ORIGINAL ARTICLE

Psychometric properties of the Gender Role Attitudes Scale among Turkish nursing students and factors affecting their attitudes

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Abstract

Purpose: This study aimed to test the psychometric properties of the Gender Roles Attitudes Scale-Turkish Version (GRAS-TR) and evaluate nursing students' gender role attitudes.

Design and Methods: This was a psychometric and descriptive study. The sample consisted of 916 nursing students at two state universities in Turkey.

Findings: The content validity index of the scale was 0.89. The confirmatory factor analysis revealed that the fit indices were acceptable/good. Test–retest results and Cronbach alpha coefficient showed that the scale has high reliability. Nursing students scored above midlevel from GRAS-TR.

Practice Implications: GRAS-TR is a valid and reliable instrument. Nursing students who were women, had postgraduate education, few siblings, and were not born/raised in the eastern region had a more egalitarian attitude.

KEYWORDS
gender roles, nursing students, psychometric properties, reliability, validity

1 | INTRODUCTION

Beliefs about roles deemed appropriate for women and men are defined as gender role attitudes. Gender role attitudes, which can vary according to different cultures, professions, classes, and groups of the same society,[1] range between two extremes as traditional and egalitarian.[2] Traditional attitude views women and men as interdependent and focuses on the distinction between female and male roles. The egalitarian approach views women and men as equal in terms of power relationships. It adopts the view that gender roles are less diverse. It advocates that men and women can assume similar roles.[3]

Traditional gender roles and a patriarchal structure dominate in Turkey.[4] It is thought that the head of the family is male, and women depend on men.[5] Social and social prejudices restrict women's employment outside the home or impose only certain occupations on women.[6] Therefore, women's low status and position are not perceived as a problematic situation by society.[5] Although this problem diminishes with modernization, patriarchal relations continue to exist strongly.[7]

The gender roles ascribed to women and men by patriarchal society cause inequality in certain areas of individuals' lives.[8] One of the most critical areas in which inequalities occur is the health system.[2,9] Healthcare services are divided into "women's job" and "men's job" according to gender roles.[10] Female employees are concentrated in areas with lower wages and status.[11] Although gender is not a key indicator of caring behavior, women are considered more suitable for the nursing profession because of their feminine characteristics.[10,12] Inequalities caused by gender stereotypes based on the nature of the profession reduce nurses' motivation and prevent them from working towards organizational goals.[13] All these show a need for a more sensitive and positive environment for nurses in the health sector.[12] Because nurses with egalitarian gender role attitudes contribute significantly to increasing the quality of care and decreasing gender discrimination in health.[2,9]

Nurses, who are at the center of healthcare services, have vital responsibilities in transforming nonegalitarian gender role attitudes and eliminating inequalities in health.[9] Because one of nursing's main

goals is to find solutions to gender-based problems that concern the individual, family, and society.[14] Nurses who in direct contact with society should gain awareness about gender roles and develop an egalitarian perspective. Also, gender role attitudes should be evaluated to ensure gender equality.[15] For this reason, it is crucial to understand better and evaluate the gender role attitudes of nursing students who are trained as nurses of the future.

Gender role attitude is a multidimensional, hidden concept that cannot be measured directly. It is tough to evaluate it empirically. For this reason, quantitative questionnaires based on self-report, which have items related to the roles and responsibilities of women and men, are used in the measurement of gender role attitude.[16] There is a large number of measurement instruments in the literature on gender. These instruments developed within the sample of university students address specific aspects (such as family, parenthood, marriage, work) of gender roles.[17–21] The Gender Role Attitudes Scale (GRAS), which was developed by Garcia-Cueto et al.,[22] objectively evaluates gender role attitude based on gender equality theory. This scale, which is reported to be a valid and reliable instrument, also contributes to the change of sexist attitudes. In addition to the family and social functions, it also evaluates gender role attitudes related to employment functions.[22] A previous study reported that the scale was adapted on a different sample that consists of students studying at a state university.[23] However, it was observed that the departments where the students were educated were unclear. Besides, five items were removed from the scale, unlike the original structure. Thus, the GRAS was chosen to adapt it to Turkish on a sample consisted of nursing students.

