies aimed at creating positive environments for nursing practice.

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