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Research Article

Reliability and validity of the continence self-efficacy scale in Turkish women with urinary incontinence

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Abstract This study investigated the psychometric properties of the Continence Self-Efficacy Scale. Data was collected from 128 women who had urinary incontinence using the following instruments: the Continence Self-Efficacy Scale, the Broome Pelvic Muscle Exercise Self-Efficacy Scale, the International Consultation on Incontinence Questionnaire Short Form, and the Beck Depression Inventory. The validity of the Continence Self-Efficacy Scale was investigated using confirmatory factor analysis and convergent and divergent validity analyses. The reliability of the Continence Self-Efficacy Scale was examined in terms of internal consistency and test–retest correlations. Confirmatory factor analysis indicated a three -factor model that had acceptable goodness-of-fit indices. The convergent validity of the Continence Self-Efficacy Scale was supported by a positive correlation between the Continence Self-Efficacy Scale and the Broome Pelvic Muscle Exercise Self-Efficacy Scale. The divergent validity of the Continence Self-Efficacy Scale was supported by negative relationships between the Continence Self-Efficacy Scale and the Beck Depression Inventory. The Cronbach's alpha values regarding internal consistency were 0.94 for the overall scale and 0.92–0.93 for the subscales. Test–retest correlations were 0.75 for the overall scale and 0.52–0.74 for the subscales. The Continence Self-Efficacy Scale is a valid and reliable instrument for use in Turkish women with urinary incontinence.

Key words reliability, self-efficacy, Turkey, urinary incontinence, validity.

INTRODUCTION

Urinary incontinence (UI) is a medical, social, and hygienic problem that involves involuntary leakage of urine and affects a large population worldwide. It is a problem that affects women more than men across all age groups, different races, and cultures (Azuma *et al*., 2008; Milsom *et al*., 2009). UI is classified into six categories that include stress urinary incontinence (SUI), urge urinary incontinence (UUI), mixed urinary incontinence (MUI), nocturnal enuresis, continuous urinary incontinence, and the other types of urinary incontinence defined by the International Continence Society in 2002 (Abrams *et al*., 2003). The most common types of UI are SUI, UUI, and MUI (Milsom *et al*., 2009).

The prevalence of UI is 30–60% among middle-aged and older women in the general population, while the prevalence rates of daily UI range between 5% and 15% (Milsom *et al*., 2009). In Turkey, the prevalence rate of UI among women aged between 15 and 70 years and over is approximately 16.4–68.8% (Oskay *et al*., 2005; Filiz *et al*., 2006).

The treatment of UI can be grouped under three categories: pharmacological, non-pharmacological (behavioral intervention), and surgical treatment. The most preferred treatment is behavioral intervention, which includes lifestyle interventions, schedule voiding regimens, bladder training, and pelvic floor muscle (PFM) exercises. Behavioral intervention is non-invasive, does not have any side-effects, and can be used in conjunction with other treatments (Wilson *et al*., 2002; Hay Smith *et al*., 2009). In addition, behavioral interventions are very efficient in improving UI, and PFM training (PFMT) in particular has proven to be efficient. PFMT decreases the frequency of UI episodes and the amount of leakage, and alleviates symptoms of depression (Seim *et al*., 1996; Borrie *et al*., 2002; Bø, 2004; Hay-Smith *et al*., 2007; Dumoulin & Hay-Smith, 2010), while increasing the quality of life (Seim *et al*., 1996; Borrie *et al*., 2002; Perrin *et al*., 2005). However, many patients do not adhere effectively to behavioral interventions, such as PFMT, and most do not apply these methods to their daily life (Bø *et al*., 2005; Hines *et al*., 2007).

The achievement of behavioral interventions, such as PFMT, depends on the adherence and motivation of patients who intend to control unwanted urine loss (Alewijnse *et al*., 2003; Messer *et al*., 2007; Hines *et al*., 2007). Self-efficacy is one of the most important factors that affect an individual's adherence and motivation toward PFMT (Broome, 1999; 2001; Alewijnse *et al*., 2001; Kim, 2001, Messer *et al*., 2007; Chen & Tzeng, 2009; Borello-France *et al*., 2010). Studies examining the relationship between UI and self-efficacy

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suggest that the perception of one's ability to perform pelvic floor exercises affects the actual outcomes of pelvic floor exercise programs. Svengalis *et al*. (1995) developed a questionnaire to examine the impact of a 3 month PFMT program on self-efficacy. In this study, a positive relationship was identified between the perceived level of self-efficacy and the actual treatment outcome (a decrease in the frequency of urinary incontinence). Alewijnse *et al*. (2001) reported that women's perceptions of their ability to exercise in various situations (self-efficacy) predicted adherence. The authors also suggested that self-efficacy regarding exercise technique and the ability to adhere to PFM exercises and the exercise regimen in the short term are predictors of long-term (12 month) PFM exercise.

