



Moral sensitivity of nursing students: Adaptation and validation of the Campillo's tool

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ABSTRACT

Aim: Analyse the psychometric properties of the Moral Sensitivity Questionnaire in nursing care and to examine the level of moral sensitivity among nursing students in Spain.

Background: Ethical sensitivity is essential in nursing for patient care and decision-making. Assessing nursing students' moral sensitivity aids in developing training strategies for improved care.

Design: The study was conducted in two phases: (1) analysis of psychometric properties involving nursing students; and (2) a cross-sectional study design.

Method: The study included 611 Spanish nursing students, recruited through non-probability sampling. A self-report questionnaire, socio-demographic data and the Moral Sensitivity Questionnaire were used for data collection. To assess the psychometric properties, both confirmatory factor analysis and exploratory factor analysis were performed. Data were analysed using Student's t-test, analysis of variance (ANOVA) and Pearson correlation. Data analysis was performed using SPSS for Windows v28, with a significance level set at $p < 0.05$.

Results: The study included 611 nursing students. The adjustment indices of the exploratory factor analysis indicate an excellent fit when items 18, 20 and 21 are grouped in Dimension 1, contrary to the proposal made by Campillo et al. The questionnaire demonstrated high reliability and validity. Second-year students and those from the SJD Campus showed higher moral sensitivity. No differences were found based on work experience.

Conclusion: This study validated the Moral Sensitivity Questionnaire for nursing students, revealing its reliability. Early ethical training enhanced moral sensitivity, particularly in second-year students, while institutional values and campus focus significantly influenced scores. Gender and experience were negligible.

1. Introduction

In the past century, scientific advancements and technological developments in healthcare have generated complex ethical dilemmas that

demand specialized ethical competencies for effective resolution (Kraaijeveld, Schilderman, and van Leeuwen, 2021). In this context, the competence to make ethical decisions is recognized as an essential skill in nursing practice, crucial for addressing ethical issues that arise in

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clinical settings (Carrese et al., 2015). Fry and Johnstone (Fry and Johnstone, 2008) underscore the importance of ethical decision-making in delivering high-quality care, highlighting ethical competence as an indispensable aspect of the daily work of healthcare professionals (Bayoumy, Halabi, and Esheaba, 2017).

2. Background

Moral sensitivity, understood as the ability to recognize and respond to ethical conflicts in patient care, has been identified as a key skill in the ethical training of nurses (Asmaningrum, Rifki, and Wijaya, 2025). Authors such as Rest (Rest, 1979) define moral sensitivity as a precursor to ethical decision-making, while Bebeau et al. (Bebeau, Rest, and Narvaez, 1999; Weaver, Morse, and Mitcham, 2008) emphasize its importance in enabling empathy and perspective-taking, both of which are essential skills for identifying moral issues in practice. This capacity not only fosters a nurse-patient relationship built on trust but also promotes patient autonomy by protecting individuals in their vulnerability (Borhani, Abbaszadeh, and Mohsenpour, 2013; Weaver et al., 2008).

As a result, bioethics education has become a fundamental component of healthcare training programs (Berry, Williams, Lamb, and Klugman, 2023), required in the curricula of various disciplines (Danis, Fox, Tarzian, and Duke, 2021), including nursing (Jahangashht Ghoozlu, Vanaki, and Mohammad Khan Kermanshahi, 2023). Existing research underscores the importance of ethical education, both for students and practicing professionals, in developing ethical competencies that support responsible, patient-centered clinical practice (Borhani et al., 2013). This emphasis on ethical education has driven numerous studies and projects aimed at measuring ethical and moral sensitivity in healthcare professionals and students, highlighting the importance of concepts such as ethical sensitivity and moral sensitivity (Lütznén, Nordström, and Evertzon, 1995). Although these terms are often used interchangeably, they have distinct nuances. For instance, Chen and Qin (Chen, Su, Liu, Miao, and Fang, 2021) argue that moral sensitivity represents the initial step in the ethical decision-making process, as it enables professionals to identify and recognize ethical issues.

