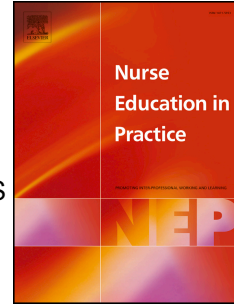


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COUNTRIES' CULTURES AND PROFESSIONAL NURSING VALUES: CROSS-CULTURAL EVIDENCE FROM SPANISH AND COLOMBIAN NURSING STUDENTS

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## **COUNTRIES' CULTURES AND PROFESSIONAL NURSING VALUES: CROSS-CULTURAL EVIDENCE FROM SPANISH AND COLOMBIAN NURSING STUDENTS**

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### **Blinding codes in the manuscript:**

University A: University of Antioquia.

University B: University of Seville.

**ABSTRACT**

This study aimed to identify countries' cultural values associated with the importance given to certain professional nursing values by nursing students from Spain and Colombia. Weis and Schank's *Nurses Professional Values Scale-Revised* (NPVS-R) in its Spanish version and the Hofstede cultural classification were used for this purpose. The sample was composed of 880 nursing students. Nursing students from both countries showed a greater importance for professional nursing values compared to evidence from other countries. Significant differences were also found in the total score, dimensions, and items, always being higher for Colombian students. Based on regression results, the impact that the academic year had on the importance given to NPVS-R is non-linear (U-inverted). Both groups of students gave the highest importance to the same group of items. Those showing the largest difference in the rankings were associated with country culture differences based on the scores identified by Hofstede. Colombian and Spanish societies present similarities in Power Distance and Uncertainty Avoidance, as well as differences in the other cultural dimensions.

**Keywords:** Cross-Sectional Studies; Nursing Ethics; Professional Practice; Students.

**Declarations of interest:** none

1 **Countries' cultures and professional nursing values: cross-cultural evidence from Spanish**  
2 **and Colombian nursing students**

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14 with country culture differences based on the scores identified by Hofstede. Colombian and  
15 Spanish societies present similarities in Power Distance and Uncertainty Avoidance, as well as  
16 differences in the other cultural dimensions.

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18

## 19 INTRODUCTION

20 Ethics has been linked to nursing care since the origins of the profession (Kangasniemi et al.,  
21 2015). Nursing practice implies dealing with ethical dilemmas (Iacobucci et al., 2013), and nurses  
22 need to have the tools that guide their behaviours. Professional nursing values are defined by  
23 Schmidt and McArthur (2018, p. 72) as ‘important professional nursing principles of human  
24 dignity, integrity, altruism, and justice that serve as a framework for standards, professional  
25 practice, and evaluation’. To internalise professional nursing values is key to developing a  
26 professional identity (Weis and Schank, 2009).

27 Professional nursing values are influenced by the level of education (Fisher, 2014; Cetinkaya-  
28 Uslusoy et al., 2015; Gallegos and Sortedahl, 2015), experience (Riklikiene et al., 2018;  
29 Fernández-Feito et al., 2019; Poorchangizi et al., 2019a), and also by personal values (Iacobucci  
30 et al., 2013; Sibandze and Scafide, 2018).

31 Although the culture of the country in which the professional is developing their practice on  
32 professional nursing values has been discussed in theoretical terms (Horton et al., 2007; Rassin,  
33 2008; Parandeh et al., 2014), the empirical evidence is scarce (Alfred et al., 2013; Lin et al.,  
34 2016). Presently, there is a call for further research to better comprehend the role of national  
35 culture on professional nursing values (Poorchangizi et al., 2019a).

36 Consequently, this study aimed to identify the cultural values associated with specific  
37 professional nursing values through the comparison of nursing students’ values from two  
38 countries with different cultures (Spain and Colombia), and to analyse if this importance varies  
39 according to certain factors.

40 The findings will be helpful to provide a better understanding about how countries’ cultures  
41 influence professional nursing values. Specifically, countries’ cultural characteristics associated  
42 with certain professional nursing values will be identified.

## 43 **BACKGROUND**

44 Professional nursing values are an issue of growing relevance in academic literature (Elliot,  
45 2017). Nurses' codes of ethics articulate the values, specific behaviours and ethical obligations of  
46 nurses (Schmidt and McArthur, 2018). Each country has developed its own code of ethics,  
47 although there is a common set of professional nursing values (Erkus and Dinc, 2018). Human  
48 dignity, altruism, social justice, autonomy in decision making, precision and accuracy in caring,  
49 responsibility, human relationships, individual and professional competency, sympathy, and trust  
50 were identified as professional nursing values by Elliot (2017) who carried out an integrative  
51 review of the literature.

