





Analysis in the ethical decision-making of dental, nurse and physiotherapist students, through case-based learning

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Abstract

Introduction: Training in ethical competencies is perceived with special interest among the objectives of health education. The dimensions of the person such as integrity, autonomy and dignity influence the choice of interventions, but the different specialties of the health sciences conceive these dimensions with different perspectives depending on the clinical setting. These divergences can be detected during the first years of undergraduate studies, and it is important to know the professional bias and its possible causes.

Materials and Methods: A procedure was developed through case-based learning (CBL) to assess various characteristics of decision-making during the early stages of student training. A semi-quantitative method was designed based on the narrative responses of a case with ethical implications in the field of gender violence. The method was applied to 294 undergraduate students in nursing (95), physiotherapy (109) and dentistry (90) from the Faculty of Health Sciences of a Spanish university. A frequency analysis of the narrative responses of the students to the proposed case was carried out, using the chi-square test to determine any association between the variables studied: gender, specialty and ethical knowledge.

Results: Four types of response categories were detected, as a result of combining the personal conversation, report to legal authority or require assistance of other teams. The most common option in dentists is conversation only, while physical therapists include the assistance of other teams. In nursing, a balance is observed between both possibilities. The results show that student responses differ significantly among specialties and also differ significantly according to test scores on ethical knowledge. However, no significant differences were found between the responses provided by men and women.

Conclusion: Most of the health sciences students highly valued their own capacity for dialogue and reflection to approach situations with complex ethical dimensions. We consider that case-based learning (CBL), in combination with narrative analysis is a valid means of evaluating the professional ethical competencies of students in health sciences careers applied to a common goal.

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KEYWORDS

case method, case-based learning, decision-making, ethical competences, healthcare curriculum

1 | INTRODUCTION

The ethical skills of health professionals and the analysis of ethical decision-making in clinical different situations are gaining importance.¹⁻³ Dimensions of the person such as integrity, autonomy and dignity influence the choice of treatments and clinical scenarios become more complex and diverse.^{4,5} Interventions in the face of a suicide attempt, a gender violence case, or a request for euthanasia require different responses and they are not solely technical. In this context, a solid ethical education is becoming increasingly necessary when dealing with these situations, which need training complementary to protocols of actuation.⁶ This ethics training should be holistic and comprehensive rather than compartmentalized^{7,8} and based both on doctor/patient communication and one's profound reflection.⁹⁻¹¹

Upon this scenario, the limited postgraduate training and its failure to reach the professionals involved has been put forward.^{2,12} Trying to overcome these unmet needs, several proposals have emerged to include ethical training during the first years of undergraduate studies. In this period, the main technical skills, the professional principles and attitudes are acquired and assimilated.¹³⁻¹⁵ In addition, another problem, perceived by undergraduate students of medicine, dentistry, pharmacy, physiotherapy, nursing and other healthcare-related disciplines is the lack clear ethical criteria.¹⁶⁻¹⁸ This perception is not only due to a lack of training, but mostly to an absence of consensus on concepts and skills to be taught.^{19,20} Cultural, social and personal diversity and variety permeate all moral problems making difficult to pin down their ethical dimension. Attempts have been made to overcome this dispersion, developing ethical codes and protocols which students must manage and master (ADA code, WMA International Code of Medical Ethics, NMC code). However, the result tends to be a formal assimilation of theoretical materials.

In addition, there are many variables that may influence the moral aptitudes of healthcare professionals: gender, age, education, previous ethical training or professional specialty.²⁰⁻²³ Do moral decisions differ whether a male or female person takes them? Do dentistry students respond in the same way as nursing students do? Does familiarity with theoretical moral concepts facilitate a specific type of decision? The same moral concepts taught to groups of different age, gender or professional fields may be assimilated in different ways. Probably, this phenomenon is due to the relative and subjective interest in ethics generated by each age, gender or specialty, and its bias introduced in the decision-making process.²⁴⁻²⁷

In this setting, the case method or case-based learning (CBL) has established itself as a promising pedagogical option.²⁸⁻³⁰ The case method presents real-life situations in order to transmit concepts, principles and approaches that may be useful due to their similarity

to current clinical situations.^{18,31} This method allows to assess the degree of sensitivity and ethical commitment of students when faced with a moral dilemma, as well as to assess influence of key variables in their decision-making.

Among the multiple situations that have scope in various specialties, the reactions to a situation of gender violence stand out. Few comparative studies among specialties focused on violence against women have been carried out to date or they are limited to specific health areas.^{23,32-35} For this reason, we consider it interesting to carry out a study on the ethical decisions that students from different health areas make in the face of the same gender violence situation.