The following research questions were sought in this study.

- Is Gender Roles Attitudes Scale-Turkish Version (GRAS-TR) a valid tool to assess nursing students' gender role attitudes?
- Is GRAS-TR a reliable tool to assess nursing students' gender role attitudes?
- What are the gender role attitudes of Turkish nursing students?
- What are the sociodemographic factors affecting the gender roles of Turkish nursing students?

1.1 | Purpose

This study aimed to test the psychometric properties of the GRAS-TR in nursing students and evaluate these students' gender role attitudes.

2 | METHOD

2.1 | Design

The study was carried out in a psychometric, cross-sectional, and descriptive design.

2.2 | Sample

There is no consensus regarding the sample size of the studies testing the psychometric properties of the scales. However, it is recommended to reach out to sample size as large as possible so that the scale factor structure is stable, and the results obtained can be generalized.[24] The convenience sampling method was used in this study. The sample consisted of 916 nursing students studying at two state universities in Istanbul and agreed to participate in the study.

2.3 | Instruments

The data collection instrument consisted of two parts. The first part included "Personal Information Form" and the second part included the "GRAS."

2.3.1 | Personal Information Form

This form included five open-ended questions about the socio-demographic characteristics (sex, age, number of siblings, education level, the geographic region where born and raised) of nursing students.

2.3.2 | Gender Role Attitudes Scale

The GRAS was developed by Garcia-Cueto et al.[22] to evaluate gender role attitude based on gender equality theory. The original scale consists of five subdomains and 20 items as "social function transcendent (SFT) (4 items)," "family function transcendent (FFT) (2 items)," "social function sexism (SFS) (4 items)," "family function sexism (FFS) (4 items)," "employment function sexism (EFS) (6 items)." This scale, which has a two-prolonged structure (sexist and egalitarian), is a 5-point Likert type and the Cronbach's alpha coefficient is 0.99. The responses of the scale range between 1 = totally disagree and 5 = totally agree. This scale has no cut-off value, and its scoring system is based on mean scores.[22] The scores from the scale total and its subdomains practically reflect a sexist gender role attitude (1.00–2.99) or an egalitarian gender role attitude (3.00–5.00).

2.4 | Translation-back translation and cultural adaptation process

In this study, the International Test Commission[25] guideline was followed during the cultural adaptation process of the original scale. The original scale was translated from English into Turkish by two independent translators by sticking to the meaning in the source and target language. The version translated into Turkish was back-translated into English by two independent translators. The original scale, Turkish versions of the scale, and the back-translated English
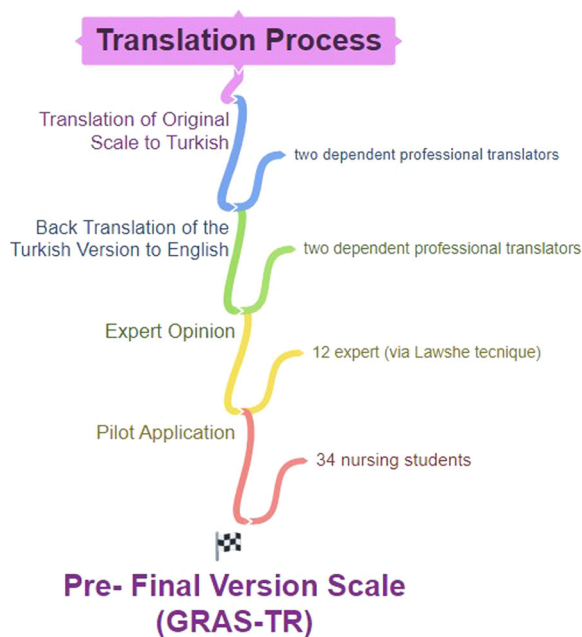
FIGURE 1 Translation-back translation and cultural adaptation process. GRAS-TR, Gender Roles Attitudes Scale-Turkish Version