Using their own domain-specific self-efficacy scale, Messer *et al*. (2007) found that the perception of self-efficacy in performing PFM exercises regularly affects adherence.

Self-efficacy is a construct of social learning theory, which was described by Albert Bandura in 1977. Self-efficacy is defined as a person's feelings and thoughts about his/her own capability of accomplishing any given task. Self-efficacy refers to the belief that one can successfully perform a specific behavior to achieve a particular outcome. The concept of self-efficacy indicates that outcomes are determined by the actions of the individual. An individual's perception of his/her capabilities will impact behaviors, the level of motivation, thought patterns, and emotional reactions in taxing situations. It consists of two different constructs, which are expectation and outcome expectation. Efficacy expectation is the evaluation of one's capacity in performing a specific action, and is an important determinant of compliance to health behavior. Outcome expectation is one's estimate about being able to produce a specific outcome. While efficacy expectation is a belief concerning one's performance, outcome expectation is a belief about the consequence of a behavior. Also, both structures play a role in behavioral change (Bandura, 1977; Bandura, 1997).

The evaluation of self-efficacy in behavioral UI interventions can provide important information regarding one's motivation and belief about adherence (Svengalis *et al*., 1995; Bandura, 1997; Broome, 1999; Broome, 2001; Kim, 2001). Additionally, self-efficacy is a predictor of adherence to PFMT in women with UI (Broome, 1999; 2001; Alewijnse *et al*., 2003). Several studies showed that the frequency and amount of urinary incontinence decreased as self-efficacy and adherence increased (Svengalis *et al*., 1995; Kim, 2001; Perrin *et al*., 2005; Messer *et al*., 2007).

There are a limited number of studies about behavioral interventions and self-efficacy, and these studies used different scales (Svengalis *et al*., 1995; Broome, 1999; Broome, 2001; Kim, 2001; Messer *et al*., 2007). In the Turkish research literature, we did not identify any studies that investigated the relationship between the effectiveness of PFM exercise and self-efficacy.

An instrument that measures the level of self-efficacy can be utilized in studies that aim to assess the indirect effects of PFM exercises. This study was carried out to examine the validity and reliability of the Continence Self-Efficacy Scale (CSES), which could be used in the Turkish population and would be useful for cross-cultural research.

METHODS

Study aim

This study investigated the psychometric properties of CSES among women with UI in Turkey.

Study sample

The study sample comprised women who presented to Bakirköy Gynaecology and Paediatrics Training and Research Hospital in Istanbul with complaints of UI, and who received urodynamic testing. There are several guidelines regarding the sample size of a study. Adequate sample sizes, both in terms of absolute numbers and subject–item ratios (5–10 subjects per item) are crucial in conducting reliable statistical analyses in a study. Therefore, we aimed to collect data from eight patients for each item of the CSES, and a sample of 128 participants who received urodynamic testing was recruited for our study. Inclusion criteria were: between 20–60 years of age; being able to speak and read Turkish; able to complete a questionnaire; and agreeing to participate in the study.

Data collection

Data were collected using the CSES, Broome Pelvic Muscle Exercise Self-Efficacy Scale (Broome PMSES), International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF), and the Beck Depression Inventory (BDI).

Instruments

The CSES was examined in terms of language equivalency, and subject to cultural adaptation. Following this, reliability and validity analyses were carried out. Permission and written consent from the researchers who developed the CSES were obtained. After this procedure, translation and back-translation of the scale were conducted. Modifications were made based on the recommendations from the developers of the original questionnaire, thus we completed the language equivalency and cultural adaptation procedure (Bullinger *et al*., 1998). The translation and back translation of the CSES presented no major difficulties regarding language.

