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Turkish adaptation of the nurses' sexual harassment scale: validity and reliability study

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Abstract

The aim of this study is to adapt the Nurses' Sexual Harassment Scale, originally developed in Iran, into Turkish and to determine its validity and reliability. This methodological study was conducted with a sample of 288 nurses working in various healthcare institutions across Turkey. Data were collected via online platforms between December 2024 and February 2025 using a survey form that included socio-demographic questions, the Nurses' Sexual Harassment Scale, and the Scale of Sexual Harassment Behavior from Patients or Clients toward Healthcare Workers. Data were collected from the sample group using convenience sampling method. For linguistic validation, the translation-back translation method was applied. Construct validity was analysed by exploratory and confirmatory factor analyses, and internal consistency was evaluated using Cronbach's alpha scores. The data were analyzed by using SPSS 23.00 and AMOS software. Exploratory factor analysis revealed a two-factor structure—Latent Sexual Harassment and Manifest Sexual Harassment—comprising 15 items. The eigenvalues for the two factors were 13.43 and 1.57, explaining 89.541% and 10.459% of the total variance, respectively. Item loadings ranged between 0.416 and 0.899. The confirmatory factor analysis results showed that CMIN/DF was 5.447, RMR was 0.044, GFI was 0.800, and AGFI was 0.730. Fit indices such as NFI (0.912), TLI (0.913), and CFI (0.926) were all above 0.90, while RMSEA was 0.091. The overall internal consistency of the scale was high (Cronbach's alpha = 0.961). Subscale reliability was also strong, with alpha values of 0.975 for Latent Sexual Harassment and 0.973 for Manifest Sexual Harassment. These findings support that the Turkish version of the Nurses' Sexual Harassment Scale is a valid and reliable instrument for assessing sexual harassment experiences among nurses.

Clinical trial number

Not applicable.

Keywords Nurses, Sexual harassment, Scale, Validity, Reliability

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Background

Violence is a significant public health issue that can be observed in every area of human life and is increasingly becoming a global problem. It is defined as the intentional application of physical force, coercion, or threats aimed at causing death, injury, mental harm, or developmental disorders to oneself, another person, or a group [1, 2]. Any threatening behavior or words from a patient, patient's relative, or others that pose a risk to healthcare professionals, including sexual or physical assaults, are described as violence in healthcare institutions [3]. Workplace violence, a significant and priority public health problem worldwide, is spreading daily, and it is becoming a worrying phenomenon, particularly for healthcare professionals who are at higher risk [4].

Violence, which has existed since the beginning of human history, is one of the most uncontrollable social phenomena affecting all social professions, ages, and ethnic groups. With the frequent encounters of healthcare professionals with violent incidents, workplace violence in healthcare is increasingly becoming more important, and it is acknowledged that healthcare professionals are at risk of violence. Healthcare professionals and their colleagues suffer physical and psychological harm from the violence of patients or their relatives [5].

Sexual harassment, which is common in workplaces, is described as recurrent and unwanted sexual behaviors, including verbal, physical, emotional, psychological, and visual forms, enforced on an individual without consent, related to humiliation, abuse, or threats to the victim's safety or health [6]. These behaviors include unwanted, non-reciprocated, and unwelcome sexual behaviors such as physical, psychological, verbal gestures, body language, written and visual materials, and attacks that cause fear, humiliation, shame, and embarrassment in the target [4, 5, 7].

Sexual harassment in the workplace can affect both men and women, potentially rendering individuals victims regardless of gender. Sexual harassment is not limited to interactions between individuals of the opposite sex and may also take place between members of the same sex. However, studies indicate that a large majority of those who are sexually harassed are women, and sexual harassment is typically from men to women [8]. The majority of nurses are women, and because they often work in unsafe environments, their experiences with violence are three times higher than other professional groups. It is also discussed that there may be a relationship between the risk of violence faced by female nurses and the occurrence of violence in other areas of women's lives [2, 9]. Healthcare professionals, who are in close contact with stressed individuals as part of their profession, are at a greater risk of experiencing violence compared to other professions. In recent years, gender discrimination and sexual harassment can occur in all professions and health workers can face serious problems [6].

