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Nurses' Job Satisfaction in The Post-COVID Period: A Portuguese Cross-Sectional and Quantitative Study

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Abstract

Job satisfaction (JS) is a crucial variable in organizational behavior and has been studied across different fields. Therefore, the aim of this research was to determine nurses' level of JS at the Northeast Local Health Unit (NLHU) in Portugal and to identify which sociodemographic and organizational variables serve as differentiating factors. This cross-sectional and analytical study was conducted across three hospital units integrated into the NLHU from July 2022 to October 2023. A simple random sample of 149 nurses was surveyed through a questionnaire that included sociodemographic variables and the JS Scale by Siqueira (2008). The data were analyzed using software suitable for the Social and Health Sciences. The internal consistency of the JS scale dimensions, assessed using Cronbach's alpha, was good to very good ($\alpha > 0.8$). The JS was low ($\bar{x}=3.6$; $SD=0.987$), primarily due to dissatisfaction with salaries ($\bar{x}=2.1$; $SD=1.182$) and career progression ($\bar{x}=2.4$; $SD=1.267$). Satisfaction with colleagues ($\bar{x}=4.6$; $SD=1.296$), work's nature ($\bar{x}=4.4$; $SD=1.224$), and management ($\bar{x}=4.3$; $SD=1.518$) contributed positively to JS. Furthermore, satisfaction with colleagues varied by age, service length, and contract type ($p < 0.05$). Additionally, gender was a significant factor in salary satisfaction ($p < 0.05$). Finally, JS differed in terms of service length ($p < 0.05$). Most nurses were dissatisfied, suggesting the need to implement measures to improve JS, namely, offering more competitive salaries and professional growth through progression in skills, knowledge, and responsibilities over time.

Keywords: Nurses; Job Satisfaction; Organizational Behavior; Portugal.

Introduction

Job satisfaction (JS) has been studied across many professional fields. Considered an important variable in organizational behavior, it influences the functioning of organizations, potentially impacting performance and management, and, consequently, the quality of services provided. JS has become a critical issue for healthcare organizations, particularly in nursing, due to nursing workforce shortages, its impact on patient care, and associated costs (Mendes, 2014). The OECD (2025) report states that nurses were the professional group in the healthcare sector most negatively impacted during the COVID-19 pandemic, particularly mental health problems, which gave them a primary role in care delivery. The same report notes that nurses in Portugal are

among the lowest-paid in the 38 OECD countries, earning just over half the OECD average. During the pandemic, nurses faced increased workloads and numerous concerns. Furthermore, stress and challenges (Cheraghi et al., 2023; Salahat & Al-Hamdan, 2022), as well as the responsibility for several administrative and operational tasks that vary by seniority, can impact JS (Suhaimi et al., 2023). The relationship between JS and productivity, as well as with nurses' quality of life, physical and mental health, and overall performance, was reported by Yasin et al. (2020). For example, the study by Marcomini (2025) showed that organizational variables were predictive of nurses' JS. That is, workload, work-life balance, burnout, and staff inadequacy were all predictors of higher levels of nurse dissatisfaction. Conversely, high-quality leadership, opportunities for development, and a good teamwork climate were predictors of higher levels of satisfaction.

Nursing constitutes the fundamental foundation of healthcare systems, acting as the first link between patients and the delivery of healthcare services (Alzoubi et al., 2024). Nurses are vital members of healthcare institutions (Cayllahua Curiñaupa et al., 2025) due to their roles in providing patient-centered care, ensuring quality care, and consistently promoting quality care (Ismail et al., 2018). Their professional performance affects patient satisfaction, quality-of-care indicators, and the achievement of organizational objectives (Sarıköse & Göktepe, 2022). According to Hynes et al. (2025), the COVID-19 pandemic not only drew attention to the well-documented global nursing shortage but also exacerbated it. Due to these new challenges, healthcare organizations face the need to redefine their strategies and policies to respond to emerging health needs (Sarıköse & Göktepe, 2022). Human resources management and its performance are relevant challenges for organizations today (da Cruz et al., 2018).

