

The Validity and Reliability of the General Self-Efficacy Scale-Turkish Form

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Abstract

Objective: Self-efficacy, which is a basic construct in social cognitive theory, has been defined as one's belief in his/her ability to start, continue, and complete an action in a manner that has an impact on his/her environment. This study aimed to investigate the psychometric properties of the General Self-Efficacy Scale-Turkish Form.

Method: The General Self-Efficacy Scale-Turkish Form was administered to 895 individuals ≥ 18 years of age that had at least 5 years of education. Exploratory factor analysis, criterion validity testing (using the Beck Depression Scale, Spielberger Trait Anxiety Inventory, Locus of Control Scale, Learned Resourcefulness Scale, and Coopersmith Self Esteem Inventory), internal consistency analysis, and test-retest reliability analysis were performed.

Results: The 3-factor structure of the scale explained 41.5% of the observed variance. Correlations between the General Self-Efficacy Scale-Turkish Form and the other measures were statistically significant. The Cronbach's alpha coefficient for the entire scale was 0.80 and the test-retest reliability coefficient estimated from data for 236 individuals that were contacted for follow-up was 0.69.

Conclusion: The General Self-Efficacy Scale-Turkish Form is a valid and reliable instrument for the assessment of general self-efficacy in individuals ≥ 18 years of age with at least 5 years of education.

Keywords: Self-efficacy, General Self-Efficacy Scale, validity, reliability

INTRODUCTION

Bandura (1997,1989,1994) (Bandura and Adams 1977) defined the self-efficacy construct as a significant predictor of human behavior in the context of social cognitive theory, and many theoretical and experimental studies have been subsequently performed. Self-efficacy is defined as one's belief in his/her ability to start, continue, and complete an action in a manner that has an impact on his/her environment (Bandura 1994). Self-efficacy does not correspond to the level of skill, but depends on an individual's resources. A person with sufficient skills for coping with a situation and a low level of self-efficacy would not activate his/her relevant skills.

The concept of self-efficacy includes such elements as planning an action, awareness and organization of the re-

quired skills, and the level of motivation after reviewing the potential gains and difficulties of a given situation. A high level of self-efficacy facilitates the experience of success and well-being, and in particular, personal development and further development of one's skills. Previous successful experiences, examples of the achievements of other people with similar personal characteristics, positive feedback from one's environment, and a positive mood support one's belief in their self-efficacy. When an action results in failure, people with a high level of belief in their self-efficacy do not relate the failure to their own deficiency, but to the methods and strategies they used. According to Bandura (1997), the most significant characteristic that distinguishes individuals with a low level of self-efficacy from those with a high level is that the latter recover faster following a failure, insist on their action, and do not give up.

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When faced with the self-efficacy concept, one of the first questions that come to mind is whether it is different from self-esteem. Bandura (1997) suggested that apart from self-efficacy, self-esteem is not related to the process of action in reaching a targeted goal; as such, self-esteem is not related to the result. A person that determines that his/her skills concerning a specific action are deficient does not necessarily have low self-esteem. Moreover, though there is a relationship between self-efficacy and self-esteem, while self-efficacy is related to the motivational aspect of behavior, self-esteem is related to the degree to which a person likes or dislikes him/herself (Chen et al. 2001, 2004).

There is no consensus about whether or not self-efficacy is a state or a trait construct. As such, belief in self-efficacy has been examined as either task-specific or general self-efficacy. In terms of task-specific self-efficacy, that is self-efficacy concerning a targeted behavior specific to a particular situation, for instance academic self-efficacy, interpersonal self-efficacy, and diabetes-specific self-efficacy has been studied. Although Bandura (1997) originally suggested that task-specific self-efficacy had more predictive value than general self-efficacy, the general self-efficacy construct has been supported by various studies (Eden and Kinnar 1991, Harrison et al. 1996, Chen et al. 2000, Scherbaum et al. 2006).