52 Values ought to be the core of care (Parandeh et al., 2014), and they should guide nurses'  
53 behaviours in professional practice (Shahriari et al., 2013). There is an agreement about the  
54 important effect that professional nursing values have on the practice, and the high  
55 interdependence between personal and professional values (Kaya et al., 2017; Poorchangizi et al.,  
56 2017). In the exercise of their profession, nurses must make many decisions that will be  
57 significantly affected by their personal and professional values (Weis and Schank, 2000; Özsoy  
58 and Donmez, 2015). As nurses build a professional identity through their training, these personal  
59 and professional values change, and their behaviour also changes as a consequence (Fagermoen,  
60 1997; Schmidt and McArthur, 2018).

61 Although this training is an ongoing process that continues throughout their professional practice  
62 (López-Pereira and Arango-Bayer, 2017; Posluszny and Hawley, 2017), many researchers have  
63 pointed out the appropriateness of training in professional nursing values during the training for  
64 their degree (Leners et al., 2006; Bang et al., 2011).

65 In this regard, Johnstone (2015) found that pre-graduate training is the ideal moment for future  
66 nurses to learn the obligations, responsibilities, and challenges involved in the profession. The

67 cognitive and affective components of this training in nursing values (Taylor, 2014) may change  
68 the student's attitudes once they start their university studies (Ranjbar et al., 2017). The process  
69 of becoming a nurse implies the adaptation of one's attitudes to professional nursing values  
70 (Halperin and Mashiach-Eizenberg, 2014).

71 Furthermore, as a consequence of the training progress, the importance of professional nursing  
72 values should increase (Fisher, 2014; Dever et al., 2015; Kantek et al., 2017; Posluszny and  
73 Hawley, 2017), even though this is not always supported by statistical data (Lin et al., 2010;  
74 Donmez and Özsoy, 2016).

75 At this point, some authors (Shahriari et al., 2013; Poorchangizi et al., 2017; Kantek et al., 2017)  
76 claim that nursing programmes need to give greater priority to values training since it will be  
77 helpful in building a professional identity and generating progress towards excellence (Adeniran  
78 et al., 2012; Graan et al., 2016).

79 In addition, Schmidt and McArthur (2018) observed that the literature on the subject has  
80 suggested that there are some common professional nursing values across the world, although  
81 cultural differences in the priorities of values exist. Based on the Value Theory (Rokeach, 1973),  
82 the relative importance given by each nurse to professional values differs due to his/her personal  
83 background, which includes his/her country's culture. In this sense, Pang et al. (2003) argued that  
84 comparative analysis helps to understand the substantial role that cultural values play in the  
85 determination of the healthcare professional moral experience. The comparison in how nurses are  
86 trained is relevant considering the globalisation of healthcare and the sharing of professional  
87 resources across continental borders (Kraft et al., 2017).

88 Considering this argument, previous research (Alfred et al., 2013; Lin et al., 2016) confirms the  
89 appropriateness of the comparison of values commitment between different countries since the  
90 priorities vary depending on the cultural context. In order to better understand how countries'



91 cultures influence the importance of professional nursing values, it is necessary to conduct  
92 analyses in other different settings that will allow to evidence-based conclusions to be reached.  
93 According to Horton et al. (2007), whether a culture was more individualistic or more  
94 collectivistic has an impact on professional nursing values. Most previous studies have focused  
95 on Asian countries (Poorchangizi et al., 2019a; Bijani et al., 2019; Lee et al., 2020) and the  
96 United States (Weis and Schank, 2009; Iacobucci et al., 2013), but there has been a lack of  
97 evidence from Europe and Latin America.

98 In particular, this research is focused on Spain and Colombia. Nursing competencies in both  
99 countries are defined by their Codes of Ethics (Spanish: Consejo General de Colegios Oficiales  
100 de Diplomados en Enfermería, 1989; Colombia: República de Colombia, 2004). According to a  
101 study by García (2015), both codes are focused on achieving a patient's wellness. However, the  
102 Spanish nursing code of ethics emphasises how professionals should act while the Colombian  
103 code is focused on what professionals ought to avoid to not incur a sanction (García, 2015).