When sexual harassment occurs in the workplace, it often gives rise to a sense of insecurity, making the work environment unstable and tense. This instability may lead to psychological harm like stress, fear, anger, and depression along with various physical health problems. These negative outcomes may disrupt both professional responsibilities and family life, creating confusion and imbalance across both domains. Consequently, this weakens nurses' right to provide safe and effective care, leading to problems like resignation, frequent absenteeism, lowered energy, decreased work productivity, lowered creativity, conflict with co-workers, decreased job pleasure and lowered patient care quality [6].

The aim of this study is to adapt the Nurses' Sexual Harassment Scale, developed by Zeighami et al. (2024) in Iran, to translate it into Turkish and to analyse its validity and reliability.

Methods

Research type

In this metadological study, it was aimed to analyse its validity and reliability of the Nurses' Sexual Harassment Scale and the research was completed with this method.

Hypotheses

H1 The Turkish-adapted "Nurses' Sexual Harassment Scale" is a valid assessment tool.

H1 The Turkish-adapted "Nurses' Sexual Harassment Scale" is a reliable assessment tool.

H0 The Turkish-adapted "Nurses' Sexual Harassment Scale" is not a valid assessment tool.

H0 The Turkish-adapted "Nurses' Sexual Harassment Scale" is not a reliable assessment tool.

Population and sample

In the literature, it is suggested that for factor analysis in scale validity and reliability studies, the sample size should be at least five times the number of items in the scale [10]. The original scale consisted of 15 items. A total of 305 nurses were reached for this study, but 17 nurses excluded from the study due to incomplete data forms. Hence, the study was completed with 288 nurses.

Inclusion and exclusion criteria

The study included nurses who were 18 years or older, had access to online social networks (WhatsApp, Instagram, etc.), used smartphones, had worked as nurses for at least one year in any healthcare institution in Turkey,

and volunteered to participate in the study. Nurses who filled out the data collection forms incompletely were excluded from the study.

Data collection tools

The data for the study collected through a questionnaire form developed by the researchers, which included socio-demographic characteristics of the participants, the Nurses' Sexual Harassment Scale, and the Scale of Sexual Harassment Behavior from Patients or Clients toward Healthcare Workers.

Questionnaire form

The questionnaire form consists of 6 questions connected to the socio-demographic traits of the nurses [6, 11].

Nurses' sexual harassment scale

According to Zeighami et al. (2024) [6], the Nurses' Sexual Harassment Scale is a validated tool created to measure experiences of sexual harassment among nurses. The scale includes 15 items, categorized into two subscales: 'Latent Sexual Harassment' (9 items) and 'Manifest Sexual Harassment' (6 items). Each item is rated on a 5 point Likert scale (0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Always). The Cronbach's alpha value of the scale was stated as 0.94. The total score between 0 to 60, with 0 indicating no experience of harassment and higher scores representing increased levels of experienced harassment [6].

Scale of sexual harassment behavior from patients or clients toward healthcare workers

The scale, originally was designed by Vincent-Höper et al. (2020) and then adopted and validated in Turkish by Ayar et al. (2022) [12], assesses sexual violence directed at healthcare professionals. It comprises 14 items divided into three subscales: verbal sexual harassment (6 items), witnessed sexual harassment (4 items), and physical sexual harassment (4 items). The Cronbach's alpha value of the scale was stated as 0.843. Responses are saved using a 6 point Likert scale, between 1 (lowest) to 6 (highest) to indicate the degree of experience [12].

Data collection process and security

Data for this study were collected online via Google Forms link, targeting nurses who have been working in any healthcare organization in Turkey for at least one year. Data collection was completed between December 2024 and February 2025. Individuals who participated in the study were informed that their responses would remain confidential and would be used for academic research purposes only.

Study procedure

Permission and translation process

To conduct the Turkish validation and reliability study of the Nurses' Sexual Harassment Scale, permission was first obtained from Maryam Zeighami, the developer of the scale, via email.

To minimize conceptual and expression differences in the language adaptation, the back-translation method, which is recommended for adapting tools developed in a language different from the target language by the World Health Organization, was used (Çapık et al., 2018) [13]. Eight independent translators fluent in English at a native level were sent the scale's manual and related articles, and they translated the scale from its original language to Turkish. After translation, the researchers reviewed and evaluated the translations to create a unified version. Necessary revisions were made to the Turkish version based on discussions among the researchers regarding meaning and grammar.