JS is a crucial topic in organizational terms, particularly in healthcare settings (Sameer et al., 2025), as it impacts both the well-being of healthcare professionals and the quality of patient care (Georgousopoulou et al., 2025). Among nurses, JS is notable, as satisfied nurses are more committed to their professional roles and responsibilities (Kallerhult et al., 2024). Nurses' JS has been associated with positive outcomes, such as lower intention to leave the workplace and better healthcare quality (Montuori et al., 2024; Moura Ramos et al., 2025). In the opinion of Sameer et al. (2025), given the crucial role nurses play in healthcare delivery, their JS levels are critical to the quality of nursing care provided. JS is assumed to be a multidimensional concept that includes, as preliminary aspects, satisfaction of workplace needs, happiness, rewarding emotional responses to working conditions, and the value of work or equity (Liu et al., 2023). It is based on individual psychosocial characteristics and on individuals' adaptation to the work environment (Sameer et al., 2025). It includes feelings such as satisfaction or dissatisfaction arising from employees' work experiences, positive emotional attitudes towards work, and perceived love (Salar et al., 2016). That is, it is defined as a positive emotional response resulting from professional experiences, a key factor influencing the well-being, retention, and performance of nurses (Montuori et al., 2022). In this context, JS includes several elements, including working conditions, salaries, promotion opportunities, work quality, organizational policies, appreciation, safety, and interpersonal communication (Halcomb, Smyth, & McInnes, 2018). Factors such as workload, work-life balance, and workplace support influence nurses' engagement and commitment, as well as JS (Hogan, 2025). Work-life balance is a crucial factor influencing the well-being and JS of healthcare professionals, particularly generalist nurses. Increased job demands, shift work, and inadequate pay contribute to burnout, stress, and turnover among nurses (Hujová et al., 2025). In fact, according to You et al. (2025), JS is influenced by work-life balance, pay, and professional development. In this context, the present study aimed to assess nurses' JS levels at a local health unit (LHU) in northern Portugal and to identify differences in JS levels, while accounting for sociodemographic and organizational variables.

Methodology

A quantitative, cross-sectional, and analytical study was conducted to achieve these objectives. The target population comprises all nurses providing primary, specialized, and continuing health care at the Northeast Local Health Unit (NLHU). This organization includes three hospitals from three cities of the Trás-os-Montes region, Portugal (Bragança, Macedo de Cavaleiros, and Mirandela).

The study population consisted of all 726 nurses who, at the time of the study, worked at the NLHU and voluntarily agreed to participate. The sample obtained was a simple random sample, as all professionals had the same probability of being included. The questionnaire, available online, was sent to the nurses' professional email addresses. A total of 149 complete questionnaires were validated between July 2022 and October 2023.

The data collection instrument consisted of four sections. The first section presented the study's objectives and scope. The second section contained the informed consent form, which participants were required to accept to

confirm their voluntary participation. The third section contained socio-professional questions aimed at characterizing the respondents, including variables such as gender, age, professional category, service length, professional category, type of contractual relationship, and self-perceived health status. Finally, the fourth section was integrated into the JS Scale developed by Siqueira (2008). This scale consists of 25 items grouped into five dimensions: satisfaction with promotions (items 3, 4, 10, 16, 20), satisfaction with the management (items 2, 9, 19, 22, 25), satisfaction with salary (items 5, 8, 12, 15, 21), satisfaction with the work's nature (items 7, 11, 13, 18, 23), and satisfaction with colleagues (items 1, 6, 14, 17, 24).

Satisfaction or dissatisfaction levels were assessed using a 7-point Likert-type scale, where 1 corresponds to "completely dissatisfied" and 7 to "completely satisfied." According to Siqueira (2008), higher mean values indicate greater satisfaction in the dimension assessed. Thus, averages between 5 and 7 reflect satisfaction, while averages between 1 and 3.9 indicate dissatisfaction. Averages between 4.0 and 4.9 reflect indifference, that is, a lack of either satisfaction or dissatisfaction.

