

## Original Article

# Turkish Version of the Brief Serenity Scale: Reliability and Validity Study

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### Abstract

**Background:** Developed by Kreitzer et al. In 2009, the 'Brief Serenity Scale (BSS)' is a very high measure of validity and reliability of 22 items developed to determine serenity level of patients, and the community.

**Objectives:** This study objected to transcribe the Brief Serenity Scale (BSS) to the Turkish language and to test its validity and reliability.

**Methods:** The population of the methodological study consisted of 1500 participants in Ankara, the capital city of Turkey between December 2018 and May 2019. The sample, conversely, consisted of 220 participants, who agreed to participate in the study, from the present population. After the translation process of the scale; content and construct validity was carried out. The content validity index was computed after receiving the expert opinions. While the exploratory factor analysis was performed for the item analyses and internal consistency analysis were performed for the reliability.

**Results:** The confirmatory factor analysis of the index values indicated that the model fit the data well. The internal consistency coefficients were 0.73 for the acceptance, 0.77 for inner peace, 0.71 for trust and 0.87 for the total score. The total correlation of the BSS items and the test-retest method showed good reliability levels.

**Conclusion:** The results of the study shown that the Brief Serenity Scale had a validity and reliability and could be used in Turkey.

**Keywords:** serenity, well-being, reliability, validity, scale

### Introduction

The concept of serenity first arose in the context of spiritual experiences, in which religious and philosophical issues have traditionally been discussed (Roberts & Aspy, 1993). Pejner (2015) defined serenity as an emotional experience featuring a condition of awareness that enables one to come to terms with a condition. It is important for a person to be serene because a person who is at peace can objectively view matters pertaining to his or her condition and thus have the capability to act to alter his or her condition (Roberts & Fitzgerald, 1991). Serenity is an intrinsic trait and can be learned through experience; it buffers against various stresses and can serve as a subjective outcome measure of the improvement of health and well-being with a holistic approach

(Kreitzer, Gross, Waleekhachonloet, Reilly-Spong, & Byrd, 2009). In addition, studies in psychology have shown that peace is negatively associated with feelings of anxiety and sadness, fear, and guilt and is positively associated with joy (Barnett, Moore, & Harp, 2017; Stanton, Stasik-O'Brien, Ellickson-Larew, & Watson, 2016). Serenity has a significant role in recently emerging types of psychotherapy such as mindfulness-based cognitive therapy (Cavallaro, 2020). It is accepted that serenity is necessary for the well-being and health of individuals of all ages (Naz, Shazia, & Khalid, 2020).

Several studies in psychology have shown that serenity is negatively correlated with sadness, fear, and guilt (Barnett et al., 2017) and positively correlated with joy (Barnett et al., 2017; Stanton et

al., 2016). Soysa, Zhang, Parmley, and Lahikainen (2020) found that dispositional awareness and well-being were positively associated with mental health. Pejner stated that the concept of serenity can be used in relation to elderly patients with chronic illnesses to refer to a state in which the patient seeks stability so that they can control or accept their condition (Pejner, 2015).

Using each component of Roberts and Aspy (1993) serenity scale, Boyd-Wilson, McClure, and Walkey (2004) reconceptualized the aspects of serenity by recognizing three features: faith, humility, and gladness. They defined faith as having humility in terms of a feeling of trust, inner strength, and resistance; as taking action to change things that they have the power to change; and as accepting conditions outside their control. Further, they defined faith as showing happiness to the world as a feeling of love and attachment (Boyd-Wilson et al., 2004; Roberts & Aspy, 1993). Various measurement tools have been used to assess the importance of serenity in patients and healthy individuals (Kreitzer et al., 2009; Kruse, Heinemann, Moody, Beckstead, & Conley, 2005; Roberts & Aspy, 1993). Kreitzer et al. (2009) developed a second multidimensional scale of serenity with parts adapted from the scale developed by Boyd-Wilson et al. (2004) that most strongly demonstrated the basic opinions about serenity. Kreitzer et al. (2009) developed this Brief Serenity Scale (BSS) with three sub-dimensions (inner haven, acceptance and trust). They described an inner haven as a feeling of inner peace and quiet, acceptance as fully coming to terms with things that are outside one's control and the temporary nature of life, and trust as a belief in the inherent kindness and meaningfulness of life and in the profoundness of the cosmos. The BSS is a 22-item questionnaire that measures serenity in terms of these three factors (acceptance, trust, and inner haven) and uses a 5-point Likert scale. The Cronbach's alpha of the scale was .95 (Kreitzer et al., 2009). In Turkey, no studies on the effect of serenity on health and disease have been performed with the BSS. This study sought to translate the BSS developed by Kreitzer et al. (2009) into the Turkish language. In addition, the validity and reliability of this translated scale were determined.