There are a vast number of studies on patient behavior related to self-efficacy in the health domain. It may be useful to consider the self-efficacy concept in structuring and changing patient health-related behavior (Vallis and Bucher 1986, Jeng and Braun 1994, Schwarzer and Fuchs 1995, Marlowe 1998, Rapley and Fruin 1999, French et al. 2000, Mancuso et al. 2001, Lau-Walker 2004, Bandura 2005). Self-efficacy was reported to be related to depression (Hermann and Betz 2004, Pössel et al. 2005), generalized anxiety (Stanley et al. 2002), and reactions to trauma or psychosocial stressors (Mikkelsen and Einarsen 2002, Benight and Bandura 2004). Moreover, it was reported that a high level of self-efficacy predicted mental well-being (Magaletta and Oliver 1999) and a heightened level of psychosocial adaptation in patients with a mood disorder (Cutler 2005). It was also shown that a high level of self-efficacy was a positive prognostic factor in alcohol dependent patients (Miller et al. 1994, Noone et al. 1999, Allsop et al. 2000, Hasking and Oei 2007) and cannabis use (Lozano et al. 2006). Task-specific self-efficacy was investigated in some of the above-mentioned studies, while general self-efficacy was evaluated in others.

Self-efficacy is a concept that has become very important in many fields. Instead of studying task-specific self-efficacy using specific scales, the General Self-Efficacy Scale, developed by Sherer et al. (1982), is a tool that can be used for assessment in many areas. Self-efficacy is a key concept, particularly in the mental health domains. In this context the present study aimed to adapt the General Self-Efficacy Scale for use in Turkey.

MATERIALS AND METHODS

Participants

The study sample was formed by combining the samples from 3 different field studies performed using the General Self-Efficacy Scale. The entire study sample is from out of the clinic. So it was possible to reach individuals with various characteristics. The psychological scales used in the study were administered to 895 volunteers (498 females and 407 males) aged ≥ 18 years (mean age: 35.1 ± 9.5 years; range: 18-70 years) with at least 5 years of education. In all, 28.6% ($n = 258$) of the study population had only a primary school education, whereas 23.5% ($n = 213$) completed high school, and 40.8% ($n = 369$) and 7.1% ($n = 65$) had a university and postgraduate level education, respectively. In total, 35.1% ($n = 318$) were unemployed, 60.2% ($n = 545$) were employed, and 4.7% ($n = 42$) were retired. Among the participants, 300, (33.1%) were single, whereas 64.6% ($n = 584$) were married and 2.3% ($n = 21$) were divorced or widowed. Regarding income, 16.7% ($n = 151$) reported that their situation was difficult, 64.7% ($n = 586$) reported that their situation was not bad, and 18.6% ($n = 168$) reported that they were living well. Data for 10 participants that did not fully complete the questionnaire form were not used for statistical analysis.

Instruments

The General Self-Efficacy Scale

The original 23-item scale was developed by Sherer et al. (1982). The original scale has a construct of 2 factors: general self-efficacy (explaining 26.5% of variance with a Cronbach's alpha value of 0.86) and social-self efficacy (explaining 8.5% of variance with a Cronbach's alpha value of 0.71). As the items that loaded on the first factor did not indicate a specific behavioral domain, the term general self-efficacy was considered inappropriate. The social self-efficacy factor reflected efficacy expectations in various social situations. The original scale, which was rated on 14 degrees, was converted to a 5-point Likert-

type scale (Sherer and Adams 1983). In the present study the 5-point Likert form was used, in which answers to questions such as, “how well does it define you?”, range from not at all to very well. The score for each question ranges from 1 to 5. The total scale score ranges from 17 to 85 and higher scores indicate a higher level of belief in one’s self-efficacy.

For assessing the psychotherapeutic process and behavioral change, the authors recommend use of the General Efficacy Scale alone (Sherer et al. 1982, Sherer and Adams 1983), in consideration of the scale’s psychometric properties. In a study performed with the Spanish version of the scale the psychometric properties of the General Self-Efficacy Scale were observed to be superior to those of the Social Self-Efficacy Scale (Lopez-Torrecillas et al. 2006).