The CSES was developed by Kim and Kanagawa in 1998, and was used to evaluate the level of self-confidence about performing PMF exercises and the success of continence tasks. The scale consists of 16 items: five items assess the efficacy expectation (EE) in performing PMF exercises (2–6), three items assess the EE frequency (EEF) and amount of PFM exercises (7–9), and eight items assess the outcome expectation (OE) of the PMF program (1, 10–16). In the psychometric analysis of the original CSES, Kim and Kanagawa (1998) supported the utilization of a two-factor model, in spite of the results from the explanatory factor analysis of the scale, which yielded a three-factor model.

Explanatory factory analysis of the original CSES yielded a three-factor structure. However, Kim and Kanagawa recommended the utilization of a two-factor structure. The authors stated that the two factors explained 59% of the total variance, and the factor loadings of the items were above 0.4. Items are scored between 1 (not confident) and 10 (very confident), with the global score ranging from 16 to 160. Higher scores indicate a better level of self-efficacy regarding urinary continence (Kim & Kanagawa, 1998).

The Broome PMSES was developed by Broome in 1999. This scale consists of 23 items, which were divided into two subscales: EE and OE. The EE subscale is a 14-item scale. Patients are asked to point out how confident they are in performing activities, such as contracting pelvic muscles and performing pelvic muscle contractions while lying down, standing, and sitting. The outcome expectations subscale is a nine-item scale and measures the level of faith in the activity, which would prevent unwanted urine loss. Some of the situations included in the Scale are coughing, sneezing, laughing, and waiting in the line for a restroom. All items are scored on a 10-point scale. Scoring options range from 0 to 10, with 0 being "not confident", and 10 "very confident". The averaged summation of the subscores yields the total score. The total score ranges from 0 to 100, where scores between 0 and 32 indicate low self-efficacy (0–32), scores between 33 and 66 indicate moderate self-efficacy, and scores above 66 indicate high self-efficacy. Higher scores show a greater level of perceived efficacy and outcome expectations (Broome, 1999; 2001).

The adaptation of the PMES to the Turkish population was conducted by Zengin in 2008. There was sufficient evidence of its reliability based on the estimates of the total scale and subscales' internal consistency coefficients (total scale Cronbach's alpha = 0.95; expectations self-efficacy subscale Cronbach's alpha = 0.94; and outcome self-efficacy subscale Cronbach's alpha = 0.92). Test–retest reliability of the Turkish version of the Broome PMSES was at an acceptable level (test–retest reliability coefficients were 0.79, 0.75, and 0.68, respectively). In the current study, the internal consistency of the PMSES was evaluated again (total scale Cronbach's alpha = 0.95, expectations self-efficacy subscale Cronbach's alpha = 0.94, and outcome self-efficacy subscale Cronbach's alpha = 0.93) (Zengin, 2008) and Cronbach's alpha coefficients of the scale and subscales ranged from 0.93 to 0.95.

The ICIQ-SF is a four-item, disease-specific questionnaire that assesses the symptoms and quality of life of patients with UI, developed by Avery *et al*. in 2004. The questionnaire consists of four questions pertaining to the frequency of leakage, amount of leakage, interference with everyday life, and the perceived cause of leakage. For the first three questions, the patients were asked to rate their answers based on a Likert-type scale. For the last question, the purpose of which was to diagnose the type of incontinence, the patients were asked to state all of the circumstances when urine leakage occurred (Avery *et al*., 2004). Çetinel *et al*. (2004) completed the psychometric validation of the Turkish version of the ICIQ-SF in 2004. The authors found a Cronbach's alpha coefficient of 0.71, and test–retest correlation coefficients ranged between 0.97 and 0.98 (Çetinel *et al*., 2004). The first statement of the scale in the study was used to determine the frequency of leakage, whereas the second and fourth statements were used for determining leakage amount and leakage type, respectively.

The BDI was developed by Beck in 1961. The BDI is a self-report scale with 21 items that measure the emotional, somatic, cognitive, and motivational symptoms of depression. The aim of the scale is not to diagnose depression, but to objectively determine the severity of depressive symptoms. The score of each item ranges from 0 to 3, and the depressive symptoms score is obtained by adding the scores of each item. The possible highest score is 63. Higher scores indicate increased symptoms of depression. The BDI was adapted to Turkish by Hisli in 1988 (Hisli, 1988). Hisli (1989) reported that BDI scores ≥ 17 discriminated depression that might require treatment with more than 90% accuracy (Hisli, 1989). Cronbach's alpha coefficient of the scale in this study was found to be 0.87.