Content validity

For content validity of the scale items, six experts in the field were consulted using the Davis technique (Davis, 1992) [14]. The scale was sent electronically to these experts, and the Content Validity Index (CVI) calculated as 0.98. Subsequently, the Turkish scale was re-translated into English by two individuals who were fluent in both languages. After translation-back-translation process, last edition of the scale was determined by the researchers.

Statistical analysis

Comprehensive statistical analyses were carried out to analyse its psychometric traits of the Nurses' Sexual Harassment Scale. Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), item-total correlations, and internal consistency (Cronbach's Alpha) analyses were applied to assess the scale's validity and reliability. Correlation analysis was also performed with a similar measurement tool to support the scale's construct validity. SPSS 23.00 and AMOS software packages were used software packages for data analysis. Descriptive statistics were provided for the characteristics of the participants (frequency, percentage, mean, standard deviation, minimum and maximum values).

Ethical considerations

Permission to use the Turkish-adapted version of the scale was obtained from the original authors who conducted its reliability and validity studies. Ethics approval for research was approved by Izmir Bakircay University Non-Interventional Clinical Research Ethics Committee (dated 18.12.2024, decision number 1930). In addition, informed online consents were obtained from

Table 1 Socio-demographic characteristics of the nurses ($n=288$)

Socio-demographic characteristics		*n*	%
Gender	Female	257	89.2
	Male	31	10.8
Family Type	Nuclear Family	260	90.3
	Extended Family	13	4.5
	Broken Family	8	2.8
	Single-Parent Family	7	2.4
Educational Status	Health Vocational High School	10	3.5
	Associate Degree	16	5.6
	Bachelor's Degree	189	65.6
	Postgraduate (Master's/PhD)	73	25.3
Shift Type / Work Schedule	Day Shift	93	32.3
	Night Shift	11	3.8
	Rotating Shift (Day-Night)	183	63.5
Age	X̄±SD (Min-Max)	34.39 ± 7.81 (22–60)	
Years of Professional Experience	X̄±SD (Min-Max)	12.33 ± 8.53 (1–37)	

Table 2 Kaiser-Meyer-Olkin (KMO) and Bartlett's test ($n=288$)

Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy	0.956
Bartlett's Test of Sphericity - Approx. Chi-Square	5746.353
df	105
Sig.	0.000

Table 3 Item-total correlations, reliability analysis, and factor loadings ($n=288$)

Item	Corrected item-total correlation	Cronbach's alpha if item deleted	Factor 1	Factor 2
O1	0.745	0.972	0.687	
O2	0.822	0.971	0.746	0.416
O3	0.462	0.970	0.740	0.484
O4	0.796	0.972	0.748	
O5	0.746	0.973	0.858	
O6	0.886	0.970	0.800	0.457
O7	0.480	0.970	0.753	0.497
O8	0.798	0.972	0.695	0.434
O9	0.639	0.971	0.755	0.433
O10	0.853	0.971	0.426	0.825
O11	0.440	0.971		0.899
O12	0.823	0.971		0.850
O13	0.666	0.970	0.480	0.782
O14	0.864	0.971	0.417	0.856
O15	0.649	0.971	0.435	0.811
Eigenvalue			13,43	1,57
% of Variance			89.541%	10.459%
Cumulative %			89.541%	100.000%

all participants prior to participation in the study. The research was conducted in accordance with the principles of the Declaration of Helsinki.

Results

In this study, 305 nurses who met the research criteria were contacted; however, 17 nurses were excluded from the study due to incomplete data forms. Thus, the research data were evaluated with data obtained from 288 nurses.

Table 1 shows the socio-demographic characteristics of the nursing.

The KMO value was 0.956, showing that the sample size was at an excellent level for perform factor analysis. Bartlett's Test of Sphericity was significant ($p<0.001$), demonstrating that factor analysis was appropriate and applicable (Table 2).