Gözüm and Aksayan (1999) devised a 23-item Turkish form, including both the general and the social self-efficacy items, and then the scale was reviewed and the number of items was decreased to 19 (Özalp-Türetgen 2005). The factor structure of the scale was not observed to be similar to that of the original and the authors (Özalp-Türetgen 2005) suggested that scale should be assessed as a whole rather than assessing the subscales separately (the general and the social self-efficacy dimensions), as some of the items did not fit their related factor. On the other hand, the social and general self-efficacy dimensions have been used separately according to the literature (Sherer and Adams 1982, Sherer et al. 1983, Cutler 2005). Moreover, factor analyses were carried out using the 2 subscales separately. In the present study the 17-item General Self-Efficacy Scale (Magaletta and Oliver 1999) was used. Furthermore, it was deemed appropriate to begin the study with the translation phase because of problems in previous adaptation to the Turkish language.

Prior to adaptation of the scale to Turkish, permission was received from the authors of the original version. The first step was translation of the scale to Turkish by academicians from various fields (psychology, psychiatry, sociology, linguistics). Back translation was performed by a different group that included 5 psychiatry, psychology, sociology, and linguistics professionals. Items for which a consensus was reached were used directly, and items for which a consensus could not be reached were used in the form for which at least 3 of the back-translators agreed. Moreover, the final form of the scale was created according to the evaluation of 5 academicians not in the translation group, with respect to cultural appropriateness, comprehensibility, and goal-directedness.

Based on previous validity studies of the scale, the Beck Depression Scale and Spielberger Trait Anxiety Scale were used, and for the assessment of the variables that were previously found to be conceptually related to belief in self-efficacy, the Locus of Control Scale, Learned Resourcefulness Scale, and Coopersmith Self-Esteem Inventory were used for criterion validity testing.

The Beck Depression Scale (BDI)

Hisli (1988) performed the Turkish adaptation of this self-rating 20-item scale, which was developed by Beck et al. (1961) for the assessment of somatic, emotional, cognitive, and motivational symptoms of depression. The score for each item ranges from 0 to 4, and total score ranges from 0 to 63. Scores ≥ 21 indicate moderate to severe depression (Hisli 1989).

The Spielberger Trait Anxiety Inventory (STAI)

The Trait Anxiety Scale, which includes items concerning how an individual feels in general, was developed by Spielberger et al. (1970) and was adapted to Turkish by Öner and Le Compte (1985). It is a self-rating 20-item scale that provides an idea about the level of general anxiety.

The Locus of Control Scale

This scale assesses one’s belief that the consequences of his/her behavior are controlled by external forces (for example, chance or fate). It is a 47-item 5-point Likert-type self-rating scale developed by Dağ (2002) based on various other locus-of-control scales. High scores indicate a high level of belief in an external locus-of-control. Internal consistency (Cronbach’s $\alpha = 0.92$) and test-retest reliability (Pearson’s $r = 0.88$) are reported to be high.

The Learned Resourcefulness Scale

This scale was developed by Rosenbaum (1980) to be used for assessing how effectively one can cope with negative life events. It is a 36-item 5-point Likert-type self-rating scale, which was adapted to Turkish by Dağ (1991). A high score indicates a high level of self-control and coping skills. Its internal consistency (Cronbach’s $\alpha = 0.78$) and test-retest reliability (Pearson’s $r = 0.88$) are high.

The Coopersmith Self-Esteem Inventory

The Coopersmith Self-Esteem Inventory is a 25-item self-rating instrument with a 2-point rating scale (Coop-

TABLE 1. General Self-Efficacy Scale principal component analysis.

	1st factor loading	2nd factor loading	3rd factor loading
Factor 1. Initiative			
7. If something looks too complicated I will not even bother to try it.	.662		
6. I avoid facing difficulties.	.660		
17. I do not seem capable of dealing with most problems that come up in life.	.620		
12. I avoid trying to learn new things when they look too difficult for me.	.586		
4. When I set important goals for myself I rarely achieve them.	.582		
10. When trying to learn something new I soon give up if I am not initially successful.	.573		
11. When unexpected problems occur I don't handle them well.	.564		
5. I give up on things before completing them.	.480		
2. One of my problems is that I cannot get down to work when I should.	.465		
Factor 2. Persistence			
15. I am a self-reliant person.		.701	
13. Failure just makes me try harder.		.604	
16. I give up easily.		.577	
3. If I can't do a job the first time I keep trying until I can.		.497	
14. I feel insecure about my ability to do things.		.434	
Factor 3. Effort			
8. When I have something unpleasant to do I stick to it until I finish it.			.641
9. When I decide to do something, I go right to work on it.			.620
1. When I make plans, I am certain I can make them work.			.489
Variance explained	20.155	11.862	9.449
Total variance explained		41.466	

ersmith 1986). Total score ranges from 0 to 100; higher scores indicate higher levels of self-esteem. The Turkish version was reported to be valid and reliable by Turan and Tufan (1987).

