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Level of emotional intelligence in medical-surgical nursing specialist nurses

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Abstract

Aim: To measure the level of emotional intelligence in medical-surgical nursing specialist nurses. *Design:* A quantitative descriptive cross-sectional study. *Methods:* Data were collected through a digital form comprising a questionnaire divided into two sections: first – sociodemographic and professional characterization; second – a Portuguese version of the Schutte Emotional Intelligence Scale. The internal consistency of the instrument, measured by Cronbach's alpha (unidimensional), was 0.878. Data were collected between 27 January and 16 March 2023. A non-probability convenience sampling technique was used to enroll the participants. *Results:* The final sample consisted of 168 medical-surgical nursing specialist nurses. Their mean emotional intelligence score was 105.28 points, with a standard deviation of 10.56 points. The variables academic degree ($p = 0.002$) and gender ($p = 0.035$) showed a statistically significant association with the total emotional intelligence score. *Conclusion:* This study allowed to measure the level of emotional intelligence in medical-surgical nursing specialist nurses, yielding high mean scores. Nevertheless, it is essential to invest in strategies for the acquisition of emotional intelligence skills by professionals with low mean scores.

Keywords: emotional intelligence, medical-surgical nursing, nursing care, nurses, Schutte Emotional Intelligence Scale.

Introduction

Providing care to a person and / or family implies the existence of a therapeutic relationship that is based on a relevant emotional component. Caring for a person, regardless of the clinical practice context, requires the specialist nurse to be highly adaptive at an emotional level, both because of the nature of the care provided and the emotions generated by interacting with the person and family who are suffering.

Nurses have a particularly vulnerable occupational activity in terms of the stressful work environment, caring for patients with communicable diseases, exposure to radiation and toxic substances, shift work, low pay, and the need for continuous training, all of which can lead to anxiety and some irritability (Nespereira-Campuzano & Vázquez-Campo, 2017).

The demands inherent to the nursing profession and the contact with people at very specific moments in their health / illness process mean that nurses are constantly exposed to different emotional states, not only by dealing with the emotions of those they care for, but also by demands of their own emotions.

Over the years, there has been a paradigm shift in the field in terms of skills, which means that one of the main focuses today is on emotional skills (Goleman, 2018). Organizations and society themselves require healthcare professionals, particularly nurses, to be involved in patient care, which requires emotional engagement with an increased risk of emotional exhaustion.

Emotional intelligence (EI) in the workplace positively influences workers' performance at both the organizational and individual levels, promoting the handling of stressful situations, conflict resolution, and successful teamwork (Nespereira-Campuzano & Vázquez-Campo, 2017). It is considered an added value to the nurse's individual

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skills, since knowing themselves and their emotions allows them to have more control and achieve better results in their daily life.

EI is "the way we know and manage our emotions, how we formulate thoughts based on them, and how we can improve our behavior" (Moreira, 2019, p. 20). EI can also be understood as "the individual's set of abilities to identify, manage, and understand their own emotions and to motivate themselves in the face of embarrassing and conflict-generating situations. It reflects the professional's attitudes and behaviors in different contexts, having an impact on the quality of their performance" (Sousa et al., 2020, p. 39).

The impact of EI has been studied in different areas of nursing care, namely clinical decision making (Kozlowski et al., 2017), job satisfaction (Phillips & Harris, 2017), conflict management (Başoğul & Özgür, 2016), professional performance (Al-Hamdan et al., 2017), and leadership (Beydler, 2017).

Nurses' EI can facilitate problem solving, which can have a significant impact on the outcomes of interventions delivered to patients under their care. EI can be acquired through training, which is why Lewis (2019) recommends investing in nursing curricula on this topic. Sousa et al. (2020) propose the implementation of sessions that promote the development of intelligence and emotional management skills towards an appropriate approach to critically ill patients.