versions were compared by a team (researchers, translators, an expert in assessment and evaluation, a linguist). The meaning of the items and grammatical structure were evaluated, and the "preliminary version" of the scale was formed. To evaluate whether this version was suitable for the Turkish language and culture, 12 experts reviewed the items and the scale, according to the Lawshe technique. The content validity ratio and content validity index of the scale were calculated.[26] Based on the suggestions of the expert panel, the wording was changed, and "couple" was used instead of "partner." Next, a pilot study was performed on 34 nursing students to evaluate whether the items were understandable. The items of the scale were found to be understandable in the pilot application. After the expert view and pilot application stages were completed, the "prefinal version" of the scale was formed (Figure 1).

2.5 | Data analysis

The data of the study were analyzed in IBM SPSS Statistics 24 and Amos 22 programs. The sociodemographic characteristics of the participants were evaluated by using descriptive statistics (number, percentage, mean, and standard deviation). The normality of the data distribution was examined using the measures of central tendency (mean, median, and mode), skewness–kurtosis coefficients, and QQ plot. Content validity ratios of the items and content validity index of the scale were calculated. Quality and discrimination of scale items were examined via the corrected item-total correlation coefficient and 27% lower–upper group item analysis. Confirmatory factor analysis (CFA) was conducted to test the construct validity of the scale.

Kaiser–Meyer–Olkin (KMO) coefficient and Bartlett's test of sphericity were performed before the CFA to test whether the sampling adequacy and the relationship between variables were suitable for factor analysis. In this study, the following fit indices were used to test model fit: χ^2 = chi-square, χ^2/df = chi-square/degrees of freedom, GFI = goodness of fit index, AGFI = adjusted goodness of fit index, CFI = comparative fit index, RMSEA = root mean square error of approximation, RMR = root mean square residual, SRMR = standardized root mean square residual. The internal consistency of the scale was analyzed by calculating Cronbach's alpha coefficient. The test–retest method was used to evaluate the scale's temporal stability, and the intraclass correlation coefficient (ICC) was calculated.

2.6 | Data collection

The data of the study were collected in the nursing departments of two state universities between February and June 2018. First, a preliminary interview was held with the relevant faculty members, and the appropriate date and time to collect the data were mutually determined. Later, the corresponding author explained the purpose, content, and scope of the research to the students. The researchers distributed the forms to the students who agreed to participate in the study and collected them after they were filled out. At this stage, the student nurses were asked to fill out the forms anonymously to protect confidentiality. Finally, the researchers communicated with 74 nursing students who had similar characteristics with the target population through the relevant faculty members and invited them to the test–retest phase to evaluate the scale's stability. In test–retest studies, the minimum sample size was recommended as 50 to predict reliability accurately.[27] Sixty-nine students who agreed to complete the scale twice participated in this stage. The scale was administered to these students twice with a 3-week interval at the end of the courses by the researchers. At this stage, to maintain anonymity and to match the first application with the second application, the participants were asked to fill in the forms by typing a number or a nickname. The ordering of the scale items was changed ideally to prevent scoring bias.[28] It took 10–15 min to complete the data collection tool for each participant.

2.7 | Ethical considerations

The corresponding author received permission from Professor Rodríguez-Díaz via e-mail to adapt the GRAS into Turkish. The social and Humanities Research Ethics Committee of a public university approved the study proposal (Date: 10/09/2017, Number: 08). Formal permissions were obtained from the school's administrations. The researchers informed the students about they have the right to refuse or withdraw from the study without any reason. Students were assured that these choices would not affect their education and training. Also, informed consent was obtained from each nursing student who agreed to participate in the study.

3 | RESULTS

3.1 | Participants' characteristics

The ages of nursing students ranged between 18 and 50 (mean = 20.84, SD = 3.39), 83.5% were female, 16.5% were male, 93.4% were in the undergraduate program, and 6.65% were in the graduate program.

