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Public Stigma of Stroke Scale: Turkish Validity and Reliability Study

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ABSTRACT

Objective: This study was conducted to examine the validity and reliability of the Turkish version of the Public Stigma of Stroke Scale (PSSS).

Background: The stigma perceived by patients who have had stroke affects the quality of life as well as many health-related factors. Therefore, it is necessary to determine the society's stigmatization of the stroke patient and to reveal the differences related to stroke in different cultures.

Design: This study is methodological research.

Methods: This study was conducted with 410 individuals aged 18 and over. The data were collected by using descriptive information form and PSSS. The data were evaluated by using exploratory and confirmatory factor analysis, Cronbach's alpha, McDonald's Omega reliability, composite reliability, mean variance extracted and test–retest analysis.

Results: Factor load values of the scale items were found to vary between 0.585 and 0.904. The fit index values in the scale were found as $X^2/df = 2.42$, < 0.001, CFI = 0.934, TLI = 0.928, SRMR = 0.042 and RMSEA = 0.059. It was found that Cronbach's alpha coefficients of the factors of the scale ranged between 0.916 and 0.946, and the total Cronbach's alpha coefficient was 0.897. Total McDonald's omega coefficient was found to be 0.897, and McDonald's omega coefficients of the factors were found to be between 0.921 and 0.951. Total composite reliability was found to be 0.981, and total mean variance extracted was found to be 0.740. It was found that the Turkish version of the 33-item and four-factor scales was confirmed without any changes in the original scale form.

Conclusion: Turkish version of PSSS is a valid and reliable measurement tool for the evaluation of the stigmatization of stroke patients by the public and for use in clinical practice.

1 | Introduction

Stigma is a quality that discredits individuals in society, reduces them to an insignificant position and causes them to be excluded and perceived as inferior (Goffman 2009). The majority of stroke survivors (75%) do not make a full recovery, with 25% experiencing a mild disability and 40% experiencing moderate to severe disability (Anderson and Whitfield 2013). Stroke causes visible disability such as changes in appearance, limitation of movement and speech disorders. The fact that stroke can be understood from appearance leads to stigmatization of stroke patients by the society. All this causes a heavy social burden (Wan

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Summary

- Stroke patients are stigmatized by the society because they have visible damage. PSSS is a tool developed to assess public stigma for stroke patients.
- **What is already known about this topic?**
- PSSS is a valid and reliable measurement tool to evaluate stroke-related stigma in healthy individuals. The level of stigma related to stroke in the society and the affecting factors can be determined by using this scale. Strategies to reduce stigma can be developed. PSSS will help assess levels of public stigma related to stroke in different cultures and design interventions to reduce stigma.
- **What this paper adds?**
- Determining the level of public stigma related to stroke in Turkey will be possible by conducting a validity and reliability study of the PSSS in Turkish.
- **The implications of this paper**
- With this study, the psychometric properties of PSSS will be determined, a measurement tool will be added to the literature and a cross-cultural comparison of the scores obtained from the scale will be made.

et al. 2023). The most important barrier to achieving the best outcomes in poststroke treatment can be stigmatization, which can lead to negative outcomes and which can be a significant barrier to accessing therapy (Göksu and Katı 2021). Studies on patients with stroke have found that approximately 80% of patients experience mild to moderate stigmatization, 14.5% blame themselves as the cause of their stroke and 13% are ashamed of their physical limitations (Sarfo et al. 2017; Zhu et al. 2019a). After stroke, patients are prone to different degrees of stigmatization, including vulnerability, low self-esteem and frustration. Stigmatization leads to loneliness and social isolation (Ayasrah et al. 2022), reduces motivation and initiative towards rehabilitation treatment, hinders the rehabilitation process (Deng et al. 2019), greatly affects patients' physical and mental health and quality of life (McCrory et al. 2023; Turner et al. 2019) and places a heavy burden on families and society (Zheng et al. 2023). Moderate stigmatization was found in young and middle-aged stroke patients (Zheng et al. 2023). Studies have found that stroke patients perceive stigma (Zhu et al. 2019b). Hu et al. (2022) found that poststroke stigma of patients was associated with depression and posttraumatic growth.