104 Previous comparative research has been focused on highlighting the difference in the importance  
105 of professional nursing values (Alfred et al., 2013; Lin et al., 2016; Alkaya et al., 2018), but our  
106 research goes further since the aim of our study was to identify specifically which cultural values  
107 from countries are linked with certain professional nursing values.

## 108 **STUDY AIM**

109 The main objective of this research was to compare the perception of the importance of  
110 professional nursing values between nursing students from Colombia and Spain, identifying if the  
111 similarities and differences found are associated with their countries' cultural characteristics.

## 112 **Hypothesis**

113 We established our hypothesis: ‘There are differences in the importance given by nursing  
114 students to professional nursing values due to the cultural settings’.

## 115 **METHODS**

### 116 **Design**

117 A cross-sectional study was carried out. To identify the professional values of the nursing  
118 students, we used Weis and Schank’s Nurses Professional Values Scale-Revised (NPVS-R; Weis  
119 and Schank, 2009), which was validated in Spanish by Basurto et al. (2010).

120 For country culture, we have selected Hofstede et al.’s (2010) classification supported by the fact  
121 that it has been previously used in the comparison of nurses’ behaviours or values (Flynn and  
122 Aiken, 2002; Banaszak-Holl et al., 2012; Abdollahimohammad et al., 2014; Bruyneel et al.,  
123 2019; Rojo et al., 2020). According to Hofstede et al. (2010), countries cultures are classified  
124 based on six cultural dimensions: Power Distance, Individualism, Masculinity, Uncertainty  
125 Avoidance, Long-Term Orientation, and Indulgence. Figure 1 presents the scores for each  
126 dimension in Colombia and Spain.

### 127 **Instrument**

128 NPVS-R has been used by most researchers who have conducted quantitative research (Elliot,  
129 2017; Poorchangizi et al., 2019a; Bijani et al., 2019; Lee et al., 2020) since it includes most of the  
130 professional nursing values recognised by the American Nursing Association in their 2001  
131 version Code of Ethics (Fisher, 2014). This questionnaire (NPVS-R) is the unique instrument that  
132 measures professional nursing values which has provided valid and reliable results in different  
133 countries (Schmidt and McArthur, 2018) and has been translated into several languages (Lin and  
134 Wang, 2010; Geçkil et al., 2012; Moon et al., 2014). Taking into account that our aim includes a  
135 comparison of two countries, the use of this tool is appropriate.

136 When the NPVS-R was validated in Spanish (Basurto et al., 2010), the 26 items were divided  
137 into three dimensions which emerged from the factorial analysis (Fernández-Feito et al., 2019):  
138 Ethics (9 items), Professional Commitment (8 items), and Professional Mastery (9 items).  
139 Considering that this version was used in this study, the analysis was based on these three  
140 dimensions. In addition to the original instrument, each item had Likert-type answers which  
141 reflect the degree of importance (Özsoy and Donmez, 2015; Poorchangizi et al., 2017), ranging  
142 from a score of 1 (Not important) to 5 (Most important). The total score by dimension is the sum  
143 of the score of each item included in the dimension. The higher the score, the stronger the  
144 importance of this nursing professional value/dimension.

#### 145 **Setting and Sample**

146 Adopting a convenience criterion, two degree programmes in nursing located in Colombia and  
147 Spain were selected. The universities chosen for the study are two with a high similarity in the  
148 syllabus of their nursing degree programmes, and both include specific trainings in Ethics  
149 (University A: 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> course; University B: 3<sup>rd</sup> course). Although ethics is taught in a  
150 transversal way through the nursing training, the specific courses in ethics involved 240 and 120  
151 hours in the University A and the University B, respectively. Their primary content covers  
152 bioethical problems and ethical care.

#### 153 **Data collection**

154 The questionnaires were collected in person by one of the authors in the courses given at the  
155 faculty with the highest attendance rate for each academic year. Only students who were  
156 available in class on the day of data collection and consented to participate were eligible and  
157 issued the de-identified self-report NPVS-R questionnaire with additional demographic variables  
158 (sex, age, marital status, and academic year). This was collected immediately from each student  
159 after completion. No student of the two universities refused to take part in the research. Ethical

160 and administrative approval for the study from both universities were obtained prior to contacting  
161 potential participants in January 2016.

