

Violence management proficiency scale in application areas for nursing students: A Turkish validity and reliability study

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Abstract

Aim: The aim of this study is to perform the validity and reliability study of the Turkish version of the Management of Workplace Violence Competence Scale (MWVCS) for Nursing Students.

Method: The methodological and cross-sectional study design was used in the method of the study. The research was carried out with 300 nursing students in Turkey. Data were collected using the personal information form and MWVCS.

Results: Explanatory factor analysis and confirmatory factor analysis results confirmed the four-factor structure of the scale. Cronbach's α , item-total correlation, test-retest analysis, and equivalent form analysis showed high reliability. The MWVCS consists of 28 items on a five-point Likert-type scale. Four factors explained 88.729 of the total variance explained. The content validity index of the scale is 0.99. Cronbach's α of the scale was 0.880 and test-retest correlations were found as 0.76.

Conclusion: The Turkish version of the MWVCS is a valid and reliable tool for assessing students' workplace violence.

KEYWORDS

nursing students, psychometrics, reliability, validity, workplace violence

1 | INTRODUCTION

Violence comes from the Latin word "Violentia" (hard or cruel personality, power) (Samadzadeh & Aghamohammadi, 2018). According to the World Health Organization (WHO), "Physical strength or force will intentionally increase the likelihood of resulting in physical harm or harm to oneself, another person, a group or community, resulting in psychological harm, death, developmental problems or deprivation. threatening or actual use" (WHO, 2008). The phenomenon of violence, which continues to exist increasingly today, is one of the social problems that negatively affect millions of people physically and mentally (Mulla et al., 2020; Wendt et al., 2020). The issue of violence in society and in health care as a part of society has long occupied researchers and practitioners (Magnavita & Heponiemi, 2012; McKinnon & Cross, 2008; Shi et al., 2017). Violence against healthcare professionals emerges as a global

problem faced by healthcare professionals worldwide (Doran & Hutchinson, 2017; Du et al., 2020; Liu, Gan, et al., 2019). Many studies have been conducted showing that the prevalence of verbal and physical violence is increasing globally in different parts of the world (Dafny & Beccaria, 2020; Liu, Gan, et al., 2019; Sahebi et al., 2019; Vento et al., 2020).

Professional socialization refers to a process in which professional knowledge, skills, attitudes, and identity are acquired (Teskereci & Boz, 2019). Because nursing is a practice-based profession, clinical education is a critical component of undergraduate nursing education (Raso et al., 2019). Clinical education is the field of nursing in which students apply their theoretical knowledge and develop their practical skills to achieve practical proficiency (Lee & Yang, 2019). Through clinical placements, nursing students develop both practical and theoretical knowledge in a real work environment by practicing under the supervision of a clinical

instructor (Raso et al., 2019). Clinical practice processes are very important in terms of professional socialization and establishing their identity as healthcare providers.

Workplace violence (WPV) in the health sector is an important public health problem that has negative effects on individuals' physical and mental health (Budden et al., 2017; Maffissoni et al., 2021; Mantzurani et al., 2015; Wang, 2016). Among healthcare professionals, nursing students are more exposed to WPV due to their younger age, insufficient clinical experience, and frequent rotations in clinical practice, as well as difficulty in communicating quickly with patients and nurses (Cheung et al., 2019; Newman et al., 2021; Mozafari & Tavan, 2013; Samadzadeh & Aghamohammadi, 2018; Wang, 2016). It was determined that the anxiety levels of nursing students exposed to WPV increased, and in parallel, the duration of absenteeism increased in clinical practice processes (Scherer et al., 2015). In addition to its physical and psychological negative effects on nursing students, WPV also negatively affects students' perspectives, professional attitudes, and roles (Park et al., 2017; Tee et al., 2016). Again, WPV reduces the job satisfaction of nursing students and the quality of education negatively affects patient care standards, and disrupts students' communication skills with patients and other healthcare professionals (Budden et al., 2017; Tee et al., 2016). Nursing is a professional health discipline that deals with human as a bio-psycho-social entity and human problems holistically (Indra, 2018; Papathanasiou et al., 2013). For this reason, nurses have important responsibilities and duties in preventing violence, determining existing violence, and eliminating health problems caused by its consequences (Hassankhani et al., 2018; Liu, Gan, et al., 2019). The American Nurses Association (ANA) has made the work environment a top priority, stating that bullying and rudeness are common in all patient care settings (ANA, 2015). "Joint Program on Workplace Violence in the Health Sector" was established in cooperation with the International Labor Office (ILO), the International Nursing Council (ICN), the WHO, and the International Public Service (PSI) to prevent WPV (International Labour Office, International Council of Nurses, World Health Organization, Public Service International, 2002). Again, a number of training programs have been designed to prevent nursing students from being exposed to WPV (Brann & Hartley, 2017; Jonas-Dwyer et al., 2017).

