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Gender awareness is also nurses' business: Measuring sensitivity and role ideology towards patients

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Abstract

Aim: This study aims to validate the Nijmegen Gender Awareness in Medicine Scale, which assesses gender sensitivity and gender-role ideology towards patients in the Spanish language for use among physicians and nurses.

Background: Women are more likely to suffer pain, delays and health consequences related to low therapeutic effort. Health professionals' gender awareness may minimize such bias; however, the only instrument to assess such awareness is limited to physicians and lacks a Spanish version.

Methods: After using the back-translation method, a sample of 167 Spanish nurses and nursing students completed the instrument. In order to obtain additional validity evidence, 98 health professionals filled in gender sensitivity and gender-role ideology towards patients' subscales and the short versions of the Ambivalent Sexism Inventory.

Results: Gender-role ideology towards patients correlated strongly with sexist attitudes, demonstrating convergent validity, and Cronbach's alpha coefficients showed an adequate internal consistency.

Conclusions: Nijmegen Gender Awareness in Medicine Scale perfectly applies to nurse population, and this adaptation also broadens its use for Spanish professionals.

Implications for Nursing Management: Nurse managers and educators can use this applicable tool to treat low gender awareness levels as a modifiable risk factor and promote a gender-sensitive caring culture.

KEYWORDS
adaptation, gender awareness, nursing, questionnaire, validity

1 | BACKGROUND

The discriminatory practices induced by values, rules and thoughts in healthcare increase mortality and morbidity worldwide (Shannon et al., 2019). Despite universality, equality and equity health policies established at the national and international levels, gender significantly influenced healthcare resources' use and access (Ruiz-Cantero et al., 2019). Gender inequalities have been evidenced in different care levels worldwide, including in the so-called developed world (Alspach, 2017). For instance, in Spain, women showed 13.6% higher waiting times for diagnosis visits than men (Abásolo et al., 2014). Both Swedish and American women with severe sepsis or septic shock experienced longer delays to initial antibiotics in the emergency department compared to men (Madsen & Napoli, 2014; Sunden-Cullberg et al., 2020), and females were more likely than males to be diagnosed with advanced stage of bladder cancer in England (Carney et al., 2020). Besides, severely injured women were less likely to be transported to trauma centres than their male counterparts in Canada and New York (Gomez et al., 2012; Scheetz & Orazem, 2020).

On this point, the need for gender equity education in the nursing profession is currently recognized, as well as the need for nurses to detect the potential impact of unconscious biases and practices that contribute to patients' discrimination (American Nurses Association, 2019; Tzeng et al., 2011). To this end, validated instruments are required to detect such gender biases. In this sense, the gender awareness level of healthcare providers comprises a construct that may explain the underlying cause of lower therapeutic efforts towards women. Gender awareness includes two main components. On the one hand, gender sensitivity refers to the ability and willingness to understand and take account of the social and cultural factors involved in gender-based exclusion and discrimination and their impact on health services delivery. On the other hand, gender-role ideology towards patients involves the healthcare worker relying on negative gender stereotypes about patients when performing clinical assessments (Salgado et al., 2002; Verdonk et al., 2009).

Starting from this premise, gender awareness was first measured by the Gender Awareness Inventory—Veterans Administration (GAI-VA; Salgado et al., 2002). Some years later, Verdonk et al. (2008) created the Nijmegen Gender Awareness in Medicine Scale (N-GAMS) with 14 items measuring gender sensitivity (GS), 11 items measuring gender-role ideology towards patients (GRI-patient) and eight items measuring gender-role ideology towards doctors (GRI-doctors).

The N-GAMS has shown reliability and replicability among Dutch, Swedish, Swiss and Portuguese populations (Andersson et al., 2012; Morais et al., 2020; Rrustemi et al., 2020; Verdonk et al., 2008). However, this scale is aimed at medical students and physicians, ignoring the impact of other health professionals' gender awareness in healthcare delivery. In this regard, Tekkas et al. (2020) found high levels of sexism among both Turkish and South Korean nursing students, and other studies have found gender discrimination in nursing care. In Jordanian addiction rehabilitation centres, Daibes et al. (2017) found that nurses' attitudes towards females with addictions were less tolerant than towards males. According to a multicentre study in Australia, nurses less often allocated urgent triage categories to women with acute coronary syndrome, and female patients waited longer for their first electrocardiograph (Kuhn et al., 2017). Regarding pain management, Wandner et al. (2014) showed that using virtual patient cases, nurses and physicians rated women's pain as less intense and resisted administering more opioid drugs to females, which was exceptionally high among nurses. Taking these data into account, and considering that the N-GAMS seems to be perfectly applicable to nursing practice, nurse professionals should not be omitted when approaching gender equity in health. The availability of validated instruments to study nurses' awareness of gender inequalities in health is essential to assess the overall impact of policies that ensure equal access to the healthcare system in the future.