## 162 **Data analysis**

163 The information gathered was analysed with the SPSS version 21.00 programme. The statistical  
164 analysis used was the following: a) the general characteristics of the participants by countries; b)  
165 the mean differences test between the countries and the NPVS-R total score, scores by  
166 dimensions and each item; c) a one-way ANOVA of the NPVS-R total score and scores by  
167 dimensions considering sex, and academic year variables; and d) multiple linear regression  
168 models. An analysis by age was not done as this variable had a moderate positive correlation  
169 with the year of study ( $r=0.551$ ,  $p<0.001$ ), which is why using this latter variable in the models  
170 was preferred. The global  $F$  was examined to determine whether the models were significant  
171 ( $p<0.05$ ).

## 172 **RESULTS**

173 In this study, 392 nursing students from Colombia and 488 from Spain completed the NPVS-R.  
174 The percentage of participation of the students was 82.8% in the Colombian University and  
175 53.4% in the Spanish University, and the participation was greater in the first years of both  
176 subsamples (see details in Supplementary material). The internal consistency of the Spanish  
177 version of the NPVS-R in our research was 0.75 (Colombian nursing students) and 0.88 (Spanish  
178 nursing students).

179 Turning to the general characteristics of the participants of the study (Table 1), the main profile  
180 of respondent was single women, aged 20-years-old or younger, enrolled in the first two years of  
181 the degree programme. There were no significant differences in the profiles between both  
182 subsamples except for marital status (a greater proportion of single students were in the Spanish  
183 sample).

184 The total and dimensions mean scores of NPVS-R were slightly higher in nursing students from  
185 Colombia, with all differences being statistically significant. By dimensions, *Ethics* had the  
186 highest score, followed by *Professional Mastery* and *Professional Commitment* (Table 2).  
187 Significant differences were also reported when each item was analysed (Table 3, except for item  
188 24 'Practice guided by principles of fidelity and respect for person'. To determine which values  
189 were most important to students in the two programmes, the position of each item in the rank was  
190 analysed (Table 3). In both countries, the most important items belong to the *Ethics* dimension  
191 while the less relevant items pertain to the *Professional Commitment* dimension. Based on the  
192 scores given by Hofstede et al. (2010), both societies (Colombian and Spanish) present  
193 similarities in Power Distance (medium-high) and Uncertainty Avoidance (high). Nevertheless,  
194 the results also showed differences in the relative importance given to certain professional  
195 nursing values. In this sense, Colombian nursing students (characterised by being more indulgent,  
196 masculine, and collectivistic, and less long-term oriented) gave more relative importance to 'Seek  
197 additional education to update knowledge and skills'. On the other hand, Spanish nursing  
198 students (characterised by being less indulgent and masculine as well as more individualistic and  
199 long-term oriented) gave greater relative value to 'Maintain competency in area of practice'.  
200 Table 4 shows the results of the multiple linear regression for total scores and scores by  
201 dimensions of the NPVS-R. Sex, marital status, and academic year were included in the  
202 regressions. Results from Table 4a (complete sample) revealed a significant difference in the  
203 country variable, which indicated that Spanish nursing students had lower NPVS-R scores than  
204 Colombian nursing students. Considering this point, the sample was divided between the two  
205 countries and analysed independently (Tables 4b and 4c).  
206 It was noted that the tendency of NPVS-R scores across academic years was non-linear,  
207 characterised by an inverted U-shape (except for *Ethics* dimension that lacked statistical

208 significance): NPVS-R (or dimensions) increased until the second (total score and *Professional*  
209 *Commitment*) or third course (*Professional Mastery*), and later it decreased. Mean differences of  
210 the total scores and scores by dimensions tests (see details in Supplementary material) also  
211 corroborated this behaviour. By gender, the only significant difference of scores was in the *Ethics*  
212 dimension, while by age there were differences for the *Professional Commitment* dimension.  
213 When the results by countries were analysed, the impact of most independent variables  
214 considered was similar, but sex presented a lack of statistical significance in the Spanish  
215 subsample. Nevertheless, professional nursing values of students differed by academic year.  
216 While a non-linear, inverted U-shape tendency was valid for Spanish students in the case of the  
217 total score, *Professional Commitment*, and *Professional Mastery* (getting their higher scores  
218 between the second and third courses), Colombian students reported their higher scores for total  
219 score, *Ethics*, and *Professional Mastery* in the last course, so their non-linear relationship was not  
220 defined by an inverted U-shape. In addition, academic year only had a statistically significant  
221 impact on *Ethics* in the case of the Colombian subsample.