Data analysis

Validity

Validity investigations were based on factorial construct validity, which was evaluated by confirmatory factor analysis (CFA), convergent validity, and divergent validity. Using the data from our sample, two models were tested and compared with CFA. Model 1 was the single factor solution, and model 2 was the three factor solution found by Kim and Kanagawa in 1998. We expected that the three subscales, originally defined by Kim and Kanagawa, would emerge from the CFA, and items relating to a particular scale would be grouped together within a single factor.

The factor loadings are the regression coefficients for predicting indicators from the latent factor. It is stated that higher factor loadings are better and that recommended minimum factor loadings should exceed 0.30 and should be positive (Streiner & Norman, 2003). However, as a general rule of thumb in CFA, factor loadings above 0.71 are excellent, 0.63 very good, 0.55 good, 0.45 fair, and 0.32 poor. Thus, in the current study, we considered 0.45 as the minimum value of factor loadings (Tabachnick & Fidell, 2007).

The fit of the model to the data was based on the ratio of the χ^2 value and degrees of freedom (χ^2/d.f.), comparative fit index (CFI), normed fit index (NFI), standardized root mean square residual (SRMR), and root mean square error of approximation residual (RMSEA). It was considered that χ^2/d.f. < 2, CFI > 0.97, NFI > 0.95, SRMR < 0.05, and RMSEA < 0.05 indicate perfect fit, whereas χ^2/d.f. < 3, CFI > 0.95, NFI > 0.90, SRMR < 0.10, and RMSEA < 0.08 indicate acceptable fit (Shermelleh-Engel *et al*., 2003).

Finally, as recommended by Fayers and Machin (2007), the pattern of cross-scale correlations was examined to further test the structure of the CSES. A significant positive correlation was expected to emerge.

Convergent and divergent validity

We investigated convergent validity by comparing the CSES scores and Broome PMSES scores. It was hypothesized that

there would be positive correlations between the CSES and Broome PMSES scores because they measure similar constructs (Kim & Kanagawa, 1998; Broome, 1999; 2001). We also hypothesized that the CSES scores would change according to the Broome PMSES categories, which indicate low, moderate, and high efficacy.

The CSES and BDI scores were compared to test divergent validity. In accordance with the related literature, we hypothesized that there would be a negative correlation between the CSES and BDI. In addition, it was hypothesized that the CSES scores would be lower in people with a depressed mood compared to those without a depressed mood (Bandura, 1997; Broome, 1999; 2001; Tsay & Chao, 2002; Mustafa *et al*., 2010).

Reliability

The reliability of the CSES was tested with internal consistency and test–retest stability. Cronbach's alpha coefficients and corrected item–factor correlations were calculated to investigate internal consistency. A reliability coefficient of at least 0.90 is often recommended if measurements are to be used for evaluating individual patients (Nunnally & Bernstein, 1994). We considered a Cronbach's alpha value of 0.90 as perfect, because the CSES is a tool to evaluate patients with UI on an individual basis. We used Pearson correlation coefficients to calculate item–factor consistency. Acceptable corrected item–factor correlations were > 0.40 (Nunnally & Bernstein, 1994).

Test–retest stability was assessed by calculating intraclass correlation (ICC) coefficients. The second CSES administration was performed 2 weeks after the initial measurement. There is no consensus regarding the appropriate standards for the value of the related coefficients. Nevertheless, a value of 0.50 is considered satisfactory in practice (Streiner & Norman, 2003). All statistical analyses were conducted using SPSS version 15.0 for Windows (SPSS, Chicago, IL, USA) and LISREL version 8 (Jöreskog & Sörbom, 2004).

Ethical considerations

Consent was obtained from the first author of the CSES to conduct psychometical testing in Turkey (Kim & Kanagawa, 1998). Afterwards, the study was approved by the Ethical Board of Bakırköy Gynaecology and Pediatrics Training and Research Hospital in Istanbul. The participants were informed about the purpose of the study and asked for their consent to participate.