The stigma perceived by patients who have had stroke affects the quality of life as well as many health-related factors. Reducing stigma should be part of a comprehensive management plan. Therefore, it is necessary to determine the society's stigmatization of the stroke patient and to reveal the differences related to stroke in different cultures (Hu et al. 2022; Li et al. 2023). In Eastern cultures, unlike Western cultures, stigmatization can have a greater impact on the individual as well as on friends and family due to the cultural emphasis on harmonious and close relationships. It has been suggested that stigmatization from relatives is more common in Eastern cultures and that social distancing and avoidance of close relationships are more common (Birtel and Mitchell 2023). In a study conducted with healthcare professionals caring for patients from Kuwait and other cultures, it was reported that social stigmatization and invisibility in the community were higher in Kuwaiti patients. A common attitude is that the person with stroke is sick and should stay at home and rest. It was reported that this is a cultural phenomenon (Omu and Reynolds 2012). Stigma scales have been developed for many contagious and noncontagious diseases (Latalova et al. 2014; Liu et al. 2009; Nochaiwong et al. 2021). However, unlike other systems, neurological disorders are particularly characteristic, as they cause disability and increase the burden of care. Measurement tools have been developed to evaluate the stigma perceived by patients in neurological disorders. (Molina et al. 2013; Rao et al. 2009) Wan et al. (2023) developed a measurement tool that evaluates the society's stigmatization of stroke patients. This measurement tool aims to measure the stigma associated with stroke in healthy or, rather, nonstroke populations. This scale includes four dimensions as inherent ideology, aesthetic feelings, avoidance behaviour and policy attitudes (Wan et al. 2023). International comparison of the evaluations made with the scale will make important contributions to the literature.

The incidence of stroke has increased in Turkey over the years (Topçuoğlu 2022). For this reason, the number of individuals who can be affected by social stigma is increasing (Wan et al. 2023). Understanding the social utility of stigmatization in maintaining social cohesion and social order is an important function. However, this process can be harmful when applied to individuals with chronic illnesses such as stroke (Engebretson 2013). Individuals exposed to stigmatization may begin to perceive that they are not a member of the society to which they feel they belong. Due to the discriminatory attitude of the individuals in the society, they may start to feel lonely over time and become withdrawn. The emergence of thoughts such as social isolation, guilt, inadequacy, pessimism, hopelessness and helplessness may prepare the ground for mental illnesses (Turkish Psychiatric Association 2020). In addition, stigmatization is used as a social power over those who are stigmatized. A better understanding of the issues related to stigmatization and the experiences of individuals is important for all nurses in clinical practice. Healthcare providers are not exempt from many of these social constructs that create stigma; therefore, self-awareness and understanding are extremely important. Understanding stigmatization can help nurses to provide supportive assistance to stroke patients (Engebretson 2013). In the case of stigmatization of individuals who experience illness, it is important that the nurse treats the patient as a whole and identifies possible psychosocial problems at an early stage and makes the necessary intervention (Ertem 2020). There is no measurement tool developed to assess public stigma towards stroke patients in Turkey. The validity and reliability study of PSSS in Turkey will provide cross-cultural comparison. The fact that Turkey has a unique culture due to its geographical location on both Asia and Europe is characteristic in cultural comparisons. By conducting scale validity and reliability, it will be possible to make cross-cultural comparisons. In this study, the aim was psychometric evaluation of the validity and reliability of Public Stigma of Stroke Scale in Turkish language.

1.1 | Research Questions

1. Is the Turkish version of the PSSS a valid measurement tool for the Turkish population?
2. Is the Turkish version of the PSSS a reliable measurement tool for the Turkish population?

2 | Methods

This study was conducted to examine the validity and reliability of Turkish version of PSSS.

2.1 | Design

The study is methodological research.