As presented in Table 3, scale internal consistency is remarkably high. The corrected item-total correlations are mostly above 0.60, indicating that the items are strongly related to the underlying construct being measured. Cronbach's alpha coefficients range between approximately 0.970 and 0.973, demonstrating excellent reliability. Furthermore, no substantial increase in alpha is observed when any item is deleted, suggesting that all items contribute meaningfully to the overall consistency of the scale.

An exploratory factor analysis was performed using Principal Components Analysis as the extraction method and Oblimin rotation, which assumes that the factors may be correlated. The analysis revealed a two-factor structure. Factor 1 primarily includes items O1 through O9, while Factor 2 loads strongly on items O10 through O15. This distribution suggests that the scale reflects two distinct but related dimensions.

The eigenvalues for the two factors were calculated as 13.43 and 1.57, accounting for 89.541% and 10.459% of the total variance, respectively. Combined, the two factors explain 100% of the total variance, supporting the construct validity of the scale.

In conclusion, the scale demonstrates high internal reliability, and the two-factor structure identified through Oblimin rotation indicates a conceptually coherent and statistically robust measurement model.

As presented in Table 4, the result of the CFA indicate that the scale has some deficiencies in terms of model fit. The CMIN/DF value is 5.447, which is within acceptable limits (< 5). The RMR value is 0.044, indicating an excellent fit. However, the GFI and AGFI values fall below the ideal fit level (> 0.90 is expected, but they are 0.800 and 0.730, respectively). Since the NFI, TLI, and CFI values are above 0.90, it indicates that the model is acceptable. However, the RMSEA value is 0.091, suggesting that the model needs improvement. Overall, it can be stated that

Table 4 Confirmatory factor analysis (CFA) of the nurses sexual harassment scale ($n=288$)

Measurement	Scale values	Perfect fit
CMIN/DF (Chi-Square / DF)	5.447	< 3 (good), < 5 (acceptable) [15]
RMR (Root Mean Residual)	0.044	< 0.05 [16]
GFI (Goodness of Fit Index)	0.800	> 0.90 [16]
AGFI (Adjusted GFI)	0.730	> 0.90 [16]
NFI (Normed Fit Index)	0.912	> 0.90 [17]
TLI (Tucker-Lewis Index)	0.913	> 0.90 [17]
CFI (Comparative Fit Index)	0.926	> 0.90 [18]
RMSEA (Root Mean Square Error of Approximation)	0.091	< 0.08 (good), < 0.10 (acceptable) [18]

Table 5 Correlation between the subscales and the total scale of the nurses sexual harassment scale with the nurses' sexual harassment scale ($n=288$)

The nurses' sexual harassment scale		Scale of sexual harassment behaviors from patients or Clients towards care workers
F1-Latent Sexual Harassment	r	0.545
	p	0.000
F2-Manifest Sexual Harassment	r	0.287
	p	0.000
TOTAL	r	0.468
	p	0.000

the model is acceptable but does not provide a perfect fit [15–18].

Table 5 presents the correlations between the Nurses Sexual Harassment Scale and the Sexual Harassment Behaviors from Patients or Clients Toward Care Workers Scale. According to the findings, there is a statistically significant correlation of $r=0.545$ between the Latent Sexual Harassment subscale and the comparison scale ($p<0.001$). This result indicates a moderate positive relationship between the perception of latent sexual harassment and the scale measuring sexual harassment behaviors toward care workers. For the Manifest Sexual Harassment subscale, the correlation is $r=0.287$, which is also statistically significant ($p<0.001$), but the relationship is weaker. This suggests that the perception of manifest sexual harassment is less strongly associated with perceptions of sexual harassment from patients or clients. The correlation between the overall score of the scale and the comparison scale is $r=0.468$, showing a statistically significant relationship ($p<0.001$). This indicates that the overall scale has a moderate positive correlation with the scale measuring perceptions of sexual harassment toward care workers. The Latent Sexual Harassment subscale demonstrated a higher correlation compared to the Manifest Sexual Harassment subscale. These findings suggest that the Nurses Sexual Harassment Scale shows significant correlations with a similar construct, thereby supporting its construct validity. However, the moderate level of the correlation coefficients suggests that the construct measured by the scale is not entirely the same and may involve different components.