3.2 | Content validity

Twelve experts (six nursing, two English linguistics, two Turkish linguistics, one sociology, and one assessment-evaluation) evaluated the content validity via the Lawshe technique. The content validity ratios of items ranged between 0.67 and 1.00, and the content validity index of the scale was found as 0.89.

3.3 | Item analysis

Item analysis was carried out to determine the quality and discrimination of scale items. Corrected item-total correlation coefficients of scale items ranged between 0.24 and 0.62. The average scores obtained from the scale were listed from the highest to the lowest. The average scores of groups in the lower 27% and upper 27% were evaluated through the independent group t-test. A statistically significant difference was found between the groups (Table 1).

3.4 | Construct validity

The KMO coefficient and Bartlett's test of sphericity were performed to test whether the sampling adequacy and the relationship between variables were appropriate for factor analysis. KMO coefficient was 0.91, and Bartlett's test of sphericity was 4727.711 (df = 0.190, $p < 0.001$). Next, the construct validity of the scale was examined through the CFA. Standardized factor loadings of the scale items ranged between 0.35 and 0.74 (Figure 2). The model fit indices of the scale were at an acceptable or good level (Table 2). It was found that χ^2/df (<3), GFI (>0.95), RMSEA, SRMR, RMR (<0.050) had a good fit level; AGFI, CFI (>0.90) had an acceptable fit level.

3.5 | Reliability

The Cronbach alpha coefficient of GRAS-TR composed of 20 items was 0.87. The Cronbach alpha coefficients were 0.65 for SFT, 0.62 for FFT, 0.68 for SFS, 0.66 for FFS, and 0.74 for EFS. The stability of the scale was evaluated via the test–retest method and the ICCs were calculated. The average measure ICC of the GRAS-TR was 0.942 with a 95% confidence interval (CI) from 0.906 to 0.964 (F = 17.242,

$p < 0.001$). The average measures ICC of the subdomains were 0.859 for SFT (95% CI = 0.772–0.912, F = 7.074), 0.708 for FFT (95% CI = 0.529–0.819, F = 3.428), 0.890 for SFS (95% CI = 0.822–0.932, F = 9.052), 0.846 for FFS (95% CI = 0.752–0.905, F = 6.514), 0.873 for EFS (95% CI = 0.795–0.921, F = 7.868) (Table 3).

3.6 | Gender role attitudes of nursing students and affecting factors

Nursing students obtained a high score from GRAS-TR total (mean = 3.91, SD = 0.56) and the highest average score from the SFT subdomain (mean = 4.45, SD = 0.53). The nursing students who got scores higher than the mid-level in all subdomains got the lowest average score in the EFS subdomain (mean = 3.50, SD = 0.78) (Table 4). There was only one item (item 16) with an average score lower than the midlevel, and this item was in the EFS subdomain (Table 2). Also, there were statistically significant differences in the average scores of nursing students obtained from GRAS total according to sex, age, number of siblings, education level, and geographic region where born and raised (Table 5).

4 | DISCUSSION

The previous studies emphasized that nurses with an egalitarian gender role attitude may decrease discrimination in the health sector.[2,9] Thus, it is crucial to evaluate the gender role attitudes of nursing students and adapt suitable measurement tools between cultures. The present study aimed to test the psychometric properties of GRAS-TR and to assess the gender role attitudes of nursing students. This study's strength was using a guideline proposed for scale adaptation studies in the literature.[25] The study results showed that GRAS-TR was a valid and reliable instrument, and the gender role attitudes of the nursing students who participated in the study were egalitarian. It was also revealed that gender role attitudes of the nursing students vary according to sex, age, education level, number of siblings, and geographic region were born and raised.

A panel of 12 experts evaluated content validity through the technique developed by Lawshe.[26] The content validity index should be ≥0.56 in the case of 12 experts making evaluations.[29] The study showed that the content validity ratios of the items were high enough.