2.2 | Participants and Sample

Between June and July 2023, data collection forms prepared with the GoogleDocs program were sent online (e-mail and social media) to individuals over the age of 18 in Turkey, and they were asked to fill in the forms and share them with people aged 18 and over. In the data collection phase, the sample was reached by 'snowball sampling technique'. In the snowball sampling method, the sampling process starts by reaching one of the individuals to be researched. The researcher tries to reach new individuals by asking them who else they can interview. The data collection phase of the research is completed as soon as data saturation is reached (Şahin 2014). A total of 620 individuals were reached with the online questionnaire. The study was completed with 410 individuals because 190 did not meet the inclusion criteria (being 18 years of age or older, not having a stroke before and filling out the questionnaire in 4–5 min) and 30 did not agree to respond to the questionnaire. In scale adaptation studies, it is stated that the sample size should be at least five times (if possible 10 times) the number of items in the scale (Noh 2019; Tabachnick et al. 2019). There are 33 items in the original PSSS. Therefore, it was predicted that the sample size should be at least 160 or 330. Therefore, the study was terminated with 410 individuals who agreed to participate in the study and who met the research criteria.

2.3 | Measurement

Study data were collected by using 'Descriptive Information Form' and 'Public Stigma of Stroke Scale (PSSS)'.

2.3.1 | Descriptive Information Form

This form, which was prepared by the researchers, includes seven questions as the age, gender, marital status, educational status, working status, presence of a chronic disease and having a relative who has had a stroke.

2.3.2 | Public Stigma of Stroke Scale (PSSS)

PSSS is used by Wan et al. (2023) to assess the stigmatization status of stroke patients by the community (Wan et al. 2023). PSSS is used to evaluate the public stigma of stroke patients. The scale is a 5-point Likert type and consists of 33 items in total. The scale has four subdimensions. These subdimensions are inherent ideology subdimension (Items 16–27), aesthetic feelings subdimension (Items 1–10), avoidance behaviour subdimension (Items 28–33) and policy attitudes subdimension (Items 11–15). Each item is responded as 1 = *totally disagree*, 2 = *somewhat disagree*, 3 = *neither agree nor disagree*, 4 = *somewhat agree* and 5 = *totally agree*. There are no reverse items in the scale. McDonald's omega coefficient showed high reliability of the PSSS (McDonald's omega = 0.93). McDonald's omega values for the subdimensions ranged between 0.87 and 0.95, indicating good internal consistency (Wan et al. 2023).

2.4 | Translation Process of the Scale

There are certain stages that need to be followed while adaptation studies are carried out, and it is very important to fulfil these stages (Spielberger and Sharma, 1976). Spielberger and Sharma (1976) stated the minimum steps to be followed in adaptation studies as (1) translation from the original language to the target language, (2) evaluation of the translation and developing the experimental form, (4) determining the equivalence between forms and (5) determining the validity and reliability of the new form (Spielberger and Sharma 1976). The scale was first translated into Turkish by three independent foreign language experts in order to carry out Stages 1–4. After the translation, a single form was created with the expressions in the scale items, and this form was reviewed with three Turkish Language experts, one Scale Development Specialist and seven field experts (four internal medicine nursing, two public health nursing and one psychiatric nursing specialist). Suitability of the scale items, Turkish language validity and cultural compatibility were checked, and revisions were made. As a result of the revisions, the scale items were collected in a single form and translated back into the original language by a foreign language expert. The original scale and the translated form were checked, and it was determined that the Turkish form was similar to the English form. Content validity index (CVI) was performed in order to prove both the linguistic and cultural equivalence of the items and the content validity with numerical values. CVI is the most widely used method among nurse researchers in terms of content, language and cultural equivalence (Polit and Beck 2006). A CVI analysis result of >0.80 indicates adequacy in terms of content validity in the literature (Polit and Beck 2004).

2.5 | Pilot Application

A pilot study was conducted with 45 individuals in order to test whether the scale items were understood by the participants. Participants in the pilot application were not included in the sample. Participants were asked to complete the scale and then evaluate each item for comprehensibility. No changes were

made to the items during the pilot application. In the light of this information, the actual implementation phase was started.

2.6 | Implementation

Online consent was first obtained from individuals for participation in the study, which was carried out using an online questionnaire. The study was carried out with 410 participants who were reached with the online questionnaire on the specified dates and who met the research criteria.