Violence against healthcare professionals is an increasing problem in Turkey (Cerit et al., 2018; Erten et al., 2019; Tokgöz, 2019). In this context, it is important for nursing students to evaluate violence management competency in practice areas, to take necessary precautions, and to increase violence management competency in students. Otherwise, the continuity of violence will be ensured. However, there is no measurement tool for the determination of violence management in practice areas for nursing students in Turkey. In this context, the aim of the research is to conduct the Turkish validity and reliability study of the Management of Workplace Violence Competence Scale (MWVCS) developed by Lu et al. (2021). This measurement tool was chosen because it allows for a comprehensive evaluation and is up-to-date.

2 | METHODS

2.1 | Participants and setting

This study was conducted in a methodological design to ensure that the Turkish version of the MWVCS is used as a reliable and valid measurement tool by all health professionals in Turkey. The study was carried out in two centers because it provides the opportunity to work on larger data and samples that can represent society. The study was carried out in the provinces of Tokat and Sivas. The number of nursing students is high in these selected provinces and researchers work in these provinces. The population of the research is (1) center ($n = 813$; 1st grade $n = 205$; 2nd grade $n = 200$; 3rd grade $n = 201$; 4th grade $n = 207$) and (2) center ($n = 506$; 1st grade) located in Turkey, $n = 130$; 2nd year $n = 120$; 3rd year $n = 116$; 4th year $n = 140$) nursing students from all classes at two state universities in the provinces. Sample selection was not made in the research, the whole universe also formed the sample, and the research was carried out between June 30, 2021, and September 30, 2021. For a reliable factor analysis when adapting a scale to another culture, it is recommended that the sample size be at least 5–10 times the number of items in the scale (DeVellis, 2016; Tavşancıl, 2014). For this reason, 300 nursing students who accepted to participate in the study and answered the questionnaire completely were included in the study. The rate of participation in the research is 22.74%.

2.2 | Data collection

Data were collected from nursing students who agreed to participate in the study, using a three-question Personal Information Form and a 40-question MWVCS developed by the researchers through online survey software (Google Surveys) and social media communication (WhatsApp). The students accessed the questionnaires by clicking on the link sent via WhatsApp. Again, students from WhatsApp groups were informed about the research.

2.3 | Instruments

The Personal Information Form and the MWVCS were used for data collection.

2.4 | The personal information form

The personal information form consists of a total of four closed-ended questions: gender, age, research center, and class.

2.5 | The MWVCS

MWVCS was developed by Lu et al. (2021). The scale consists of 40 items and 5 likerts (1) I strongly disagree, (2) I disagree, (3) I am undecided,

(4) I agree, (5) I strongly agree. The total score of the scale consists of the sum of the items scored according to the answers given by the nursing students in line with the scoring mentioned above. The seven factors in the original scale were named as Postevent Recovery, Nurse–Patient Interaction, Response to Violence, Violent Cognition, Using Protective Opportunities, Information Renewal, and Risk Assessment. Seven factors of the scale explained 63.21% of the total explained variance. The content validity index of the scale is 0.99. The Cronbach α of the scale was calculated as 0.96 and test–retest correlations ≥ 0.76 . This scale was developed by all health professionals to measure the proficiency of nursing students in managing violence from patients and their relatives in the hospital they work.