In addition, the potential of gender sensitivity and gender-role ideology towards patients' subscales as indicators of the risk of gender-biased therapeutic effort towards patients should be emphasized. Both subscales measure health professionals' attitudes towards male and female patients, and, interestingly, Morais et al. (2020) have recently found an association between gender sensitivity, gender-role ideology towards patients and Ambivalent Sexism Inventory in the Portuguese population. The Ambivalent Sexism Inventory (Glick & Fiske, 1996) has demonstrated its capacity to measure sexism in different populations and predict behaviour and attitudes. For instance, Ovejero et al. (2013) found that children with high punctuations on sexism performed more bullying behaviours. Ibabe et al. (2016) found that ambivalent sexism among young men and women was positively associated with the perpetration of violence and victimization in their dating relationships. The inventory has also predicted more tolerant attitudes towards wife abuse among police officers and judiciary members (Gölge et al., 2016).

Thus, the present work aimed to adapt and validate the N-GAMS for the Spanish population. Furthermore, in order to expand the population and make a valid adaptation not only for physicians and medical students but also for nurses and nursing students, in this adaptation, we have decided to adapt the original wording. Therefore, in this adaptation, the term 'physicians' has been changed to 'health professionals'.

2 | METHODS

2.1 | Study 1

The aim of Study 1 was to adapt the N-GAMS to the Spanish nursing staff population and analyse its psychometric properties.

2.1.1 | Participants

A convenience sample of 167 Spanish nursing students and professionals was used in this study. Specifically, we contacted three different populations: nursing students that were in their last year ($N = 95$), registered nurses that were enrolled in master's studies ($N = 29$) and nursing assistants ($N = 43$). They ranged in age from 18 to 63 years ($M = 30.70$; $SD = 13.40$), and the significant majority, 92.8%, were female. This difference in the participants' gender reflects the reality of this profession in Spain. Indeed, according to the National Institute of Statistics, 52.377 male and 278.368 female nursing graduates were registered in nursing associations in 2021 (National Institute of Statistics, 2021).

Considering that we have 32 indicators and three dimensions in our study and expect high factor loadings of at least .50, we estimated that a minimum sample size of 50 participants would be sufficient. In this sense, a study aiming to analyse the minimum sample size requirements of the robust weighted least squares estimator concluded that samples of 50 people would be sufficient for an instrument with 10 indicators with factor weights of 0.70 and samples of 100 people for the same number of indicators but with factor weights of 0.40 (Moshagen & Musch, 2014). However, to increase the sample's representativeness, we decided to increase the sample size to at least 150 participants.

2.1.2 | Instruments

The *N-GAMS* (Verdonk et al., 2008) is a self-report questionnaire that assesses gender awareness in healthcare. It includes 32 items to be answered on a 5-point Likert scale with options ranging from *totally disagree* to *totally agree*. The items are grouped in three dimensions. Fourteen items assess gender sensitivity (GS), which focuses on healthcare professional attitudes towards gender concerns in healthcare (i.e. 'Physicians' knowledge of gender differences in illness and health increases the quality of care'). Gender-role ideology towards patients (GRI-patient) aimed to measure gender-stereotypical thinking about patients through 11 items (i.e. 'Female patients compared to male patients have unreasonable expectations of physicians'). Gender-role ideology towards doctors (GRI-doctors) aimed to assess gender-stereotypical thinking about physicians through seven items (i.e. 'male physicians are more efficient than female physicians').

A higher score on the gender sensitivity subscale indicates more gender sensitivity, while a higher score on the gender-role ideology towards patients and the gender-role ideology towards doctors subscales implies agreeing more with gender stereotypes. In this study, we applied the Spanish version that was in the process of adaptation, which contains the same number of items and uses the same response format as the original N-GAMS. In addition, as we aimed to make a valid adaptation not only for physicians and medical students but also for nursing staff, in this adaptation, we changed the original term 'physicians' to the broader term 'health professionals'. A

short questionnaire designed to gather sociodemographic information complemented this instrument.

2.1.3 | Procedure

The NGAMS was adapted for use in the Spanish language in the health professional population (hereinafter, the S-NGAMS) following the International Test Commission Guidelines for Translating and Adapting Tests. Concretely, the original N-GAMS items were translated using a forward–backward design to detect potential problems associated with poor translations (Balluerka et al., 2007; Muñiz et al., 2013). Two bilingual researchers translated each item into Spanish, and then the two translations were compared and discussed until a consensus was reached regarding the wording of each item. Another two bilingual researchers did the back-translation, and again they compared their translations until they reached a consensus. This translation was examined and compared to the original wording to determine whether the items had the same meaning. If necessary, the wording of items in Spanish was revised and modified to ensure suitability for the target population (see the Spanish version of the items in Table S1). The instruments were administered online and were anonymous (the target population received a generic link), and it took a maximum of 15 min to complete them.

