

**Research Article**

# Psychometric properties of the Turkish version of the Depression Coping Self-efficacy Scale

Esra Albal, msc,<sup>1</sup> Yasemin Kutlu, PhD<sup>2</sup> and Hulya Bilgin, PhD<sup>2</sup><sup>1</sup>Health Sciences Institute and <sup>2</sup>Department of Psychiatric Nursing, Florence Nightingale College of Nursing, Istanbul University, Istanbul, Turkey**Abstract**

Reliable and valid instruments are needed to assess and deal with the problems that are encountered by depressed patients in psychiatric nursing practice. The aim of this study was to assess the reliability and validity of the Turkish version of the Depression Coping Self-efficacy Scale. A descriptive and correlation design was used to determine the psychometric properties of the Scale. The study population was 105 depressed inpatients from acute psychiatry services. The study confirmed that the Scale is reliable and valid for assessing depression coping self-efficacy of depressed patients in acute psychiatric wards in Turkey.

**Key words**

coping, depression, psychiatric nursing, self-efficacy, Turkey.

**INTRODUCTION**

Depression, one of the most common mental disorders worldwide, is a significant health problem owing to its long-lasting nature and the adversity it presents during treatment or care. Thus, it is important to define depression and identify the risk factors that are involved.

In a World Health Organization-coordinated study that was conducted in 14 countries between 1989 and 1993, depression was diagnosed in 11.6% of the population in Turkey (Rezaki, 1995). According to a study that was conducted by the Turkish Health Ministry, the prevalence of depressive episodes was 4% among 7429 people in the general population (Erol *et al.*, 1998). Coping and self-efficacy are two significant factors that influence the treatment and course of depression (Perraud, 2000). Since the introduction of the concept of self-efficacy by Bandura (1977) and its use in later studies (Boyd, 2008; Richards & Digger, 2008), widespread evidence has suggested a negative correlation between self-efficacy and depression scores (Cutler, 2005; Fiori *et al.*, 2006; Maciejewski *et al.*, 2000; Tonge *et al.*, 2005). A strong belief in one's self-efficacy is associated with lower levels of depression, whereas a low sense of self-efficacy is associated with increased helplessness against depression (Hermann & Betz, 2006; Perraud *et al.*, 2006). A low sense of self-efficacy triggers negative feelings in coping with a situation, whereas a high sense of self-efficacy results

in an air of calm in a situation and a lack of negative feelings being triggered in coping situations (Zeiss *et al.*, 1999).

**Depression and self-efficacy**

It has been suggested that depressed individuals have low self-efficacy levels, owing to their negative mode of thinking (Perraud, 2000). A low sense of self-efficacy results in decreased motivation, poor task-focusing, decreased effort against difficulties, increased thoughts of self-insufficiency, and limits the ability of the individual to cope with depression and to manage treatment (Tucker *et al.*, 2002).

Psychiatric nurses play an important role in assessing and improving patients' ability to cope with depression. Improving patients' self-efficacy regarding their ability to cope with depression might lead to improvements in their depressive symptoms and overall functionality. Routine assessment of self-efficacy concerning the ability to cope with depression in inpatient programs also might assist in determining patients' readiness for discharge and in identifying those at risk of relapse. Although self-efficacy is an important construct to guide, and target nursing interventions, few nursing studies have examined self-efficacy as a focus for psychiatric nursing interventions in patients seeking treatment for depression.

The Depression Coping Self-efficacy Scale (DCSES) was developed by Perraud (2000) in the USA to determine the depression coping self-efficacy of depressed patients. The Scale measures self-efficacy beliefs in relation to the ability to carry out tasks specific to coping with the symptoms of depression. Originally, the DCSES was given to 150 depressed inpatients and 24 non-depressed community volunteers. Using a variety of procedures, the DCSES was shortened to 24 items and tested on a group of 51 participants

Correspondence address: Yasemin Kutlu, Istanbul University, Florence Nightingale College of Nursing, Psychiatric Nursing Department, Abide-i Hurriyet Cad. 34381, Istanbul, Turkey. Email: kutluy@istanbul.edu.tr  
Received 21 January 2010; accepted 26 July 2010.

from the same depressed population (Perraud, 2000). This author thus provided evidence demonstrating the reliability and validity of the DCSES and supported the use of the Scale to measure coping self-efficacy in depressed patients. However, Perraud (2000) also recommended further testing of the DCSES.