2.6 | Procedure

For the Turkish validity and reliability study, permission and original forms of the scale were obtained from the communication writer of the article, Dongyan Lu, for the Turkish validity and reliability of the scale. To ensure the language equivalence of the MWVCS, the scale was translated into Turkish by the researcher and two people, two of whom have lived and worked in the United States for more than 5 years, and are fluent in English. The three translations at hand were evaluated by the researchers, and the most appropriate expressions were determined and a single translation was obtained. Then, it was reviewed by a lecturer who teaches Turkish Language and Literature in terms of clarity of expressions and spelling. The scale was created as a presentation form for expert opinion and presented to the opinion of nine academicians who are experts in this field. Experts were asked to score each item between 1 and 4 points in the expert opinion presentation form prepared to determine the compatibility between the English items and the Turkish equivalent of the scale and the clarity of the Turkish expressions. In scoring “1 point; ineligible, 2 points; somewhat appropriate (revision of item/statement required), 3 points; very suitable (appropriate but minor modification required), 4 points; rated as “extremely appropriate.” A pilot study was conducted to determine the clarity, comprehensibility, and clarity of the scale items and to test the reliability by calculating the internal consistency of the scale. The pilot study was conducted with 60 nursing students in line with the International Testing Commission guidelines (Press & Volkerink, 2010). During the pilot study, the scale items were understood by the students, and no problem was reported by the students regarding the intelligibility of the items. None of the students participating in the pilot study were included in the scale validation study.

2.7 | Data analysis

SPSS 22.0 and AMOS software program were used in the analysis of the data. In the definition of the data, number, percentage, mean, and standard deviation values were calculated. During the adaptation process,

language and content validity were studied. During the validity period, the compliance of the data with explanatory factor analysis (EFA) was evaluated with Kaiser–Meyer–Olkin (KMO) and Bartlett's sphericity tests, and the reliability of the scale was evaluated with Cronbach's α . Confirmatory factor analysis (CFA) was used to evaluate whether the factor model was adapted to the data as a result of the EFA. For this purpose, the covariance matrix was prepared by transferring the data to the AMOS software program. Model fit; χ^2 /degree of freedom was evaluated using various fit criteria including approximate root mean square error, standardized root mean square residual, goodness-of-fit index, and norm-free fit index. The path diagram of the validated model was created. Test–retest analysis was performed to evaluate the reliability of the scale and to determine its stability over time. Spearman's ρ correlation test was used to determine the relationship between the scales.

2.8 | Ethical considerations

Before starting the research, permission from Dongyan Lu was obtained for the use of MWVCS and Ethics Committee approval (Decision no: 2021-05/01) was obtained for the implementation of the research. It was stated to the students included in the study that the decision about whether or not to participate in the research was entirely their own and that the data obtained from this study would only be used within the scope of the research, confidentiality would be strictly ensured, and their informed consent was obtained. All procedures performed in studies involving human participants were performed in accordance with the ethical standards of the National Research Committee and the 1964 Declaration of Helsinki.

3 | RESULTS

3.1 | Sociodemographic characteristics

The distribution of the students participating in the research according to some introductory characteristics is given in Table 1. It was determined that 52.00% ($n = 156$) of the participants were female, mean age was 20.77 ± 1.46 , and 36.70% ($n = 110$) were 1st year students (Table 1).