2.1.4 | Data analysis

We began by conducting an item analysis to determine each item's mean score, standard deviation and corrected item-total correlations. There were no missing data because we forced the respondents to answer all the items. Confirmatory factor analysis (CFA) was performed with weighted least squares means and variance adjusted (WLSMV) method to examine whether the factor structure of the Spanish health professional's version was consistent with that of the original instrument. Goodness of fit was assessed by means of the comparative fit index (CFI), the Tucker–Lewis index (TLI) and the root mean square error of approximation (RMSEA). In the case of the CFI and TLI, values above .90 and .95 indicate acceptable and excellent fit, respectively. For the RMSEA, values below .08 indicate acceptable fit, and those below .06 indicate a good fit (Hu & Bentler, 1999). Internal consistency was assessed by calculating Cronbach's alpha coefficient for each dimension. We used Mplus for the CFA and SPSS for all other analyses.

2.2 | Study 2

The main objective of this second study was to obtain additional validity evidence of the gender-role towards patients subscale of the S-NGAMS developed in Study 1. Thus, we analysed convergent validity and provided additional evidence of internal consistency

and structure for two subscales (gender sensitivity and gender-role ideology towards patients) in a different sample.

2.2.1 | Participants

In this second study, we focused mainly on health professionals. However, we also admitted nursing students that were at least in their third year and had a minimum of 950 h of clinical experience. Regarding the inclusion criteria for health professionals, they had to be part of the workforce of nurses and physicians from an outpatient or inpatient care unit of a healthcare centre and have at least 1 year of working experience. The study comprised a total of 98 participants, of which 79 (80.6%) were health professionals (81.1% nurses and 18.9% doctors) and 19 (19.4%) were nursing students. Their ages ranged from 20 to 63 years (M = 30.57; SD = 9.89), and most of the sample was female (86.7% women, 12.3% men and 1.0% no binary). Health professionals had a mean working experience of 8.5 years (minimum 1, maximum 40).

Considering that the version of the NGMAS used in this study has two dimensions with more than 10 indicators per factor, and that we expected high factor loadings (<.50), we estimated that we needed a minimum sample size of 50 participants (Moshagen & Musch, 2014).

2.2.2 | Instruments

The data collection instruments included a demographic data form (sex, nationality, age and working experience) and three questionnaires. The first questionnaire comprises the gender sensitivity and the gender-role ideology towards patients subscales of the S-NGAMS developed in Study 1. The other two questionnaires were the short forms of the Ambivalent Sexism Inventory towards Women (ASI) and the Ambivalent Sexism Inventory towards Men (AMI) (Spanish adaptation of those short forms by Rodríguez et al., 2009).

Spanish adaptation of The Nijmegen Gender Awareness in Medicine Scale (S-NGAMS). Although the original scale has three dimensions assessing gender sensitivity (GS), gender-role ideology towards patients (GRI-patient) and gender-role ideology towards doctors (GRI-doctors), in this second study, we have used only the first two of those three dimensions. Thus, the self-report measure we used includes 25 items to be answered on a 5-point Likert scale (1 = *totally disagree* to 5 = *totally agree*). The gender sensitivity subscale includes 14 items focusing on healthcare professional attitudes towards gender concerns in healthcare, and the gender-role ideology towards patients subscale includes 11 items aimed at measuring gender-stereotypical thinking about patients. A higher score on the gender sensitivity subscale indicates more gender sensitivity, and a higher score on the gender-role ideology towards patients subscale implies agreeing more with gender stereotypes.

Short form of the Ambivalent Sexism Inventory towards Women (S-ASI; Spanish validation by Rodríguez et al., 2009). This short form comprises 12 items with a 6-point Likert-type response scale ranging from 0 (*totally disagree*) to 5 (*totally agree*). Half of the items assess hostile sexism towards women (HS), and the other half, benevolent sexism towards women (BS). The psychometric properties of the short version of the ASI in Spanish were adequate (Rodríguez et al., 2009). The present study observed the following internal consistency indices: HS α = .88, BS α = .80 and ASI α = .90.

Short form of the Ambivalence Inventory towards Men (S-AMI; Spanish validation by Rodríguez et al., 2009). This short form is also composed of 12 items that assess ambivalent attitudes towards men. Half of the items assess hostility towards men (HM), and the other half, benevolence towards men (BM). The psychometric properties of the short version of the AMI in Spanish were adequate (Rodríguez et al., 2009). The present study observed the following internal consistency indices: HM α = .84, BM α = .73 and AMI α = .87.

2.2.3 | Procedure

Regarding data collection, health professionals and nursing students were invited to collaborate on a study about gender issues in healthcare. As in Study 1, the instruments were administered online, participation was voluntary, and responses were anonymized and treated confidentially. This study was part of a larger study; therefore, the protocol included some additional tools not described in the present paper.

2.2.4 | Data analysis

To assess the convergent validity of the S-NGAMS questionnaire, we examined the relation with two related variables—ambivalent sexism towards women (S-ASI) and ambivalent sexism towards men (S-AMI)—using Spearman correlation coefficients. The effect size interpretations for the correlation coefficients are reported according to the recommendations from Davis (1971): ≤0.29 (low association), 0.3–0.49 (moderate association), 0.5–0.69 (substantial association) and ≥0.7 (very strong association). CFA was used to test the factorial validity of the original model. As in Study 1, we used weighted least square means and WLSMV for ordered categorical data. Reliability was analysed using Cronbach's alpha coefficient. The pairwise deletion was used to handle missing data, and CFA analyses were done with Mplus, while the other analyses were done with SPSS.