The collected data were edited and processed using statistical software appropriate for the Social Health Sciences fields. Descriptive statistics were calculated (Pestana & Gageiro, 2014; Marôco, 2018), namely the mean ($\bar{x}$), the median ($\tilde{X}$), and standard deviation (SD) for quantitative variables, and absolute (n) and relative (%) frequencies for qualitative variables.

Cronbach's Alpha was used to assess the questionnaire's reliability and internal consistency. The value must be positive, ranging from 0 to 1; values greater than 0.9 indicate very good consistency; between 0.8 and 0.9 indicate good consistency; between 0.7 and 0.8 indicate reasonable consistency; between 0.6 and 0.7 indicate poor consistency; and values below 0.6 are unacceptable (Tavakol & Dennick, 2011; Field, 2018).

Additionally, the Kolmogorov-Smirnov (KS) test was used to assess the normality of the data, a necessary assumption for the use of parametric tests. Since the assumption for using parametric tests was not met, a nonparametric test was used instead. In fact, Spearman's correlation test was used to examine the association among the various dimensions. This test allows the calculation of the correlation coefficient "Rho," which ranges from -1 (perfect negative correlation) to 1 (perfect positive correlation). Values close to zero indicate a weak correlation, and values close to 1 indicate a strong correlation. Therefore, when the correlation coefficient ranges from 0.7 to 0.9, positive or negative, the correlation is strong; if it ranges from 0.5 to 0.7, positive or negative, the correlation is moderate; if it ranges from 0.3 to 0.5, positive or negative, the correlation is weak; and if it ranges from 0 to 0.3, positive or negative, the correlation is considered negligible (Pestana & Gageiro, 2014).

Finally, to identify differences in JS levels considering sociodemographic and organizational variables, the Mann-Whitney test was used to compare two groups, and the Kruskal-Wallis test was used to compare three or more groups. These non-parametric tests were used because, when testing the assumptions for the use of parametric tests, namely variance homogeneity of the groups and normality of data using Levene and Kolmogorov-Smirnov (KS) tests, respectively, it was verified that at least one of the assumptions was violated. The significance level was set at 5%.

Results and Discussion

As mentioned, a simple random sample of 149 nurses was obtained from a total of 726, yielding a response rate of 21%. Most nurses were female (86.3%), over 44 years of age (63.1%), without a specialist title (45.6%), with an indefinite-term contract (72.5%), more than 20 years of service length (63.1%), and had been in the same professional category for more than 10 years (52.3%).

Table 1: General information about nurses

Variable	Categories	Frequencies	
		Absolute (n)	Relative (%)
Gender	Female	133	89.3
	Male	16	10.7
Age (years)	25 to 34	13	8.7
	35 to 44	42	28.2

	More than 44	94	63.1
Professional category	Nurse	68	45.6
	Specialist nurse	62	41.6
	Nurse manager/management functions	19	12.8
Type of contract	Indefinite-term contract	108	72.5
	Individual employment contract	39	26.2
	Fixed-term contract	2	1.3
Service length (years)	Inferior to or equal to 10	18	12.1
	11 to 20	37	24.8
	21 to 30	71	47.7
	More than 30	23	15.4
Service length in the same category (years)	Inferior to or equal to 10	70	47.0
	11 to 20	41	27.5
	More than 20	37	24.8
	Missing	1	0.7

Most nurses who participated in this study considered their health status to be fair (45%) or good (33.6%), as shown in Figure 1.