The corrected item-total correlation coefficients obtained from item analysis were higher than the minimum value suggested in the literature (≥0.20), similar to the original study.[30] Thus, the results showed that the items were related to each other, and they were homogenous.

In scale adaptation studies, it is recommended to evaluate the scale's construct validity with CFA and report more than one fit index.[31] The CFA results of the scale showed that GRAS-TR had a model fit.[31] Similarly, fit indices were also at good levels in the original study.[22] Also, standardized factor loadings of the items were higher than the minimum criterion recommended in the literature

Items	M (SD)	Corrected item-total correlation	Cronbach's alpha if item deleted	Lower and upper 27% group t/p
Item 1	4.21 (0.83)	0.24	0.87	−9.126, <0.001
Item 2	4.65 (0.68)	0.33	0.87	−9.903, <0.001
Item 3	4.49 (0.77)	0.36	0.86	−11.483, <0.001
Item 4	4.34 (0.88)	0.51	0.86	−18.946, <0.001
Item 5	4.18 (1.05)	0.40	0.86	−14.205, <0.001
Item 6	4.44 (0.76)	0.48	0.86	−15.338, <0.001
Item 7	4.01 (1.03)	0.35	0.87	−13.674, <0.001
Item 8	4.32 (1.02)	0.53	0.86	−19.367, <0.001
Item 9	3.39 (1.25)	0.53	0.86	−21.417, <0.001
Item 10	3.71 (1.24)	0.51	0.86	−20.912, <0.001
Item 11	4.02 (1.01)	0.55	0.86	−20.555, <0.001
Item 12	3.42 (1.38)	0.36	0.87	−15.271, <0.001
Item 13	4.01 (1.06)	0.53	0.86	−20.357, <0.001
Item 14	3.52 (1.15)	0.47	0.86	−16.395, <0.001
Item 15	3.75 (1.08)	0.38	0.86	−13.322, <0.001
Item 16	2.97 (1.24)	0.58	0.86	−22.716, <0.001
Item 17	3.94 (1.02)	0.52	0.86	−21.104, <0.001
Item 18	3.82 (1.02)	0.40	0.86	−14.933, <0.001
Item 19	3.08 (1.19)	0.58	0.86	−22.966, <0.001
Item 20	3.84 (1.11)	0.62	0.86	−24.467, <0.001

Note: N = 916.

Abbreviations: GRAS-TR, Gender Roles Attitudes Scale-Turkish Version; *M*, mean; *SD*, standard deviation; *t*, independent group *t*-test.

(>0.30),[32] and was similar to the original study.[22] The results of the study proved that GRAS-TR was a valid measurement instrument.

The Cronbach alpha coefficient calculated to determine the internal consistency of the GRAS-TR was above the threshold value (>0.60).[33] In addition, the stability of GRAS-TR was evaluated by using the test–retest method. The ICCs were above the recommended critical value of 0.50[34] and revealed that GRAS-TR has temporal stability. These results showed that GRAS-TR is a reliable instrument to evaluate the gender role attitudes of nursing students.

This study revealed that nursing students have an egalitarian gender role attitude in all areas, including social, family, and employment functions, similar to other studies in the literature.[9,35–37] However, it was observed that the nursing students displayed a less egalitarian attitude in the employment area compared to the family and social area. It was especially striking that the participants responded more sexist to the statement, "Some jobs are not suitable for women (item 16)" compared to other items. Similarly, in a study conducted with nursing students, it was reported that the nursing profession is more suitable for women due to its nature, characteristics, and social judgments.[38] In Turkey, where the patriarchal structure is dominant, it is known that it is adopted of traditional gender roles.[4]

Depending on motherhood and spouse roles, healing and caring works are attributed to women by society, and the nursing profession is considered more appropriate for women.[6] Therefore, it is thought that the patriarchal cultural structure of the country may affect gender role attitudes regarding the employment field negatively. This result may suggest that vertical and horizontal occupational discrimination based on gender will continue in the health sector and supports previous studies.[10,39]

This study revealed that nursing students' gender role attitudes differ according to sex. Female students displayed a more egalitarian gender role attitude than male students. This finding is supported by other researchers in the literature.[9,40] The traditional view of gender roles is advantageous and gratifying for men. For this reason, it is thought that men can display fewer egalitarian attitudes.

