



## Research article

# Effects of an educational intervention on nursing students' attitudes towards gypsy women: A non-randomized controlled trial

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## ABSTRACT

**Background:** The cultural differences between health professionals and patients, together with the ethnocentric opinions that some health professionals sometimes hold, generate prejudice and negatively influence the experiences of these groups, for example, the Gypsy population.

**Methods:** We set up a quasi-experimental study to test the efficacy of an educational intervention among 40 nursing students in Spain based on the use of positive references in order to improve the students' attitude towards gypsy women receiving health care. Analysis of comparison of means and correlation analysis were carried out according to the type of variable compared.

**Results:** The score in all the items that make up the Prejudicial Attitude Scale (PAT) decreased after the test, which demonstrated that their attitudes had become less prejudiced. The Stereotype Content Model (SCM), the perception of the outgroup and the stereotypes regarding the Roma population as "trustworthy" all improved showing a statistically significant difference between the periods (pre and post educational intervention).

**Conclusion:** Nursing educators have the opportunity, through theoretical and practical exposure to positive references, to explore the students' experience and perceptions, analyze interventions and change their perceptions of threat, thus contributing to a more inclusive group identity.

## 1. Introduction

The educational environment is currently a powerful socializing agent and the value of education plays a crucial role throughout life in training the population, in the management and improvement of their health through a community approach (Barbero-Radío et al., 2021; Lorenzo, 2011). In fact, its influence, together with that of the media, has replaced the family as the main agent of socialization (Sevilla and Álvarez, 2006). However, during this educational process, young people also learn stereotypes and undesirable social behaviors (Serrano et al., 2012), such as gender prejudices and intolerance to cultures.

The positives referents have been pointed out as a main aspect in the formation of personal identity, contributing to the elimination of prejudices about the groups and promoting greater respect for diversity. In this regard, previous studies have highlighted the importance of 'first-person speeches' (Sedgwick, 1990). In this context, recent studies have

pointed out that the use of positive references in gender education, eg, including positive gay and lesbian references (Butler et al., 2008) or hearing members of the LGBTQ+ community sharing their experiences (Berbel and Prieto, 2016), constitutes an effective educational tool in the fight against stereotypes.

In addition, the university sees itself as an institution capable of revising its own internal systems, processes, and culture, while influencing individual and organizational health and well-being (Oliva, 2015). In fact, there are networks of health educational centers in schools and universities on both a national and international level, e.g., the Schools for Health in Europe Network (RAUS, 2021). The intervention methodology within the school curriculum involves dealing with health-related topics (Bolívar, 1999; Leroy et al., 2017), as well as giving teachers a key role in Health Education by encouraging the development of healthy skills and behaviors, facilitating information and channels of participation, proposing stimulating challenges and

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focusing on active participation as an educating and socializing agent (Botello et al., 2013; Porras, 2017).

In the health field, cultural differences between health professionals and patients sometimes generate prejudices and negatively influence the experiences of these groups (Wikberg et al., 2012), for example, when dealing with the Gypsy population. Specifically in the case of nursing, previous studies have pointed out that in the modern world, nurses treat patients from different cultural backgrounds on a daily basis and it is a legal and moral obligation for them to be culturally competent in order to provide high-quality care to a diverse range of patients (Repo et al., 2017). In this sense, we can observe that in recent years the term 'cultural competence' has evolved to that of 'cultural safety' (Curtis et al., 2019). In 1992, the Nursing Council of New Zealand made cultural safety a requirement for nursing and midwifery education and the concept was described as providing: 'a focus for the delivery of quality care through changes in thinking about power relationships and patients' rights' (Papps and Ramsden, 1996, p. 493).

Thus, while cultural competence is largely focused on the domains of knowledge, skills and attitudes, considered a static and restrictive process (Kumagai and Lyson, 2009), the cultural safety, is a continuous and reflective process, focused on critical awareness, where requires health professionals and healthcare organizations to recognize and address their own biases, attitudes, assumptions, stereotypes, prejudices, structures, and characteristics that can affect the quality of care provided (Curtis et al., 2019). Thus, cultural safety is determined by the patient, not the health professional. If the patient feels culturally safe, then the health professional has provided culturally safe care. Therefore, it is important that the interventions carried out in future nursing professionals address this broader concept considering ethno-particularism, respect for cultural differences, adaptability, knowing how to change perspectives, understanding others avoiding not judging and being sensitive to the needs of other people (Chen and Starosta, 1998, 2000). Only in this way can it be guaranteed a health care system that provides adequate and equitable care (Curtis et al., 2019).