However, while studies on moral sensitivity have been conducted among practicing nurses, few have focused on nursing students and even fewer have validated instruments like the Moral Sensitivity Questionnaire by Campillo-Zaragoza in this specific population (Campillo-Zaragoza, 2014). This gap represents a significant research need, given that nursing students are at a formative stage where developing moral sensitivity can influence their ethical and professional preparedness to address complex situations in future practice (Xu et al., 2024). Cultivating this sensitivity during training enables students to not only respond ethically in uncertain situations but also interpret the reactions and emotions of others and evaluate courses of action with a critical and empathetic perspective (Borhani, Keshtgar, and Abbaszadeh, 2015).

In the nursing context, moral sensitivity, as defined by Lütznén and Nordin (1993) (Lütznén and Nordin, 1993), is a personal capacity that allows professionals to recognize moral conflicts, understand patients' vulnerability in specific contexts and is seen as fundamental for high-quality ethical practice. Additionally, moral sensitivity is understood as a dynamic and evolving competence that acts as a mediator between motivation and moral reasoning, facilitating the development and maturation of ethical judgment (González and Prieto, 2019). Scholars such as Bebeau and Narvaez (Bebeau et al., 1999) have examined this capacity from an epistemological perspective, highlighting the need for valid measurement instruments that can capture its variability across different contexts.

Given the importance of promoting and training professionals with high moral sensitivity (Katsarov, Schmocker, Tanner, and Christen, 2023) and the lack of validated tools to measure this competence in nursing students (Lyu, Liang, Li, and Chi, 2024), the present study is positioned as a novel contribution. Its objective is to validate the Moral

Sensitivity Questionnaire by Campillo-Zaragoza. in a sample of nursing students, assessing its reliability and validity in this population. Additionally, this study seeks to determine the level of moral sensitivity among these students and explore its relationship with sociodemographic characteristics, which may provide insight into factors influencing ethical development during academic training.

In summary, this study addresses the contemporary need for precise tools to assess moral sensitivity in the educational context of nursing, ultimately contributing to the strengthening of ethical competencies that are crucial for today's professional practice.

3. Method

3.1. Design

We used a two-step methodological approach consisting of the analysis of the psychometric properties of the questionnaire, in terms of reliability and construct validity, followed by a descriptive and correlational study.

3.2. Ethical considerations

This study was approved by the Clinical Research Committee of the Sant Joan de Déu Research Foundation, with PIC number 43–19. All participants were informed verbally and in writing about the purpose of the study and the confidentiality of the data. They were also asked to provide informed consent to voluntarily participate in the study. Questionnaires were distributed to all participants present on the day of data collection and each questionnaire was anonymous. On completion, participants deposited their questionnaires in a designated box to ensure anonymity. To eliminate any potential power dynamics during data collection, no member of the research team was present. Additionally, authorization to use the questionnaire in the study was obtained from the original author.

3.3. Sample

The study sample consisted of 611 nursing students from four university centers in the autonomous community of Catalonia (Spain) enrolled during the 2019 and 2020 academic year. The sampling technique was non-probabilistic, convenience sampling. Nursing students in the second, third and fourth years who had completed an internship and provided informed consent to participate in the study were included. Students who were not present in the classroom on the day of the questionnaire collection were excluded.

To estimate the sample size, Comrey and Lee's recommendations for validation studies were followed (Comrey, 2013). They suggest that a very good sample has between 500 and 1000 participants. Therefore, it was agreed to include at least 500 participants in this study.

3.4. Procedure

Initially, a committee of six experts, consisting of two ethics professors, two nurses with clinical experience and two psychometrics professors, evaluated the suitability of the questionnaire for use with nursing students who had completed a period of practical training. The committee assessed whether the questions were clear, understandable and appropriate for nursing students, considering their prior experiences during practical training. Additionally, the language used was reviewed to ensure it was simplified, taking into account the varying levels of technical knowledge among nursing students. After a thorough analysis, the committee concluded that the original questionnaire met all necessary requirements and did not require any further modifications. The questions were relevant, clear and well-formulated, ensuring the tool's effectiveness without the need for adjustments. In addition to the original questionnaire, other variables were collected, including age,

gender, institution, employment status, healthcare experience and type of employment contract.