Table 6 Mean, standard deviation, and Cronbach's alpha values of the nurses sexual harassment scale and Its subscales

	Min-Max	$\overline{X} \pm SD$	Cronbach's alpha
The Nurses' Sexual Harassment Scale	15–75	23.31 ± 12.98	0.961
F1-Latent Sexual Harassment	9–45	15.23 ± 8.31	0.975
F2-Manifest Sexual Harassment	6–30	8.07 ± 5.36	0.973

According to Table 6 means, standard deviations, and internal consistency values (Cronbach's Alpha) of the Nurses Sexual Harassment Scale and its subscales were examined. The overall score of the scale was 23.31 ± 12.98, with a very high internal consistency coefficient (0.961). Looking at the subscales, the Latent Sexual Harassment factor had a mean of 15.23 ± 8.31, with a Cronbach's Alpha of 0.975. For the Manifest Sexual Harassment factor, the mean was 8.07 ± 5.36, and internal consistency coefficient was analysed 0.973. The fact that the Cronbach's Alpha values for all sub-scales and overall score are above 0.90 indicates that the scale has high internal consistency.

Discussion

Healthcare professionals may encounter violence or adverse situations while performing their duties, and sexual harassment is among these negative experiences. Due to the nature of their care provision, nurses are in close physical and emotional contact with patients, patient relatives, and other healthcare workers. Various studies in the literature have reported instances of sexual harassment against nurses [19–21].

Bruschini et al. (2023) [22], in a study carried in Switzerland with nurses and nursing students, found that 95.6% of participants had been exposed to at least one type of sexual harassment in the past 12 months. Verbal sexual harassment has been reported as the most commonly occurring form, and younger nurses were found to be at higher risk. Similarly, Nasim et al. (2023) [23], in a qualitative study with nurses in Pakistan, highlighted that sexual harassment is a prevalent issue. Patients reportedly engaged in sexually inappropriate behaviors such as touching, requesting sexual favors, kissing, and hugging. Erdemir et al. (2011) [19], reported that 71.7% of nurses in their study in Turkey experienced sexual harassment by patients. In another Turkish study, Ulusoy and Sarıçoban (2023) stated that prevalence of sexual harassment between nurses ranged from 1.5 to 75% [21].

These studies collectively show that nurses are exposed to sexual harassment in their work environments and are

adversely affected by these experiences [19, 21–23]. It is observed that in studies conducted in Turkey regarding sexual harassment towards nurses, valid and reliable measurement tools are rarely used, and assessments are mostly based on researcher-developed questionnaires [19, 24, 25]. Therefore, there is a clear need for valid and reliable instruments to analyse sexual harassment against nurses. In this context, the current study intended to examine the validity and reliability of the Nurses' Sexual Harassment Scale.

As a result of the exploratory factor analyses, it was determined that the scale has a two-factor structure. Using Oblimin rotation, the first factor had an eigenvalue of 13.43 and accounted for 89.541% of the total variance, while the second factor had an eigenvalue of 1.57 and explained 10.459% of the variance. These results indicate that the two subdimensions of the scale together explain the total variance, supporting its construct validity. Examination of the factor loadings revealed that items O1–O9 loaded highly on the first factor, while items O10–O15 loaded strongly on the second factor. These findings demonstrate that the scale has a clear and robust factor structure aligned with its theoretical framework.

The results of the CFA indicated that while the model does not exhibit perfect fit, the fit indices NFI, TLI, and CFI were above 0.90, indicating an acceptable two-factor model. These findings confirm the two-dimensional structure of the scale.

Validity describes the degree to which a measuring instrument fulfills its purpose, accurately represents the structure intended to be measured, and does so without being confounded by other variables. Validity types include face validity, content validity, construct validity, convergent and discriminant validity, and criterion-related validity [10, 26]. In this study, content and construct validity were assessed. The KMO and Bartlett's Test of Sphericity results supported the adequacy of the study sample and suitability for factor analysis. The KMO value was 0.956, indicating an excellent sample size for factor analyse. Bartlett's Test was found to be statistically significant ($p < 0.001$), supporting the suitability of the data for factor analyse.