There are several strategies mentioned by authors as a way to improve EI: practicing emotional detachment; "welcome distraction" from emotional difficulty (due to the excess of patients leaving no time to process emotions); cognitive reappraisal; greater vigilance in the treatment of patients eliciting negative emotions, through awareness of their prejudices (avoiding unfair treatment of these patients); and other strategies including momentary breaks, seeking social support (among colleagues and loved ones), humor, self-care, and leisure activities such as sports, going for a walk, or spending time with family (Isbell et al., 2020).

Marcelino et al. (2021) also refer to other strategies for acquiring EI skills, such as: group reflection, role-play, watching a video, using art, poetry, dance, theater, and music as expressive modalities that improve the integration of emotional experience.

The use of strategies that promote EI skills can help nurses in their daily lives to overcome problems arising from their professional activities. Given that EI is trainable and can be acquired, investment in EI acquisition strategies is essential to reap benefits for patients, institutions, and professionals involved.

Medical-surgical nursing specialist nurses (MSNSNs), according to the Portuguese Nurses Association (OE) (OE, 2019), are endowed with scientific, technical and human skills, which allow them to provide differentiated and specialized nursing care.

They play a central role in healthcare teams in Portugal, so recognizing the EI skills of MSNSNs and those around them allows the identification of the main gaps and barriers faced by professionals regarding this topic, as well as mapping strategies to promote EI by these specialists. Therefore, and considering the lack of studies that address the EI of Portuguese MSNSNs, this study is considered relevant and innovative.

In this sense, the study aims to answer the research question: "What is the level of emotional intelligence of medical-surgical nursing specialist nurses?", with the objective of measuring the level of EI in MSNSNs.

Aim

To measure the level of emotional intelligence in medical-surgical nursing specialist nurses.

Methods

Design

A descriptive and cross-sectional study, quantitative in nature.

Sample

The sampling technique was non-probabilistic for convenience; the sample consisted of MSNSNs registered with the OE and active in clinical practice. Participation was voluntary, with no costs to participants and no conflict of interest identified.

A total of 168 responses were analyzed, corresponding to 2.7% of the eligible population of 6134 Portuguese MSNSNs (OE, 2022).

Data collection

Data collection took place between 27 January and 16 March 2023 and was carried out by completing a digital questionnaire via Google Forms, disseminated by email from the main author of the study. Collaboration was requested from the Portuguese Association of Specialist Nurses in Medical-Surgical Nursing, the Portuguese Association of Dialysis and Transplantation Nurses, and the Northern Health School of the Portuguese Red Cross (ESSNorteCVP), in order to increase the sample size.

In the first section of the questionnaire, a sociodemographic and professional characterization

is carried out, consisting of questions prepared by the study authors, such as: gender, age, length of professional practice in nursing, academic degree, region of the country, and area of care.

The second section comprises the use of an instrument, the Schutte Emotional Intelligence Scale (SEIS) (Satuf et al., 2020), translated and validated for use in Portugal by Vicente (2014). This scale contains 27 statements about emotions or reactions associated with those emotions, operationalized on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with no right or wrong responses.

The Portuguese version of the SEIS considers the existence of four dimensions: perception of one's own emotions, socio-cognitive component of emotions, perception of others' emotions, and difficulty in understanding emotions. However, after an exploratory factor analysis with the extraction of principal components and varimax rotation, the factor loadings obtained did not confirm the existence of these dimensions in the sample. Although there was reasonable support for considering two dimensions with regard to the distribution and magnitude of factor loadings, the explained variance was only 32.6%, so this alternative was discarded. Therefore, the instrument was considered unidimensional in this study. The Cronbach's alpha obtained was 0.878, which is considered good and close to the threshold of very good (Marôco, 2021).

In the SEIS, items Q3, Q22, and Q27 are negatively formulated, with the respective responses reversed. Thus, after inverting the items, the unidimensional scale has a minimum score of 27 and a maximum score of 135, resulting from the sum of all the items that make up the scale.

Data analysis

Data analysis consisted of the use of descriptive and inferential statistics and was carried out using the SPSS software, version 28. In the descriptive statistics of sample characterization, for quantitative variables, the mean ($\bar{X}$) and the median (Mdn) were used as measures of central tendency and the standard deviation (SD) as a measure of dispersion; qualitative variables were described using absolute and relative frequencies.