3.5. Data collection and variables

The Campillo et al. (Campillo-Zaragoza, 2014) questionnaire was administered, along with an ad hoc form to collect the sociodemographic and labor variables of nursing students. The original questionnaire by Campillo et al. (Campillo-Zaragoza, 2014) is a self-administered instrument consisting of 23 statements or items, with six possible responses, where 0 indicates total agreement with a statement and 5 indicates total disagreement. These 23 items are grouped into two dimensions: "D1. Nurse values (items 1–12)" and "D2. Nurse responses (items 13–23)." The items scored inversely in the questionnaire are: 13, 14, 15, 16, 17, 19, 22 and 23. A lower score on the questionnaire is interpreted as higher moral sensitivity on the part of the student. The reliability of the scale was assessed using Cronbach's alpha coefficient, which was found to be 0.81, indicating a high level of internal consistency.

3.6. Data analysis

Statistical analysis was performed using a descriptive approach for all variables. For categorical variables, absolute and relative frequencies (percentages) were calculated. To analyze the relationship between variables, Pearson's correlation coefficient was used for quantitative variables to assess the linear relationship between them. When dealing with a categorical variable with two groups and a quantitative variable, the independent samples *t*-test was employed. In the case of a quantitative variable and a categorical variable with more than two categories, analysis of variance (ANOVA) was applied, followed by the Bonferroni correction to adjust the *p*-values due to multiple comparisons.

To analyze the psychometric properties of the questionnaire, a confirmatory factor analysis was performed using the generalized least squares method to determine whether the scores reproduce the two-dimensional structure of the original questionnaire proposed by Campillo-Zaragoza (Campillo-Zaragoza, 2014). This method is particularly suitable for ordinal measurement items (Hu and Bentler, 1999). The overall fit indices used in this study were: normalized Chi-square, defined as the ratio between the Chi-square value and the number of degrees of freedom (χ^2/df), CFI (Comparative Fit Index), BBNFI (Bentler-Bonnet Normed Fit Index), BBNNFI (Bentler-Bonnet Non-Normed Fit Index), RMSEA (Root Mean Square Error of Approximation), SRMR (Standardized Root Mean Square Residual) and RMR (Root Mean Square Residual). Values above 0.95 were considered acceptable for the CFI, BBNFI and BBNNFI indices (Hu and Bentler, 1998). For the RMSEA, SRMR and RMR indices, values less than 0.08 were considered acceptable (Brown, 2015). Finally, it was considered that the ratio between the Chi-square value and the number of degrees of freedom (χ^2/df) should fall between 2 and 6 to be considered acceptable (Rial, Varela, Abalo, and Lévy, 2006). The internal consistency was assessed using Cronbach's alpha coefficient, with values of 0.70 or higher considered acceptable (Nunnally and Bernstein, 1994).

Data analysis was conducted using the SPSS statistical software for Windows version 28 (SPSS Inc., Chicago, IL, USA, 2008). For the CFA, EQS 6.4 for Windows (Multivariate Software, Inc., 2006) was used and the Factor Analysis program (Ferrando and Lorenzo-Seva, 2017) was used for the Parallel Analysis, as described in the results section.

3.7. Results

The study population consisted of 611 students, with a mean age of 22.6 years (SD = 5.4). Most participants were female (86.7%, *n* = 530). When examining the correlation between age and moral sensitivity scores, a low correlation was observed with the dimension "Nursing Values" (D1) ($r = .103$; $p = .0111$) and a somewhat stronger correlation

with "Nursing Responses" (D2) ($r = .121$; $p = .0031$), which was statistically significant in the latter. In terms of gender, women and men scored similarly on the "Nursing Values" and "Nursing Responses" dimensions and the differences observed between the two groups were not statistically significant.

The results also showed differences between students from different academic years. Second-year students scored an average of 22.9 (SD = 7.7) on the "Nursing Responses" dimension, while fourth-year students scored an average of 25.8 (SD = 7.7), with this difference being statistically significant ($p = .006$). This suggests that students in advanced courses may show lower moral sensitivity in responses related to nursing practice. However, no statistically significant differences were found in the overall questionnaire score.

The study center also had a significant impact on moral sensitivity scores. Students from the SJD Campus (UB) and URV displayed differences in both dimensions, with SJD Campus students obtaining lower scores in both "Nursing Values" (D1) and "Nursing Responses" (D2). These differences were statistically significant ($p = .030$ in D1 and $p = .001$ in D2), suggesting that the institutional context may influence the development of moral sensitivity in students.

On the other hand, when analyzing the relationship between moral sensitivity and previous work experience in the healthcare sector, current employment in the sector and the type of contract, no statistically significant differences were found.