The Gypsy, or Roma, community in Spain, estimated at between 800,000 and 1,000,000 individuals, constitutes the largest ethnic minority in the country, with the highest percentage of gypsies living in Andalusia (Damonti and Arza, 2014).

Social exclusion in the Roma population can be analyzed from different dimensions and the exclusion that occurs in each area, from work to education, relationships, health, etc. can be dealt with separately (La Parra, 2018). According to the 2019 report of the Survey on Integration and Social Needs (EINFOESSA), 63.6% of Roma households have experienced basic deprivation in terms of housing and education and 73% of health deprivation, which can be defined as requiring treatments that are not financed by the public health system (e.g. dental health, hearing aids, or glasses) (Foundation FOESSA, 2019).

From a gender perspective, Roma women face many forms of discrimination, both because they are women in a patriarchal society and because they belong to a highly discriminated ethnic minority in their country. These cultural difficulties influence issues such as their access to education, the labor market, or health care. Roma women is determined by gender mandates, which has been defined such that the traditional roles that would assign to women the tasks within the private sphere, domestic work, childcare and housework, by which they are conditioned to dedicate themselves to other matters considered a higher priority within the Roma community, and by the lack of projects, activities and socio-health care workshops, as well as their lack of knowledge of the Spanish public health system (Sáez and Rodríguez, 2013).

The creation of associations of community interest through the associative movement, it would be possible to transform reality through social commitment, by proposing ideas and opinions that can be heard in governmental bodies and agencies, through the active participation of everyone (Espadas and Alberich, 2010; Schroeder et al., 2018). Consequently, many types of interventions can be designed, especially in the

area of education, to improve the quality of life of certain groups of people from an inclusive health perspective (Barbero-Radio et al., 2021). In this context, we felt that our response to the problem of gender and ethnicity prejudice towards gypsy women should be approached through the core subject of 'Gender and Health' in the degree of Nursing, which is the only compulsory core subject in common with all Health Science degrees in Spain. The generic competencies of this subject include identifying the gender category as a determinant of health/disease, recognizing diversity and multiculturalism, and acquiring ethical commitment and greater knowledge of the customs of other cultures (Official Spanish State Bulletin, 2011).

Therefore, the present study aimed to test the efficacy of an educational intervention based on the use of positive references to improve the attitude of nursing students in Spain towards gypsy women receiving healthcare. We hypothesized that the intervention would foster a positive attitude among nursing students.

## 2. Methods

### 2.1. Study design and sample size

The number of potential participants was 255 students taking a Nursing Degree at the University of Seville who were studying the subject "Gender and Health" in the first year of their degree during the 2019/2020 academic year and a convenience sampling strategy was used. All students were invited to complete the survey instruments and demographic information at the beginning of the intervention (pre-test) and 6 months after the intervention (post-test), since all received the intervention carried out by FAKALI (the Seville Gypsy Women's Association) during the development of the classes where social determinants related to health were addressed in their teaching program. This invitation to fill the questionnaires was made by the professors of the subject and not by the lecturers, in this case, members of FAKALI, to avoid the potential bias. 165 participants were recruited before the intervention (pre-test intervention group) (response rate: 64.71%), of whom 40 completed the post-intervention evaluation (post-test intervention group). The response rate before the intervention is due to absenteeism, understanding this as not attending classes.

All data were collected from March to September 2020.

### 2.2. Setting and sample

The participants were recruited from a convenience sample from the University of Seville School of Nursing, among students who were taking their degrees in nursing.

### 2.3. Study intervention

The study intervention was specially designed for this study by the research team.

This intervention consisted of (a) a presentation of and consensus over the instruments to be used to evaluate the students' attitudes, through meetings between the teachers involved and members of FAKALI (the Seville Gypsy Women's Association). At these meetings, the two groups agreed on the instruments to be used to evaluate the change in the students' attitudes before and just after the intervention, and 6 months after it had finished; (b) the design of the educational intervention, which was carried out at sessions attended by FAKALI technical staff and professionals from health care and social services who had worked with the Gypsy community, who acted as positive references, to address the main concern, namely the gender and health issues faced by Gypsy women. These sessions varied in length from 2 to 4 h and were conducted in online mode.

The teaching program was made up of sessions that addressed the topics: Introduction to the history and culture of the Roma community (*Pygmalion effect* on Roma women in vulnerable situations);

Determinants of health: Gypsy community and health concept (information on the concepts of community health and disease present in an important sector of the Roma population); Gender and Roma population (gypsy women's health; cultural traits of the Roma population with an impact on their health. o family planning; early marriages; early pregnancies; use of health resources; prevention of pathologies); Work, health and the Roma population (occupational health in the Roma population; working conditions of the Roma community and impact on the health; main occupational pathologies among the Roma population); Roma culture, society and population (differentiation between the culture of marginality and the gypsy culture; society, stigma and the Roma population); Gender violence in the Roma population.