Tucker *et al.* (2002) conducted a USA study that highlighted the importance of self-efficacy in depression. The aim of their study was to examine the construct validity of DCSES in patients receiving inpatient treatment ( $n = 25$ ) or partial hospital treatment ( $n = 25$ ) for a depressive disorder. Although the sample was small ( $n = 50$ ), the findings indicated that the depression coping self-efficacy levels were related to the levels of depressive symptoms and global functioning, particularly during and following treatment, and that the DCSES held promise for measuring and targeting nursing interventions (Tucker *et al.*, 2002).

There have been different scales in the literature that have only determined self-efficacy (Luszczynska *et al.*, 2005; Tonge *et al.*, 2005; Chesney *et al.*, 2006). Although there is an existing scale that determines general self-efficacy for Turkish patients (Gözüm & Aksayan, 1999; Yildirim & Ilhan, 2010), there is a gap in assessing self-efficacy in depression and the coping abilities of psychiatric patients. The DCSES would have several advantages, including serving as a self-efficacy guide for patients and nurses. In addition, it could be used to measure the outcomes of patient care in treatment settings that have been designed to provide skills and motivation to depressed individuals. Such a scale might be used to predict relapse in depressed patients by providing evidence of an inability to follow treatment recommendations (Perraud, 2000). The DCSES has been validated in a Western population (Tucker *et al.*, 2002; Perraud *et al.*, 2006), but the psychometric properties of the DCSES is unknown in Eastern populations and of course Turkish language and culture are different from those of Western populations. Hence, the validation of a Turkish version of the DCSES is indispensable in order to assess the depression coping self-efficacy of depressed patients in Turkey.

## AIM

The aim of this study was to assess the reliability and validity of the Turkish version of the DCSES. Moreover, the researchers hoped that the investigation of the psychometric properties of this instrument in a cultural setting that is different from where the DCSES was developed will provide additional evidence of its properties in a different culture. Currently, there is no published study of the psychometric properties of the DCSES in Turkey.

## METHOD

### Study design

A descriptive and correlational design was used to reveal the psychometric properties of the DCSES in this study.

## Translation and content validity of the Depression Coping Self-Efficacy Scale

All the members of the team were psychiatric nurses with research experience. In the first phase of our study, the DCSES was translated into Turkish. The standard forward-backward procedure was applied to translate the Scale from English into Turkish (Beaton *et al.*, 2000; Gjersing *et al.*, 2010). Three bilingual nursing professionals translated the DCSES into standard Turkish and back-translation was carried out independently by a bilingual language expert. The principal investigator (E.A.) then compared the translated Turkish questionnaire and the original DCSES and minor revisions were made with the help of the language expert. (The Turkish version of the DCSES is available on request from the authors).

In order to test item relevance and content validity, the translated version of the DCSES was submitted to a multidisciplinary panel comprising 20 specialists. The panel comprised 12 psychiatrists, one psychiatric nurse, one psychologist, and six nurse academics. They were asked to rate each scale item on a four-point Likert scale, ranging from 1 ("not relevant") to 4 ("very relevant"). These 20 experts analyzed the applicability of the content in the local culture and the clarity of the phrasing linguistically because the scale was translated into a different language (Erefe, 2002). The Content Validity Index (CVI) of the scale should be  $> 0.80$ . If the CVI is low, the researcher should evaluate the items that should be eliminated or revised in order to establish sufficient content validity (Grant & Davis, 1997; Polit & Beck, 2006). The CVI was low for item 1 (0.45), item 2 (0.60), item 10 (0.60), and item 14 (0.70), but was  $> 0.80$  for the remaining items in the current study. The four items were modified, based on the experts' opinions. The CVI for the full scale was 0.85, which indicates satisfactory agreement among the experts on the Turkish version of the DCSES. Later, a pilot study was carried out with 30 depressed people. The DCSES scores were correlated negatively with the BDI score in pilot study ( $r = -0.72$ ,  $P < 0.001$ ). The alpha coefficient for the Turkish version of the DCSES was 0.94 for the pilot study. After the pilot study, we did not make any changes to the Scale.