In this study, it was observed that nursing students' gender roles in the older age group were more egalitarian. There are some contradictions in the literature regarding this result. Basar and Demirci[9] and Aktaş et al.[2] emphasize a negative relationship between the ages of nursing students and their gender role attitudes, whereas Güzel[41] reports no difference between age groups. This difference may be related to the increase in education level with the increase in the sample group's

FIGURE 2 Confirmatory factor analysis path diagram of the Gender Roles Attitudes Scale-Turkish Version. EFS, employment function sexism; FFS, family function sexism; FFT, family function transcendent; SFS, social function sexism; SFT, social function transcendent
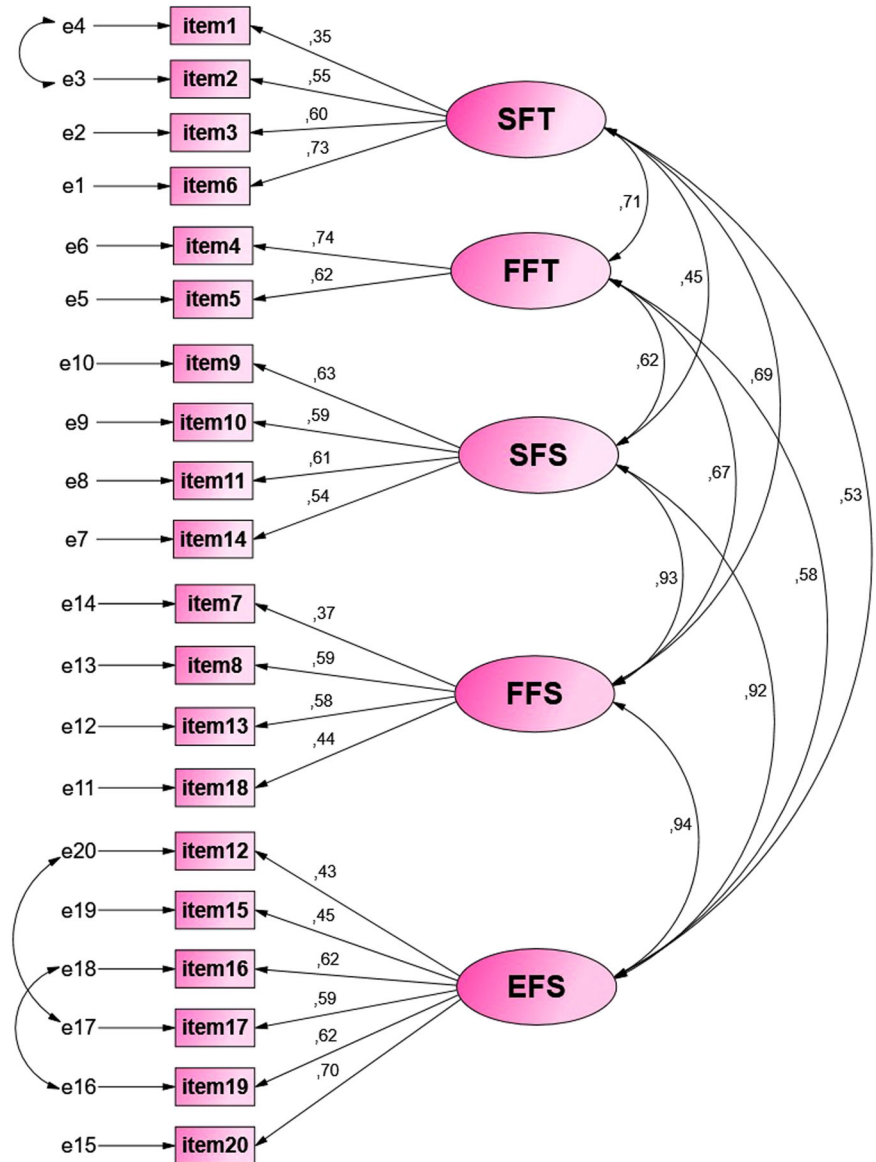
age. It is known that awareness of gender equality increases with the increase in education level, and gender roles are adopted more with the decrease in education level.[42] In line with the current research results, it can be claimed that advanced nursing education has a positive effect on gender roles because this study revealed that graduate students have more egalitarian gender role attitudes than undergraduate ones. Therefore, further studies should be conducted to demonstrate how gender role attitudes affect nursing students when their age and academic level progress. Also, it may be suggested that the nursing education curriculum should be strengthened in a way to raise awareness of gender equality and supported by courses and continuing education after the undergraduate degree.