Procedure

A sociodemographic information form and the aforementioned scales were delivered to the participants in an envelope and the participants were instructed to write a nickname, not their real name on the forms, for the retest-reliability study, to ensure anonymity. The information form was given first and the order of the scales was changed each time. It took approximately 25 minutes to complete the scales and information form.

The General Self-Efficacy Scale was completed by 236 of the participants that were contacted a second time after a mean interval of 3 weeks (range: 2-4 weeks).

Statistical analysis

The factor structure of the scale was investigated using exploratory factor analysis and varimax rotation. Pearson's correlation analysis was performed for criterion validity and test-retest reliability analysis. Cronbach's alpha coefficient estimation and split-half analysis were

employed to test the scale's reliability. In order to test the effect of gender, age, and level of education on the General Self-Efficacy score 2 (gender) ' 2 (participants aged <35 years and those aged ≥35 years, 35 being the mean age of the study sample) ' 3 (primary school, high school, and university graduates) ANOVA and post-hoc Tukey's tests were used. Moreover, the General Self-Efficacy score in the participants with clinically significant depression and those without a significant level of depression, and those with high-end low levels of anxiety were compared using the t test. SPSS 13.0 was used to perform the analyses.

RESULTS

Validity study

Exploratory factor and principal component analysis showed that there were 3 factors with an Eigen value >1. The Eigen value of the first factor was 4.150 and it explained 20.2% of the variance, and the Eigen values and the percentages of variance explained by the second and the third factors were 1.786 and 11.9%, and 1.114 and 9.5%, respectively. These factors were referred to as initiative, persistence, and effort, respectively. As such, the total variance explained by the 3-factor structure of the

TABLE 2. Correlation coefficients between the General Self-Efficacy Scale, and the Coopersmith Self-Esteem Inventory, Learned Resourcefulness Scale, Beck Depression Inventory, and Spielberger Trait Anxiety Scale

	Pearson's r
Self-Esteem Inventory	.487**
Learned Resourcefulness Scale	.575**
Locus of Control Scale	-.302**
Beck Depression Inventory	-.492**
Trait Anxiety Scale	-.342**

**p< 0.01, *p< 0.05

scale was 41.47%. The Eigen values and loadings of the items are shown in the Table 1; loadings ranged between 0.43 and 0.70.

Correlation coefficients between the General Self-Efficacy Scale and the Locus of Control Scale, Learned Resourcefulness Scale, Beck Depression Scale, and Trait Anxiety Scale are given in the Table 2. Correlations between the General Self-Efficacy Scale and the other scales were statistically significant.

Self-efficacy scores of the depressed and the non-depressed participants were 55.7 ± 10.1 and 61.8 ± 9.0 , respectively, and the difference between them was statistically significant ($t = 5.846$, $p < 0.0001$). The self-efficacy score of the participants with a high level of anxiety (54.4 ± 9.7) was significantly lower than that of those without a high level of anxiety (62.6 ± 8.6) ($t = 8.355$, $p < 0.0001$).

Reliability

The internal consistency coefficient (Cronbach's alpha) of the entire scale was 0.80. According to split-half reliability analysis, the Guttman split-half coefficient was 0.77. Additionally, item-total and Cronbach's alpha coefficients for each item were estimated using the item deletion technique, and Cronbach's alpha coefficients ranged between 0.78 and 0.81, as shown in the Table 3.

Data for the 236 participants that were contacted a second time were analyzed to determine the test-retest reliability of the scale. The test-retest reliability coefficient (Pearson's r) estimated with a 3-week interval (range: 2-4 weeks) was 0.69 ($p < 0.0001$).

ANOVA carried out to investigate the basic effects of gender, age, and level of educational on the General Self-Efficacy scores showed that gender ($F = 0.953$, $p = 0.329$) and age ($F = 3.691$, $p = 0.055$) effects were not significant; however, the self-efficacy score of the participants with a university education (64.9 ± 10.0) was significantly higher than that of those with a primary school (61.0 ± 9.6) or high school (61.0 ± 9.9) education ($F = 12.502$, $p < 0.001$).