Scale Scores According to Sociodemographic and Occupational Characteristics of the Sample are shown in Table 1.

3.8. Confirmatory factor analysis (CFA)

The confirmatory factor analysis (CFA) was used to verify the internal structure of the questionnaire, proposing a two-dimensional model identical to the structure of the original version of the questionnaire.

Regarding the results of the confirmatory factor analysis (CFA), a significant chi-square value was obtained [$\chi^2/df = 1661.595/229$; $p < 0.0001$; $n = 611$]; CFI = 0.867; BBNFI = 0.849; BBNNFI = 0.853; SRMR = 0.097; RMSEA = 0.101; and RMR = 0.231. The results for all indices suggest a poor fit, as reflected by the values of the CFI, BBNFI and BBNNFI indices, which are below 0.90, as well as the error values (SRMR, RMR, RMSEA), which are above 0.08.

As the CFA fit did not meet expectations, we decided to perform an exploratory factor analysis (EFA) to determine the most appropriate model for nursing students. To do this, we employed the Optimal Implementation of Horn's Parallel Analysis method (Horn, 1965). The EFA was conducted using the polychoric correlation matrix, treating item scores as ordered categorical variables (Ferrando & Lorenzo-Seva, 2013).

The adjustment function chosen was unweighted robust least squares, with mean and variance-corrected fit statistics (Lorenzo-Seva and Ferrando, 2019b). The factors were rotated using Robust Promin rotation (Ferrando & Lorenzo-Seva, 2013).

The EFA also revealed two dimensions that accounted for 60.0% of the variance. Table 2 presents the factor loadings for the exploratory factor analysis solution. All items in the assessment instrument showed factor loadings greater than 0.40. Table 3 displays the goodness-of-fit indices for the two-factor model analyzed in the nursing student sample using the EFA. All indices analyzed indicated a good fit of the model.

3.9. Reliability and validity of the moral sensitivity questionnaire for nursing students

The reliability of the full questionnaire was 0.898. Regarding the individual dimensions, the values obtained were 0.969 for D1 (Nurse Values) and 0.760 for D2 (Nurse Responses).

Table 1
Scale Scores According to Sociodemographic and Occupational Characteristics of the Sample (n = 611).

	n	%	D1 Nurse Values		D2 Nurse responses		total	
			Mean (SD)	p	Mean	p	Mean	p
Age (SD)	22.6 (SD 5.4)		r = .103; p = .011 ¹		r = .066; p = .103 ¹		r = .121; p = .003 ¹	
Sex								
Feminine	530	86.7	14.7 (16.4)	.609 ²	21.7 (7.1)	.101 ²	36.5 (16.8)	.516 ²
Male	81	13.3	11.9 (15.7)		23.2 (7.6)		35.1 (17.79)	
Academic course								
Two	270	44.2	11.3 (16.0)	.157 ³	22.9 (7.7)	.006 ³	34.3 (18.6)	.455 ³
Three	279	45.7	13.6 (16.1)		22.4 (7.3)		36.0 (17.6)	
Four	62	10.1	13.3 (15.8)		25.8 (7.7)		36.2 (11.4)	
Center								
Campus SJD (UB)	310	50.7	10.8 (15.0)	.030 ²	21.9 (7.5)	.001 ²	35.6 (19.1)	.638 ²
URV	301	49.3	13.6 (16.5)		24.1 (7.5)		34.9 (15.8)	
Study schedule.								
Morning	395	64.6	11.7 (15.7)	.027 ³	23.4 (7.9)	0.18 ³	35.2 (17.5)	.391 ³
Afternoon	180	29.5	14.4 (16.7)		21.7 (6.4)		36.1 (18.8)	
Morning and afternoon	36	5.9	7.3 (9.8)		24.4 (7.5)		31.7 (10.0)	
Currently employed								
Yes	273	44.7	13.1 (16.7)	.217 ²	23.0 (7.7)	.940 ²	36.2 (18.3)	.252 ²
Not	338	55.3	11.5 (15.1)		23.0 (7.5)		34.5 (16.9)	
Previous work experience in healthcare								
Yes	167	61.2	14.0 (18.0)	.265 ²	23.1 (7.9)	.735 ²	37.2 (20.3)	.232 ²
Not	106	38.8	11.8 (14.4)		22.8 (7.5)		34.6 (14.5)	
Type of contract								
Permanent employment	106	38.8	15.1 (19.0)	.136 ²	23.6 (7.9)	.324 ²	38.8 (20.2)	.064 ²
Temporary employment	167	61.2	11.9 (15.0)		22.6 (7.6)		34.5 (16.9)	

1. Pearson’s correlation coefficient; 2. t-test; 3. ANOVA (Bonferroni correction)

Table 2
Loading matrix related to the exploratory factor analysis solution.