2.7 | Data Analysis

SPSS 22 program was used for exploratory factor analysis (EFA), reliability and validity analysis. Mplus 8.3 program was used to verify the construct validity of the scale. During the EFA process, Kaiser–Meyer–Olkin (KMO) test was used for sampling adequacy, and the results obtained from the Bartlett sphericity test were examined for item consistency. A KMO value higher than 0.60 indicates that the data are suitable for factor analysis, and a significant Bartlett sphericity test indicates that multivariate normal distribution is met (Tabachnick et al. 2007). Principal component analysis in EFA and Varimax factor rotation method was applied because the scale has more than one factor, and it was checked whether there were items with cross loads among the scale items (Çokluk and Büyüköztürk 2021; Seçer 2020). While determining the factors, the factors with an eigenvalue above 1 were evaluated. In addition, attention was paid for each factor to have at least three items and for factor load values to be high (≥ 0.30) (Finch 2019; Seçer 2020). It was checked whether the factors met these conditions. Next, the factor structure and the variance rates explained by each factor were reported together.

First-level CFA was performed to test whether the factor structure of the scale was confirmed as a model, and χ^2/df (Chi-square/degree-of-freedom), CFI (Comparative Fit Index), TLI (Tucker–Lewis Index), RMSEA (Root Mean Square Error of Approximation) and SRMR (Standardized Root Mean Square Residual) fit indices were checked for model fit. It is recommended to use CFI, TLI, RMSEA and SRMR fit criteria to evaluate model fit in confirmatory factor analysis (CFA) (Xu and Tracey 2017). In addition to these values, Kline (2023) stated that dividing Chi-square (χ2) by degrees of freedom (df) is an important criterion for model fit (Kline 2023). In the evaluation of CFA fit indices, CFI and TLI values of > 0.95, RMSEA and SRMR values of < 0.05 and χ2/df values of < 2 indicate excellent fit, whereas CFI and TLI values of < 0.90–0.95, RMSEA and SRMR values of < 0.05–0.08 and χ2/df values of < 3 indicate acceptable fit (Kline 2023; Xia and Yang 2019).

In reliability analysis, McDonald's omega (ω) reliability, composite reliability (CR) and mean variance extracted (AVE) coefficients were calculated together to determine structural reliability, and Cronbach's alpha (α) was calculated to determine internal consistency between items. If scale items are scored multiple times, Cronbach's alpha coefficient is a reliability method that should be examined in scale development and adaptation studies (Seçer 2020). For this reason, Cronbach alpha internal consistency coefficient was checked for the reliability of the scale. It is stated that McDonald's omega (ω) coefficient, which expresses structural reliability, gives more unbiased results compared to the Cronbach alpha (Yurdugül 2006). Therefore, both reliability coefficients were evaluated together. If the CR value is > 0.80, it is another indicator that the reliability of the scale is good (Yaşlıoğlu 2017). CR > AVE and AVE > 0.5 were taken into account (Yaşlıoğlu 2017). Finally, test–retest analysis was performed on 40 subjects 2 weeks later to test the stability of the scale. In the test–retest analysis, stability of the scale depends on the fact that the correlation value between the structures measured at different times approaches 1 and the correlation value is significant (Gravesande et al. 2019).

3 | Results

Mean age of the participants was found to be 27.47 ± 9.91 years. It was found that 73.3% of the participants were female, 70% were single, 87.1% were had undergraduate or higher degree, 58.3% did not work, 88.5% did not have a chronic disease and 74.1% did not have a relative who had a stroke.

3.1 | Results on Validity

Views of seven experts were taken about the draft of the Turkish version of the scale. Based on these views, item content validity index (I-CVI) was found to be between 0.90 and 1.00, and scale content validity index (S-CVI) was 0.97.

KMO = 0.925 and Bartlett sphericity test (χ^2 = 10 667; df = 5828; < 0.001) were checked for sample adequacy, and they were found to be significant. In Table 1, the findings related to the EFA performed to determine the construct validity of the scale adapted to the Turkish language were presented.

As a result of EFA, it was found that the load values of the four-factor structure of the original scale ranged between 0.585 and 0.904, and the scale explained 66.937% of the total variance. It was found that F1 explained 23.963% of the total variance, F2 explained 18.363% of the total variance, F3 explained 13 237% of the total variance and F4 explained 11 375% of the total variance. The eigenvalues for the factors were found to be 9.916 for F1, 5.352 for F2, 2.482 for F3 and 1.415 for F4.