3.2 | Validity

Before determining the factor structure of MWVCS, KMO test was used to determine the suitability of the sample size for factor analysis, and Bartlett's sphericity test was used for statistical significance. Since the data showed normality distribution, the maximum likelihood calculation method was used. The KMO coefficient was 0.872 and Bartlett's test of sphericity was determined as 17806.418, and the result was statistically significant ($p < 0.001$). According to these findings, it was determined that the sample size

TABLE 1 Characteristics of the participants

Characteristics	n	%
<i>Gender</i>		
Female	156	52.00
Male	144	48.00
<i>Age (\bar{x} = 20.77 \pm 1.46)</i>		
18–20	115	38.30
21–23	167	55.70
24>	18	6.00
<i>Application center</i>		
First center	172	57.33
Second center	128	42.67
<i>Class</i>		
1. Class	110	36.70
2. Class	67	22.30
3. Class	51	17.00
4. Class	72	24.00

was suitable for factor analysis. According to the EFA results, the factor loads of the items in the scale vary between 0.90 and 0.99 (Table 2). In addition, it was determined that the scale had 88.729 of the total variance. It was determined that all of the items in the original scale had the appropriate factor loading and were included in the factors they belonged to. The first factor of the Turkish version of the MWVCS, which consists of four subdimensions and a total of 28 items = 30, 31, 32, 33, 34, 35, 36, 37, 39, and 40; second factor = 13, 14, 15, 16, 17, 18, 19, 20, and 21; third factor = 6, 22, 23, 24, 25, and 26; fourth factor = 27, 28 and consists of 29 items.

The fit index values calculated for the produced model are presented in Table 3. The goodness of fit criterion χ^2/SD = 2.846, RMSEA = 0.067, CFI = 0.94, GFI = 0.91 proposed as a result of the first level CFA, was shown to be compatible and acceptable with the four-factor model. According to the EFA results, it was determined that the fit indices were generally at acceptable levels, and all fit values for the four-factor model were found to be within acceptable limits (Table 3). Based on these results, the four-factor (Postevent Recovery, Violence Information Management, Violence Response and Interaction, Response to Violence) structure was validated, and the path diagram of the model is shown in Figure 1.

3.3 | Reliability

Cronbach's α coefficient was used to evaluate the internal consistency of the Turkish version of the MWVCS. In this study, Cronbach's α for the scale was 0.880, for the subdimensions 0.977, 0.990, 0.983, and 0.902, respectively. Based on the 4R

TABLE 2 Explanatory factor analysis results for MWVCS (n = 300)

Scale items	Factor 1	Factor 2	Factor 3	Factor 4
30	0.91			
31	0.86			
32	0.96			
33	0.94			
34	0.93			
35	0.91			
36	0.83			
37	0.97			
39	0.90			
40	0.84			
13		0.97		
14		0.97		
15		0.96		
16		0.95		
17		0.94		
18		0.94		
19		0.98		
20		0.91		
21		0.98		
6			0.88	
22			0.96	
23			0.97	
24			0.96	
25			0.97	
26			0.96	
27				0.91
28				0.93
29				0.89
Exploratory percentage (%)	31.732	29.743	18.414	8.841

Abbreviations: EFA, exploratory factor analysis; MWVCS, Management of Workplace Violence Competence Scale.

crisis management theory, the Turkish version of the MWVCS consists of four factors and 28 items: (1) Postevent Recovery, (2) Violence Information Management, (3) Violence Response and Interaction, (4) Response to Violence. The item-total correlation of the scale was examined and it was determined that the acceptable level ranged between 0.835 and 0.987 (Table 4). MWVCS was found to be quite reliable in terms of total and all subdimensions. Test-retest analysis was performed to determine the stability of the scale over time. For analysis, the scale was applied to the sample group (n = 60) for the second time 2 weeks

after the first application. The correlation value of the relationship between test and retest results was determined as $r = 0.783$ for the total scale score and was found to be statistically significant. ($p < 0.001$). The lowest and highest scores that can be obtained from the MWVCS are 28 and 140 Figure 2.