Item	Factor 1	Factor 2
1.	0893	
2.	0960	
3.	0880	
4.	0799	
5.	0753	
6.	0659	
7.	0862	
8.	0860	
9.	0610	
10.	0779	
11.	0846	
12.	0807	
13.		0618
14.		0558
15.		0479
16.		0661
17.		0525
18.	0782	
19.		0537
20.	0857	
21.	0851	
22.		0562
23.		0598

Source: Compiled by authors

Table 3
Indices of goodness of fit of the exploratory factor analysis to the model.

CONTENTS	VALUE	95 % confidence interval
CFI	0995	0995 – 0996
GFI	0994	0993–0994
AGFI	0992	0992–0993
RMSEA	0035	0033–0035
Goodness of fit test	$\chi^2 = 247,616; gl = 208; P = 0031$	
Reason for fit	$\chi^2 / gl = 1.19$	

CFI: Comparative Fit Index. GFI: Goodness of Fit Index. AGFI: Adjusted Goodness of Fit Index. RMSEA: Root Mean Standard Error of Approximation

4. Discussion

The aim of this study was to validate the Moral Sensitivity Questionnaire in nursing students in terms of reliability and construct validity and to assess the degree of moral sensitivity of students with respect to sociodemographic and occupational characteristics, as [Yüksel Kaçan \(2022\)](#) argues that the moral sensitivity of nurses positively influences the quality of patient care ([Fry and Johnstone, 2008](#); [Yüksel Kaçan, 2022](#)). Rest ([Rest, 1979](#)) defines ethical sensitivity as a precursor to ethical decision-making and moral sensitivity is closely related to recognizing ethical issues in practice, which is critical in nursing care.

The results obtained in this study provide a comprehensive analysis of the psychometric properties of the version of the moral sensitivity questionnaire adapted for nursing students. The sample, composed of 611 students with a mean age of 22.6 years and a female predominance (86.7 %), allowed a rigorous evaluation of the structure and reliability of the questionnaire in a specific academic context. This analysis is particularly important because of the relevance of moral sensitivity in the field of nursing, where students must develop skills to face complex ethical situations and make decisions sensitive to the values and rights of patients, as emphasized by [Bebeau et al., \(Bebeau et al., 1999; Weaver et al., 2008\)](#), who explores how moral sensitivity influences healthcare professionals’ responses to ethical conflicts.

Confirmatory Factor Analysis (CFA) was initially performed with the purpose of verifying the consistency of the two-dimensional structure of the questionnaire, consistent with the original version. However, the fit indices obtained indicated a poor fit of the two-factor model in this specific sample, suggesting that the original structure of the questionnaire is not perfectly adapted to the particular characteristics and experiences of nursing students in this population. The observed discrepancy suggests that it may be necessary to adjust certain aspects of the questionnaire to better address the particularities of nursing students, adapting to their level of experience and the ethical challenges specific to their academic and professional environment. Following these results in the CFA, it was decided to perform an Exploratory Factor Analysis (EFA) to identify the model that best fit the characteristics of this population. The EFA was performed using Horn’s Parallel Analysis

method (Horn, 1965), a tool that is considered more robust for determining the number of factors in complex data such as those in this study. The structure identified through the EFA also resulted in two dimensions, explaining 60 % of the variance.

Although the percentage of explained variance found for this model could be considered low, it is currently not recommended to use the interpretation of the explained variance as the only indicator of identified factors. It is recommended to incorporate, to identify the number of factors, procedures based on the Parallel Analysis (select common components or factors that have eigenvalues higher than those expected by chance) or the RMSEA adjustment indicator (Field, 2018; Horn, 1965; Lorenzo-Seva, 2013).