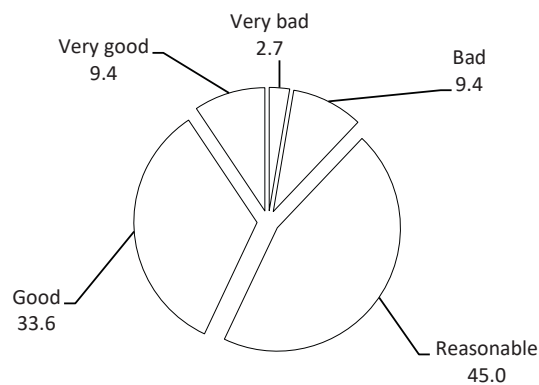


Fig 1. Nurses' health status (self-perception)

The nurses' ages ranged from 25 to 64 years, with an average of 46.3 (SD = 8.083) and a median of 47. Regarding the length of service, within the same professional category, the average was 13.4 years (SD = 9.640). Total length of service ranged from 2 to 39 years. On average, nurses had 22.5 years of service (SD = 8.645), as shown in Table 2.

Table 2: Central tendency and dispersion measures, by age and service length

Statistics	Age (years)	Service length (years)	Service length in the same professional category (years)
Mean ($\bar{x}$)	46.3	22.5	13.4
Standard deviation (SD)	8.083	8.645	9.64
Median ($\tilde{X}$)	47	24	12
Minimum	25	2	< 1 year
Maximum	64	39	38

Table 3 presents the results of the internal consistency analysis for the job satisfaction dimensions. Based on the values obtained, all dimensions exhibit good internal consistency ($\alpha > 0.7$) or very good ($\alpha > 0.9$) (Tavakol & Dennick, 2011; Field, 2018). Regarding the level of satisfaction, nurses consider themselves indifferent towards their colleagues ($\bar{x} = 4.6$; SD = 1.296; $\tilde{X} = 4.8$), the nature of the work ($\bar{x} = 4.4$; SD = 1.224; $\tilde{X} = 4.6$), and the management ($\bar{x} = 4.3$; SD = 1.518; $\tilde{X} = 4.8$), and are dissatisfied with promotions ($\bar{x} = 2.4$; SD = 1.267; $\tilde{X} = 2.2$) and salaries ($\bar{x} = 2.4$; SD = 1.267; $\tilde{X} = 2.2$). Generally, in the present study, nurses reported job dissatisfaction ($\bar{x} = 3.6$; SD = 0.987; $\tilde{X} = 3.7$), as shown in Table 3. These results are consistent with the findings of a cross-sectional and analytical study conducted at a private hospital in Brazil involving 149 nursing professionals. Professionals expressed satisfaction with colleagues and management. However, results regarding salary and career progression demonstrate dissatisfaction. Furthermore, most nursing professionals were indifferent to their work satisfaction (Zaidan et al., 2022). Interestingly, the results of this study are also like those obtained in a study that included 155 participants working at a regional hospital in Oman. The overall mean satisfaction score was 3.49, indicating moderate job satisfaction (Al Maqbali, 2015). However, a study carried out in three regions of Spain, namely Murcia, Lleida, and Galicia, which included 228 nurses, reported a job satisfaction ranging from moderate to high (Acea-López et al., 2021). According to a study conducted in Italy involving 1,304 nurses from 15 wards in public hospitals across several cities in northern, central, and southern Italy, job satisfaction was low. Furthermore, nurses considered autonomy and salary to be important factors in job satisfaction (Sansoni et al., 2016). In a descriptive and cross-sectional study involving 338 nurses working in secondary and tertiary hospitals in Greece, the level of JS was moderate (Georgousopoulou et al., 2025).

Table 3: Reliability and descriptive statistics of the JS dimensions

Dimensions	Internal consistency		Number of items	$\bar{x}$	SD	$\tilde{X}$
	α	Classification				
Work's nature	0.881	Good	5	4.4	1.224	4.6
Colleagues	0.917	Very good	5	4.6	1.296	4.8
Management	0.941	Very good	5	4.3	1.518	4.6
Promotions	0.932	Very good	5	2.4	1.267	2.2
Salaries	0.943	Very good	5	2.1	1.182	1.8
Job satisfaction	0.947	Very good	25	3.6	0.987	3.7

Table 4 shows the correlation between JS and its dimensions. All correlations are statistically significant at the 1% significance level ($p < 0.01$). The results of the Spearman correlation test show that all dimensions, except salary satisfaction, which has a moderate and positive correlation with JS ($0.5 < \text{Rho} < 0.7$), are strongly and positively correlated with job satisfaction ($\text{Rho} > 0.7$).