2 | METHOD

2.1 | Study design

Our research is an exploratory study, following a mixed qualitative-quantitative methodology. The starting point of the study was the analysis of the narrative responses to a moral dilemma about partner violence posed as a clinical case.^{36,37} The analysis of the bibliography reveals that the capacities and aptitudes of the non-specialized in partner violence healthcare staff are a source of differences in the perceptions and the possible solutions.^{19,25,32,38}

We chose the narrative response due to its ability to shed light on student behaviour patterns.^{6,39,40} and the dependence on specific factors.^{17,41} We think that, for the exploration of abstract thinking, such as moral deliberation, reflective narration facilitates the presentation of ideas and opinions with greater coherence, without directing the response.^{42,43} Furthermore, this approach may foster spontaneity and avoid restrictions or reductionisms of the type of response that could be given.^{4,31}

The study case was delivered during a session in the Ethics subject class during the first quarter of the course. The students evaluated the case individually and the responses took around 30 min to complete. In brief, the clinical situation described a case of partner violence that necessarily implied the ethical commitment of the professional (the student): a female patient who visits a healthcare centre with injuries to the mouth and the hip. She reports that her partner caused these injuries and that she has been undergoing this abuse in silence. The healthcare staff urge her to inform the authorities, but she refuses point blank, saying that it is none of their business, that she knows how to deal with her partner and that she would deny everything, so they stop bothering her (Appendix).

Given this situation, students were asked what the most correct action would be, according to their opinion and taking into account the response of the woman, following a narrative method. Although

TABLE 1 Distribution of original data according to categories, health specialty and gender

Categories		Health specialty					
		Nursing		Physiotherapy		Dentistry	
		Female	Male	Female	Male	Female	Male
A) Personal conversation only	85 (28.7%)	23	5	3	6	28	20
B) Personal conversation and legal intervention	63 (21.3%)	14	4	9	18	10	8
C) Personal conversation and psychologists/ social workers assistance	86 (29.7%)	27	6	27	20	4	2
D) No personal conversation and require the legal, psychologists and social worker intervention	60 (20.3%)	12	4	12	14	13	5
		76	19	51	58	55	35
Total (n = 294)		95		109		90	

there are standardized protocols in all legislations for these situations, the student's response implied certain moral reflection on the patient's own autonomy to reject the solution proposed by the healthcare professional. The responses would allow analysing the types of decision made and their frequencies considering a variety of factors such as the student gender, his or her academic field (health specialty) and the level of theoretical knowledge in general ethics. It should be taken into account that, due to the type of injuries described (in the mouth and hip) the case can be analysed by any of the three specialties, although they belong to very different health areas. Obviously, the object of the analysis is not based on the clinical situation of the woman but on her psychological reaction and the response of the health professional.

2.2 | Data collection

The study sample comprised 294 students (184 women, 112 men) in Health Sciences Faculty of a Spanish university, of three healthcare degrees, from second and third year of their undergraduate course: nursing (95), physiotherapy (109) and dentistry (90). The study was conducted from October 2014 to April 2016. The selection of Degrees was made keeping in mind the lack of formal specialization in partner violence of these health practitioners. Nursing, physiotherapy and dentistry professionals perceive the problem of violence indirectly through its immediate clinical consequences but lack psychosocial tools that would allow them to manage the situation.^{15,44}

The selected students had received the same humanistic sciences training through a specific subject during the first year of their undergraduate course, but they still did not have regular contact with patients. To facilitate that all students acquired a standardized knowledge of ethics, they received 30 h on General Ethics Theory. The training programme given is adapted to the programmes of the European Union, which include the analysis, among others, of the Universal Declaration of Human Rights, the Declaration of Helsinki, the Oviedo Convention, the guidelines of the Council of

Europe and the different Deontological Codes of Professional Associations (in coordination with European Federation of Nursing Regulators, Association for Dental Education in Europe and World Confederation of Physical Therapy). Based on them, performance criteria are established in aspects related to informed consent, professional secrecy, patient autonomy or conscientious objection. We consider, therefore, that the training received is equivalent in the three specialties and comparable with European standards. A test of 100 true/false questions was taken by the students to assess their level of ethical knowledge⁴⁵ and the score of the test ranged from 0 to 10.

2.3 | Data analysis

Data were collected from Department of Humanities student's academic register. Data were available for the researchers, previously codify, and they were analysed anonymously. After collecting the answers, two authors grouped them according to the decisions or actions adopted by students. Three rounds of categorization were carried out until a consensus was reached between two authors, going to the third party in case of divergence. In this way, the total agreement or interrater reliability was reached. In addition, qualitative and quantitative variables were collected, such as student gender, health specialty (nursing, physiotherapy or dentistry) and the marks of the general ethics knowledge test. The information was tabulated and used for the posterior analysis of frequencies and assessment of the significance of the variables using the chi-square test and ANOVA. It was considered significant when *p*-value was lower or equal to .05.

2.4 | Ethical considerations

The International University of Catalonia Research Ethics Committee approved this research project in September 2018 (approval number HUM-2018-1).