## 222 **DISCUSSION**

223 Based on the results, nursing students from Spain and Colombia presented with a high NPVS-R  
224 (109.82 vs. 116.30 in absolute numbers), which indicates that professional nursing values are  
225 perceived by students in both countries as important. The internal consistency of the instrument  
226 could reflect certain cultural differences in the meaning assigned to the items, given that the scale  
227 is adapted to the Spanish context (Basurto et al., 2010). These values obtained can be considered  
228 adequate (Tavakol and Dennick, 2011) and are very similar to those attained in the valuation of  
229 the scale revised in English (Weis and Schank, 2009).

230 The higher scores NPVS-R of Colombian nursing students is closely related to the fact that their  
231 code of ethics emphasized behaviours to avoid if they did not want to get a penalty (García,  
232 2015).

233 The NPVS-R score in both countries involved in the research was higher than those reported by  
234 students in other countries. In this regard, Alfred et al. (2013) conducted research comparing  
235 professional nursing values of United States (US) and Taiwanese nursing students, and their total  
236 scores were 106.60 and 104.27, respectively. Moreover, Lin et al. (2016) analysed professional  
237 nursing values of Taiwanese and Chinese nursing students reporting a score of 99.10 and 100.47,  
238 respectively. Alkaya et al. (2018) also reported the NPVS-R showed by US and Turkish students  
239 (109.20 vs. 101.60). Furthermore, Moon et al. (2014) presented an NPVR-S total score of 101.86  
240 in South Korea, Nelwati et al. (2019) showed a score of 95.80 in Indonesia, and the score for  
241 Iranian students was 101.79 (Poorchangizi et al., 2019b).

242 In addition, results showed there were significant differences in total scores as well as in the  
243 dimensions identified. As it was argued previously, national culture influences the importance  
244 given to professional nursing values (Horton et al., 2007; Rassin, 2008; Parandeh et al., 2014).

245 If the ranking of the importance of professional nursing values obtained from this research is  
246 compared to those obtained from other countries (Alfred et al., 2013: US and Taiwan; Moon et  
247 al., 2014: South Korea), some general conclusions could be reached.

248 Previous research shows that the most important professional values for nursing students in  
249 Taiwan (Alfred et al., 2013), China (Lin et al., 2016), Indonesia (Nelwati et al., 2019) and South  
250 Korea (Moon et al., 2014) also belong to the *Ethics* dimension, while in other countries such as  
251 the US (Alfred et al., 2013) and Iran (Poorchangizi et al., 2019b), students give more importance  
252 to values included in the *Professional Mastery* dimension. In the case of the less relevant  
253 professional values, Spanish and Colombian nursing students showed similarities in professional

254 nursing values with the US (Alfred et al., 2013), Taiwan (Alfred et al., 2013), China (Lin et al.,  
255 2016), South Korea (Moon et al., 2014) and Indonesia (Nelwati et al., 2019), particularly, in  
256 ‘Participate in public policy decisions affecting distribution of resources’, ‘Participate in peer  
257 review’ (*Professional Commitment* dimension), while Iranian nursing students give the lowest  
258 importance to some values included in the *Professional Mastery* dimension (Poorchangizi et al.,  
259 2019b).

260 At this point, it is necessary to highlight that Taiwan and South Korea present similarities with  
261 Colombia and Spain regarding Power Distance (high-medium) and Uncertainty Avoidance (a  
262 high level, although the Taiwan score is slightly lower).

263 The highest differences among the subsamples analysed in this research are showed by items  
264 which belong to the *Professional Mastery* dimension. The relevance reported by item 9 (“Seek  
265 additional education to update of knowledge and skills”) in the Colombian sample is similar to  
266 that reported in the US (Alfred et al., 2013), while previous research pointed out a higher  
267 importance in China (Lin et al., 2016), Taiwan (Alfred et al., 2013) and Iran (Poorchangizi et al.,  
268 2019b). In this regard, the relative importance given by Spanish nursing students (ranked 15<sup>th</sup>) is  
269 similar to that reported in Indonesia and South Korea. Based on Hofstede et al. (2010), Colombia  
270 and the US are close in Masculinity (high-medium) as well as Spain and Indonesia (medium),  
271 while Spain reported similar scores to South Korea in Power Distance (high-medium) and  
272 Uncertainty Avoidance (high)

273 Moreover, item 15 (“Maintain competency in area of practice”) presents a medium relative  
274 importance in the Colombian subsample as is reported by nursing students in Taiwan (Alfred et  
275 al., 2013). According to Hofstede et al. (2010), these two countries have similarities in Power  
276 Distance (high-medium), Individualism (low), and Uncertainty Avoidance (high). Spanish  
277 nursing students give more relevance to this item but they do not have the first positions in the



278 ranking like in the US (Alfred et al., 2013), China (Lin et al., 2016), Indonesia (Nelwati et al.,  
279 2019) and South Korea (Moon et al., 2014).