Table 4: Spearman correlations (Rho) between the dimensions of JS

Dimensions	Statistics	(1)	(2)	(3)	(4)	(5)	(6)
Job satisfaction (1)	Rho	1					
	p	-					
Satisfaction with the work's nature (2)	Rho	0.797*	1				
	p	< 0.001	-				
Satisfaction with colleagues (3)	Rho	0.774*	0.680*	1			
	p	< 0.001	< 0.001	-			
Satisfaction with the management (4)	Rho	0.772*	0.561*	0.584*	1		
	p	< 0.001	< 0.001	< 0.001	-		
Satisfaction with promotions (5)	Rho	0.773*	0.436*	0.401*	0.391*	1	
	p	< 0.001	< 0.001	< 0.001	< 0.001	-	
Satisfaction with salaries (6)	Rho	0.682*	0.359*	0.250*	0.299*	0.479*	1
	p	< 0.001	< 0.001	0.002	< 0.001	0.000	-

* There is a statistically significant correlation at a significance level of 0.01

Figure 2 shows that most nurses were dissatisfied with salaries (90.6%) and promotions (88.6%). Overall, the majority (69.8%) of nurses reported being dissatisfied with their work. The same results were obtained in a study conducted in Iraq involving 140 nurses (Aljebory, 2023). According to the author, most nurses (61.9%) were dissatisfied and considered their salaries insufficient. However, the results of Kaddourah et al. (2013) indicate that of 140 nurses, 111 (79.3%) were satisfied with their jobs. Furthermore, 65 nurses (46.4%) were dissatisfied with their salaries, and almost half were dissatisfied with the nurse-to-patient ratio, autonomy, and the time to discuss problems with the team.

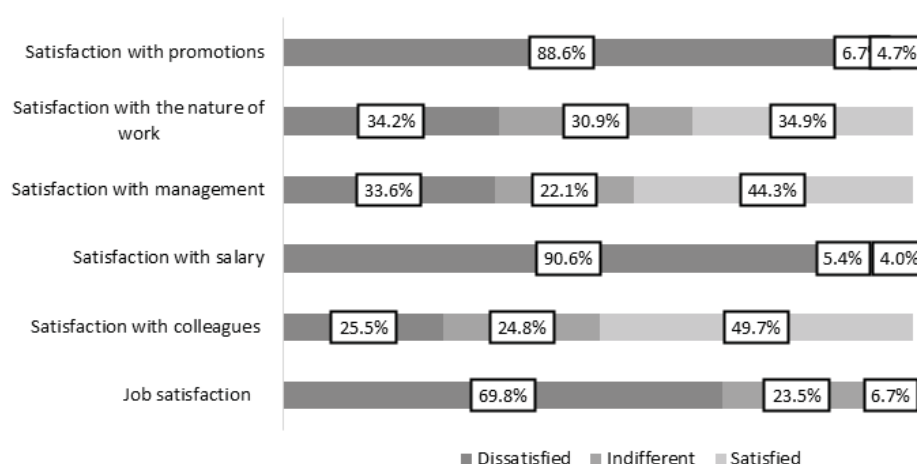


Fig 2. Nurses distributed by JS level

Regarding gender, there were no differences in JS levels or in the various dimensions, except for salary satisfaction ($p < 0.05$). Salary satisfaction is particularly relevant for males (Appendix 1). Roney and Acri (2028) conducted a study among pediatric nurses who reported high levels of JS, although no association was found between satisfaction levels and gender. However, Sansoni et al. (2016) consider autonomy and salary to be important factors that contribute to increasing JS (Sansoni et al., 2016). Furthermore, in a study by Alfuqaha

et al. (2021), which included 786 nurses from five hospitals in Jordan, gender was identified as a significant predictor of JS.