3 | RESULTS

The open, narrative answers provided by the students allowed to explore their spontaneous reflections on basic concepts of medical ethics, such as autonomy, justice and the patient's welfare. Four types of response, categories were detected (Table 1), as a result of combining the personal conversation, report to legal authority or require assistance of other teams, with or without patient's permission:

- A) To engage in a reflective personal conversation with the patient without an external agent's intervention, in order to ensure the patient's privacy and to encourage her to take the initiative;
- B) To engage in a reflective personal conversation with the patient, but at the same time either reporting the abuse to the legal authorities, regardless the patient's permission;
- C) To engage in a reflective personal conversation with the patient and suggest her the assistance of a team of psychologists and/or social workers, with the patient's permission;
- D) To seek legal authorities, psychologists or social workers intervention, without engaging in a dialogue with the patient or seeking her consent.

Overall, the preferred responses included the reflective individual conversation alone or with the intervention of specialized personal, corresponding with categories A and C. It was preferred to use the term "personal conversation" over "counselling" because the latter concept may contain certain bias of paternalism which did not exist in this case.

The most frequently provided answer was the combination of a personal conversation and the assistance from a team of psychologists or social workers (category C, 29%), followed by the personal conversation only (category A, 28%). These responses were followed by two other types, category B and D which included legal intervention and ignored the patient's decision-making capacity. Then, a covariate analysis was performed to assess the influence of gender, health specialty, and level of ethics knowledge (Tables 2–4).

The influence of gender may be observed in Table 2 and Figure 1. The personal conversation with the participation of psychologists/social workers (category C) was chosen by 32.6% of women and was followed by the personal conversation only (category A, 29.3%). These were also the most frequent responses among men (27.7% for category A and 25% for category C). In contrast, men were more likely to suggest reporting the abuse to the authorities than women (men 26.8%, women 17.9%, $p = .079$). The analysis of the ratio between % of male/female for each category and the chi-squared analysis show that there are no significant differences between the responses of women and men, neither when each category is taken in isolation nor when it is taken together.

The analysis according to health specialty shows large differences (Table 3; Figure 2). The personal conversation only (category A) was the most frequently chosen option by the dentistry students (53.3%) but was hardly chosen by physiotherapists (8.1%) and was second choice among nursing students (29.6%). The category C of the conversation and support from psychologists/social workers was preferred by the physiotherapists (44.2%) but it was hardly chosen at all by the dentistry students (6.7%), while 34.7% of nursing students chose it. The option of the personal conversation and informing the legal authorities (category B) was less prevalent and variable across the three specialties: 20% in dentistry, 24.3% in physiotherapy and 18.9% in nursing. Finally, the search for other solutions (interventions by judges, psychologists and social workers) as an alternative to conversation (category D) was the least frequent in nursing (16.8%) and slightly higher in dentistry and physiotherapy (20% and 23.4% respectively). The analysis of the ratio and the chi-square show that there are significant differences when the data of the two-by-two specialties are analysed. The categories A and C are those that generate the significant differences between specialties.

Last, students who chose category C showed the highest score mean on ethics knowledge (6.45 ± 1.70 marks), while students who chose category A attained the lowest score mean (5.72 ± 1.48). The average score of the test according to the categories confirms this hypothesis (Table 4). The ANOVA analysis showed that there were differences among the different levels of ethic knowledge ($p < .024$;

TABLE 2 Distribution of frequencies and chi-square analysis, according to genders

Categories	Gender		Ratio % M/F (95% CI)	<i>p</i> -value (χ^2)
	Female	Male		
A) Personal conversation only	54 (29.3%)	31 (27.7%)	0.933 (0.642–1.356)	.715 (0.134)
B) Personal conversation and legal intervention	33 (17.9%)	30 (26.8%)	1.477 (0.956–2.282)	.079 (3.084)
C) Personal conversation and psychologists/social workers assistance	58 (32.6%)	28 (25.0%)	0.758 (0.518–1.111)	.147 (2.098)
D) No personal conversation and require the legal, psychologists and social worker intervention	37 (20.2%)	23 (20.5%)	1.010 (0.635–1.607)	.966 (0.002)
Total (<i>n</i> = 294)	182	112		

TABLE 3 Distribution of frequencies and chi-square analysis, according to health specialty