In addition, the fit indices obtained in the AFE were satisfactory, which represents an advance with respect to the initial model confirmed with the CFA. This can be interpreted as a validation of the two-dimensional structure of the questionnaire, being necessary to explore in greater depth the items that make up each factor to assess whether they adequately reflect the key aspects of moral sensitivity in nursing students. On the other hand, the statistical methods used, such as the unweighted least squares adjustment with robust mean and variance correction, strengthen the validity of the analysis, as they provide a more accurate adjustment for data that do not meet the normal assumptions (Lorenzo-Seva and Ferrando, 2019a, 2019b).

Regarding the internal consistency of the questionnaire, it showed reliability values close to .70, considering that, in the development of a measuring instrument, the minimum acceptable reliability is suggested to be equal to or greater than 0.70, (Bland and Altman, 1997; L. Hu and Bentler, 1998) so it could be affirmed that the Campillo questionnaire instrument for nursing students is reliable.

Studies on moral sensitivity state that the sociodemographic characteristics of nursing professionals and working conditions can affect their moral sensitivity (Goktas, Aktug, and Gezginci, 2023). In the case of the study presented here and in line with other studies (Lützen, Blom, Ewalds-Kvist, and Winch, 2010; Lützen, Evertzon, and Nordin, 1997) carried out on moral sensitivity, within the sociodemographic characteristics of the participants it is observed that the sample recruited was mostly female. This is not a limitation of the study but is because historically, the nursing profession is marked by gender stigmas (Nogueira et al., 2023).

Likewise, when analyzing the results, it can be observed that the level of moral sensitivity received higher scores in men, although these differences were not statistically significant. This finding differs from the published literature, which generally indicates that the females tend to obtain higher scores in moral sensitivity (O'Connell, 2015).

This is relevant since the data show that sex could be a determining factor in moral sensitivity, which coincides with what was expressed by Lützen (30), who points out that, at the level of moral sensitivity, there is a significant difference between the sexes. Additionally, Tas Arslan (Arslan and Calpbini, 2018) mentions in his study that nursing professionals who identify with the female gender tend to have more holistic care approaches and greater moral sensitivity compared with professionals with the male gender. However, in our study, the results obtained in men differ from what is reported by these authors, suggesting that gender may not have the same impact on moral sensitivity in our sample. This fact could be related to the theory of care ethics proposed by Carol Gilligan (Gilligan, 1994).

A fact that should also be highlighted from the results obtained through this study is the high overall moral sensitivity of the students of the second year of the nursing degree. This could be explained by the fact that this group of students has just received training in ethics of care, which could influence a better result. Moreover, the differences were statistically significant with respect to Dimension 2, Nurse responses. This suggests that the second-year training could have an impact on the development of moral sensitivity in nursing students, particularly in relation to their responses in nursing practice. When comparing the overall ethical sensitivity data obtained from second-year students with

that of final-year students, no significant differences are found, despite the latter having received more extensive training in clinical practice and having had the opportunity to gain a greater number of real-world experiences related to ethical dilemmas (Ertug, Aktas, Faydali, and Yaşın, 2014). This finding may be linked to Chen and Qin's (2021) observation that moral sensitivity is the first step in ethical decision-making and could explain why second-year students score higher than expected, despite the greater experience of final-year students (Chen et al., 2021; Morton, Worthley, Testerman, and Mahoney, 2006).

This would contradict with Park et al. (2012) claim that moral sensitivity increases with ethical education and would explain why upper-semester nursing students score higher compared with first-year students and not so much with second-year undergraduates who have taken the mandatory subject of legislation and professional ethics recently. Likewise, Park and Kjervik (Park et al., 2012) also ensure that, if there is greater training, reflection and discussion around ethical issues in students and professionals, there is an increase in their level of moral sensitivity in caring relationships. Along these lines, publications such as those of Jang, Sun Joo et al. (Jang, Kim, and Lee, 2022) warn about the importance of nurses receiving continuous education to be aware and maintain a high level of moral sensitivity. It seems therefore true that stated by Bahiarni, Farideh et al., moral sensitivity can and should be trained, since the training of moral sensitivity is one of the most important ways to strengthen the moral decision-making of nursing (Bahrieni, Azodi, Hajivandi, seddighi, and Jahanpour, 2022).