2.3 | Ethical considerations

The research received a favourable report from the Clinical Research Ethics Committee of the Basque Country (ref. no.: PI2019152) and

3 | RESULTS

3.1 | Study 1

Table 1 shows the means, standard deviations, homogeneity indices, factor loadings for each item and Cronbach's alpha coefficient for each dimension. The means varied depending on the items' dimension, and the highest values corresponded to the *gender sensitivity* dimension. The homogeneity index (corrected item-total correlation) was above .30 for almost all the items (the sole exception being items GS1 with $r = .25$ and GS13 with $r = .22$). Finally, with respect to the factor structure, we can conclude that the model fit was acceptable [$\chi^2(461) = 717.50$; RMSEA = 0.058, IC 90% [.049, .066]; CFI = 0.933; TLI = 0.928] (see Figure S1), and standardized factor loadings of each item in its corresponding factor were above .40 for all the items except again the item GS13 with a factor loading of .34. Regarding the correlations among subscales, as expected, both gender-role ideology scales were strongly and positively correlated among them ($r = .82$; $p < .001$), whereas gender sensitivity was negatively and less strongly correlated with gender-role ideology towards patients and gender-role ideology towards doctors ($r = -.18$; $p = .010$; and $r = -0.14$; $p = .081$), respectively. Finally, internal consistency indices ranged between .79 and .89, with the lower value corresponding to the dimension with fewer items (gender-role ideology towards doctors with seven items).

3.2 | Study 2

With respect to internal structure, the results of the CFA indicated an acceptable fit [$\chi^2(274) = 377,651$; RMSEA = 0.061, IC 90% [.046, .077]; CFI = 0.938; TLI = 0.932] (see Figure S2). As expected, the correlation between both subscales (gender sensitivity and gender-role ideology towards patients) was negative and had a small effect size $r = -.13$ ($p = .207$).

Regarding convergent validity, as shown in Table 2, the analysis confirmed a positive relationship between gender-role ideology towards patients and all the scales and subscales of sexism analysed in the study. All these relationships were positive, statistically significant and of moderate magnitude. Besides, gender sensitivity was not related to sexism.

Finally, regarding reliability, Cronbach's alpha coefficients were calculated for each of the two subscales of the S-NGAMS, and they showed an adequate internal consistency (gender sensitivity subscale $\alpha = .80$ and gender-role ideology towards patients $\alpha = .89$) (see Table 3).

4 | DISCUSSION

The main strength of this study consists in the broader utility conferred to the N-GAMS. Indeed, gender awareness towards patients can now be evaluated in Spanish- or English-speaking nurses, physicians and nursing or medicine students worldwide. This could facilitate international study reports and measure the effectiveness of global gender plans in the mindset of health professionals.

Regarding the adaptation and validation analyses of the N-GAMS for the Spanish population, the instrument's psychometric properties were adequate. In the same sense, the internal structure and reliability of the instrument were adequate.

The results of the CFA in this first study support the theoretical dimensions of the N-GAMS, confirming the original three-factor structure. The internal consistency indices, item homogeneity and factor loadings were also adequate, except for item GS13. The values of this last item were not as good as the other items, but we decided to maintain the item because eliminating items would affect the reliability and the validity of the test, and one of the objectives of test adaptation is to guarantee cross-cultural comparison. In this case, the overall values were adequate, so we believe that the S-NGAMS is psychometrically valid for assessing gender sensitivity and gender-role ideology of Spanish health professionals.

Regarding convergent validity, as we expected, hostile (HS) and benevolent sexism (BS) were highly and positively correlated with gender-role ideology towards patients, but not with gender sensitivity. Those results are in line with the ones Morais et al. (2020) obtained in the Portuguese adaptation of the instrument. That study only analysed the relationship between gender-role ideology and ASI. In our study, we have further analysed the relationship between ambivalent sexism and gender-role ideology by adding the AMI scale, and we have concluded that the results are similar. Overall, it can be concluded that gender-role ideologies represent stereotypical views towards patients, and those stereotypes are related to ambivalent sexism towards women and men.

Moreover, we have maintained all the original items in the Spanish adaptation, so we believe that the content validity of the questionnaire is guaranteed. Content validity refers to the extent to which the items in a questionnaire represent the entire theoretical construct the questionnaire is designed to assess (Shultz et al., 2014). In some of the previous research done with the N-GAMS (Andersson et al., 2012; Morais et al., 2020; Rrustemi et al., 2020), not all the items of the questionnaire have been maintained (i.e. the authors did some factor analysis and decided to maintain the items with higher loadings). Although this can be done to keep good psychometric properties, changes in validated and published scales should be made with caution since it can result in an instrument that measures something different from the validated scale from which it was produced. Moreover, this can be a problem regarding content validity and scores comparability.

The Ethical Committee of the University of the Basque Country University (ref. no.: M10_2019_139).