Categories	Health specialty			Nursing/Physiotherapy			Nursing/Dentistry			Physiotherapy/Dentistry		
	Nursing	Physiotherapy	Dentistry	Ratio % N/P (95% CI)	p-value (χ^2)	Ratio % N/D (95% CI)	p-value (χ^2)	Ratio % P/D (95% CI)	p-value (χ^2)			
A) Personal conversation only	28 (29.6%)	9 (8.1%)	48 (53.3%)	3.570 (1.775-7.180)	<.001 (15.398)	0.552 (0.383-0.797)	.001 (10.870)	0.155 (0.080-0.298)	<.001 (49.007)			
B) Personal conversation and legal intervention	18 (18.9%)	27 (24.3%)	18 (20.0%)	0.765 (0.451-1.298)	.317 (1.001)	0.947 (0.527-1.703)	.857 (0.033)	1.238 (0.731-2.098)	.423 (0.641)			
C) Personal conversation and psychologists/ social workers assistance	33 (34.7%)	47 (44.2%)	6 (6.7%)	0.806 (0.568-1.143)	.221 (1.496)	5.210 (2.293-11.839)	<.001 (21.888)	4.541 (1.992-10.351)	<.001 (17.437)			
D) No personal conversation and require the legal, psychologists and social worker intervention	16 (16.8%)	26 (23.4%)	18 (20.0%)	0.706 (0.404-1.234)	.217 (1.526)	0.842 (0.458-1.548)	.579 (0.307)	0.734 (0.398-1.355)	.320 (0.985)			
Total (n = 294)	95	109	90									

Note: p-value < .05, in bold.

F = 3.203) and the differences were found between responses C and A (category C vs. category A, p-value .022).

The distribution and relation of Gender influence and Health specialty factor with the Ethical knowledge test scores are displayed in a jittered strip chart (Figures 3 and 4).

4 | DISCUSSION

The first interesting finding in the study shows that around 70% of the students lean towards a personal conversation, generally supported by other measures. This result suggests that healthcare students value the capacity of dialogue even with their incipient humanistic training.² On the other hand, it may also manifest the lesser choice of the students to involve the legal authorities, psychologists or social workers without engaging with an initial conversation with the patient. This is particularly important given the fact that these healthcare students may not necessarily be proficient in conversational methods with patients yet. Communication skills are integrated later during their clinical rotations, but they are aware of the need for empathy and collaboration with the victim.

4.1 | Gender influence

Another interesting finding is the absence of differences among categories and ethical knowledge scores when the covariate gender is included in the analysis (Table 2; Figure 3). Previous studies have shown different reactions to a case of partner violence between men and women.^{23,46} However, our data do not suggest any significant difference ($p > .05$). This may show greater sensitivity and awareness towards this kind of problems among younger generations in both sexes. In any case, in this study, we only have data from student population without professional experience, and thus, a larger study including healthcare professionals is essential to test this finding and see whether differences exists between students and practitioners.⁴⁷

4.2 | Health specialty factor

The professional field of study (whether nursing, physiotherapy or dentistry) played a significant effect on the way the students approached the case (Table 3; Figure 4). This observation could be related to prior holistic training received by students during the undergraduate years, as previously has been suggested.^{23,32,48} It must be borne in mind that this training may also reflect the influence of culture and differences in the perception of the severity of partner violence and the ways to address it.⁴⁹ Thus, it is expected that this kind of studies may include also the observed bias among the different healthcare practitioners upon these problems and as it may be reflected in the student's responses.^{25,41} More interestingly, our results show that the students' points of views of the different

Categories	M (SD)	p-value (F)
A) Personal conversation only	5.72 (1.48)	.024 (3.203) [*]
B) Personal conversation and legal intervention	6.33 (1.85)	
C) Personal conversation and psychologists/social workers assistance	6.45 (1.70)	
D) No personal conversation and require the legal, psychologists and social worker intervention	6.22 (1.61)	

**p*-value <.05, in bold. Bonferroni correction for the multiple comparison of the means (for each two categories). C vs. A: *p*-value .022; 95% CI (0.069–1.404). The other comparisons were not significant.

undergraduate courses are not coincidental and are likely to propose diverse solutions.^{17,50,51}

4.2.1 | Dentistry

More than half of the dental students (53.3%) would try to solve the problem exclusively through a personal conversation with the patient. Those leaning towards a combined approach seem to prefer the referral to the legal authorities together with the personal conversation. In fact, the assistance of a psychologists or social workers team is hardly suggested, a pattern that is observed in both male and female dentistry students. The explanation for this response might be that the visit to the dental clinic does not offer many other alternatives. These observations suggest certain degree of confidence in the value of dialogue and the legal system as an effective method to solve this type of problem, probably due to a greater awareness.³² Certainly, training in interaction skills in dentistry is infrequent but the implementation of tutorial programmes to promote this skill has led to significant improvements.^{11,52,53}

4.2.2 | Physiotherapy

Only 8% of physiotherapy students would propose the exclusive personal conversation option as the initial approach, a figure much lower than among the dental students. In addition, physiotherapy students (both male and female) were more likely to combine personal conversation with other alternatives, and in fact, 44.2% proposed consulting a team of psychologists as an additional measure. This may suggest less trust in the effectiveness of personal dialogue and greater confidence in the effectiveness of psychological therapy or the legal system.^{54,55} Ethics is not widely taught in physiotherapy degrees, mostly due to course content structure, which may lead to limited teaching efficacy.^{55,56} Thus, our findings may reflect some of these curriculum deficiencies in this group of students.⁴¹