4 | DISCUSSION

WPV, which has negative effects on individuals' physical and mental health, is an important public health problem, and nursing students may be more exposed to WPV as candidates who do not have sufficient experience in the nursing profession, who spend the most time with patients and their relatives in clinical settings (Budden et al., 2017; Maffisconi et al., 2021; Mantzuranis et al., 2015;

Wang, 2016). In this context, there is a need for rigorous studies using valid and reliable tools to measure WPV in nursing students. MWVCS, developed by Lu et al. (2021) and originally published in English, is a valid, applicable, and acceptable measurement tool for the global assessment of WPV in nursing students (Lu et al., 2021). In this study, the Turkish validity and reliability of the MWVCS developed by Dongyan Lu et al. was tested to measure WPV in nursing students.

The test-retest reliability, which is the criterion of consistency, is the strength of a measurement that is independent of time. It is a tool that delivers consistent results from application to application and changes over time. To find the test-retest reliability, the correlation between the scores obtained from the two applications is calculated. For the reliability of the scale, this correlation coefficient is required to be high and positive (Liamputtong, 2019; Sharma et al., 2017). When the test-retest results, which tested the reliability of the scale, were examined in

TABLE 3 MWVCS compliance values ($n = 300$)

Fit indices	Excellent	Acceptable	Four-factor model	Four-factor model ^a
χ^2/SD	≤ 2	≤ 5	≤ 3	2.846
RMSEA	≤ 0.05	≤ 0.08	≤ 0.080	0.067
CFI	≥ 0.95	≥ 0.90	≤ 0.90	0.94
GFI	≥ 0.95	≥ 0.90	≤ 0.85	0.91

Abbreviations: χ^2/df , χ^2 /degree of freedom; CFI, comparative fit index; GFI, goodness-of-fit index; MWVCS, Management of Workplace Violence Competence Scale; RMSEA, root mean square error of approximation.

^aAfter modification.

TABLE 4 Correlation of Turkish version of MWVCS

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	1	-0.006	-0.118	-0.106
Factor 2	-0.006	1	0.135	0.168
Factor 3	-0.118	0.135	1	0.76
Factor 4	-0.106	0.168	0.76	1

Abbreviation: MWVCS, Management of Workplace Violence Competence Scale.