#### 2.4. Measures

The complete questionnaire used includes general data on the student and their family, such as age, sex, place of work and job position, professional experience in the health area, belonging to an ethnic minority group, relationship with people belonging to an ethnic minority, place of residence, existence of other ethnic minorities in their neighborhood and details of their current residence (using the Social Class Questionnaire - CCS) (García et al., 2013); the Prejudicial Attitude Test (TAP) (Rojas et al., 2012); the Stereotype Content Model (SCM) applied by López-Rodríguez et al. (2013) in immigrant groups in Spain (Annex 1) and the Reduced Gender Ideology Scale (GIS) (Moya et al., 2006).

The total score for the CCS was calculated by adding up the number of items the student indicated that they had in their habitual residence: for instance, the last item, related to the number of books owned, was a categorical response scored as follows: less than 100 books (0 points), between 100 and 500 (1 point), between 500 and 1000 (2 points) and more than 1000 (3 points). The total score for this questionnaire was recoded into five categories as proposed by the authors: low (<10 points), medium-low (10–12 points), medium (12.01–16 points), medium-high (16.01–20 points) and high (> 20 points).

The TAP was composed of 14 items: the first two items of the original test were excluded due to their reference to political system and government, or the social welfare (education, health and social services) available to the Gypsy ethnic group, which is not of interest because the same information is given in their place of residence. In this test, the variable of prejudice is calculated by a combination of three variables or dimensions: the person's opinion about the outgroup or stereotype (cognitive component of prejudice), emotions (affective component) and preferred social distance with the outgroup (conative component or of behavioral intention). The first component was measured from the first 6 items, the second component from the next 7 items, and the final component from the last item "If you could choose, how far would you be willing to go in your relationship with people (of the outgroup)? (Several answers can be given)". Each item of the cognitive component, as well as the first item of the affective component, was assessed using a Likert-type scale from 1 to 5 ("very bad" to "very good"). Each item of the affective component, with the exception of the first, as previously mentioned, was assessed using a Likert-type scale from 1 to 5 from "not at all" to "a lot". Finally, in the item corresponding to the conative component, the students had to choose one or more answers among the following five options:

1. To form a family with a person (from the outgroup) or have a partner (from the outgroup);
2. For my sons or daughters to choose a person (from the outgroup) as a partner;
3. To have friends (from the outgroup);
4. To have neighbors or co-workers (from the outgroup);
5. I prefer not to have relationships with people (from the outgroup), although the most inclusive option (indicating a preference for maintaining a more intimate relationship with people in the outgroup) was used for the analyses. Scores in the cognitive component

and in those items of the affective component related to positive emotions (admiration, sympathy, respect) were inverted, so that the higher scores indicated a greater prejudice towards the outgroup. The measure of prejudice measured through the TAP was obtained by adding up each dimension weighted by the number of items in each component.

The SCM (Stereotype Content Model) is one of the most influential models in social psychology used usually in immigrant population (López-Rodríguez et al., 2013). This model proposes that the perception of other groups is made from two basic dimensions of stereotypes: *warmth* and *competence*. Warmth includes characteristics such as being trustworthy, sincere, friendly, or affectionate, and the competence is referred to the ability of others to achieve their objectives and would be composed of characteristics such as being competent, efficient, or intelligent (Fiske, Cuddy, Glick, and Xu, 2002; Fiske et al., 1999).

The instruments and variables used for the application of the SCM to measure the perception of nursing students about the Roma population were as follows:

- Stereotypes. A nine-item scale was used (Fiske et al., 2019; López-Rodríguez et al., 2013; Wayne et al., 2007) with a Likert-type response scale from 1 to 5 (from "little" to "a lot") for each item. The students answered the following question, which covered the nine items on this scale: "To what extent do you think Roma people are: honest, pleasant, intelligent, sincere, friendly, skillful, trustworthy, warm and competent?". López-Rodríguez et al. (2013) found an internal consistency measured through Cronbach's alpha between 0.71 and 0.89, depending on the group of immigrants studied.
- Perception of Exogroupal Competition. This instrument consisted of three items (Fiske et al., 2019; López-Rodríguez et al., 2013): "If Roma people get special privileges (for example, preference in getting a job), life is likely to be more difficult for people like me", "The more power Roma people have, the less power people like me will have," and "It is likely that the resources that go to Roma people are resources which are taken away from people like me." The students responded to these questions using a Likert-type scale of 1 to 5 from "Strongly disagree" to "Strongly agree". López-Rodríguez et al. (2013) found an internal consistency measured through Cronbach's alpha between 0.79 and 0.85, depending on the group of immigrants studied.
- Perception of Exogroupal Status. This was measured through three items (Fiske et al., 2019; López-Rodríguez et al., 2013), which were answered using a Likert-type scale from 1 to 5 from "Nothing" to "Much" for the first two items, and from "Very low" to "Very high" for the last item. The questions were: "How prestigious are the jobs normally held by Roma people?", "How financially successful have Roma people been?" and "What level of education do Roma people have?". López-Rodríguez et al. (2013) found an internal consistency measured through Cronbach's alpha between 0.58 and 0.69, depending on the group of immigrants studied. The lower Cronbach's alpha was found among Moroccan people.