One of the participants assigned the lowest score to all items, including the negatively formulated ones. In addition to being considered an impossible response pattern in practical terms, this resulted in an outlier data point with a major impact (greater than 6 SD) in terms of distorting the results, and was therefore excluded from all inferential analyses.

To analyze differences in the total score depending on selected independent variables, analysis of covariance (ANCOVA) was used, treating the qualitative variables as fixed factors and the quantitative variables of interest for control and adjustment purposes as covariates.

The normality and homogeneity of the dependent variable, referring to the EI score, was assessed using the Shapiro–Wilk and Levene's tests, respectively. White's test was used to ensure the homoscedasticity of the model residuals. To assess the homogeneity of the slopes, that is, that the slopes of the regression line between the dependent variable and the covariate are similar for all levels of each independent variable, simple analysis of variance was performed focusing on the interaction term between each independent variable and the covariate age (Marôco, 2021).

In statistical inference, a significance of 0.05 was adopted, corresponding to a confidence level of 95%. In multiple comparisons, the Bonferroni correction was used to control the false positive rate.

Results

The sociodemographic characterization of the sample is shown in Table 1. The mean SEIS total score achieved by the nurses in the sample was 105.3, with a standard deviation of 10.6. The maximum score obtained was 131, close to the theoretical maximum of 135, and the minimum was 69.

The individual analysis by item (Table 2) shows that the statements with which the nurses agreed most, reaching the maximum possible median of 5, related to reevaluating what is important based on life events (Q4, Mdn = 5, $\bar{X}$ = 4.55), and not giving up when faced with a challenge because they do not believe they will fail (Q22, Mdn = 5, $\bar{X}$ = 4.39).

On the other hand, there were no absolute disagreements, with the lowest median being 3. These items related to knowing what other people are feeling just by looking at them (Q23, Mdn = 3, $\bar{X}$ = 3.28), feeling like they are experiencing other people's important events when they are told about them (Q20, Mdn = 3, $\bar{X}$ = 3.29), and seeing new possibilities when their mood changes (Q5, Mdn = 3, $\bar{X}$ = 3.40).

To assess the existence of differences in the SEIS total score depending on sociodemographic variables, a two-way ANCOVA was carried out, assuming gender and academic degree as fixed effects,

Table 1 Sociodemographic characteristics of the participants (n = 168)

Variable		N (%)
Gender	female	139 (82.7)
	male	29 (17.3)
Academic degree	bachelor's	71 (42.3)
	master's	93 (55.4)
	PhD	4 (2.4)
Country region	center	80 (47.6)
	north	54 (32.1)
	south	27 (16.1)
	islands	7 (4.2)
Unit worked in	surgical services	49 (29.2)
	intensive / intermediate care	29 (17.3)
	emergency service	25 (14.9)
	medical services	21 (12.5)
	palliative care	10 (6.0)
	others – several minor units	34 (20.2)
	$\bar{X}$ (SD)	**Med (Min–Max)**
Age (years)	41.5 (7.7)	41 (25–63)
Professional practice (years)	18.7 (7.6)	17 (3–40)

with statistical control for the influence of age, modeled as a covariate.

The model summary is shown in Table 3. The interaction between the interaction terms (gender * academic degree) is not statistically significant (p = 0.439), so the impact of each of these variables on the SEIS score does not depend on the level of the other variable, thus facilitating the interpretation of the main effects.

Statistically significant associations were found for the variables academic degree (p = 0.002) and gender (p = 0.035).

Figure 1 shows the origin of the differences by estimating the means after controlling for age, which is fixed by the ANCOVA model as being the grand mean of the participant's ages, whose value is 41.5 years.

Visually, the statistically significant difference found by ANCOVA regarding academic degree is related to the higher EI of nurses with doctorates compared to those with other academic degrees.

For females, there is an estimated significant mean difference of 27.27 points (p = 0.021) between those with doctorates and those with master's degrees, and an estimated marginally significant mean difference of 23.58 points (p = 0.058) between those with doctorates and those with lower degrees.