TABLE 1 Mean, standard deviation, item-total correlation and factor loadings for each item of the S-NGAMS

S-NGAMS	M	SD	r	Loadings
GS. Gender sensitivity (α = .87)				
GS1. Addressing differences between men and women creates inequity in healthcare (R)	3.60	1.31	**.25**	.495
GS2. Physicians' knowledge of gender differences in illness and health increases quality of care	4.32	1.13	.33	.501
GS3. Physicians should only address biological differences between men and women (R)	3.54	1.63	.60	.726
GS4. In non-sex-specific health disorders the sex/gender of the patient is irrelevant (R)	2.74	1.60	.58	.690
GS5. A physician should confine as much as possible to medical aspects of health complaints of men and women (R)	3.37	1.56	.64	.727
GS6. Physicians do not need to know what happens in the lives of men and women to be able to deliver medical care (R)	3.76	1.33	.63	.664
GS7. Differences between male and female physicians are too small to be relevant (R)	3.43	1.43	.58	.756
GS8. Especially because men and women are different, physicians should treat everybody the same (R)	2.46	1.45	.56	.674
GS9. Physicians who address gender differences are not dealing with the important issues (R)	3.69	1.31	.47	.586
GS10. In communicating with patients it does not matter to a physician whether the patients are men or women (R)	2.03	1.37	.56	.791
GS11. In communicating with patients it does not matter whether the physician is a man or a woman (R)	1.83	1.20	.48	.728
GS12. Differences between male and female patients are so small that physicians can hardly take them into account (R)	3.48	1.27	.70	.795
GS13. For effective treatment, physicians should address gender differences in aetiology and consequences of disease	3.98	1.08	**.22**	.340
GS14. It is not necessary to consider gender differences in presentation of complaints (R)	3.29	1.54	.66	.791
GRI-patient. Gender-role ideology towards patients (α = .89)				
GRI-P1. Male patients better understand the approach of physicians than female patients	1.30	0.70	.46	.726
GRI-P2. Female patients compared to male patients have unreasonable expectations of physicians	1.43	0.81	.59	.818
GRI-P3. Women more frequently than men want to discuss problems with physicians that do not belong in the consultation room	2.24	1.29	.67	.765
GRI-P4. Women expect too much emotional support from physicians	2.15	1.25	.64	.742
GRI-P5. Male patients are less demanding than female patients	1.74	1.04	.69	.795
GRI-P6. Women are larger consumers of healthcare than is actually needed	1.63	1.06	.68	.828
GRI-P7. Men do not go to a physician for harmless health problems	2.22	1.32	.62	.686
GRI-P8. Medically unexplained symptoms develop in women because they lament too much about their health	1.48	0.90	.72	.881

(Continues)

TABLE 1 (Continued)

S-NGAMS	M	SD	r	Loadings
GRI-P9. Female patients complain about their health because they need more attention than male patients	1.43	0.88	.65	.777
GRI-P10. It is easier to find causes of health complaints in men because men communicate in a direct way	1.62	.98	.69	.808
GRI-P11. Men appeal to healthcare more often with problems they should have prevented	2.60	1.39	.51	.619
GRI-doctor. Gender-role ideology towards doctors (α = .79)				
GRI-D1. Male physicians put too much emphasis on technical aspects of medicine compared to female physicians	2.17	1.22	.55	.762
GRI-D2. Female physicians extend their consultations too much compared to male physicians	1.69	0.98	.63	.806
GRI-D3. Male physicians are more efficient than female physicians	1.18	0.54	.54	.892
GRI-D4. Female physicians are more empathic than male physicians	2.40	1.38	.45	.538
GRI-D5. Female physicians needlessly take into account how a patient experiences disease	1.69	1.02	.48	.647
GRI-D6. Male physicians are better able to deal with the work than female physicians	1.13	0.46	.55	.948
GRI-D7. Female physicians are too emotionally involved with their patients	1.82	1.05	.56	.741

Note: (R): reverse items; *r* = corrected item-total correlation.

TABLE 2 Spearman correlations between S-NGAMS subscales and ambivalent sexism scales

		S-ASI			S-AMI		
		HS	BS	ASI	HM	BM	AMI
GS	rho	−.14	−.05	−.11	−.01	−.04	−.01
	p	.203	.659	.303	.971	.695	.990
GRI-patient	rho	.35	.36	.37	.33	.30	.37
	p	.001	.001	<.001	.002	.004	<.001

Abbreviations: AMI, ambivalence towards men; ASI, ambivalent sexism towards women; BM, benevolence towards men; BS, benevolent sexism towards women; GRI-patients, gender role ideology towards patients; GS, gender sensitivity; HM, hostility towards men; HS, hostile sexism towards women; S-AMI, Short form of the Ambivalence Inventory towards Men; S-ASI, Short form of the Ambivalent Sexism Inventory towards Women.