DISCUSSION

In the present study Turkish adaptation, and validity and reliability analyses of the General Self-Efficacy Scale (Sherer et al. 1982) were performed. The reliability (Cronbach's alpha) coefficient of the original scale was reported

TABLE 3. Results of item and reliability analysis of the General Self-Efficacy Scale.

Item	Mean	SD	Scale mean when item deleted	Total scale variance when item deleted	Item-total correlation	Cronbach's alpha coefficient when item deleted
1	3.59	1.04	59.73	88.51	.33	.79
2	3.41	1.34	59.91	86.06	.33	.79
3	4.02	1.05	59.30	86.32	.44	.79
4	3.55	1.16	59.77	85.40	.43	.79
5	4.17	1.11	59.15	85.16	.47	.78
6	3.81	1.26	59.51	82.22	.53	.78
7	3.56	1.34	59.76	82.94	.46	.78
8	3.49	1.27	59.82	90.60	.16	.81
9	4.01	1.06	59.30	89.41	.27	.80
10	3.71	1.24	59.61	83.21	.50	.78
11	3.44	1.16	59.88	85.65	.42	.79
12	3.91	1.22	59.40	84.13	.46	.78
13	3.33	1.29	59.98	88.77	.23	.80
14	3.38	1.23	59.94	87.31	.31	.80
15	4.17	.94	59.14	88.04	.40	.79
16	4.18	1.07	59.13	84.60	.52	.78
17	3.59	1.24	59.72	85.30	.40	.79

as 0.86, and other studies reported Cronbach's alpha coefficients ranging from 0.68 to 0.91 (Sherer et al. 1982, Eden and Kinnar 1991, Woodruff and Cashman 1993, Bosscher and Smit 1998, Chen et al. 2001, DeWitz and Walsh 2002, Sohng et al. 2002, Lau-Walker 2004, Kim and Omizo 2005). The test-retest reliability coefficient was reported to be 0.74 by Chen et al. (2001). In the present study the reliability of the Turkish form of the scale (Cronbach's alpha = 0.80), split-half reliability (0.77), and test-retest reliability (Pearson's $r = 0.69$) were similar.

Three factors were identified with an Eigen value <1 based on exploratory factor and principal component analysis, and this structure explained 41.5% of the total variance. This is much higher than the percentage of variance explained (26.5%) by the original form of the scale. Sherer et al. (1982) suggested that a 2-factor structure was possible^{3/4} initiation/persistence and efficacy in the face of adversity^{3/4}although their factor analysis revealed a 1-factor structure for the original scale. Other studies reported a 3-factor structure for the scale. Chen et al. (2001) determined there was a 3-factor structure that explained 45%-58% of the variance in their test-retest study conducted with university students and directors in Israel. Again, Woodruff and Cashman (1993) suggested a 3-factor structure in their study conducted with students. Thus, the results of the present study are consistent with those of other studies that reported a 3-factor structure for the scale. The first factor can be

considered initiative, the second persistence, and the third effort; however, it has been concluded that it is more appropriate to consider the 17 items together and to estimate a total score from the entire scale, instead of considering each factor as a subscale.

Although item-total correlation and internal consistency analysis showed that the performance of the eighth item was not satisfactory, it was not excluded from the scale, as its Eigen value was high (0.641) and because it contributed to the whole construct theoretically.

Criterion validity analysis showed that the scale could discriminate depressed participants from those that are not, and anxious participants from those without a significant level of anxiety. Similarly, its correlation with both the Beck Depression Scale and Trait Anxiety Scale ($r = 0.52$ and $r = 0.48$, respectively) was reported to be significant in another study (Bourland et al. 2000).

A major strength of the present study is its inclusion of a wide spectrum of participants, in terms of socio-demographic characteristics. Additionally, it is thought that its application and evaluation will be easy, because it consists of short and simple phrases. This scale, which facilitates the assessment of belief in self-efficacy as one of the basic concepts of social cognitive theory, can be used in many domains related to human behavior, such as education, healthcare, social life, and in particular, psychiatry and psychology.

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