The reduced Gender Ideology Scale (GIS) consists of 12 items and has shown in the literature an alpha coefficient of 0.90, as well as a high correlation (0.89–0.92) with the long or extended version (Expósito et al., 1998; Moya et al., 2000). The mean score on the scale ranges from 1 to 100 (from "totally agree with what is expressed in the statement", with the minimum score representing the traditional sexist masculine viewpoint, to "totally disagree", with the maximum score representing the more egalitarian, less sexist and discriminatory points of view between men and women).

#### 2.5. Procedure

The study intervention was carried out at the authors' institution.

After explaining the purpose of the study and the processes involved, informed consent was obtained from the 165 nursing students.

The full questionnaire was completed online due to the COVID-19 pandemic, which at that time prevented face-to-face attendance to the classes, following the instructions of the researchers and/or teachers. A self-administered on-line format was used through Google Forms, thus guaranteeing the voluntary nature of the study, its anonymity and data protection (Organic Law 3/2018, of December 5, on the Protection of Personal Data and guarantee of digital rights). The administration of the questionnaires took approximately 20 min.

## 2.6. Ethical considerations

The study received approval from the [BLINDED FOR PEER REVIEW]. Nursing students were informed that all responses would be strictly confidential.

## 2.7. Analysis

A descriptive analysis of the sample was carried out using means and standard deviations for quantitative variables and frequencies and percentages for categorical variables. Likewise, a summary table was prepared with the sample's sociodemographic characteristics and the mean scores on the different scales used for the total sample and by sex. For the bivariate analysis, Student's T or ANOVA was used when the variable was compared by pre- and post-test periods with quantitative variables, provided that the latter met the criteria of normality and homoscedasticity required for its use. Failing that, non-parametric tests were used, such as the Wilcoxon t-test (Tables 2, 3 and 4).

Likewise, a Spearman correlation analysis was carried out to analyze the difference between the total scores in the pre- and post-tests for the different instruments used to measure prejudicial attitude, stereotypes and perception of the outgroup, as well as gender ideology. Similarly, the association between these differences in the scales and the sociodemographic variables measured through the Spearman correlation test and the Wilcoxon t-test was analyzed according to the type of variable compared.

The statistical analysis was carried out using R software (version 4.0.5).

## 3. Results

### 3.1. Sociodemographic characteristics

The total sample analyzed consisted of 165 students in the pre-test and 40 students in the post-test, with a drop-out rate of approximately 75%, and as a result, the comparative analysis between the pre- and post-tests could only be carried out with this sample of 40 students who had completed both pre- and post-tests.

Regarding the sociodemographic characteristics measured in the sample, 84.85% were women in the initial complete sample and 90% in the sample that completed both questionnaires (pre and post-test). The mean age of the students was  $20.51 \pm 5.93$  years and  $21.75 \pm 7.74$  years, respectively. Regarding the training received in addition to nursing, it was observed that a higher percentage of students (60.53%) in the final sample ( $n = 40$ ) had received training compared to the initial sample ( $n = 165$ ). Regarding the relationship with ethnic minorities, around 50% of the students said they had a relationship with them. Regarding social class, most of the students were of a medium or medium-high social level (see Table 1).

It can be observed that in all the items that make up the scale of prejudicial attitude (PAT) the score was lower in the post-test, which signifies an improvement in their prejudicial attitude. Specifically, the items that showed a statistically significant difference between the periods (pre and post) were related to the cognitive component, such as their opinion about consumption habits and home economy, religious