The findings of our study showed that students with fewer siblings display more egalitarian attitudes. This finding is similar to the results of other studies in the literature.[9,41,43] It can be said that this may be due to the more segregation of the roles expected of boys and girls in families with a high number of children and the adoption of traditional gender role attitudes.

Finally, nursing students born and raised in Turkey's eastern region had less egalitarian gender role attitudes than other nursing students in this study. Similarly, Basar and Demirci[9] report that gender role attitudes of nursing students who study at universities in Turkey's eastern are more sexist. In addition, Öngen and Aytaç[44] emphasize that students who were born, raised, or lived in rural areas exhibit more sexist approaches. It is known that the general attitude towards women and gender role attitudes are affected by the region and cultural characteristics. In the eastern region where the patriarchal gender regime prevails in our country, an understanding that puts men at the center and keeps women in a secondary position is dominant.[45] Our research suggests that the cultural characteristics of the region where students are born, raised, or live may have reflections on gender role attitudes. This result is also supported by the data in the Global Gender Gap Report 2020, prepared to measure gender-based discrimination at a global level. According to this report evaluating 153 countries, Turkey was 130, Turkey's eastern neighbor Iran was 148, and Turkey's western

TABLE 2 Confirmatory factor analysis and model fit indices results of the GRAS-TR

	χ^2 (df)	χ^2/df	GFI	AGFI	CFI	RMSE-A	RMR	SRMR
GRAS								
Sample 1			0.999				0.048	
Sample 2					0.969	0.053		0.045
Sample 3					0.969	0.055		0.034
GRAS-TR								
First result before modification	548.669 (160)	3.429	0.943	0.926	0.915	0.052	0.046	0.0414
First modification	439.616 (159)	2.765	0.955	0.941	0.939	0.044	0.041	0.0383
Second modification	426.654 (158)	2.700	0.956	0.942	0.941	0.043	0.040	0.0376
Third modification	418.094 (157)	2.633	0.957	0.943	0.943	0.043	0.040	0.0373
Acceptable fit level		<5	>0.90	>0.90	>0.90	<0.080	<0.080	<0.080
Good fit level		<3	>0.95	>0.95	>0.95	<0.050	<0.050	<0.050

Note: N = 916.

Abbreviations: χ^2, chi-square; AGFI, adjusted goodness of fit index; CFI, comparative fit index; *df*, degrees of freedom; GFI, goodness of fit index; GRAS-TR, Gender Roles Attitudes Scale-Turkish Version; IFI, incremental fit index; NFI, normed fit index; RMR, root mean square residual; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual.

neighbor Greece was 84 in gender inequality.[11] Therefore, it can be said that gender role attitudes differ by region.