5 | IMPLICATIONS FOR NURSING MANAGEMENT

Notably, the N-GAMS has not previously been applied to nurses. This fact may paradoxically reflect gender bias within the study of gender bias in health since nursing is considered one of the most feminized professions, and such representation may be related to the omission of nurses as active health assets in research and management (Galbany-Estragués & Comas-d'Argemir, 2017; Ortega, 2019). In this regard, this work provides for the first time an easy-to-use and applicable tool to measure gender awareness for nursing managers, the S-NGAMS. Considering the growing importance of nursing in the context of health systems, nursing managers should promote gender-sensitive caring cultures to educate nurses. Undoubtedly, each health worker can minimize gender inequities by addressing sexist stereotypes that can affect her/his care delivery process.

At organizational level, the gender sensitivity and the gender-role ideology towards patients subscales allow measuring the gender awareness level of health professionals in clinical settings, and nurse managers should treat low gender awareness levels as a modifiable risk factor for health inequities. This approach may facilitate the establishment of specific strategies to guarantee equal adherence to established standards of care for all patients.

Notwithstanding, the World Health Organization (2006) established the curricula to provide academic institutions with adequate preparation concerning the gender perspective in 2006 since health

TABLE 3 Mean, standard deviation, item-total correlation and factor loadings for each item of the S-NGAMS

S-NGAMS	M	SD	r	Loadings
GS. Gender sensitivity (α = .80)				
GS1. Addressing differences between men and women creates inequity in healthcare (R)	2.37	1.47	−.07	.093
GS2. Physicians' knowledge of gender differences in illness and health increases quality of care	4.21	1.13	.31	.469
GS3. Physicians should only address biological differences between men and women (R)	3.75	1.47	.46	.614
GS4. In non-sex-specific health disorders the sex/gender of the patient is irrelevant (R)	2.99	1.55	.57	.711
GS5. A physician should confine as much as possible to medical aspects of health complaints of men and women (R)	3.34	1.63	.51	.587
GS6. Physicians do not need to know what happens in the lives of men and women to be able to deliver medical care (R)	4.28	1.13	.32	.387
GS7. Differences between male and female physicians are too small to be relevant (R)	3.27	1.33	.31	.437
GS8. Especially because men and women are different, physicians should treat everybody the same (R)	2.29	1.38	.41	.587
GS9. Physicians who address gender differences are not dealing with the important issues (R)	3.67	1.27	.30	.444
GS10. In communicating with patients it does not matter to a physician whether the patients are men or women (R)	2.20	1.45	.55	.826
GS11. In communicating with patients it does not matter whether the physician is a man or a woman (R)	1.78	1.14	.52	.715
GS12. Differences between male and female patients are so small that physicians can hardly take them into account (R)	3.54	1.27	.60	.703
GS13. For effective treatment, physicians should address gender differences in aetiology and consequences of disease	4.00	1.13	**.26**	.417
GS14. It is not necessary to consider gender differences in presentation of complaints (R)	3.33	1.46	.62	.762
GRI-patient. Gender-role ideology towards patients (α = .89)				
GRI-P1. Male patients better understand the approach of physicians than female patients	1.24	0.54	.52	.653
GRI-P2. Female patients compared to male patients have unreasonable expectations of physicians	1.45	0.87	.52	.764
GRI-P3. Women more frequently than men want to discuss problems with physicians that do not belong in the consultation room	2.09	1.27	.77	.876
GRI-P4. Women expect too much emotional support from physicians	2.14	1.21	.72	.827
GRI-P5. Male patients are less demanding than female patients	1.74	1.10	.67	.795
GRI-P6. Women are larger consumers of healthcare than is actually needed	1.46	0.86	.73	.898
GRI-P7. Men do not go to a physician for harmless health problems	1.78	1.12	.51	.675
GRI-P8. Medically unexplained symptoms develop in women because they lament too much about their health	1.35	0.71	.59	.771

(Continues)

TABLE 3 (Continued)

S-NGAMS	M	SD	r	Loadings
GRI-P9. Female patients complain about their health because they need more attention than male patients	1.30	0.70	.55	.773
GRI-P10. It is easier to find causes of health complaints in men because men communicate in a direct way	1.56	0.93	.68	.827
GRI-P11. Men appeal to healthcare more often with problems they should have prevented	2.39	1.25	.60	.731

Note: (R): reverse items; *r* = corrected item-total correlation.

professionals who do not obtain such training could perpetuate gender bias in healthcare (Ruiz-Cantero et al., 2019). In this context, the internalization of the N-GAMS scale may be useful for nurse educators to ascertain appropriate gender perspectives among nursing students of different countries.

6 | CONCLUSIONS

We conclude that the S-NGAMS is a valid and reliable self-report questionnaire that assesses the attitudinal component of healthcare students' and professionals' gender awareness. The valid assessment of gender awareness in this field can be an important topic to achieve healthcare equity, so we believe this adaptation can help research in this domain.

7 | LIMITATIONS OF THE STUDY

Although our sample was quite heterogeneous, and we have replicated some analyses in two different samples, the sample size in both studies can be considered a limitation, so future studies should be done to further validate this version of the questionnaire. Additionally, the translation may need slight variations if it aims to be applied to the American Spanish-speaking population.

CONFLICT OF INTEREST
The authors have no conflicts of interest to report.