For males, there is an estimated significant mean difference of 16.49 points (p = 0.040) between participants with doctorates and master's degrees, and 17.44 points (p = 0.023) between those with doctorates and those with lower degrees. For both genders, the difference between bachelor's and master's degrees was not statistically significant (p > 0.05).

As for the direct comparison of genders, the difference detected by ANCOVA corresponds to an increase of 8.74 in the SEIS score in females, with the difference between females and males being 3.59 points (p > 0.05) for those with bachelor's degrees, 8.24 points for those with master's degrees (p = 0.004), and 14.38 points for those with doctorates (p > 0.05, possibly due to the lack of statistical power of the test to detect differences, as there are not many nurses with this qualification).

When adjusting the age of all participants to the grand mean of the sample ($\bar{X}$ = 41.5 years) using ANCOVA, it is observed that the estimated maximum SEIS score is 131.08 points and is associated with female nurses with doctorates.

Table 2 Description of the SEIS items

Item	Mean	Median	Standard deviation
1. I know when to speak about my personal problems to others.	4.26	4	0.878
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.	4.28	4	0.774
3. I find it hard to understand the non-verbal messages of other people (reverse coded).	3.73	4	1.111
4. Some of the major events of my life have led me to re-evaluate what is important and not important.	4.55	5	0.691
5. When my mood changes, I see new possibilities.	3.40	3	1.035
6. Emotions are one of the things that make my life worth living.	4.30	4	0.765
7. I am aware of my emotions as I experience them.	4.22	4	0.704
8. I like to share my emotions with others.	3.39	4	1.046
9. When I experience a positive emotion, I know how to make it last.	3.68	4	0.880
10. I arrange events others enjoy.	3.53	4	1.118
11. I am aware of the non-verbal messages I send to others.	3.79	4	0.930
12. When I am in a positive mood, solving problems is easy for me.	4.19	4	0.781
13. By looking at their facial expressions, I recognize the emotions people are experiencing.	4.05	4	0.642
14. I know why my emotions change.	3.93	4	0.822
15. When I am in a positive mood, I am able to come up with new ideas.	4.27	4	0.644
16. I have control over my emotions.	3.56	4	0.811
17. I easily recognize my emotions as I experience them.	3.99	4	0.724
18. I motivate myself by imagining a good outcome to tasks I take on.	4.11	4	0.814
19. I am aware of the non-verbal messages other people send.	3.92	4	0.748
20. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.	3.29	3	0.927
21. When I feel a change in emotions, I tend to come up with new ideas.	3.60	4	0.814
22. When I am faced with a challenge, I give up because I believe I will fail (reverse coded).	4.39	5	0.924
23. I know what other people are feeling just by looking at them.	3.28	3	0.898
24. I help other people feel better when they are down.	4.08	4	0.653
25. I use good moods to help myself keep trying in the face of obstacles.	4.19	4	0.733
26. I can tell how people are feeling by listening to the tone of their voice.	3.65	4	0.835
27. It is difficult for me to understand why people feel the way they do (reverse coded).	3.66	4	1.022

The estimated minimum SEIS score is associated with males having bachelor's or master's degrees (100.21 and 99.26 points, respectively), with this difference not being significant ($p > 0.05$).

The standardized magnitude of the observed differences, calculated using Cohen's d, was 0.84 for gender and 2.06 for academic degree, using the comparison of doctorates with the combination of the other qualifications for the latter calculation. The above effects are considered high and very high, respectively (Marôco, 2021).