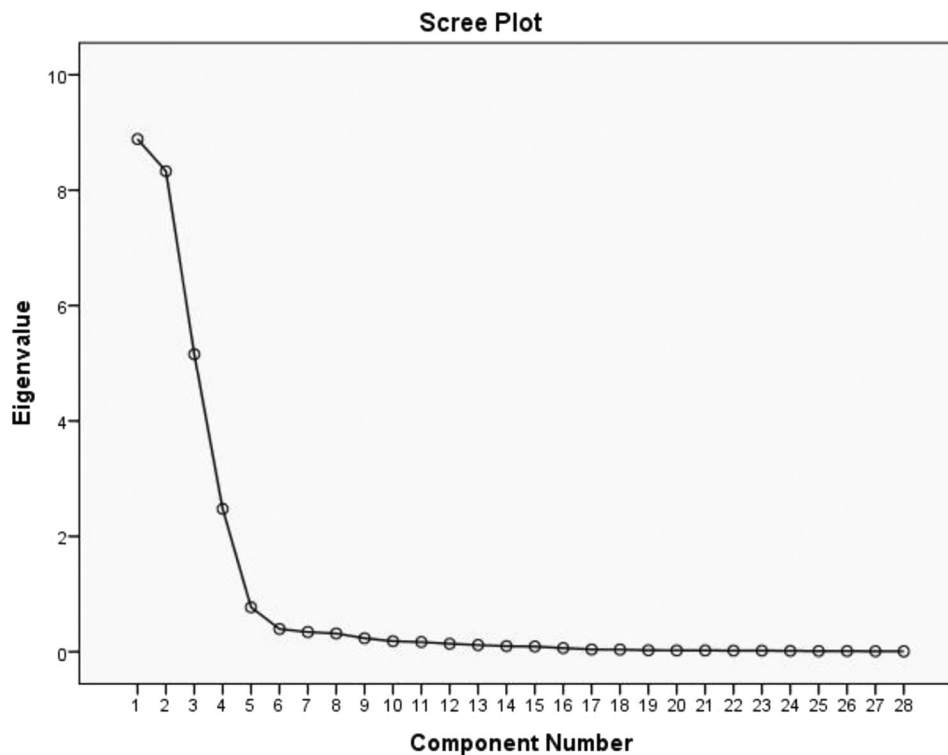


FIGURE 1 Scree plot chart

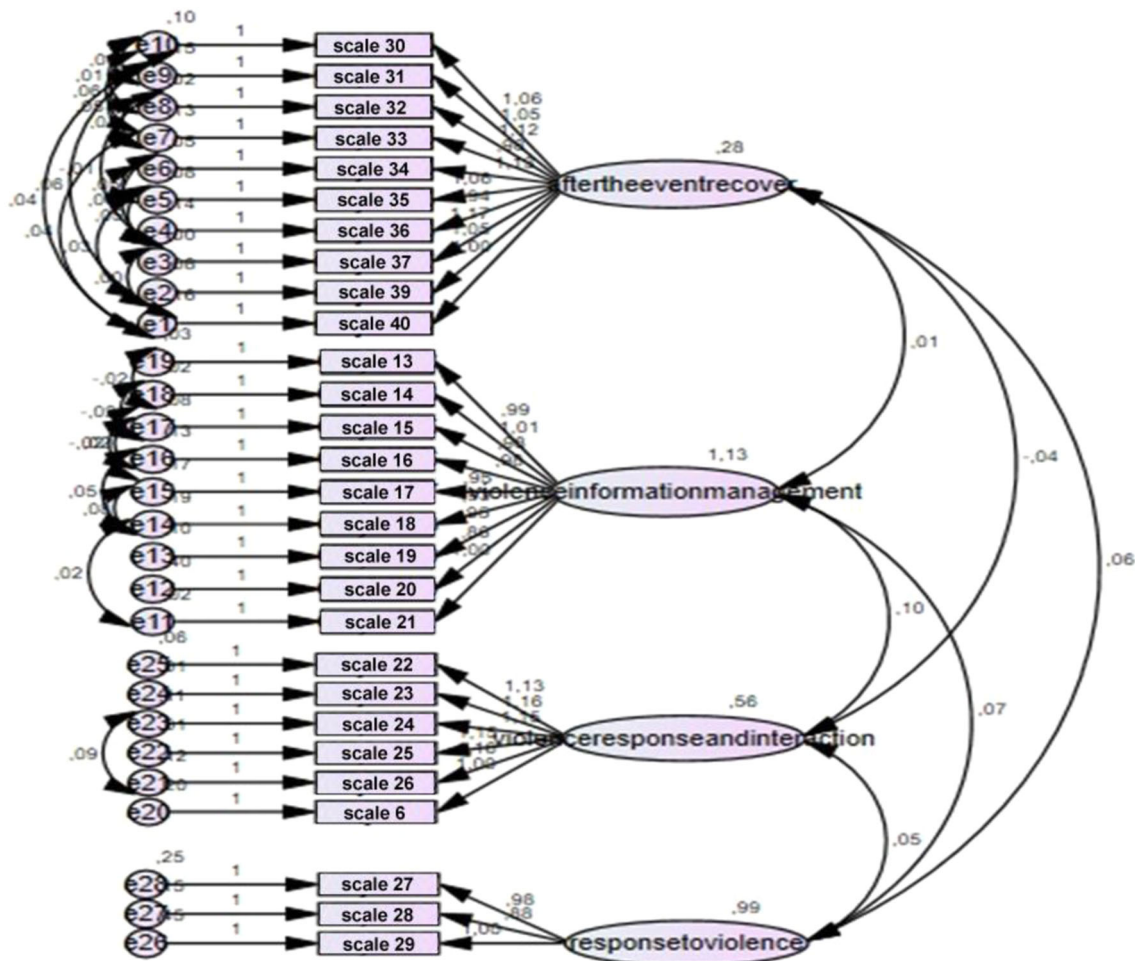


FIGURE 2 Structural equation model of Management of Workplace Violence Competence Scale ($n = 300$)