4.2.3 | Nursing

As for nursing, there is an in-the-middle situation: almost 30% of nursing students would pursue a solution through a personal conversation

TABLE 4 Test score of response categories (A-B-C-D)

alone, and around 34.7% would engage with psychologists and/or social workers. This even result may show great confidence and empathy for the patient and respect for her autonomy, as well as trust in other resources (eg psychologists, social workers or family assistance). Possibly, this observation is caused because their profession and training promotes interaction with patients, which could facilitate to search for more imaginative solutions. In fact, nurses may be in a unique position to address these situations.⁹ Hence, the nursing curriculum is beginning to address questions of intimate partner violence, though the results up to date seem still inconsistent.⁵⁷

4.3 | Ethics knowledge factor

The third covariate, the ethics knowledge, brought out significant differences among the students due to the responses provided (Table 4; Figures 3 and 4). Students with lower level of ethics training seem to prefer the personal conversation only option (Category A). Students with higher level of ethics training would favour the personal conversation combined with psychological or social assistance (Category C). Although there is no clear causality to explain this observation, we may infer a deeper degree of awareness in students with higher levels of ethical training. Those students with lower levels of training may be moved mostly by their own beliefs, attitudes or ideas in the decision process.⁵⁸ At this point, it is convenient to analyse the training given to the students and ask whether this training may have influenced their decisions. In the analysis of the relationship between the health specialty and the level of ethical training acquired, a certain barely significant link is perceived. In fact, the lowest scores corresponding to category A appear more frequently among dental students, while the highest scores, related to category C, are more frequent among Physiotherapy students. We believe that this relationship is not accidental, although we do not have enough elements to ensure it. It is possible that greater excellence in the assimilation of theoretical concepts in Ethics leads to greater prudence when making decisions and not acting alone, although this aspect may be biased by the frequent isolation in which the dentist works. Despite this, we think that anticipation and training to face these situations may help students to manage their emotions, voluntarism and indifference. Although studies encouraging and developing moral sensitivity have produced limited results, some improvement in these skills has been observed.⁵⁹

5 | LIMITATIONS

The first limitation is the use of an only one case, which obviously limits the conclusions. However, this analysis is valid to start an exploration about the effectiveness of this methodology in the

evaluation of decisions. In any case, more cases will be necessary to confirm these hypotheses to structure a solid methodology.³⁶

The second limitation relates to the narrative method to capture the responses. This may introduce bias and lack of standardization of the responses and their interpretation.⁴² We have

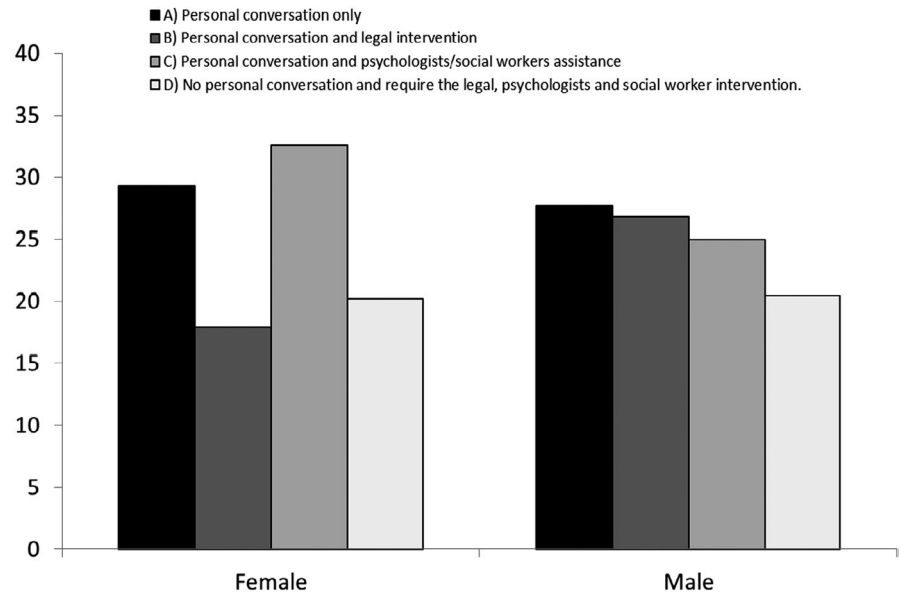


FIGURE 1 Frequencies (%) of response categories (A-B-C-D) according to genders of student