CFA fit indices such as CFI, GFI, RMSEA, RMR, CMIN/DF, AGFI, NFI, and TLI were utilized [10, 12, 27]. In this study, the CMIN/DF value was 5.447. RMR was 0.044, indicating an excellent fit. However, GFI and AGFI values were below the ideal threshold of 0.90, measured at 0.800 and 0.730, respectively. The RMSEA value was 0.091, suggesting room for improvement. Overall, while the model fit was acceptable, it was not excellent.

Expert evaluations were analyzed using Davis' technique. Items rated 3 or 4 by 80% or more of the experts were considered to have good content validity [12, 14, 28]. Previous Turkish validity and reliability studies have reported Content Validity Index (CVI) values between 0.90 and 0.98 [6, 12, 29, 30]. In this study, the CVI was calculated as 0.98, indicating strong agreement among experts and sufficient content validity.

Reliability refers to the consistency, sensitivity, and homogeneity of a measurement tool. Reliability methods include internal consistency (Cronbach's alpha), item analysis (item-total correlation), split-half reliability, parallel forms, test-retest, known-groups comparison, and 27% upper-lower group comparison [10, 30–32]. A Cronbach's alpha value above 0.70 indicates good reliability [33]. In this study, the overall Cronbach's alpha was 0.961. The subscales showed high internal consistency: 0.975 for Latent Sexual Harassment and 0.973 for Manifest Sexual Harassment. The original scale reported alpha values of 0.944 for the total scale and 0.944 and 0.893 for the latent and manifest sub-scales, respectively [6]. Ayar et al. (2022) [12] reported subscale alphas between 0.761 and 0.807 and a total alpha of 0.843. The high alpha values in this study demonstrate strong internal consistency and are consistent with the literature.

Corrected Item-Total Correlation values ranged from 0.745 to 0.886, indicating strong correlations with the total score and a homogeneous structure. The "Cronbach's Alpha if Item Deleted" values showed that removing any item did not significantly alter the reliability coefficient, suggesting that all items contributed to the scale.

Correlations between the Nurses Sexual Harassment Scale and the Patient-to-Healthcare Worker Sexual Harassment Scale showed positive, low to moderate relationships. Zeighami et al. (2024) also found a strong correlation ($r = 0.67$) between the Nurses Sexual Harassment Scale and the Impact of Event Scale-Revised. These findings further support the structure validity of the scale.

Conclusion

Sexual harassment is a global problem that transcends religion, language, race, profession, or culture, and can be encountered in any society or occupational setting. Thus, it is essential to assess sexual harassment in a way that aligns with the cultural context of each society. In this context, the current study carried out the Turkish adaptation of the Nurses Sexual Harassment Scale. Results of this study are consistent with the original version of the scale. The 15-item, two-factor scale was found valid and reliable in its Turkish version, titled the "Nurses Sexual Harassment Scale." The participation of nurses from across Turkey is believed to have minimized error and enhanced the objectivity of the scale.

The existing literature clearly indicates that healthcare professionals are exposed to sexual harassment. In this context, the use of valid and reliable tools to reveal such incidents is crucial in highlighting the seriousness of the

problem. Doing so may draw greater attention to preventive efforts and policy interventions aimed at addressing and mitigating sexual harassment in healthcare environments. In addition, comprehensive guidelines, training programs, and reporting processes aimed at preventing sexual harassment in healthcare settings should be effectively maintained. Future research should prioritize studies evaluating the impact of implemented training and guidelines, as well as comparing the results of research conducted across different cultural contexts.

Abbreviations

ILO	International Labour Organization
CVI	Content Validity Index
EFA	Exploratory Factor Analysis
CFA	Confirmatory Factor Analysis
KMO	Kaiser-Meyer-Olkin
CFI	Comparative Fit Index
RMSEA	Root Mean Square

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Data availability
The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
Before the research, Ethics approval for research was approved by Izmir Bakircay University Non-Interventional Clinical Research Ethics Committee (dated 18.12.2024, decision number 1930). In addition, informed online consents were obtained from all participants prior to participation in the study. The research was conducted in accordance with the Declaration of Helsinki. Additionally, permission to use Nurses' Sexual Harassment Scale and Scale of Sexual Harassment Behavior from Patients or Clients toward Healthcare Workers were obtained from the researchers who conducted the validity and reliability studies for the scale.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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