our study, it was found that there was a high positive correlation between the total scores of the first and last tests. Dongyan Lu et al. found $r = 0.760$, in the original scale, and similarly, $r = 0.783$ in this study. This result shows that the questions of this scale, which measures WPV in nursing students, are understandable. The KMO value of the original scale was 0.96 and Bartlett's test was 23557.13 ($p < 0.001$). In the Turkish version of the MWVCS, the KMO coefficient was 0.872 and Bartlett's test was 17806.418, and the result was statistically significant ($p < 0.001$). The total Cronbach's α coefficient of the original MWVCS ranged from 0.96 and the coefficients of the seven factors ranged from 0.80 to 0.92. Cronbach's α coefficient for the original MWVCS subdimensions; 0.76 for violence cognition, 0.79 for use of protective facilities, 0.81 for risk assessment, 0.76 for information renewal, 0.77 for violence intervention, 0.83 for postevent recovery, and 0.85 for nurse-patient interaction. It was also found that the original scale had 63.20 of the total variance. In the Turkish version of the MWVCS, the factor loads of the items in the scale vary between 0.90 and 0.99. It was determined that the scale

had 88.729 of the total variance. Cronbach's α 0.880, for subdimensions, was 0.977 for postevent recovery, 0.990 for severity information management, 0.983 for violence response and interaction, and 0.902 for response to violence, respectively. The item-total correlation of the scale was examined and it was determined that the acceptable level ranged between 0.835 and 0.987. This result confirms that the Turkish version of the MWVCS is a highly reliable scale for measuring WPV in nursing students.

The original MWVCS consists of 40 items with seven factors that are consistent with the conceptual features of the 4R crisis management theory for the solution of the increasing WPV phenomenon (Lu et al., 2021). These subdimensions are (1) Postevent Recovery, (2) Nurse-Patient Interaction, (3) Response to Violence, (4) Violence Cognition, (5) Use of Protective Facilities, (6) Renewal of Knowledge, and (7) Risk Assessment. When all the tests applied for the reliability of the MWVCS are evaluated in this study, it can be said that the Turkish version of the MWVCS is reliable. A comparison could not be made due to the lack of validity and reliability studies of the original MWVCS in other cultures.

4.1 | Limitations

The limitations of this study are that it was applied in two nursing schools in Turkey and the scale was used for the first time in Turkish society.

5 | CONCLUSION

According to the results obtained from this study; EFA and CFA results confirmed the four-factor structure of the scale. Cronbach's α , item-total correlation, test-retest analysis, and equivalent form analysis showed high reliability. These results showed that the validity and reliability study of the Turkish version of the MWVCS was compatible with the original scale and that it was a valid and reliable tool. This scale can be used safely by all health professionals to measure violence management in the practice areas of nursing students. It is a valuable tool for all healthcare professionals to help students understand their competence in experiencing and managing violence in clinical practice and to identify and assess their training needs. More work is needed to test the scale in different contexts and cultures.

5.1 | Implications for practice

Violence against healthcare professionals is a global problem faced by healthcare professionals worldwide. Nursing students in health care settings are faced with WPV for various reasons, and this situation negatively affects students in many ways. It is very important to use reliable measurement tools to determine WPV in the early period and to make necessary interventions in nursing students. The Turkish version of the MWVCS can be used safely to maintain the psychosocial well-being of nursing students and to increase the quality of nursing care.

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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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