CFA was performed to determine whether the structure found was confirmed, and the results of CFA confirmed the four-factor structure of the PSSS scale and showed that the goodness of fit values of the model (Figure 1) (X^2/df = 2.42, < 0.001; RMSEA = 0.059 (0.055–0.063, p = 0.000); CFI = 0.934; TLI = 0.928; SRMR = 0.042) indicated good fit.

3.2 | Results on Reliability

It can be understood from the results that Cronbach's alpha, McDonald's omega, CR and AVE values of PSSS and its factors are above the threshold values; therefore, reliability of the scale

is high and structural reliability is also met (McDonald 1985). The values are shown in Table 2.

Finally, test–retest method was used to determine the reliability of the scale in terms of stability, and the correlation coefficients between the pretest and posttest scores of the scale and its factors are shown in Table 3.

It can be said that correlation values calculated with the pretest and posttest mean scores showed a high level of correlation and a very stable structure in the stigmatization scale and F1, F2 and F3 factors, whereas correlation value was low in the F4 factor. However, there was still a significant correlation; therefore, it can be said that reliability in terms of stability was low in this factor.

4 | Discussion

There are no measurement tools developed to evaluate public stigma towards stroke patients in Turkey. For this reason, it is of great importance to establish the Turkish validity and reliability of the Public Stroke Stigma Scale. The findings of PSSS, which consists of 33 items and four factors, were discussed in this part of the study.

In the study, I-CVI value of the scale was between 0.90 and 1.00, S-CVI value was 0.97 and, considering the reference values in the literature, content validity of the Turkish form was found to be very high with these values (Polit et al. 2007; Seçer 2020). I-CVI and S-CVI were found to show excellent fit in the original study of the scale. This shows that each item in the scale evaluated by experts is suitable for assessing public stigma, and there is consensus among experts (Polit et al. 2007; Seçer 2020).

KMO test and Bartlett's test of sphericity were used to determine whether the data were sufficient before performing EFA for construct validity. Bartlett's test for sphericity should be significant ($p < 0.05$), and KMO value should be > 0.60 (Tabachnick et al. 2007). In the present study, KMO was 0.925, and the Bartlett sphericity test ($\chi^2 = 10667$; $df = 5828$; < 0.001) was significant. In the original study of the scale, KMO was 0.922, and Bartlett sphericity test ($\chi 2 = 8260.598$, $df = 406$, $p < 0.001$) was found to be significant (Wan et al. 2023). In this context, it was found that the database and the number of individuals who participated in the study were excellent for factor analysis. Factor analysis is performed to evaluate whether the items in the measurement tool can be grouped under different factors, and in this way, items that show high correlation with each other in the measured structure are clustered under one factor (Gorsuch 2013). First, EFA was performed for factor analysis. In EFA, Principal component analysis and Varimax factor rotation method were used because the scale had more than one factor were applied (Seçer 2020).

As a result of EFA, a four-factor structure was found, and it was found that the total variance explained was 66.937%. F1, 'inherent ideology', explained 23.963% of the total variance; F2, 'aesthetic feelings' explained 18.363% of the total variance; F3, 'avoidance behaviour' explained 13.237% of the total variance; and F4, 'policy attitudes' explained 11.375% of the total variance.

TABLE 1 | Results of EFA.

	Factors			
	1	2	3	4
Item 1		0.668		
Item 2		0.760		
Item 3		0.730		
Item 4		0.608		
Item 5		0.763		
Item 6		0.775		
Item 7		0.785		
Item 8		0.747		
Item 9		0.763		
Item 10		0.782		
Item 11				0.754
Item 12				0.834
Item 13				0.773
Item 14				0.791
Item 15				0.699
Item 16	0.644			
Item 17	0.706			
Item 18	0.847			
Item 19	0.858			
Item 20	0.870			
Item 21	0.629			
Item 22	0.804			
Item 23	0.787			
Item 24	0.783			
Item 25	0.767			
Item 26	0.585			
Item 27	0.699			
Item 28			0.711	
Item 29			0.888	
Item 30			0.904	
Item 31			0.804	
Item 32			0.653	
Item 33			0.722	
% of variance (66.937)	23.963	18.363	13.237	11.375
Initial eigenvalue	9.916	5.352	2.482	1.415

The variance range described in the literature is accepted as 40%–60% (Samuels 2016). Because total variance explained was not given in the original study of the scale, no comparison was made. It is recommended that the load factor values of a scale

should be ≥0.30 and the items <0.20 should be excluded from the scale (Finch 2019; Seçer 2020). In this study, no item was excluded from the scale because the factor loads of all items varied between 0.585 and 0.904 and there were no items with a factor load of <0.40. Wan et al. (2023), who developed the scale, found that factor loads varied between 0.468 and 0.937 (Wan et al. 2023). All these results showed that the factor structure of the construct validity in the study was strong, and a four-factor structure with 33 items was found as in the original scale.