RESULTS

Descriptive statistics of the participants are presented in Table 1. The mean age of the women was 46. The majority of participants were primary school graduates (63.3%) and housewives (76.5%). The mean duration of UI was 5.7 years; 46.1% of women had mixed-type UI, 45.3% of

Table 1. Characteristics of the participants ($n = 128$)

	N	%	Range (years)	Mean	Standard deviation
Age			30–59	46.0	8.01
Educational level					
Literate	25	19.5			
Primary school (5 years' education)	81	63.3			
High school (11–12 years' education)	22	17.2			
Occupation					
Housewife	98	76.5			
Working	13	10.2			
Retired	17	13.3			
Duration of UI			1–25	5.7	3.5
Type of UI†					
Stress	50	39.1			
Urge	19	14.8			
Mixed	59	46.1			
Frequency of UI‡					
Approximately once a week or less	10	7.8			
Twice or three times a week	12	9.4			
Approximately once a day	15	11.7			
A few times a day	58	45.3			
Always	33	25.8			
Amount of UI§					
Small	54	42.2			
Moderate	45	35.2			
Large	29	22.7			

†International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF), 4th item, ‡ICIQ-SF, 1st item, §ICIQ-SF, 2nd item. UI, urinary incontinence.

those experienced urinary leakage at least a few times a day, and 57.9% of women had UI of moderate or large amounts (Table 1).

Validity

Construct validity

The single-factor model was initially used. However, it fitted the data poorly, as shown by the fit indices (Table 2). As seen in Table 2, the three-factor model was superior to the single-factor model. The three-factor model met all fit criteria. In this model, χ^2/d.f. and SRMR had perfect fit values, while CFI, NFI, and RMSEA showed acceptable fit values.

Within this CFA model, all items relating to a particular scale were gathered together within a single factor. The loadings for the six items on EE ranged from 0.72 to 0.93. The loadings for the three items on EEF ranged from 0.84 to 0.97, and loadings for the eight items on OE ranged from 0.60 to 0.86. All loadings were positive, and all were above 0.47 (Fig. 1).

All factors in the CSES correlated with each other in a positive direction. All correlations were significant and varied from 0.50 to 0.72. The most powerful correlation was between EE and EEF (r = 0.72), and between EE and OE (r = 0.70), which is relatively lower, but acceptable moderate correlations were found between EEF and OE (r = 0.50) (Fig. 1).

Convergent and divergent validity

The comparisons yielded significant results regarding convergent and divergent validity (Tables 3,4).

In our sample, the CSES total and the subdimension scores were positively correlated with the PMSES total and its subdimension scores at moderate to strong levels. Post-hoc comparisons revealed that the participants with low Broome PMSES scores had the lowest CSES mean score, whereas participants with high Broome PMSES scores had the highest CSES mean score.

There was a negative correlation between the CSES and BDI mean scores. In addition, participants with a depressed mood, as measured by the BDI, perceived lower self-efficacy compared to participants without a depressed mood, as we had expected.

Reliability

The results of the reliability analyses are provided in Table 5. Cronbach's alpha coefficients were calculated for each subdimension score and the total score of the CSES. The CSES was found to have an overall alpha coefficient of 0.94. The Cronbach's alpha coefficients for the subdimensions were all satisfactory. The corrected correlations between each item and its subdimension ranged from 0.84 to 0.93. To evaluate stability, CSES was administered twice to 45 people at an interval of 2 weeks. The ICC for each subdimension and the total CSES was acceptable (0.68, 0.52, 0.74, and 0.75 for the EE, EEF, OE, and total CSES, respectively). The ICC was above 0.50 for the total scale and for the subdimensions.

DISCUSSION

Construct validity

We demonstrated that the three-factor model, which represents EE, EEF, and OE, was superior to the single-factor model. The CFA supported the fit of the three-factor model to our data. Our results demonstrated that the Turkish version of the CSES has a similar factor structure to the original version. All items in the CSES contributed to only one factor, as originally defined by Kim and Kanagawa (1998). The factor loadings were all positive and excellent, except for one item, which had a very good level of loading over 0.60 (Tabachnick & Fidell, 2007). In addition, the moderate to high correlations among the factors suggested that discriminate validity between the constructs exists. Overall, satisfactory factor loadings within the respective factors suggested reasonably good convergent validity.