## Methods

**Type of Study:** This methodological study was performed to evaluate the validity and reliability of the Turkish version of the BSS for participants.

**Study Sample:** The study population consisted of patients who visited the Family Health Center in Ankara, the capital city of Turkey, between December 05, 2018, and May 05, 2019. In studies assessing the validity and reliability of measures, the sample size is suggested to be quintupled to decouple the number of items in the measure (Gutsev, 2017). The study sample contained 220 participants who agreed to participate in the study.

## Data Collection Tools

**Personal information form.** The form was developed by the researcher to determine the sociodemographic characteristics of the participants. This form consisted of eight questions on sociodemographic characteristics: year, gender, marital status, education level, employment position, income status and the presence of a chronic disease.

**The brief serenity scale.** The original Serenity Scale was developed by Roberts and Aspy. It was a 40-item self-report scale evaluating the patient's serenity (long-term inner-state) status. The scale consisted of 9 subdimensions and had a Cronbach's alpha value of 0.93. However, some participants stated that the scale was very long and that they had difficulty completing it. In 2009, Kreitzer et al. (2009) developed a shorter version, the BSS, consisting of 22 questions. The BSS is a 5-point Likert-type scale. Each item on the scale is evaluated as "Never" (1 point), "Rarely" (2 points), "Sometimes" (3 points), "Frequent" (4 points) and "Always" (5 points). The scale has a minimum score of 22 and a maximum score of 110 and consists of three subdimensions: inner peace, acceptance and trust. The higher the score, the higher the serenity level is. The Cronbach's alpha of the scale was found to be 0.95.

## Data Analysis

**Validity. Language adaptation.** The proper expressions and idioms in the target language must be used and the sentences must be altered to fit the target culture while translating a scale (Gutsev, 2017). To validate the language with respect to the translation methodology of the scale, in the

preliminary phase, translation into the target language (Turkish) and back-translation to the original language (English) were conducted. The scale was converted into Turkish by five polyglots of the English language. The translations were assessed by the researcher; the most suitable translation was determined for every item, and the scale was completed. The Turkish form and the original language form were reviewed by an academician nurse. When the original English expressions were checked against the back-translated English statements, they were found to be consistent with each other.

#### **Content validity of the questionnaire.**

Professional review was used to determine the content validity of the BSS. It is suggested that three experts conduct a review to determine whether the translated text is equivalent to the original text (Orr et al., 2018). To establish whether the Turkish version of the scale was valid, the views of 12 specialists were acquired. The original and translated scales were given to the professionals for review, and they were asked to mark the items with scores between 1 and 4 (1 point = not suitable, 2 points = requires revision, 3 points = suitable but requires small changes and 4 points = very suitable) to indicate the appropriateness of the items. The content was modified in accordance with the suggestions of the specialists. For every item, the item content validity index (M-CVI) was calculated. An M-CVI of 0.83 or higher signals agreement among the specialists (Polit & Beck, 2009).

*Pilot test.* It is suggested that scales be pilot tested with a group of 15 persons with same characteristics as the study sample but who were not part of the study sample. A pilot study is used to determine whether the language and expressions in the scale are understandable (Friedel et al., 2020).