**Table 1**  
Characteristics of sample.

Variables	Total sample ( $n = 165$ )	Total sample (Those who filled post-test) ( $n = 40$ )
Sociodemographic		
Age	20.51 (5.93)	21.75 (7.74)
Sex		
Woman	140 (84.85)	36 (90)
Man	25 (15.15)	4 (10)
Training in addition to nursing [Yes]	79 (49.07)	23 (60.53)
medium-grade vocational training	7 (11.86)	2 (13.33)
superior-grade vocational training	52 (88.14)	13 (86.67)
Current paid job [Yes]	20 (12.2)	2 (5)
Belonging to an ethnic minority [No]	151 (99.34)	36 (90)
Relationship with people belonging to ethnic minorities [Yes]	78 (50.98)	17 (44.74)
Gypsies	20 (31.75)	3 (21.43)
Immigrants	19 (30.16)	3 (21.43)
Religious minorities	1 (1.59)	1 (7.14)
Two of the ethnic minorities mentioned	20 (31.75)	5 (35.71)
All ethnic minorities mentioned	3 (4.76)	2 (14.29)
Social Class Questionnaire (CCS)	17.35 (4.04)	17.06 (4.08)
Low: <10	1 (0.81)	0
Medium-low: 10–12	15 (12.10)	0
Medium: 12.01–16	35 (28.23)	15 (45.45)
Medium-high: 16.01–20	49 (39.52)	11 (33.33)
High >20	24 (19.35)	7 (21.21)

Note: we show the average values and standard deviations in brackets when the variable is numeric. We show the frequency and percentage in brackets when the variable is categorical.

beliefs and practices, and values, as well as those related to emotions such as admiration, distrust and sympathy towards the Roma population, which was also related to social distance (see Table 2).

As regards the Stereotype Content Model (SCM), the perception of the outgroup and stereotypes regarding the Roma population as "trustworthy" saw a statistically significant improvement, as did regarding the out-group as competition (focusing on the privileges and power of the Roma population) meaning that the students' perception about special privileges or resources that Roma people get do not make it difficult for people like them getting a job or getting some resources (see Table 3).

Regarding gender ideology, the total scores for both periods (pre- and post-test) were very close to the maximum score showing the participants an egalitarian ideology between men and women. Only one significant statistical reduction was found for the item "Women should recognize that just as there are jobs that are not desirable for them because they require physical strength, there are others that are not suitable due to their psychological characteristics" (see Table 4). Although the total scores in the Gender Ideology Scale were different, with a lower score in the post-test, this difference was not statistically significant.

To study the factors involved in prejudiced attitudes (PAT), stereotypes and perception of exogroups (ECM), and gender ideology (GIS), a correlation analysis was carried out between them and between the sociodemographic variables collected, although no significant associations were found.

## 4. Discussion

Dealing with cultural safety and gender perspective in nursing is essential, and for this reason, nursing education must provide opportunities for students to interact with different ethnic groups such as the Gypsy population. The aim of this study was therefore to test the efficacy of an intervention to improve the positive attitude of nursing students in Spain towards gypsy women receiving health care.

The data presented above show that the educational intervention

**Table 2**  
Impact on prejudiced attitude (PAT) (n = 40).

Items	Pre-test Mean (sd)	Post-test Mean (sd)	T Wilcoxon (p-value)
<i>Cognitive component (opinion about the outgroup)</i>			
ITEM 3. Their ways of working (pace of work, schedule, working conditions - e.g., unemployment, eventuality, etc.).	3.125 (0.82)	2.975 (1.03)	212 (0.332)
ITEM 4. Their consumption habits and home economy (products they buy, type of food they eat, family finances - for example, money they spend and save, way of managing what they have, etc.).	3.025 (0.86)	2.600 (0.90)	193 (0.004)***
ITEM 5. Their social relationships (way of relating, habitual places of social interaction, use of free time and ways of having fun, etc.).	2.975 (0.99)	2.750 (0.95)	139 (0.197)
ITEM 6. Their family relationships (way of relating to their partner, children, the elderly in the family, distribution of roles or functions, etc.).	2.900 (1.01)	2.725 (1.06)	264 (0.510)
ITEM 7. Your religious beliefs and practices (beliefs, practices and personal fulfillment of religious obligations or prohibitions).	2.975 (1.03)	2.550 (1.11)	199.5 (0.014)**
ITEM 8. Their values (respect for the elderly, way of educating children, equality between men and women, role of religion in life, etc.).	3.550 (0.81)	2.975 (1.21)	332 (0.011)**
<i>Affective component (emotions)</i>			
In general, to what degree have you felt the following emotions towards (outgroup) people?			
ITEM 9. Admiration	3.275 (1.01)	2.875 (0.99)	304.5 (0.013)**
ITEM 10. Distrust	3.500 (0.75)	3.075 (1.02)	209 (0.027)**
ITEM 11. Sympathy	2.725 (0.88)	2.400 (0.87)	139 (0.013)**
ITEM 12. Discomfort	3.500 (0.75)	3.075 (1.02)	178.5 (0.666)
ITEM 13. Insecurity	3.00 (0.96)	2.85 (1.00)	156.5 (0.305)
ITEM 14. Respect	2.075 (0.97)	2.050 (0.99)	183.5 (0.843)
ITEM 15. Indifference	2.725 (1.11)	2.525 (1.09)	210 (0.168)
<i>Conative / behavioral component (social distance)</i>			
ITEM 16. If you could choose, how far would you be willing to go in your relationship with people (from the outgroup)?	3.675 (1.05)	1.875 (0.97)	457 (0.000)***
<b>Total score</b>	2.76 (0.46)	2.64 (0.52)	505 (0.109)