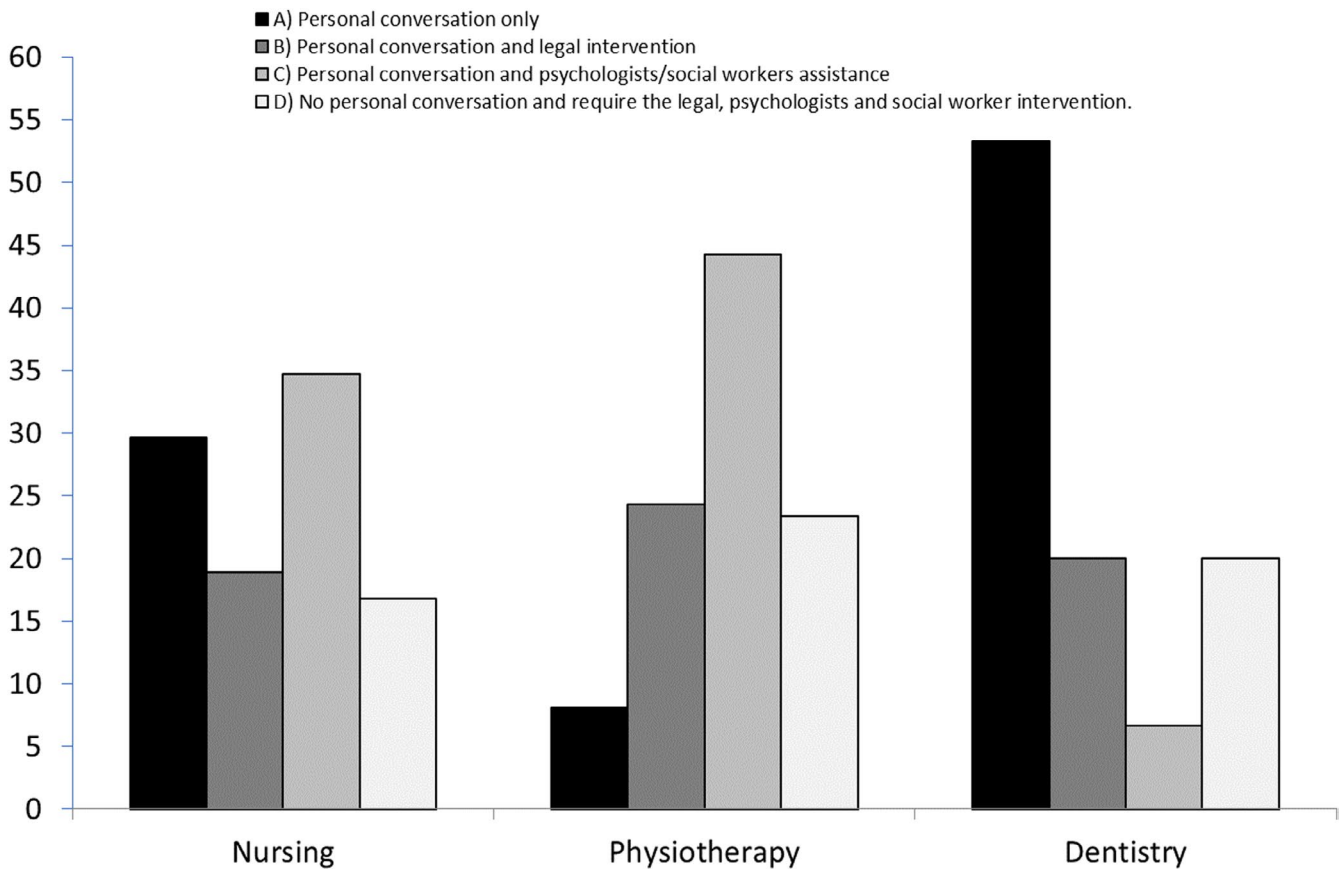


FIGURE 2 Frequencies (%) of response categories (A-B-C-D) according to health specialties of students