**Reliability.** The reliability of the questionnaire was analyzed to test the internal consistency and stability. Internal consistency was assessed using Cronbach's alpha coefficient and scores for the item-scale and item-total correlations. The Cronbach's alpha internal consistency coefficient should be between 0.70 and 1 (Sharma, 2016). To assess the stability of the questionnaire, the test-

retest scores of 50 participants were obtained a month after the initial survey. The stability of the scale was evaluated based on the variances and the link between the first and second measurements.

**Statistical analysis.** The data collected in the study were examined using the Statistical Package for the Social Sciences (SPSS) 22.0 program. Descriptive statistics were used to examine the demographic data (numbers and percentages). The Cronbach's alpha values of the subdimensions were 0.734 for the first factor, 0.77 for the second factor, 0.711 for the third factor and 0.871 for the total scale (Table 1).

[Insert Table 1 near here]

**Confirmatory factor analysis.** The scale has a 3-factor structure. The outcomes of exploratory factor analysis (EFA) were examined with first-level confirmatory factor analysis (CFA) to verify the final structure.

CFA is used to assess the degree to which a factorial model consisting of factors (latent variables) designed by several observable variables is well matched with actual data. The model to be analyzed can identify a structure using data from an empirical study or a theoretical model (Loehlin & Beaujean, 2016). Numerous fit indices are used in CFA to assess the validity of the model. The most commonly used (Loehlin & Beaujean, 2016) are the chi-square value,  $\chi^2$ ; root mean square error of approximation (RMSEA); comparative fit index (CFI); non-normed fit index (NNFI); normed fit index (NFI); and goodness of fit index (GFI). The CFA performed for the items in the subdimensions indicated that the model fit indices were as follows:  $\chi^2/df = 1.604$ , RMSEA=0.052, GFI= 0.90, AGFI=0.852, and CFI=0.907 (Table 2).

**Ethics statement.** The printed authorizations were obtained from Mary J Kreitzer for the BBS. This study was approved by the ethics committee of the University of Non-Interventional Research Ethics. When the data were gathered, participants were notified that their participation was voluntary, and the intention and type of study were clarified. Participants' information and answers were kept completely confidential. Verbal and written consent was obtained from the participants.

**Table 1. Dimensions and total reliability analysis**

	Cronbach's Alpha
The total scale	0.871
Acceptance	0.734
Inner Peace	0.770
Trust	0.711

**Table 2. Confirmatory factor analysis fit indexes**

Fit Indices	Good Fit	Acceptable Fit	Model Results
RMSEA	$0 < \text{RMSEA} < 0.05$	$0.05 < \text{RMSEA} < 0.10$	0.052
GFI	$0.95 < \text{GFI} < 1$	$0.90 < \text{GFI} < 0.95$	0.90
AGFI	$0.90 < \text{AGFI} < 1$	$0.85 < \text{AGFI} < 0.90$	0.852
CFI	$0.95 < \text{CFI} < 1$	$0.90 < \text{CFI} < 0.95$	0.907
$\chi^2/\text{df}$	$\chi^2/\text{df} < 3$	$3 < \chi^2/\text{df} < 5$	1.604

**Table 3. Item-total correlations**

Item	Item Statement	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
A	I am aware of an inner source of comfort, strength, and security	.445	.865
B	During troubled times, I experience an inner source of strength	.509	.863
C	I trust that life events happen to fit a plan that is larger and more gentle than I can know	.466	.865
D	I see the good in painful events that have happened to me	.491	.864
E	I experience peace of mind	.477	.864
F	I am forgiving of myself for past mistakes	.392	.867
G	I take care of today and let yesterday and tomorrow take care of themselves	.382	.868
H	In problem situations, I do what I am able to do and then accept whatever comes	.398	.867
I	I accept situations that I cannot change	.475	.864
J	I try to place my problems in the proper perspective in any given situation	.411	.867
K	I am aware of inner peace	.524	.863
L	I experience an inner quiet that does not depend on events	.493	.864