Note: \*\*\*, \*\* and \* represents statistically significant differences at 1%, 5% and 10% between values of variables by sex.

using health references was effective in two of the three basic components that made up our intervention. The results for the total scores of the PAT and the SCM were statistically significant, with a lower score in the post-tests, which reflected an improvement in the cognitive and attitudinal component of the students who participated in the intervention and who completed both the pre- and post-tests. The only component that did not show statistically significant results at the global level was GIS, and we can therefore state, with caution, that there has been no improvement in the cognitive and attitudinal level as regards gender ideology.

The use of positive references in university teaching is a key technique for bringing students closer to the real social position of the Gypsy people from a gender perspective. In the literature search prior to the

**Table 3**  
Stereotype Content Model (SCM).

Items	Pre-test Mean (sd)	Post-test Mean (sd)	T Wilcoxon (p-value)
<i>Stereotypes</i>			
To what extent do you believe that Roma people are:			
Honest	3.50 (0.78)	3.45 (0.88)	134.5 (0.794)
Nice	3.525 (0.99)	3.70 (0.97)	58 (0.217)
Smart	3.55 (0.99)	3.80 (0.76)	82.5 (0.135)
Sincere	3.50 (1.04)	3.65 (1.00)	90 (0.363)
Friendly	3.675 (0.89)	3.80 (0.99)	150.5 (0.501)
Skillful	4.00 (0.91)	3.975 (0.62)	123.5 (0.778)
Legit	2.875 (0.82)	3.225 (0.92)	47.5 (0.011)**
Warm	3.375 (1.03)	3.600 (1.06)	121 (0.142)
Competent	3.55 (1.01)	3.70 (0.76)	144 (0.404)
<i>Perception of Exogrupal Competition</i>			
If Roma people get special privileges (eg hiring preference), things are likely to be more difficult for people like me.	2.923 (1.06)	2.20 (1.04)	346 (0.004)***
The more power Roma people have, the less power people like me will have.	1.875 (0.94)	1.475 (0.72)	107 (0.041)**
Resources that go to Roma population are likely to be resources that take people like me away from us.	1.825 (0.98)	1.70 (0.91)	125.5 (0.432)
<i>Perception of Exogrupal Status</i>			
How prestigious are the jobs normally held by Roma people?	2.41 (0.85)	2.15 (0.95)	177 (0.082)*
How much economic success have Roma people achieved?	3.225 (0.89)	2.975 (0.89)	180 (0.194)
What level of studies do Roma people have?	2.325 (0.76)	2.425 (0.84)	86 (0.449)
<b>Total score</b>	3.068 (0.53)	3.055 (0.51)	311.5 (0.586)

Note: \*\*\*, \*\* and \* represents statistically significant differences at 1%, 5% and 10% between values of variables by sex.

intervention, no literature was found with positive references, although the most similar references we could find were interventions carried out with health mediators or with patients themselves. This is therefore a novel teaching methodology in the field of nursing, a profession which is committed to tackling social inequalities in health.

Our intervention has been justified by the European Framework for National Strategies for the Inclusion of the Roma Population until 2020 (European Commission, 2011) and the Comprehensive Plan for the Inclusion of the Gypsy Community in Andalusia 2017–2020 launched by the local Andalusian government (Junta de Andalucía). The latter aims to “improve intercultural competence with gypsies among health center workers” through actions such as “proposing and designing, in collaboration with Andalusian universities, elective modules in cultural safety with gypsies in the area of health in the teaching programs of university degrees such as medicine, nursing, social work or social education, as well as in postgraduate studies” (Junta de Andalucía, 2017).