Table 3 ANCOVA model results

Source	Type III sum of squares	df	Mean square	F	P-value	Partial eta squared
Corrected model	2800.98	6	466.83	4.757	< 0.001	0.15
Intercept	41953.22	1	41953.22	427.473	< 0.001	0.73
Age	260.36	1	260.36	2.653	0.105	0.02
Gender	446.16	1	446.16	4.546	0.035	0.03
Academic degree	1316.45	2	658.23	6.707	0.002	0.08
Gender * academic degree	162.52	2	81.26	0.828	0.439	0.01
Error	15702.79	160	98.14			
Total	1869562.00	167				
Corrected total	18503.77	166				

Note: r squared = 0.151 (adjusted r squared = 0.120).
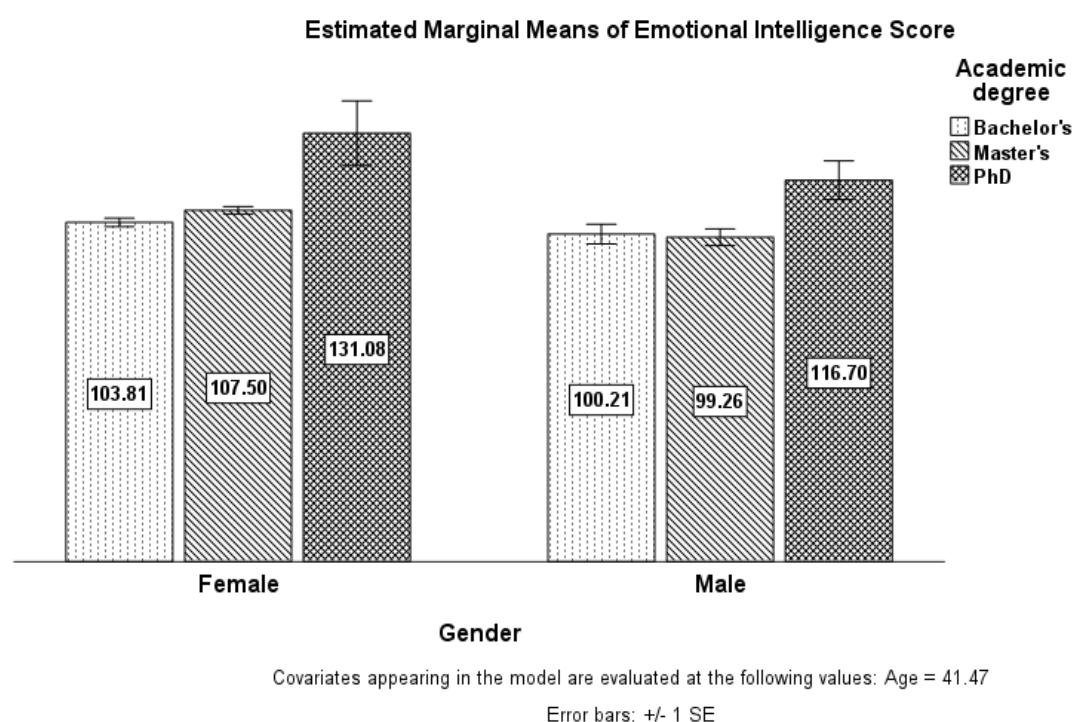
Figure 1 Estimated marginal means (SEIS score vs. gender and academic degree)

Discussion

The study made it possible to measure the level of EI in Portuguese MSNSNs. It proves to be relevant, unique and innovative given the preponderance of these specialists in healthcare teams in Portugal and the lack of research into EI in this specific population. However, it should be noted that the latter limits the present discussion of the data.

The data collection instrument showed high internal consistency and, because of its reliability, can be used in future research in the Portuguese population, particularly in nurses.

The results of the study are consistent with those obtained in a study conducted on nurses working in hospitals in Jordan, in which high levels of EI were observed, meaning that the nurses had the ability not only to recognize their emotions, but also to use and regulate them to achieve positive goals and results (Al-Oweidat et al., 2023). The authors demonstrated a relationship between high levels of EI and the commitment of healthcare professionals to their organization and, on the other hand, that lower affection towards the organization is associated with lower levels of EI (Al-Oweidat et al., 2023).

In the future, the challenge is not so much to achieve higher levels of EI, as current data already show a satisfactory level, but to ensure that these levels of EI are maintained, auditable, targeted for continuous quality improvement, and guarantee the quality of projects (Al-Oweidat, et al., 2023).