<b>M</b>	I find ways to share my talents with others	.378	.867
<b>N</b>	When I get upset, I become peaceful by getting in touch with my inner self	.525	.863
<b>O</b>	I attempt to deal with what is rather than what was or what will be	.556	.862
<b>P</b>	Even though I do not understand, I trust in the ultimate goodness of the plan of things	.503	.864
<b>Q</b>	I experience an inner calm even when I am under pressure	.493	.864
<b>R</b>	I feel that I have done the best I could in life	.308	.870
<b>S</b>	I can feel angry and observe my feeling of anger and separate myself from it and still feel an inner peace	.447	.865
<b>T</b>	I trust that everything happens as it should	.432	.866
<b>U</b>	I feel forgiving of those who have harmed me	.368	.868
<b>V</b>	I feel serene	.466	.865

**Table 4.** Test – retest correlations

		<b>R_The total scale</b>	<b>R_Acceptance</b>	<b>R_Inner Peace</b>	<b>R_Trust</b>
<b>The Total Scale</b>	r	<b>.517**</b>			
	p	<b>.000</b>			
<b>Acceptance</b>	r		<b>.310*</b>		
	p		<b>.027</b>		
<b>Inner Peace</b>	r			<b>.645**</b>	
	p			<b>.000</b>	
<b>Trust</b>	r				<b>.365**</b>
	p				<b>.008</b>

**Table 5.** t values of the relationships between the factors and items

		Factor Loads	t values
bss_v	Acceptance	0.458	6.558
bss_u	Acceptance	0.397	5.553
bss_r	Acceptance	0.363	5.055
bss_o	Acceptance	0.585	8.617
bss_m	Acceptance	0.445	6.324
bss_j	Acceptance	0.5	7.082
bss_i	Acceptance	0.505	7.298
bss_g	Acceptance	0.468	6.521
bss_h	Acceptance	0.403	5.634
bss_f	Acceptance	0.451	6.41
bss_s	Inner Peace	0.422	6.145
bss_q	Inner Peace	0.484	7.256
bss_n	Inner Peace	0.638	9.724
bss_l	Inner Peace	0.563	8.655
bss_k	Inner Peace	0.586	9.076
kho_e	Inner Peace	0.545	8.075
bss_b	Inner Peace	0.647	10.231
bss_a	Inner Peace	0.587	8.874
bss_t	Trust	0.397	5.744
bss_p	Trust	0.668	9.613
bss_d	Trust	0.606	8.557
bss_c	Trust	0.557	8.382

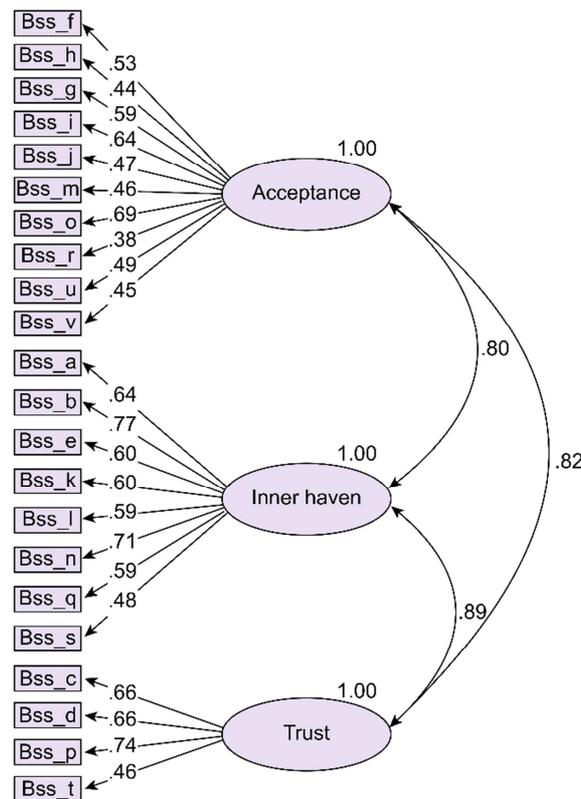


Figure 1. Factor loadings between the factors and items.