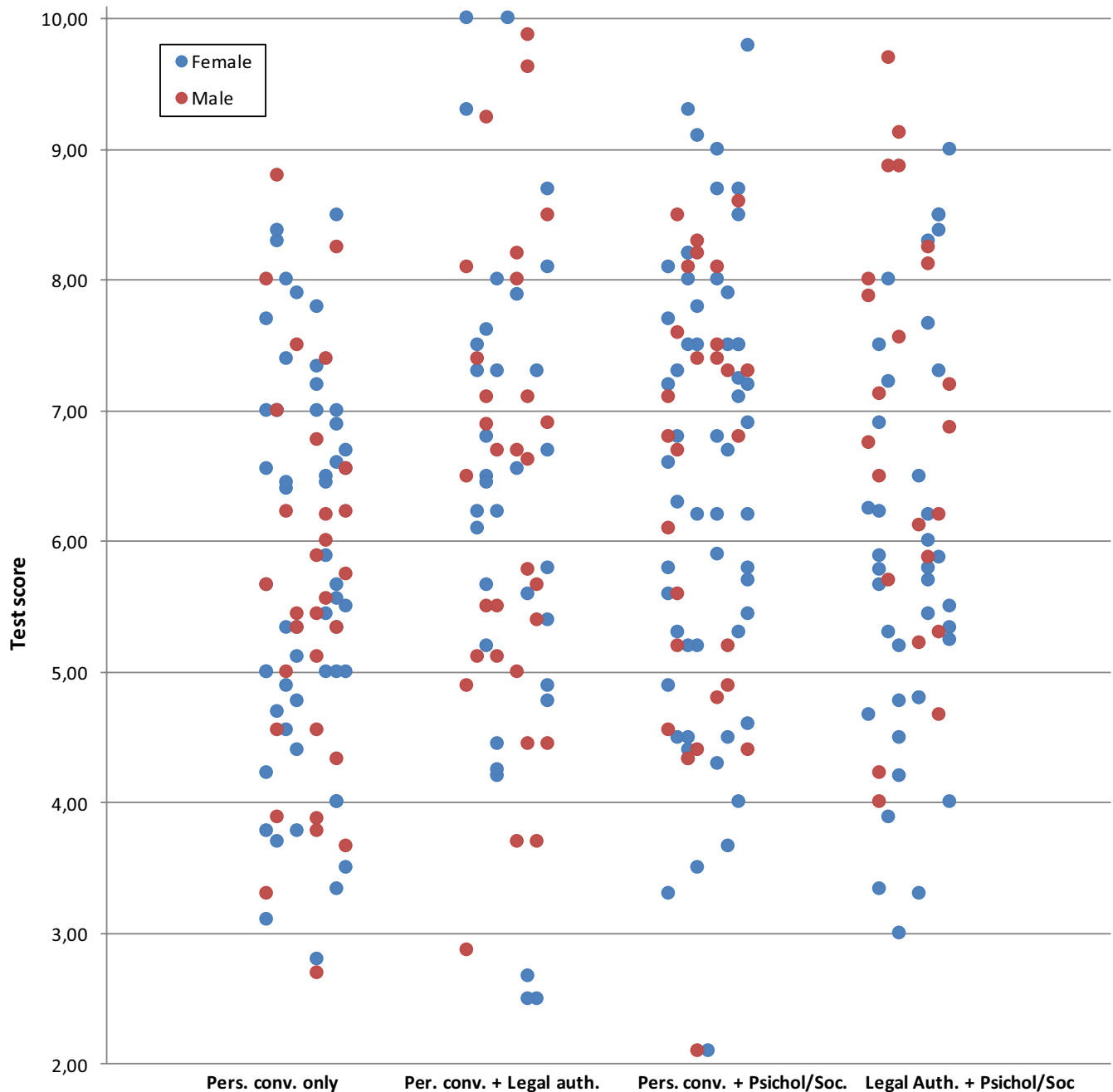


FIGURE 3 Distribution Test score vs. Categories, according to gender of students

sought to overcome this risk reading and reviewing the questionnaires by two different persons and going to a third party in case of doubts, until total agreement was reached. Another source of possible bias may have been the diverse professional experience among the students. In addition, demographic data of the student population, such as gender ratios in each degree, and age range (between 19 and 21 years) could also bring some limitation in the analysis. A multifactorial broader analysis would be needed to further complete the range of ethics competences within the health disciplines.

6 | CONCLUSION

The case method or case-based learning (CBL), in combination with a narrative analysis, seems a valid means to evaluate the ethics competences of undergraduate students in Health Sciences degrees. It highlights aspects that are difficult to assess in other ways, taking into account the complexity of human actions.

The responses of the students upon a moral dilemma about partner violence portray the diversity of approaches which may be affected by several factors; gender did not show an effect, the