The overall results of EI measured with the SEIS (Satuf et al., 2020) show that with regard to gender, females have slightly higher scores, with a statistically significant difference of 8.7 points. Also a study by Di Lorenzo et al. (2019) demonstrated a higher level of EI in females than in males, with a difference of 8.29 points which is very similar to the present study. In a Portuguese study involving higher education students, statistically significant correlations were found between the female gender and two of the EI dimensions, denoting that women seem to have a greater capacity to adapt to new situations and establish relationships with others (Silva, 2021). Likewise, in a study of students in India, females had higher levels of EI (Sen et al., 2020).

With regard to the academic qualification variable, it was found that the average EI score, adjusted for gender and age, is higher for doctorate holders at 123.9 points, then for master's degree holders at 103.4 points, and finally for bachelor's degree holders at 102 points. The specific difference in EI becomes more evident and considerable between nurses with a doctorate and the others, whereas the specific difference in EI between nurses with a master's degree and those with a bachelor's degree is not significant. In a study by Di Lorenzo et al. (2019), high mean EI scores were found

in the first year of a nursing course at 119.84 points, compared to 120.89 points in the third year.

The association between high SEIS total scores and having a doctorate may be explained in several ways: individuals with higher baseline EI are more likely to continue their studies to the doctoral level; persons with average EI improve their EI throughout their doctoral studies, with all that this entails; and both EI and doctorates are influenced by a third variable not analyzed in the study, such as the socioeconomic factors of the family from which the person comes.

Progression in academic qualification leads to maturity and understanding on the part of nurses, providing them with the knowledge and skills necessary to become more responsive and resilient in dealing with professional issues (Al-Oweidat et al., 2023). A study by Chen et al. (2016) shows that EI levels increase with age, which was also found in our study, albeit with a weaker and only marginally significant correlation (r = 0.151, p = 0.052). It should be noted that in most cases, being older in nursing is synonymous with more experience or more time in service.

EI is a skill that can be trained and acquired. Even though in a study by Di Lorenzo et al. (2019) the level of EI in students at the beginning of their nursing training was good, it was even higher in the last year of the course, suggesting that emotional skills can be learned. The same authors found high levels of EI in higher education, corroborating the findings of Silva (2021) in a study that also used the SEIS.

Nurses with high levels of EI have the ability to become more competent, more responsive in providing safe and quality care to patients and families, and can take advantage of their awareness of their emotions to cope with the demands and pressures of work (Al-Oweidat et al., 2023). It is therefore urgent to invest in the continuous development of EI skills from the beginning of the academic career, as well as throughout the nursing care practice. Although MSNSNs showed high EI scores in the present study, there are professionals with very low EI levels who require attention and targeted interventions to outline strategies that promote the development of EI skills for these specialists.

There are several limitations of the study: the small sample size, in particular the limited number of participants with a doctorate, which does not allowing a direct comparison, even though both genders with this qualification were included; the fact that the central area of the country is mainly represented, while the other areas are under-represented; the use of a self-perception instrument, which could lead to under- / overestimated results; and the fact that the sample is of a non-probabilistic type, meaning that there is a risk of bias and therefore it does not faithfully represent the population.

Conclusion

The study made it possible to measure the level of the EI among MSNSNs, in accordance with the objective of the study, using an instrument widely used to measure one's own and others' emotions.

The results show high mean levels. However, there are still some elements that show a low mean level of EI, and it is essential to invest in strategies for the acquisition of EI skills by these professionals, in order to promote benefits for the patients, institutions, and professionals involved.

This study is relevant for conducting future research, since the recognition of EI in MSNSNs is a starting point for outlining strategies to promote EI in this target population. Thus, in terms of future developments, it is suggested that the evidence be mapped with regard to strategies that promote EI skills for nurses.

Ethical aspects and conflict of interest

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Author contributions

Conception and design (SLT, ACPP, LANM), data collection (SLT, ACPP, LANM), data analysis and interpretation (PFAM, SLT, ACPP, LANM), manuscript draft (SLT), critical revision of the manuscript (SLT, PFAM, ACPP, LANM), final approval of the manuscript (SLT, PFAM, ACPP, LANM).

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