**Results**

Of the participants, 70.7% were women, 60.4% were married and 42.8% were working. A total of 41.4% of the participants had undergraduate and higher education levels. In addition, 33.3% of the participants had chronic diseases, and 29.7% smoked. To assess the content validity of the survey, the views of ten specialists were collected. The expert agreement ranged from 1 to 0.83 for each item (I-CVI) and was 0.98 for the overall questionnaire (S-CVI). The Cronbach's alpha reliability was assessed to identify the internal consistency of the BSS, and the internal reliability coefficient of the 22-item survey rated on a 5-point Likert-type measure was found to be 0.87 for the full survey. With respect to the dimensions, acceptance had an alpha value of 0.73, inner peace had a value of 0.77, and trust had a value of 0.71. This result shows that the scale is highly reliable (Table 1). The values in the "Corrected Item-Total Correlation" column in the item total correlations

table indicate the common correlation of each item with all the items in the scale. The correlation coefficient for each item should be greater than 0.3, and the item-total correlation coefficients ranged from 0.308 to 0.556. The values in the "Cronbach's Alpha if Item Deleted" column in the item-total correlations table show the Cronbach's alpha values obtained when the item is removed. The values in this column should not be significantly higher than the Cronbach's alpha value of the overall scale. Examination reveals that the Cronbach's alpha value for the full scale does not exceed 0.871 when any item is removed (Table 3).

There is a positive, moderate and statistically significant relationship between the test-retest values for the scale total ( $r=0.517$ ;  $p<0.001$ ). There is a positive, moderate and statistically significant relationship between the test-retest values for acceptance ( $r=0.310$ ;  $p<0.001$ ). There is a positive, moderate and statistically significant relationship

between test-retest values for inner peace ( $r=0.645$ ;  $p<0.001$ ). There is a positive, moderate and statistically significant relationship between the test-retest values for trust ( $r=0.365$ ;  $p<0.001$ ) (Table 4).

In this section, CFA was applied to evaluate whether the structure of the 22 items of the 3 subdimensions of the scale was confirmed. The path diagram of the factors (subdimensions) obtained after the CFA and the factor loads between the relevant items are given in Figure 1. During the CFA following the EFA, whether there was a statistically significant relationship between the factors and the related items was tested. If the  $t$  values obtained are greater than 1.96, a statistically significant relationship existed between the factors and the related items. The  $t$  values calculated as a result of the CFA are presented in Table 5. It was confirmed that there was a statistically significant relationship between the related items and the factors, since all of the calculated  $t$  values were greater than 1.96. The fit indices should be evaluated to determine whether the factorial structure obtained as a result of EFA is correct and what level of fit it is. The fit index criteria and the results obtained from the model are presented in Table 2. When the coefficients confirm the relationship between the observed variables of the model and the factors, supporting the factorial structure of the measure, it is determined that all the coefficients are adequate. According to the fit statistics computed in the CFA, the previously determined structure of the measure was in good agreement with the data gathered.

### **Discussion**

Measurement tools have been developed to evaluate many concepts in many different cultures and languages. Validity, invariance, and consistency indicate the instrument's ability to give similar results in iterative measurements, and accuracy indicates its ability to determine the actual measurement value (Erdogan & Nahcivan, 2015). Whether these measurement tools measure the target concept correctly in societies with different languages and cultural structures should be proven with validity and reliability studies. This study aimed to test the validity and reliability of the Turkish BSS, the original version of which was developed to measure the effect of serenity on the

optimal health of individuals in American society, and showed the scale to be valid and reliable. Several approaches are used to confirm the validity of a measure (Scully, 2017). In this study, to assess the validity of the BSS, its language and content validity were investigated. The content validity of the survey was examined by 12 experts in terms of the scale content and the language suitability and precision for the Turkish population. I-CVI and S-CVI were used to determine the views of the specialists. In this study, the index values were approximately 0.80, which showed that there was agreement among the specialists. According to the expert evaluations, the Turkish version of the BSS was suited to Turkish culture regarding both language and content validity.

Construct validity is used to examine which concepts or features the scale measures (Scully, 2017). CFA was performed to measure the validity of the BSS. The purpose of CFA is to reduce the structure to fewer essential dimensions to ease understanding and interpretation of the relationships between variables that are considered to be related (Scully, 2017). According to the CFA results, the error variances of the variables were 0.86 and below, and there was no high error variance. In addition, the statistical significance of the results is supported by the sufficient sample size (Buyukozturk, 2018).