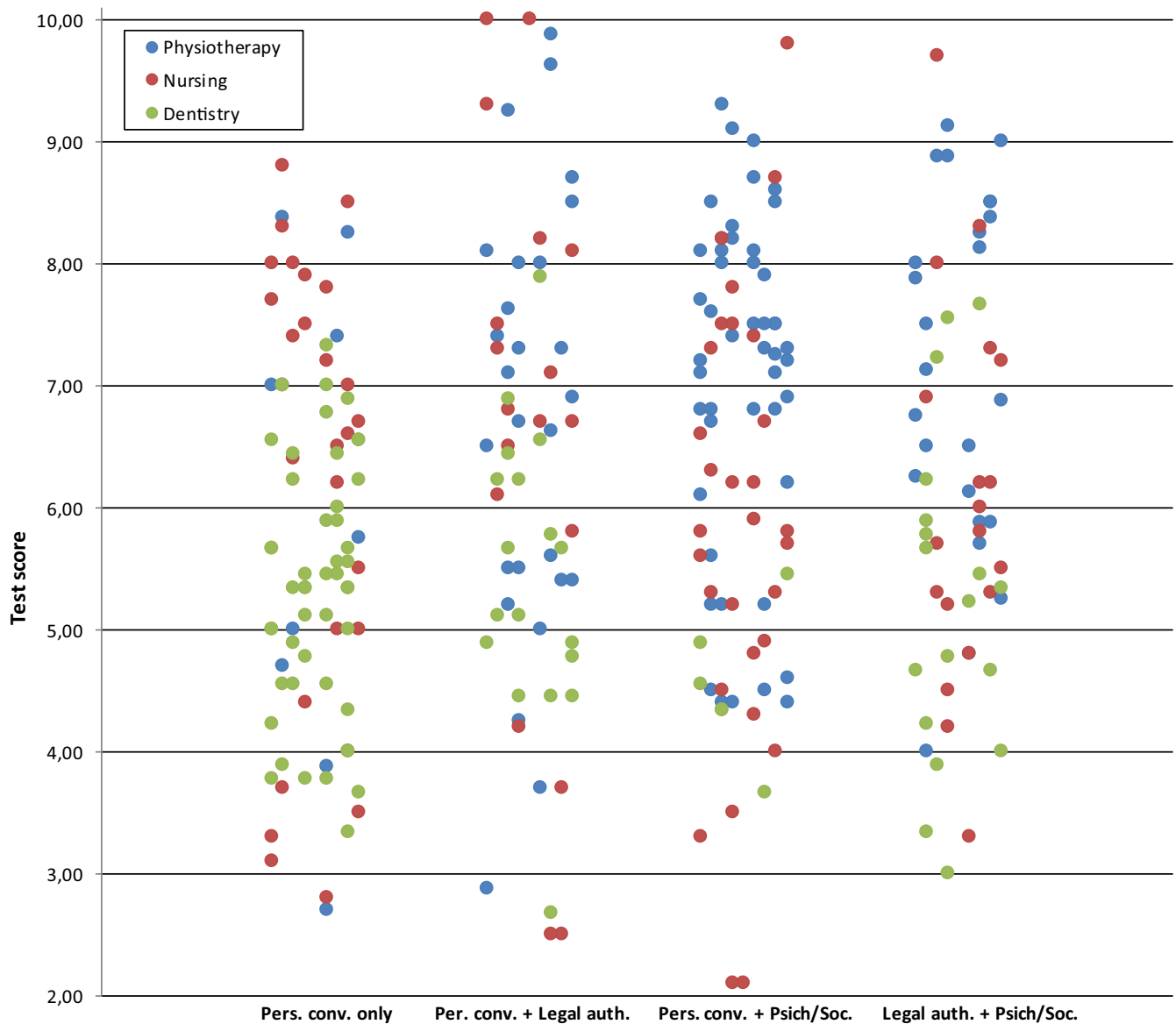


FIGURE 4 Distribution Test score vs. Categories, according to health specialty of students

professional field and the ethics knowledge did exert an influence in the outcomes.

Our results suggest that future healthcare professionals are aware that personal conversation only, in spite of its spontaneity, is not the most comfortable and accessible path for the healthcare professional, due to conceptual limitations. Thus, it seems imperative the support of other professionals to ensure that the patient's wishes are respected, and his/her health protected at the same time.

Last, our work highlights the importance of improving the different curricula of these degrees with the aim to address the violence within couples and other moral dilemma with similar action criteria.

CONFLICT OF INTEREST

The authors report no declarations of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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APPENDIX

CASE DESCRIPTION

MJ, a 58-year-old woman, goes to the health centre (dental clinic, outpatient clinic or rehabilitation centre) due to various trauma to the mouth and hip. She also has some bruising and some disorientation. MJ claims that it was just a fall, that she just wants to recover and go home as soon as possible because she has to take care of her husband. We asked her how to get in touch with her husband to inform him of the treatment to follow and if he can pick her up, since her situation is precarious, to which she responds with great nervousness and refuses to give us such information. We try to reassure her and create a relationship of trust to get to discover the truth of what happened. When we ask again how the trauma occurred, the answer is different. After several dialogues, MJ begins to cry, confirming that her husband has been the cause of her physical deterioration and that she has been suffering abuse in silence. We ask the patient if she has reported the abuse she received, and she says no. We emphasize the importance of reporting it, to which she responds nervously and with outright denial. Trying to excuse her husband, she tells us that it is normal, that her husband sometimes gets very nervous and that is why he acts that way. We recommend that you report the abuse again, but the patient is upset with the advice. She tells us that it is none of our business and that she already knows how to treat her husband. We insist that it is essential to report the injury, and if it does not proceed, we, as health personnel, will be forced to carry out said complaint. She replies that if we denounce her husband, she will deny all the facts and denounce us for reckless judgement and slander. Textually, it tells us that "she has the right to live as she wants."