Convergent and divergent validity

The CSES and Broome PMSES are two instruments that seem to measure many of the same aspects of self-efficacy. In the present study, convergent validity of the CSES was supported by a positive correlation between the CSES and Broome PMSES, suggesting that they measure similar constructs. This interpretation was further supported by the variation in the CSES mean scores according to different efficacy categories measured by the Broome PMSES.

Divergent validity was supported by the negative correlations between the CSES and BDI. The results also proved our hypotheses that, in general, people with a depressed mood would perceive lower self-efficacy (Bandura, 1997; Broome, 1999; 2001; Zengin, 2008).

Table 2. Results of the confirmatory factor analysis

	χ^2/d.f.	CFI	NFI	SRMR	RMSEA
Model 1 (one-factor model)	879.98/104 (8,46)	0.66	0.62	0.11	0.24
Model 3 (three-factor model)	169.85/93 (1.82)	0.96	0.91	0.048	0.079

CFI, comparative fit index; NFI, normed fit index; RMSEA, root mean square error of approximation residual SRMR, standardized root mean square residual; χ^2/d.f., χ^2 value to the degrees of freedom (χ^2/d.f.).

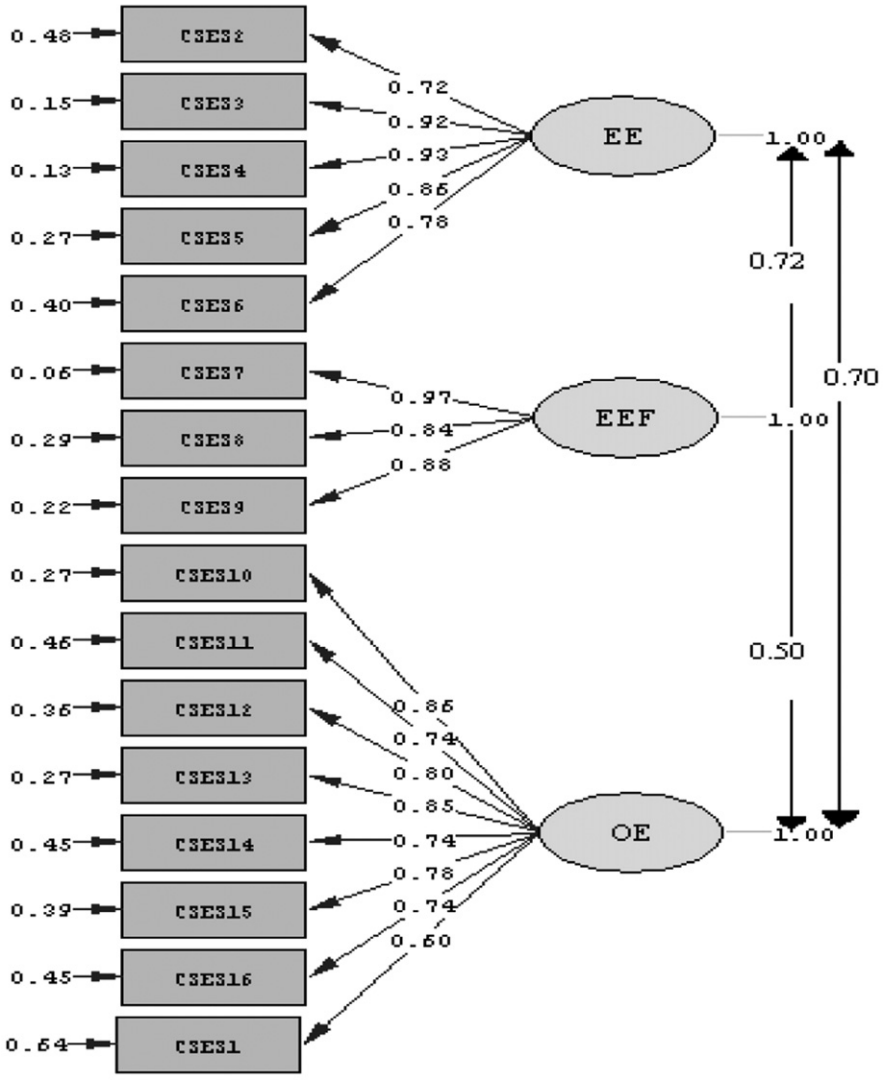

Figure 1. Results of the confirmatory factor analysis of the five-factor model. CSES, Continence Self-Efficiency Scale; EE, efficacy expectation; EEF, efficacy expectation frequency; OE, outcome expectation.