In the structural equation model, path diagrams are obtained as a result of the analyses. After the appropriate matrix is created, the path diagram is drawn, and the variables,  $t$  values, factor loads, unexplained variance and some goodness of fit values can be seen in this diagram (McNeish & Wolf, 2020) As a result of the path analysis performed in this study, it was determined that the path graph of the items in the scale was in the appropriate range (Figure 1). As a result, it was determined that the 3-factor structure of the 22-item BSS was appropriate, supporting the construct validity of the scale.

Reliability is defined as a concept that reveals the consistency and adequacy of all the items in a measurement tool (Alpar, 2016). A valid test must be reliable (Alpar, 2016). The higher the alpha coefficient of a scale, the more consistent the items of this scale are interpreted to be with each other or the greater the extent to which all the items work

together (Taber, 2018). In this study, since the Cronbach's alpha value was determined to be 0.87, the internal consistency of the BSS was high, and the scale had good reliability. By testing the scale twice under similar conditions within a short time interval, the test-retest reliability can be obtained. This value should be larger than 0.30 (Noble, Scheinost, & Constable, 2019). According to the results of the analysis, it was observed that the responses of the participants assessed at two different times were consistent. The overall correlation of the scale was positive, moderate and statistically significant ( $r = 0.517$ ;  $p < 0.001$ ). This result shows that the scale is not affected by time, and it always measures the same concepts even if time passes (Table 3). In this study, the test-retest mean scores ( $n = 50$ ) of the BSS items were calculated. A significant difference was found between the items and subdimensions of the scale applied at two different times ( $p < 0.05$ ).

Internal consistency reliability means that the scale items measure the same structure in relation to each other (Vaske, Beaman, & Sponarski, 2017). Cronbach's alpha value is a measure of the internal consistency of the items within the scale (Alpar, 2016). As the Cronbach's alpha coefficient increases, scale reliability increases at the same rate. A Cronbach's alpha coefficient between 0.80 and 1 indicates that the measure has high reliability (Taber, 2018). In this study, for the full scale, the Cronbach's alpha was determined to be 0.87, indicating high internal consistency and good reliability. In this study, the correlation coefficients between the items and the total score and each subdimension were calculated to be above 0.30, which shows that all the scale items are distinct and that the internal consistency of the test is high. Consequently, the scale items were distinctive in terms of the properties they measured, and the reliability of the items forming the scale was high and they measured the same concepts.

**Conclusions:** The long form of the Serenity Scale was developed by Roberts and Aspy (1993) to determine the effect of serenity on individuals in achieving optimum health. Kreitzer et al. (2009) tested the reliability and validity of the BSS. The language validity of this 5-point Likert-type scale was tested, and the high total correlation and Cronbach's alpha values indicated the validity and

reliability of the scale. According to the results of the CFA, the  $t$  values of the 22 items were significant, and the three-factor structure of the scale was acceptable.

As a result, the Turkish BSS was determined to be a valid and reliable scale consisting of 22 items and three subdimensions: acceptance (10 items), inner peace (8 items), and trust (4 items). The overall Cronbach's alpha value was 0.87. Within the framework of the findings obtained from this validity and reliability study of the BSS, its relationship with similar scales can be examined. In addition, the population used in this study of the scale consists of participants who visited a family health center in Ankara. Therefore, studies with different samples are extremely important to confirm the validity and reliability of the scale. Studies in which this scale will be used will significantly contribute to the literature.

**Implications for Nursing Practice:** The concept of serenity is important in maintaining holistic health, well-being and healing. Few measurement tools have been used to assess serenity in participants. There are a limited number of tools for determining serenity in Turkey. A Turkish BBS is a tool adapted in the field specific to this deficit. The scale is thought to be easy to use, as the number of items is small and its assessment is simple. This study shows the validity and reliability of the Turkish version of the BBS for the assessment of serenity among Turkish people.

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