In our intervention, cultural safety stands out as a key aspect for future nursing professionals. In recent years, it has taken on increasing importance due to the growing awareness of the needs of minority groups around the world (Chang et al., 2019). Cultural safety has been recognized as an essential curricular element in undergraduate and graduate nursing programs (Curtis et al., 2019; Milne et al., 2016),

**Table 4**  
Gender Ideology Scale (GIS).

Items	Pre-test Mean (sd)	Post-test Mean (sd)	T Wilcoxon (p-value)
Although some women like to work outside the home, it should be the ultimate responsibility of the man to provide financial support for his family.	99.50 (3.16)	92.05 (24.43)	19 (0.093)*
It is natural for men and women to perform different tasks.	77.75 (34.69)	76.60 (31.99)	160.5 (0.775)
If a child is ill and both parents are working, it should generally be the mother who asks permission from work to take care of him.	98.50 (8.02)	92.55 (23.08)	15 (0.058)*
Better for a woman to try to achieve security by encouraging her husband at work than by putting her own career ahead of him.	95.775 (16.48)	90.575 (27.57)	36 (0.411)
It is more important for a woman than for a man to be a virgin at marriage.	96.25 (16.59)	88.23 (26.56)	39 (0.058)
The ideal relationship between husband and wife is one of interdependence, in which the man helps the woman with her financial support and she satisfies her domestic and emotional needs.	99.49 (3.20)	94.55 (21.85)	8 (0.357)
It is more appropriate for a mother and not a father to change the baby's diapers.	100.0 (0.00)	94.8 (21.85)	6 (0.174)
I consider it much more unpleasant for a woman to say tacos and bad words than for a man to say them.	96.00 (12.36)	93.55 (22.27)	14.5 (1)
Extramarital affairs are more condemnable in women.	95.225 (13.95)	93.275 (23.26)	30.5 (0.797)
Women should recognize that just as there are jobs that are not desirable for them because they require physical strength, there are others that are not due to their psychological characteristics.	98.50 (8.02)	92.55 (23.08)	26 (0.049)**
There are many jobs in which men should take precedence over women when it comes to promotion and promotion.	100.00 (0.00)	94.55 (21.85)	10 (0.095)*
Men, in general, are better prepared than women for the world of politics.	100.00 (0.00)	96.78 (16.51)	3 (0.371)
<b>Total score</b>	96.41 (6.29)	93.25 (16.56)	237.5 (0.249)

Note: \*\*\*, \*\* and \* represents statistically significant differences at 1%, 5% and 10% between values of variables by sex.

allowing nurses to contribute to positive health outcomes (Tang et al., 2019), reflect on their own power and privilege, as well as that of the health system (Curtis et al., 2019) and carry out more effective interaction and communication with their patients (Govere and Govere, 2016).

As regards the improvement in their *prejudicial attitude (PAT)*, the results of our study coincide with other studies such as the study carried out by Flecha, 2013, in which educational interventions led by Roma adults were conducted in a Spanish school. The results showed that greater knowledge, learning and new skills related to the Roma culture were acquired, and that many of the prejudices related to this community were overcome (Flecha, 2013). In addition, the study carried out by the Gypsy Secretariat Foundation, in which some of the training was given by trainers of Roma ethnicity, also showed an increase in general awareness about overcoming the existing prejudices and stereotypes towards the Gypsy community in several areas of action such as culture, housing, economy, education and employment (Gypsy Secretariat Foundation, 2011). An important study funded by the World Health Organization was also carried out in Spain by Pérez-Jarauta et al. (2010), in which interventions were carried out by trained Roma mediators using peer education (among the Roma population), resulting in improvements in several indicators such as education, mental health, occupational health, lifestyle and disease prevention (Pérez-Jarauta

et al., 2010). Although this study was not carried out in the exogroup, the results reported over a period of 20 years emphasize the importance of including representatives from the Roma community in delivering training, it not only increases the educational opportunities of mediators, improves self-care skills and strengthens their leadership skills, also manages to empower Roma communities through their active participation and the control they obtain over health determinants, reducing mutual prejudices and increasing understanding in the exogroup.

As regards the second element of our intervention, the *Stereotype Content Model (SCM)*, the intervention was shown to be effective, with statistically significant results. This is a key issue to address in nursing professionals, since, following the principles of the Transformational Theory (Mezirow, 1997, 1996) nursing educators can include interventions such as using positive references in the curriculum of these subjects. These will help students to critically reflect on their normal ways of thinking, feeling and acting, and to examine how these have been influenced by the social, political, cultural and educational perspectives that will have influenced their specific views, beliefs, values, judgments and attitudes (Mezirow, 1997).

Regarding gender ideology, the total scores for both periods (pre- and post-test) were very close to the maximum score showing the participants an egalitarian ideology between men and women. This may be due to the reason that 85–90% of the sample was composed of women, since the results of several investigations that used the same instrument show that women have a higher score in favor of a better conception of gender (Chahín and Libia, 2014; Muñoz et al., 2010). In the post-test the only item that obtained a statistically significant difference was “*Women should recognize that just as there are jobs that are not desirable for them because they require physical strength, there are others that are not suitable due to their psychological characteristics*”. Probably in the other items the reduction in the scores was not statistically significant due to the evaluation time and/or that the participants needed a reinforcing memory in the content related to gender ideology.