Table 3. Results of convergent and divergent validity

	CSES			
Broome PMSES	Efficacy expectation	Efficacy expectation frequency	Outcome expectation	CSES total
Efficacy expectation	0.69*	0.62*	0.55*	0.70*
Outcome expectation	0.46*	0.41*	0.58*	0.58*
Broome PMSES total	0.67*	0.59*	0.64*	0.73*
BDI	–0.15	–0.25	–0.22	–0.24

*$P < 0.01$. BDI, Beck Depression Inventory; Broome PMSES, Broome Pelvic Muscle Exercise Self-Efficacy Scale; CSES, Continence Self-Efficiency Scale.

Reliability

The results of this study proved the reliability of the Turkish version of the CSES. First, the CSES total score and all three subdimension scores exhibited excellent internal consistency. Cronbach's alpha coefficients for the total CSES and three dimensions in the CSES were at an ideal level (Nunnally & Bernstein, 1994). The item–factor correlations for the subdimensions of the CSES exceeded the accepted standards, which suggested that the items

Table 4. Results of convergent and divergent validity among divided groups

	N	Continence Self-Efficiency Scale Mean ± standard deviation*	Statistical test	Significance
Broome Pelvic Muscle Exercise Self-Efficacy Scale			F = 49.9	$P = 0.000$*
Low efficacy (0–32)	47	56.4 ± 26.0		
Moderate efficacy (33–66)	64	90.0 ± 29.4		
High efficacy (> 66)	17	129.7 ± 20.1		
Beck Depression Inventory			t = 2.76	$P = 0.007$**
< 17 (Non-depressive mood)	63	91.7 ± 35.0		
≥ 17 (Depressive mood)	65	74.5 ± 35.3		

*$P < 0.01$ **$P < 0.05$.

Table 5. Reliability results of the Continence Self-Efficiency Scale (CSES)

Item numbers	Corrected item (total correlation)	Cronbach's α	Test–retest correlation (ICC)
Efficacy expectation			
CSES2	0.93	0.92	0.68
CSES3	0.91		
CSES4	0.89		
CSES5	0.90		
CSES6	0.92		
Efficacy expectation frequency			
CSES7	0.81	0.93	0.52
CSES8	0.91		
CSES9	0.84		
Outcome expectation			
CSES1	0.92	0.93	0.74
CSES10	0.90		
CSES11	0.91		
CSES12	0.90		
CSES13	0.90		
CSES14	0.91		
CSES15	0.90		
CSES16	0.91		
CSES total		0.94	0.75

ICC, intraclass correlation.

measured phenomena pertinent to the construct, and they were still not redundant (Nunnally & Bernstein, 1994). The Cronbach's alpha coefficients, which were above 0.90 for the overall scale, and item total correlations, which were above 0.40 for all subdimensions, indicated the structural reliability of each subdimension of the Turkish version of the scale. Second, a test–retest coefficient magnitude of 0.50 is generally considered satisfactory (Streiner & Norman, 2003). The CSES total score and three subscales scores exceeded this standard. These results demonstrated the test–retest reliability of the CSES in a Turkish sample with UI. Third, the reliability results of the Turkish version of the CSES were comparable to those of the original CSES. Kim *et al*., who developed the original CSES, found that the Cronbach's alpha coefficient for the overall scale was 0.89, which is slightly lower than the coefficient found in this study, and the test–retest correlation coefficient of the original scale was 0.76, which is similar to our findings.

Based on the validity and reliability analyses, it can be concluded that the CSES is a valid and reliable measurement for use in the Turkish population.

Clinical evaluation of the Turkish CSES helps determine and screen women who have low expectations regarding the efficacy and results of PFM exercises. This evaluation would also facilitate supporting women in this context. As a result, accordance to the PFM exercises among women with UI would increase. As a result, it is assumed that PFM exercises among women with UI would increase.

Limitations of the study

We are fully aware of the limitations of our study. First, the sample used is not representative of the general population of Turkish women with urinary incontinence. Second, a limitation of the study is the use of a convenience sample.

CONTRIBUTIONS

Study Design: NZ, RP.
Data Collection and Analysis: NZ, RP.
Manuscript Writing: NZ, RP.

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