Age was a significant differentiator in satisfaction with colleagues, especially for older nurses (aged 45 or older), as shown in Appendix 1. Interestingly, these results are like those obtained in a study of 155 participants working at a regional hospital in Oman. Interaction with colleagues and extrinsic rewards, respectively, were associated with the highest and lowest JS ratings. The results showed that age had a statistically significant effect on overall JS (Al Maqbali, 2015).

In this study, satisfaction with colleagues varied by contract type ($p = 0.004$). Nurses with indefinite-term contracts reported the highest levels of satisfaction (Appendix 1). In this regard, the study by Acea-López et al. (2021) found that nurses with temporary contracts exhibit high rates of burnout, as well as high levels of emotional fatigue, depersonalization, and a lack of personal fulfillment. Differences were found in the dimensions of satisfaction with colleagues ($p = 0.010$) and job satisfaction ($p = 0.037$) over time. Zaidan et al. (2022) state that satisfaction levels appear to increase as healthcare professionals' experience in the unit increases. Hertrich et al. (2025) conducted a study involving 753 German intensive care unit professionals across all professional groups. The results revealed significant differences in JS depending on nurse-to-patient ratio, professional category, professional experience, and gender. Nursing staff reported higher satisfaction and lower stress levels. Younger and less experienced staff reported insufficient preparation, increased stress, and lower satisfaction.

Finally, professional category and service length within the same category did not differ in JS levels or their dimensions (Appendix 1). A study conducted at Stikland Psychiatric Hospital in Cape Town, South Africa, involving 127 nurses, found no significant associations between JS and gender, hierarchical level, or years of experience (Payne et al., 2020). Hussain and Soroya (2017) found that salary and job security were differentiating factors in JS, with employees with higher salaries and permanent jobs reporting higher job satisfaction. The results of a descriptive study conducted by Çınar, Uğrak, and Serin (2025) in Turkey, involving 276 healthcare professionals from a tertiary public hospital, showed no statistically significant differences in job satisfaction across sociodemographic characteristics.

Conclusion

This study identified a significant prevalence of overall job dissatisfaction, particularly in areas related to salary and promotions. On the other hand, nurses reported greater satisfaction with their colleagues, management, and their work, albeit at moderate levels.

These findings reinforce the need for strategic interventions by healthcare institutions to value nurses' work, improve working conditions, and develop retention and professional recognition policies, which are essential for promoting satisfaction and, consequently, the quality of care provided to patients.

In this context, the priority of the NLHU administration should be to implement more competitive salaries and professional growth processes that involve progression in skills, knowledge, and responsibilities over time, whether through promotions to higher hierarchical positions, the acquisition of new skills, or moving nurses to different areas.

This research was conducted in three hospitals within the NLHU, which are public facilities. Therefore, the results obtained in this study cannot be generalized to private hospitals or to the entire country. Another limitation is the study's cross-sectional design. A longitudinal study would help assess JS and its dimensions, accounting for the time factor. Future research employing this design could more effectively evaluate the administration's decision-making regarding human resources management.

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Appendix 1: Comparison of JS levels and their dimensions considering sociodemographic and organizational variables