In this study, we have identified training needs related to conceptual aspects of prejudicial attitude, the stereotyped content and gender ideology towards the gypsy women, since a significant improvement has been observed in the post-test in almost all the components, reflecting the need for the nursing degree to have training related to these aspects given by the figure of positive referents, in our case, FAKALI. The only component that showed no improvement was gender ideology. This is similar to ideas about the differing roles of men and women in the public and private spheres noted in previous research (Castro, 2020; Donoso and Velasco, 2013; Madolell et al., 2020). There may also be denialism about real gender inequality and sexist stereotypes, in which women are expected to continue looking after the house, taking care of children when they are sick, and in which it is assumed that certain jobs are more suitable for women (Aguaded, 2017; García et al., 2010); and pre-established beliefs of sexual differentiation at work, with males associated with strength and females with weakness (Gómez and Gallego, 2016). All this gender ideology is even more aggravated in ethnic minorities, as in our research, presenting a lower cultural sensitivity (La Parra, 2018). These beliefs may exist because the students have not yet taken the subject of Gender and Health, which works on cultural stereotypes related to gender from a cognitive point of view, but also experientially through seminars and participatory workshops, in which different topics are addressed from an experiential point of view.

#### 4.1. Strengths and limitations

One of the main strengths of this study is that our intervention concurs with other interventions in which Gypsy mediators helped to contribute towards positive outcomes in the field of education (Observatorio de Salud Pública de Cantabria, 2013) and in individual and family health services (Arzas-Porras, 2007).

Not only will the experience undeniably contribute to the nursing students' scientific knowledge, but it will also increase their sensitivity,

and will make them more likely to display positive behaviors and ethical values that influence their professional competence and the creation of their identity.

In addition, it is important to note that our study is one of the few that exist published on interventions in future health professionals with positive references.

On the other hand, one limitation of our study might be that some data were missed out from the post-test, mainly due to the special situation during this academic course created by the COVID-19 pandemic and having online lessons. However, this new context has led to a growth in research in digital environments and has revealed an exponential field of possibilities to explore language, behaviors and different dynamics of interest (Deslandes and Coutinho, 2020). Moreover, the date for completing the post-test fell close to the final examination period at the university, which made it difficult for the students to remain motivated. High drop-out rates are known to be common in eHealth interventions and in adolescent populations (De Vries et al., 2012; Kelders et al., 2012; Kolhl et al., 2013; Wangberg et al., 2008). Additionally, Szopiński and Bachnik (2022) found an increase in passivity among students who are not engaged in learning, reflected by a greater reduction in their attendance (after online classes were introduced) among those who are not engaged compared to those who are engaged. One of the main consequences of this high dropout rate could be the absence of findings regarding associations between the variables studied, as well as the limitation to represent the general population with the same characteristics of this sample with these data.

Finally, another limitation of our research is the lack of a control group. For future research we will take these considerations into account for stronger results.

## 5. Conclusions

Education is an important socializing agent and universities play a particularly relevant role, because as well as being centers for teaching and research, they are environments in which the right to freedom, dignity and physical and emotional integrity of all their members is ensured, which guarantees progress in society.

In addition, it is vital to channel our efforts into setting up national and regional programs against racism, xenophobic stereotypes and discriminatory behavior towards populations other than the hegemonic culture. In cooperation with Gypsy associations such as FAKALI, these programs, as part of the curriculum of subjects such as Gender and Health, can contribute to promoting multicultural competencies in nursing students and foster knowledge and relationships based on respect and equality.

Although today's society demands educational models that allow students to acquire competencies such as teamwork and ethical and cultural competence, it requires a transformation from emotional and experiential knowledge, and this must be taken into account in the design of curricular content. Academic and professional knowledge and skills must be combined with the acquisition of the cultural, ethical and gender competencies described above.

Finally, in the field of nursing, the lack of research into this area highlights the need for further research to be conducted in nursing professionals with the Gypsy community from a gender perspective, including new interventions and analysis of results.

## CRedit authorship contribution statement

**Rocio de Diego-Cordero:** Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Supervision. **Lorena Tarrío-Concejero:** Methodology, Investigation, Writing – original draft, Writing – review & editing. **Ana Magdalena Vargas-Martínez:** Methodology, Formal analysis, Writing – original draft, Writing – review & editing. **M<sup>a</sup>. Ángeles García-Carpintero Muñoz:** Conceptualization, Methodology, Investigation, Writing – original draft,

Writing – review & editing.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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