Finally, after analyzing the results, they show that the SJD-UB nursing school belonging to the hospital order of San Juan de Dios, a religious order whose strategic line is the humanization of care, has higher scores in moral sensitivity, which could be explained by the fact that this philosophy based on values is presented more clearly compared with the rest of the institutions that identify themselves as secular (Gray, Snow, Wright, and Garner, 2004). In this line, there are publications that recommend the inclusion of explicit learning, in university education, in education designed to explore and develop professional values (Antoniu, Clifton, and Wilson, 2022).

No statistically significant differences were found when comparing the influence of prior work experience in healthcare, current employment in the healthcare sector and the type of contract in relation to moral sensitivity. These results suggest that, in our sample, none of these factors have a considerable impact on moral sensitivity levels, which could indicate that other factors, such as academic training or the educational environment, play a more significant role in the development of moral sensitivity.

5. Limitations

This study has certain limitations that should be considered when interpreting the results. First, nursing students were selected using non-probabilistic convenience sampling and participated voluntarily, which could have introduced selection bias. However, a large number of students from various university centers participated and the profile of these students is similar to that of the general Spanish population, allowing for some generalization of the results to the broader population studied.

Secondly, the overall reliability of the questionnaire was slightly lower than expected, suggesting that the results should be interpreted with caution. Although efforts were made to ensure the validity and reliability of the instruments, suboptimal reliability may affect the precision of the conclusions drawn from the questionnaire.

Additionally, it was not possible to analyze temporal stability due to the type of questions in the questionnaire, which encourage respondents to reflect on the topic. This reflection could lead to new attitudes or perceptions, potentially causing inconsistency in responses between the two measurements. This limits our ability to assess the consistency of responses over time.

Finally, another limitation is that the sensitivity to change was not analyzed in this study. Future research, particularly in longitudinal or post-intervention studies, would benefit from evaluating how the variables change over time, providing a deeper understanding of the effectiveness and implications of the topic under study.

6. Conclusions

This study successfully validated the moral sensitivity questionnaire for nursing students, confirming its reliability and construct validity. The findings indicate that the questionnaire is a useful tool for assessing moral sensitivity in this population. However, the results also highlight the need to adapt the original structure of the questionnaire to better suit the specific characteristics and experiences of nursing students, particularly regarding their academic and professional environments.

The study revealed significant differences in moral sensitivity between second- and fourth-year nursing students, with second-year students showing higher levels of sensitivity in relation to their nursing responses. This suggests that early ethical training, such as that received in the second year, plays a key role in shaping moral sensitivity.

Gender differences were not statistically significant in this study, contrasting with other research that often reports higher moral sensitivity in female nursing students. This suggests that other factors, such as training or institutional culture, may play a more important role in shaping moral sensitivity than gender alone.

Additionally, the study found that nursing students from the SJD-UB campus, which is aligned with a philosophy of humanized care, exhibited higher moral sensitivity scores compared with those from secular institutions. This finding underscores the potential influence of institutional values on the development of moral sensitivity.

Finally, no significant impact was found from prior work experience or employment type in the healthcare sector on moral sensitivity. This suggests that academic training and the educational environment may have a more profound impact on moral sensitivity than professional experience alone.

These findings provide valuable insights for the development of educational programs aimed at enhancing moral sensitivity in nursing students and highlight the importance of incorporating ethical values and professional standards into nursing curricula. Further research should explore how moral sensitivity evolves over time and in response to different educational and professional experiences.

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CRediT authorship contribution statement

Barbara Hurtado-Pardos: Writing – original draft, Validation, Methodology, Investigation, Formal analysis. **Leticia Bazo-Hernández:** Writing – original draft, Project administration, Investigation. **Isabel Font-Jiménez:** Writing – original draft, Methodology, Investigation, Formal analysis. **María F. Jiménez-Herrera:** Writing – review & editing, Writing – original draft, Supervision, Investigation, Conceptualization. **Juan Roldán-Merino:** Writing – original draft, Supervision, Investigation, Formal analysis. **Ainoa Biurrun-Garrido:** Writing – original draft, Validation, Methodology, Investigation, Formal analysis. **Beatriz Campillo-Zaragoza:** Writing – original draft, Visualization, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence

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Authors' notes

MJH, JRM designed the study, conducted literature searches and provided summaries of previous research studies. JRM, ABG and BHP conducted the statistical analysis. MJH and JRM wrote the first draft of the manuscript and the second was written for IFJ, LBH, ABG, JRM, BHP. All authors contributed in the last version and have approved the final manuscript with the equally contributed.

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