5 | LIMITATIONS

There are some limitations to the results of this study that should be taken into consideration. The first of these is related to the sample. The sample size was immense, and it was higher than the minimum value recommended to test the psychometric properties of a measurement instrument.[24] However, only nursing students studying at two public universities in Istanbul were included in the sample using a convenience sampling method. This situation limited the generalizability of the results. The second limitation is related to the data collection method. Since the data were collected with a self-report survey, the results are limited to the participants' reports. Also, further research is needed to test the scale's psychometric properties in different sample groups that include students and professionals from health disciplines and evaluate their attitudes. Third, convergent/discriminant validity could not be tested in this study. Finally, no version of the original scale adapted to different cultures was found. This situation made

TABLE 3 Test–retest results of the GRAS-TR

	M ± SD first	M ± SD second	ICC	95% CI Lower bound	Upper bound	F value	p Value
SFT	4.41 ± 0.55	4.48 ± 0.53	0.859	0.772	0.912	7.074	<0.001
FFT	4.15 ± 0.85	4.07 ± 0.82	0.708	0.529	0.819	3.428	<0.001
SFS	3.69 ± 0.79	3.71 ± 0.71	0.890	0.822	0.932	9.052	<0.001
FFS	3.97 ± 0.64	4.06 ± 0.63	0.846	0.752	0.905	6.514	<0.001
EFS	3.64 ± 0.70	3.53 ± 0.68	0.873	0.795	0.921	7.868	<0.001
GRAS-TR	3.92 ± 0.53	3.92 ± 0.52	0.942	0.906	0.964	17.242	<0.001

Note: N = 69.

Abbreviations: CI, confidence interval; EFS, employment function sexism; FFS, family function sexism; FFT, family function transcendent; GRAS-TR, Gender Roles Attitudes Scale-Turkish Version; ICC, intraclass correlation coefficient; *M*, mean; *SD*, standard deviation; SFS, social function sexism; SFT, social function transcendent.

TABLE 4 Gender role attitudes of nursing students

GRAS-TR and its domains	Min	Max	M ± SD
SFT	1.00	5.00	4.45 ± 0.53
FFT	1.00	5.00	4.26 ± 0.83
SFS	1.00	5.00	3.66 ± 0.83
FFS	2.00	5.00	4.04 ± 0.68
EFS	1.33	5.00	3.50 ± 0.78
GRAS-TR	2.20	5.00	3.91 ± 0.56

Note: N = 916.

Abbreviations: EFS, employment function sexism; FFS, family function sexism; FFT, family function transcendent; GRAS-TR, Gender Roles Attitudes Scale-Turkish Version; *M*, mean; Max, maximum; Min, minimum; *SD*, standard deviation; SFS, social function sexism; SFT, social function transcendent.

TABLE 5 Factors affecting nursing students' gender role attitudes

Variables	n	Gender roles attitudes			
		Mean	SD	t	p Value
Sex					
Female	765	3.99	0.53	11.360	<0.001
Male	151	3.46	0.51		
Age					
18-23	849	3.89	0.56	−3.457	<0.001
24 and ↑	67	4.13	0.56		
Number of siblings					
2 and ↓	606	4.00	0.54	7.334	<0.001
3 and ↑	310	3.72	0.55		
Education level					
Undergraduate	856	3.88	0.56	−5.361	<0.001
Graduate	60	4.21	0.45		
The geographic region where born and raised					
Eastern region	118	3.68	0.57	−4.766	<0.001
Other regions	798	3.94	0.55		

Note: N = 916.

Abbreviations: *SD*, standard deviation; *t*, independent group *t*-test.

it difficult to compare and discuss the results obtained from other studies.

6 | IMPLICATIONS FOR NURSING PRACTICE

It is vital to measure gender role attitudes by using appropriate methods to eliminate inequalities in the health field. In this study, GRAS, which evaluates gender role attitude, was adapted to Turkish to be used on nursing students. The study presents evidence

supporting that GRAS-TR, which consists of 20 items and five sub-domains, is a valid and reliable measurement instrument. Nursing students displayed an egalitarian gender role attitude in all areas, including family, social, and employment. However, nursing students' gender role attitudes differ according to the variables of sex, age, education level, number of siblings, and geographic region were born and raised. Thus, it can be recommended to use this measurement tool in evaluating the gender role attitudes of nursing students within the context of gender equality. This tool can also form a basis for strategic arrangements in educational programs and clinical practice areas to raise nursing students' awareness of gender equality.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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