CFA was performed to determine whether the structure revealed by EFA was confirmed (Xia and Yang 2019), and the results of CFA showed that the four-factor structure of PSSS was confirmed and that the goodness of fit values of the model ($X^2/df = 2.42$, <0.001; RMSEA = 0.059 (0.055–0.063, $p = 0.000$); CFI = 0.934; TLI = 0.928; SRMR = 0.042) was found to indicate good fit. In the evaluation of CFA fit indices, CFI and TLI values >0.95, RMSEA and SRMR values <0.05 and $\chi 2/df$ values <2 show excellent fit; CFI and TLI values <0.90–0.95, RMSEA and SRMR values <0.05–0.08 and $\chi 2$/df values <3 indicate acceptable fit (Kline 2023; Xia and Yang 2019). CFA results in this study were found to be in accordance with the criteria specified in the literature. It was found that the four-factor structure of the scale was confirmed in the CFA performed to confirm the explanatory factor analysis of the scale.

Total Cronbach's alpha coefficient was found to be 0.897 in this study. Total Cronbach's alpha coefficients of the factors were found to vary between 0.916 and 0.946. A Cronbach's alpha coefficient between 0.80 and 1.00 indicates that the scale has high reliability (Kılıç 2016). In this context, it can be seen that the scale has a strong internal consistency in this study. These values were not measured in the original study of the scale, whereas McDonald's omega coefficient and test–retest reliability coefficient were found for reliability (Wan et al. 2023). In the original scale study, McDonald's omega coefficient showed high reliability for PSSS (McDonald's omega = 0.93). The factors in the original scale showed good internal consistency with McDonald's omega values ranging from 0.87 to 0.95 (Wan et al. 2023). Total test–retest reliability coefficient of the original scale was found to be 0.721 (Wan et al. 2023). In this study, total McDonald's omega coefficient was 0.897, and the McDonald's omega coefficients of the factors ranged between 0.921 and 0.951. In this study, convergent validity, which is a reliability criterion, was examined, and values of AVE > 0.50, CR > 0.80 and CR > AVE are required to ensure reliability. When these values are met, it means that the reliability is good (Yaşlıoğlu 2017). In this study, it was found that the convergent validity values were compatible with the values suggested in the literature. Test–retest reliability coefficients of the scale items were also found to be positive and statistically significant ($p < 0.001$), and total test–retest reliability coefficient was found to be 0.989. The result found shows that the scale has satisfactory internal consistency and test–retest reliability, which shows that the scale is consistent and stable over time.

4.1 | Limitations of the Study

The present study has some limitations. First of all, the fact that EFA and CFA were performed on the same sample is the most important limitation of the study. Second, online data collection