280 Based on the regression results, nursing students enrolled in the last academic year generally gave  
281 less importance to professional nursing values than those from second and third courses. These  
282 findings differ from most previous evidence that had reported a continuous increase in the  
283 importance given to professional nursing values throughout the degree programme (Lin et al.,  
284 2010; Özsoy and Donmez, 2015; Kantek et al., 2017; Posluszny and Hawley, 2017; Lee et al.,  
285 2020), and these differences were sometimes statistically significant. However, fourth year  
286 nursing students in Iran also reported giving lower importance to professional nursing values than  
287 students from the previous years (Poorchangizi et al., 2019b), but the differences were not  
288 supported statistically. Nursing students in both countries involved in the study start their  
289 practical training in the second course, which means they were immersed in the profession and  
290 realized the importance of professional nursing values. During the third course, they acquired  
291 new abilities and faced new situations, so that they gave more importance to professional nursing  
292 values. Finally, a decrease of the importance of professional nursing values came in the fourth  
293 course. As previously stated, nurses gave less importance to professional nursing values than  
294 students (Riklikiene et al., 2018; Poorchangizi et al., 2019a; Fernández-Feito et al., 2019), so this  
295 decrease could be explained by fourth-year nursing students feeling themselves as “nurses” more  
296 than nursing students since training is intensive and has similarities with their future jobs.

297 This study has the limitation that data were self-reported, that is, there is a potential desirability  
298 bias in the responses. At this point, it was mitigated by anonymity since it favoured sincerity  
299 when the questions in the scale were answered. In addition, it did not measure how students  
300 learned professional values nor were personal values considered.

301 Future research should be conducted with cohort studies with the aim of documenting the  
302 changes in the perception of the importance of professional values of the nursing students from  
303 the beginning of their training experience until their graduation. With view to improve  
304 knowledge of the importance which professional values have for students and that there are  
305 values that have more weight during their training process as future nurses, it is also suggested to  
306 carry out meta-analysis studies with the data obtained from research conducted in other countries  
307 that have used the NPVS-R.

### 308 **CONCLUSION**

309 Colombian and Spanish nursing students gave greater importance to professional nursing values  
310 than any other setting analysed in previous literature. However, the results showed differences by  
311 dimensions and items among the countries. The sample was large enough and provided evidence  
312 from two different cultural settings that have not been previously compared. Both countries,  
313 characterised by a medium-high Power Distance and high Uncertainty Avoidance, gave the  
314 highest importance to values which belong to the *Ethics* dimension, while the lowest relevance  
315 was given to values of the *Professional Commitment* dimension. In addition, the results were  
316 compared to those obtained by previous research in other countries and discussed considering the  
317 country cultural differences based on Hofstede et al.'s (2010) cultural classification. One of the  
318 main strengths of this research lies in the consideration of multiple countries culture  
319 characteristics since previous research only focused on the Individualism/Collectivism  
320 dimension.

321 As discussed previously and considering our results, nursing schools should continue teaching  
322 professional values since it is key to the development of a nursing identity.

323

324

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488

**Table 1. General characteristics of the participants by country**

Characteristics	Colombia (n=392)	Spain (n=488)	Statistic	<i>p-value</i>
Age; average $\pm$ SD	21.7 $\pm$ 3.4	20.8 $\pm$ 3.6	12.17 <sup>†</sup>	0.001***
Age group; n (%)			21.17 <sup>‡</sup>	<0.0001***
$\leq$ 20 years old	176(44.9)	289 (59.2)		
21-25 years old	171 (43.6)	172 (35.2)		
$\geq$ 26 years old	45 (11.5)	27 (5.6)		
Gender; n (%)				
Women	319 (81.4)	394 (80.7)	0.05 <sup>‡</sup>	0.081
Men	73 (18.6)	94 (19.3)		
Marital status; n (%)			13.68 <sup>‡</sup>	0.002***
Single	359 (91.6)	460 (94.3)		
Married	23 (5.9)	8 (1.6)		
Divorced	0 (0.0)	2 (0.4)		
Other	10 (2.6)	18 (3.7)		
Year of study; n (%)			6.68 <sup>‡</sup>	0.083
First	114 (29.1)	155 (31.8)		
Second	101 (25.8)	151 (31.1)		
Third	106 (27.0)	114 (23.6)		
Fourth	71 (18.1)	68 (13.5)		