ETHICS STATEMENT
This research has been approved by the Ethics Committee for research with human beings of the University of Basque Country (CEISH UPV/EHU) (ref. no.: M10_2019_139) and the Clinical Research Ethics Committee of the Basque Country (ref. no.: PI2019152).

AUTHOR CONTRIBUTIONS
Study design: AL, EP, JP, JA, SP. Data collection: AL, JA, SP. Data analysis: JA, AL, SP. Study supervision: AL. Manuscript writing: JA, OG, AL, SP. Critical revisions for important intellectual content: AL, SP, JA, OG, EP.

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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REFERENCES
Abásolo, I., Negrín-Hernández, M. A., & Pinilla, J. (2014). Equity in specialist waiting times by socioeconomic groups: Evidence from Spain. *The European Journal of Health Economics*, 15(3), 323–334. https://doi.org/10.1007/s10198-013-0524-x

Alspach, J. A. G. (2017). Because women's lives matter, we need to eliminate gender bias. *Critical Care Nurse*, 37(2), 10–18. https://doi.org/10.4037/ccn2017326

American Nurse Association (ANA). (2019). ANA position statement: The nurse's role in addressing discrimination: Protecting and promoting inclusive strategies in practice settings, policy, and advocacy. *OJIN: The Online Journal of Issues in Nursing*, 24(3). https://doi.org/10.3912/OJIN.Vol24No03PoSCol01

Andersson, J., Verdonk, P., Johansson, E. E., Lagro-Janssen, T., & Hamberg, K. (2012). Comparing gender awareness in Dutch and Swedish first-year medical students - Results from a questionnaire. *BMC Medical Education*, 12(1), 3. https://doi.org/10.1186/1472-6920-12-3

Balluerka, N., Gorostiaga, A., Alonso-Arbiol, I., & Haranburu, M. (2007). La adaptación de instrumentos de medida de unas culturas a otras: Una perspectiva práctica. *Psicothema*, 19(1), 124–133.

Carney, M., Quiroga, M., Mounce, L., Shephard, E., Hamilton, W., & Price, S. (2020). Effect of pre-existing conditions on bladder cancer stage at diagnosis: A cohort study using electronic primary care records in the UK. *British Journal of General Practice*, 70, e629–e635. https://doi.org/10.3399/bjgp20X710921

Daibes, M. A., Al-Btoush, M. S., Marji, T., & Rasmussen, J. A. (2017). Factors influencing nurses' attitudes towards patients in Jordanian addiction rehabilitation centres: A qualitative study. *International Journal of Mental Health and Addiction*, 15(3), 588–603. https://doi.org/10.1007/s11469-016-9682-2

Davis, J. A. (1971). *Elementary survey analysis*. Prentice-Hall.

Galbany-Estragués, P., & Comas-d'Argemir, D. (2017). Care, autonomy, and gender in nursing practice: A historical study of nurses'

experiences. *Journal of Nursing Research*, 25(5), 361–367. https://doi.org/10.1097/JNR.0000000000000184

Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology*, 70(3), 491–512. https://doi.org/10.1037/0022-3514.70.3.491

Gölge, Z. B., Sanal, Y., Yavuz, S., & Arslanoglu-Çetin, E. (2016). Attitudes toward wife abuse of police officers and judiciary members in Turkey: Profession, gender, ambivalent sexism and sex roles. *Journal of Family Violence*, 31(6), 785–796. https://doi.org/10.1007/s10896-016-9823-1

Gomez, D., Haas, B., de Mestral, C., Sharma, S., Hsiao, M., Zagorski, B., Rubenfeld, G., Ray, J., & Nathens, A. B. (2012). Gender-associated differences in access to trauma center care: A population-based analysis. *Surgery*, 152(2), 179–185. https://doi.org/10.1016/j.surg.2012.04.006

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. https://doi.org/10.1080/10705519909540118

Ibabe, I., Arnoso, A., & Elgorriaga, E. (2016). Ambivalent sexism inventory: Adaptation to Basque population and sexism as a risk factor of dating violence. *Spanish Journal of Psychology*, 19(2016), 1–9. https://doi.org/10.1017/sjp.2016.80

Kuhn, L., Page, K., Street, M., Rolley, J., & Considine, J. (2017). Effect of gender on evidence-based practice for Australian patients with acute coronary syndrome: A retrospective multi-site study. *Australasian Emergency Nursing Journal*, 20(2), 63–68. https://doi.org/10.1016/j.aenj.2017.02.002

Madsen, T. E., & Napoli, A. M. (2014). The DISPARITY-II study: Delays to antibiotic administration in women with severe sepsis or septic shock. *Academic Emergency Medicine*, 21(12), 1499–1502. https://doi.org/10.1111/acem.12546

Morais, R., Bernardes, S. F., & Verdonk, P. (2020). Gender awareness in medicine: Adaptation and validation of the Nijmegen gender awareness in medicine scale to the Portuguese population (N-GAMS). *Advances in Health Sciences Education*, 25(2), 457–477. https://doi.org/10.1007/s10459-019-09936-y