Variables	Groups	Colleagues			Salary			Management			Work's mature			Promotions			JS		
		$\bar{x}$	SD	$\bar{X}$	$\bar{x}$	SD	$\bar{X}$	$\bar{x}$	SD	$\bar{X}$	$\bar{x}$	SD	$\bar{X}$	$\bar{x}$	SD	$\bar{X}$	$\bar{x}$	SD	$\bar{X}$
Gender	Female	4.6	1.25	5.0	2.0	1.08	1.8	4.4	1.48	4.6	4.4	1.13	4.4	2.3	1.16	2.2	3.5	0.88	3.6
	Male	4.8	1.64	4.8	2.9	1.65	2.6	4.6	1.80	4.6	4.3	1.87	4.6	3.0	1.84	2.6	3.9	1.61	3.8
	p	0.801			0.048*			0.499			0.988			0.171			0.408		
Age (years)	25-34	3.9	1.39	3.6	2.1	1.07	2.0	4.0	1.29	4.2	3.8	0.97	3.8	1.9	0.76	2.2	3.1	0.76	3.3
	35-44	4.3	1.36	4.2	1.9	1.03	1.5	4.2	1.65	4.5	4.2	1.44	4.4	2.1	1.10	1.8	3.3	1.00	3.5
	>44	4.8	1.19	5.0	2.2	1.24	1.9	4.4	1.48	4.6	4.5	1.12	4.6	2.6	1.35	2.5	3.7	0.97	3.8
	p	0.010*			0.332			0.448			0.085			0.065			0.066		
Service length (years)	≤10	4.0	1.51	3.7	1.9	1.02	1.6	4.0	1.56	4.2	3.9	1.55	3.8	1.8	0.81	1.6	3.1	0.91	3.2
	11-20	4.3	1.33	4.6	1.9	1.07	1.4	4.1	1.68	4.6	4.2	1.20	4.4	2.2	1.10	4.4	3.3	1.00	3.5
	21-30	4.9	1.13	5.0	2.3	1.30	2.0	4.6	1.39	4.8	4.6	1.17	4.6	2.6	1.45	4.6	3.8	0.98	3.8
	>30	4.4	1.26	4.4	2.0	1.00	1.8	4.1	1.6	4.4	4.3	1.04	4.6	2.4	1.01	2.2	3.4	0.85	3.4
	p	0.010*			0.280			0.442			0.197			0.068			0.037*		
Service length in the same category (years)	≤10	4.6	1.22	5.0	2.1	1.16	1.8	4.3	1.31	4.4	4.4	1.18	4.6	2.4	1.19	2.4	3.6	0.88	3.7
	11-20	4.7	1.46	4.8	2.0	1.15	2.8	4.1	1.77	4.4	4.3	1.13	4.4	2.3	1.42	1.8	3.4	1.14	3.5
	>20	4.8	1.26	5.0	2.2	1.28	1.8	4.4	1.59	4.4	4.4	1.25	4.6	2.5	1.26	2.4	3.7	1.02	3.8
	p	0.819			0.749			0.659			0.805			0.679			0.748		
Professional category	Nurse	4.4	1.37	4.6	2.1	1.26	1.8	4.2	1.67	4.4	4.6	1.36	4.4	2.2	1.22	2.0	3.4	1.06	3.4
	Specialist nurse	4.6	1.27	4.9	2.2	1.09	1.9	4.3	1.38	4.4	4.3	1.11	4.4	2.5	1.26	2.6	3.6	0.95	3.7
	Nurse manager	5.2	0.84	5.0	1.9	1.19	1.4	4.9	1.23	5.0	4.9	0.89	4.6	2.4	1.42	2.2	3.9	0.69	4.0
	p	0.083			0.386			0.164			0.152			0.253			0.141		
Type of contract	Indefinite-term	4.8	1.24	5.0	2.2	1.24	1.8	4.4	1.51	4.6	4.5	1.17	4.6	2.5	1.32	2.4	3.7	0.97	3.8
	Individual contract	4.0	1.31	4.2	1.8	0.91	1.6	4.1	1.56	4.4	3.9	1.31	4.2	2.0	1.06	1.6	3.2	0.95	5.0
	Fixed-term contract	4.0	0.56	4.0	2.8	2.26	2.8	3.8	0.56	3.8	4.2	0.56	4.2	2.1	0.70	2.1	3.4	0.48	3.5
	p	0.004*			0.224			0.476			0.139			0.090			0.063		

* There are statistically significant differences at a significance level of 0.05