489

490

491 **Table 2. Mean total scores and scores by dimensions of the NPVS-R by country**

Scores	Colombia (n=392)	Spain (n=488)	Student <i>t</i>	<i>p</i> -value
Total	4.47±0.37	4.22±0.39	9.59	<0.001***
Ethics	4.64±0.36	4.48±0.46	5.72	<0.001***
Professional Commitment	4.25±0.66	3.93±0.50	8.02	<0.001***
Professional Mastery	4.51±0.38	4.23±0.46	9.66	<0.001***

492 \* *p*-value<0.05, \*\* *p*-value<0.01, \*\*\* *p*-value<0.005

493

494 **Table 3. Comparison of NPVS-R between nursing students in Colombia and Spain by rank**

	Colombia		Spain		<i>p-value</i>
	Rank	Mean	Rank	Mean	
1. Engage in on-going self-evaluation	22	4.28	22	3.89	0.000
2. Request consultation/collaboration when unable to meet patient needs	9	4.61	11	4.36	0.000
3. Protect health and safety of the public	4	4.76	5	4.63	0.002
4. Participate in public policy decisions affecting distribution of resources	25	3.96	24	3.78	0.003
5. Participate in peer review	23	4.18	26	3.28	0.000
6. Establish standards as a guide for practice	19	4.30	21	3.95	0.000
7. Promote and maintain standards where planned learning activities for students take place	16	4.46	13	4.27	0.000
8. Initiate actions to improve environments of practice	18	4.38	20	3.98	0.000
9. Seek additional education to update knowledge and skills	7	4.68	15	4.25	0.000
10. Advance the profession through active involvement in health-related activities	17	4.39	16	4.23	0.003
11. Recognise role of professional nursing associations in shaping health care policy	20	4.29	19	4.04	0.000
12. Promote equitable access to nursing and health care	10	4.55	8	4.39	0.001

13. Assume responsibility for meeting health needs of the culturally diverse population	10	4.55	12	4.32	0.000
14. Accept responsibility and accountability for own practice	5	4.72	6	4.57	0.001
15. Maintain competency in area of practice	15	4.48	9	4.37	0.034
16. Protect moral and legal rights of patients	3	4.78	2	4.68	0.015
17. Refuse to participate in care if in ethical opposition to own professional values	14	4.51	18	4.07	0.000
18. Act as a patient advocate	10	4.55	13	4.27	0.000
19. Participate in nursing research and/or implement research findings appropriate to practice	24	4.10	22	3.89	0.000
20. Provide care without prejudice to patients of varying lifestyles	8	4.67	7	4.47	0.000
21. Safeguard patient's right to privacy	1	4.83	4	4.67	0.000
22. Confront practitioners with questionable or inappropriate practice	20	4.29	17	4.12	0.005
23. Protect rights of participants in research	13	4.52	9	4.37	0.003
24. Practice guided by principles of fidelity and respect for person	5	4.72	2	4.68	0.344
25. Maintain confidentiality of patient	2	4.82	1	4.72	0.004
26. Participate in activities of professional nursing associations	26	3.93	25	3.58	0.000

495

496

497 **Table 4a. Multiple linear regression models of the total score and scores by dimensions of**  
 498 **the NPVS-R (complete sample)**

	<b>Total Score</b>	<b>Ethics</b>	<b>Professional Commitment</b>	<b>Professional Mastery</b>
Constant	117.866***	41.333***	35.252***	41.282***
Sex	1.197	0.871**	0.072	0.254
Marital status	-0.046	-0.072	-0.055	0.081
University	-6.426***	-1.419***	-2.574***	-2.432***
Academic year				
2 <sup>nd</sup>	4.329***	0.598	2.086***	1.645***
3 <sup>rd</sup>	4.062***	0.467	1.644***	1.951***
4 <sup>th</sup>	2.899***	0.176	1.451***	1.272***
F (7, 873)	21.14***	7.15***	16.81***	22.33***

499 Significance level: \*\*\*p-value<0.005, \*\* p-value<0.01, \* p-value<0.05.

500

501 **Table 4b. Multiple linear regression models of the total score and scores by dimensions of**  
 502 **the NPVS-R in Colombia**