Moshagen, M., & Musch, J. (2014). Sample size requirements of the robust weighted least squares estimator. *Methodology European Journal of Research Methods for the Behavioral and Social Sciences*, 10(2), 60–70. https://doi.org/10.1027/1614-2241/a000068

Muñiz, J., Elosua, P., & Hambleton, R. K. (2013). Directrices para la traducción y adaptación de los tests: Segunda edición. *Psicothema*, 25(2), 151–157. https://doi.org/10.7334/psicothema2013.24

National Institue of Statistics (INE). (2021). Enfermeros colegiados por tipo de especialidad, año y sexo. Madrid: INE. Retrieved from: https://www.ine.es/jaxi/Datos.htm?tpx=30726

Ortega, J. (2019). Uncared-for jobs: Neoliberal reforms, feminization and the precarization of working conditions in nursing. *Athenea Digital*, 19(3), e2333. https://doi.org/10.5565/rev/athenea.2333

Ovejero, A., Yubero, S., Larranaga, E., & Navarro, R. (2013). Sexism and bullying among adolescents. *Psicología Conductual*, 21(1), 157–171.

Rodríguez, Y., Lameiras, M., & Carrera, M. V. (2009). validación de la versión reducida de las escalas ASI y AMI en una muestra de estudiantes españoles [Validation of scales shortened version of ASI and AMI students in a sample of Spanish]. *Psicogente*, 12(22), 284–295.

Rrustemi, I., Locatelli, I., Schwarz, J., Lagro-Janssen, T., Fauvel, A., & Clair, C. (2020). Gender awareness among medical students in a Swiss University. *BMC Medical Education*, 20(1), 156. https://doi.org/10.1186/s12909-020-02037-0

Ruiz-Cantero, M. T., Tomás-Aznar, C., Rodríguez-Jaume, M. J., Pérez-Sedeño, E., & Gasch-Gallén, Á. (2019). Agenda de género en la formación en ciencias de la salud: experiencias internacionales para reducir tiempos en España. *Gaceta Sanitaria*, 33(5), 485–490. https://doi.org/10.1016/j.gaceta.2018.03.010

Salgado, D. M., Vogt, D. S., King, L. A., & King, D. W. (2002). Gender awareness inventory-VA: A measure of ideology, sensitivity, and knowledge related to women veterans' health care. *Sex Roles*, 46(7–8), 247–262. https://doi.org/10.1023/A:1020171416038

Scheetz, L. J., & Orazem, J. P. (2020). The influence of sociodemographic factors on trauma center transport for severely injured older adults. *Health Services Research*, 55(3), 411–418. https://doi.org/10.1111/1475-6773.13270

Shannon, G., Jansen, M., Williams, K., Cáceres, C., Motta, A., Odhiambo, A., Eleveld, A., & Mannell, J. (2019). Gender equality in science, medicine, and global health: Where are we at and why does it matter? *The Lancet*, 393, 560–569. https://doi.org/10.1016/S0140-6736(18)33135-0

Shultz, K. S., Whitney, D. J., & Zickar, M. J. (2014). *Measurement theory in action: Case studies and exercises* (2nd ed.). Routledge/Taylor & Francis Group.

Sunden-Cullberg, J., Nilsson, A., & Inghammar, M. (2020). Sex-based differences in ED management of critically ill patients with sepsis: A nationwide cohort study. *Intensive Care Medicine*, 46(4), 727–736. https://doi.org/10.1007/s00134-019-05910-9

Tekkas, K. K., Beser, A., & Park, S. (2020). Ambivalent sexism of nursing students in Turkey and South Korea: A cross-cultural comparison study. *Nursing and Health Sciences*, 22(3), 612–619. https://doi.org/10.1111/nhs.12705

Tzeng, Y. L., Shih, H. H., & Yang, Y. L. (2011). Nursing education: Integrating gender equity consciousness. *Hu Li Za Zhi*, 58(6), 27–32.

Verdonk, P., Benschop, Y. W. M., De Haes, H. C. J. M., & Lagro-Janssen, T. L. M. (2008). Medical students' gender awareness: Construction of the Nijmegen gender awareness in medicine scale (N-GAMS). *Sex Roles*, 58(3–4), 222–234. https://doi.org/10.1007/s11199-007-9326-x

Verdonk, P., Benschop, Y. W. M., de Haes, H. C. J. M., & Lagro-Janssen, T. L. M. (2009). From gender bias to gender awareness in medical education. *Advances in Health Sciences Education*, 14(1), 135–152. https://doi.org/10.1007/s10459-008-9100-z

Wandner, L. D., Heft, M. W., Lok, B. C., Hirsh, A. T., George, S. Z., Horgas, A. L., Atchison, J. W., Torres, C. A., & Robinson, M. E. (2014). The impact of patients' gender, race, and age on health care professionals' pain management decisions: An online survey using virtual human technology. *International Journal of Nursing Studies*, 51(5), 726–733. https://doi.org/10.1016/j.ijnurstu.2013.09.011

World Health Organization. (2006). Integrating gender into the curricula for health professionals. Department of Gender, Women and Health (GWH). https://www.hrhresourcecenter.org/node/3394.html

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