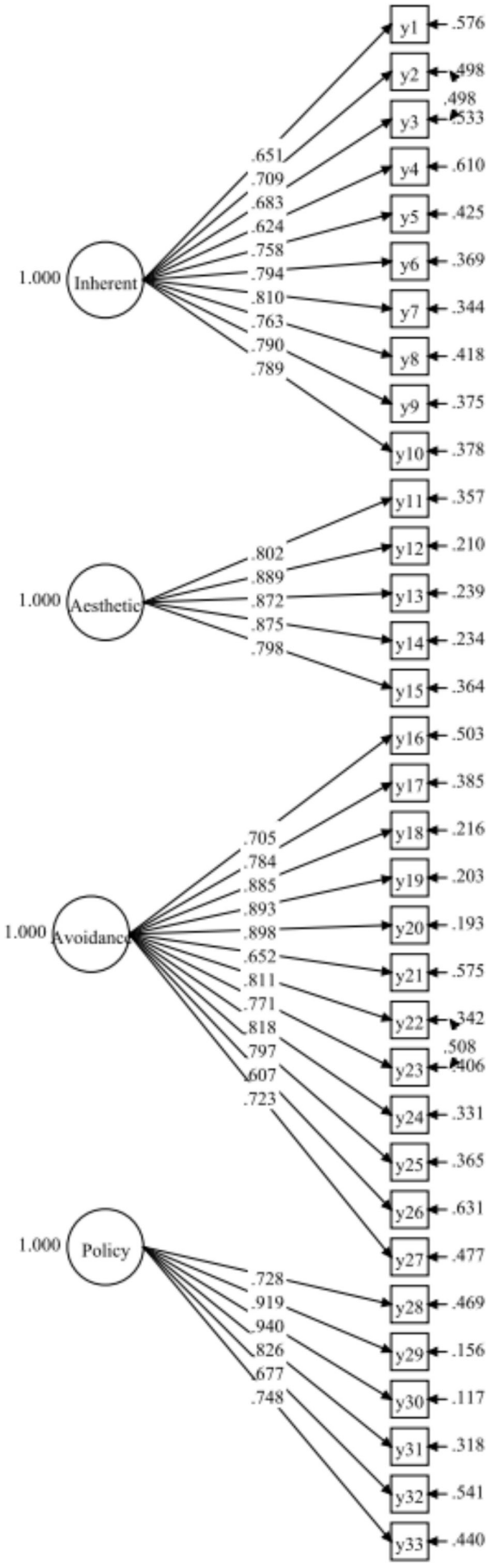

FIGURE 1 | Confirmatory factor analysis for PSSS.

TABLE 2 | Results on reliability and mean factor scores.

	Mean	SD	Cronbach alpha	Mcdonald's omega	CR	AVE
T_	2.708	0.0497	0.897	0.897	0.981	0.740
F1	3.499	0.984	0.923	0.925	0.923	0.547
F2	1.791	1.036	0.925	0.927	0.927	0.719
F3	1.448	0.725	0.946	0.951	0.950	0.680
F4	4.672	0.644	0.916	0.921	0.920	0.660

Abbreviations: AVE, average variance extracted; CR, composite reliability; F, factor; T, total.

TABLE 3 | Correlations between factors.

		T_post	F1post	F2post	F3post	F4post
T_pre	Pearson's *r*	0.989**				
	p value	< 0.001				
F1pre	Pearson's *r*	—	0.977**			
	p value	—	< 0.001			
F2pre	Pearson's *r*	—	—	0.952**		
	p value	—	—	< 0.001		
F3pre	Pearson's *r*	—	—	—	0.979**	
	p value	—	—	—	< 0.001	
F4pre	Pearson's *r*	—	—	—	—	0.354**
	p value	—	—	—	—	< 0.001

Abbreviations: F, factor; T, total.

may have caused a bias, and reliability of the data is limited to the accuracy of the answers given by all patients who participated in the study. Third, PSSS is a valid and reliable scale for Turkish society. It cannot be used in cultures other than Turkish society. Fourth, a wide age range was not provided at the sampling stage.

5 | Conclusion

Turkish version of PSSS was found to be compatible with the results of the original scale, and it was determined that it consisted of 33 items and four factors. As a result, good level of validity and reliability results were obtained for PSSS, and cultural equivalence of the scale was achieved. This study is also the first to confirm the validity and reliability of the scale in Turkish. It is thought that it can be used to determine the level of stigmatization related to stroke in countries where Turks live. For the cross-cultural validity of the PSSS, it is recommended to conduct research to validate the questionnaire by using data from more than one country.

6 | Practical Implications

Small number of items will facilitate the implementation and evaluation stages. The scale can be easily applied to individuals aged 18 and over. It is thought that the use of this scale will be beneficial in terms of evaluating the stigma of stroke patients by the public and will lead to the evaluation of the society's perspective on this issue and implementing awareness training.

Author Contributions

Gülcan Bahcecioglu Turan: idea of research, planning methodology to reach the conclusions, statistical analysis, interpretation of findings; **Zülfinaz Özer:** data management, literature review, logical interpretation; **Esra Yıldız:** obtain data, reviewing the article before submission scientifically besides spelling and grammar.

Conflicts of Interest

The authors declare no conflicts of interest.

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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