	<b>Total Score</b>	<b>Ethics</b>	<b>Professional Commitment</b>	<b>Professional Mastery</b>
Constant	111.890***	39.690***	32.824***	39.376***
Sex	0.700	0.880*	-0.107	-0.074
Marital status	0.092	-0.269	0.047	0.314
Academic year				

2 <sup>nd</sup>	4.586***	1.365***	2.122***	1.099*
3 <sup>rd</sup>	3.691***	0.426	1.899**	1.366***
4 <sup>th</sup>	4.719***	1.522***	1.361	1.836***
F (5, 386)	3.57***	4.00***	2.20*	3.48***

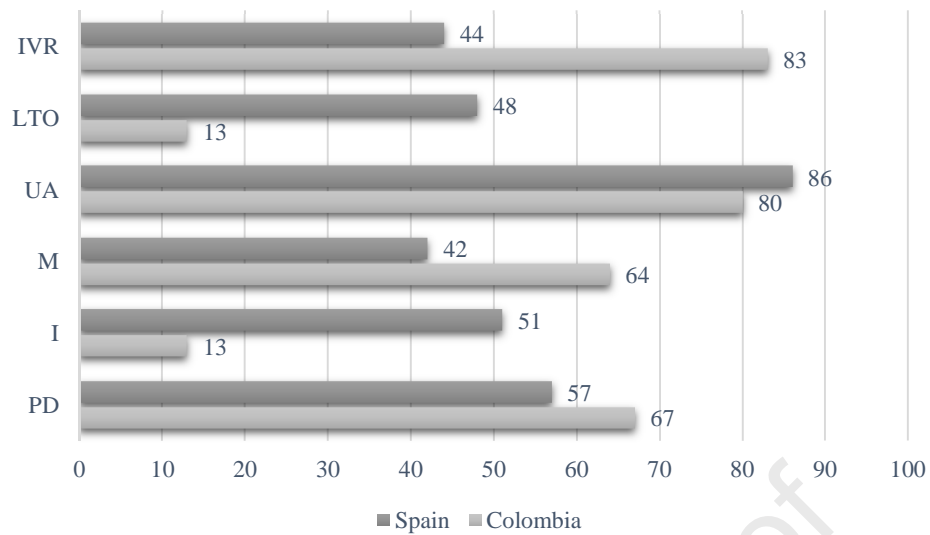
503 Significance level: \*\*\*p-value<0.005, \*\* p-value<0.01, \* p-value<0.05.

504

505 **Table 4c. Multiple linear regression models of the total score and scores by dimensions of**  
 506 **the NPVS-R in Spain**

	<b>Total Score</b>	<b>Ethics</b>	<b>Professional Commitment</b>	<b>Professional Mastery</b>
Constant	104.538***	38.697***	30.015***	35.826***
Sex	1.712	0.896	0.181	0.636
Marital status	-0.282	-0.019	-0.116	-0.147
Academic year				
2 <sup>nd</sup>	4.183***	0.059	2.070***	2.054***
3 <sup>rd</sup>	4.536***	0.597	1.439***	2.500***
4 <sup>th</sup>	1.023	-1.078	1.546**	0.556
F (5, 482)	4.19**	2.11	4.48***	7.05***

507 Significance level: \*\*\*p-value<0.005, \*\* p-value<0.01, \* p-value<0.05.



**Fig. 1.** Scores for each country's cultural dimension in Colombia and Spain according to Hofstede et al. (2010).

PD (Power Distance): the degree to which the less powerful members of a society accept and expect that power is distributed unequally. I (Individualism): the degree of interdependence a society maintains among its members. M (Masculinity): a reference in society for achievement, heroism, assertiveness, and material rewards for success. UA (Uncertainty Avoidance): the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. LTO (Long Term Orientation): how every society has to maintain some links with its own past while dealing with the challenges of the present and future. IVR (Indulgence): the extent to which people try to control their desires and impulses.



## Highlights

- Countries' cultures influence professional nursing values of students.
- The importance given to the professional nursing values was high in both settings.
- In both countries, the most important items belong to the *Ethics* dimension.
- Academic year also has an impact on the importance given to professional values.

Journal Pre-proof

### **CONFLICT OF INTEREST**

None declared.

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### **ETHICAL APPROVAL DETAIL**

Ethical approval for this research was sought from both Faculties involved in the research.

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