## Setting

The research setting was in Istanbul, the largest city in Turkey with a population of  $> 13$  million persons (Turkish Statistical Institute, 2009). The research was carried out in a hospital that is the largest training hospital caring for mentally ill patients in Turkey. It is affiliated with the Ministry of Health and there are  $\sim 1700$  beds. Ten of the hospital's acute wards were included in this study.

## Participants

The selection criteria for the participants were as follows:  $> 18$  years old; a diagnosis of a major depressive disorder or episode; dysthymic disorder; bipolar I or II depressive episode; adjustment disorder with depressive mood,

according to the DSM-IV diagnostic criteria (American Psychiatric Association, 2000); absence of psychotic and developmental disorders; able to understand the scales; willingness to participate in the interview; and hospitalization for a minimum of 48 h.

One-hundred-and-ninety-six patients who met the study criteria were interviewed. Of these, 46 were excluded from the sample because their primary diagnosis on admission was added to other psychotic diagnoses on discharge. Furthermore, 45 patients reported that they did not want to participate in the study. As a result, the sample consisted of 105 depressed inpatients.

### Data collection

A questionnaire was designed to obtain three sets of measures: demographic and medical data, depression self-efficacy, and symptoms of depression.

#### *Demographic and medical data*

The researchers developed a set of questions regarding the individual's background (age, sex, education, and marital status), and illness characteristics (history of mental illness in the family, diagnosis, length of illness, number of relapses, and length of hospitalization).

#### *Depression Coping Self-efficacy Scale*

The DCSSES measures self-efficacy beliefs about the ability to carry out tasks specific to coping with the symptoms of depression. As mentioned previously, the DCSSES was developed by Perraud (2000). The DCSSES is a self-assessment scale. It consists of 24 items set on a scale divided into 10 equal ranges between 0% and 100%, the starting point of which corresponds to "not sure", mid-point to "moderately sure", and the final point to "sure". The items tap coping self-efficacy that is related to the domains of negative cognitions (e.g. "I am XX percent confident that I will be able to recognize when I am blaming myself for my symptoms and try to stop"), behaviour (e.g. "I am XX percent confident that I will be able to engage in some sort of hobby or other activity, like writing, reading, drawing, playing music, or working on projects"), and somatic problems (e.g. "I am XX percent confident that I will be able to get up and do something relaxing if I cannot sleep"). The DCSSES score is calculated as a percentage by dividing the sum of the points that are given to the scale items by the number of items. The higher the percentage value that is calculated, the higher is the sense of self-efficacy. A score of < 50% represents a low sense of self-efficacy, scores between 50% and 75% represent moderate self-efficacy, and a score of > 75% represents a high sense of self-efficacy. Perraud (2000) tested the DCSSES on individuals who had been diagnosed with depression, as well as healthy individuals who had not been diagnosed with depression, and calculated Cronbach's alpha values of 0.93 and 0.84, respectively. There was a strong negative correlation between depression coping self-efficacy and depression ( $r = -0.73$ ; Perraud, 2000).

#### *Beck Depression Inventory*

The Beck Depression Inventory (BDI) was designed by Beck *et al.* (1961) and was chosen as a test of discriminant validity to the DCSSES. It was chosen for this study because it was designed to rate an already-depressed population on a severity scale. The BDI is a self-assessment scale that consists of 21 items that are further grouped into cognitive, somatic, and affective aspects of depressive symptoms and are rated on a four-point scale, ranging from 0 ("absence of symptoms") to 3 ("full manifestation of the symptom"). The possible scores range from 0 to 63, with a higher total score signifying more severe symptoms of depression. Beck *et al.* (1961) classified the BDI scores as follows: 0–9 points, normal; 10–15 points, mild depressive symptoms; 16–23 points, moderate depressive symptoms; and 24–63 points, severe depressive symptoms. The validity and reliability of the scale were assessed in Turkey by Hisli (1989), whose translation of the BDI was used in the current study. The Cronbach's alpha coefficient of the BDI was 0.80 in Hisli's (1989) study. The Cronbach's alpha coefficient of the BDI was 0.94 in the current study.

### Procedure and data collection

The study was conducted between June and December 2008. After completing the information in the demographic and medical data questionnaire, each patient was asked to complete the DCSSES and BDI. The patients were interviewed at the time of discharge. The time taken to complete the questionnaire ranged between 30 and 35 min. During this process, the principal investigator gave assistance as needed.

### Data analysis

#### *Descriptive statistics*

Frequency and percentages were used to describe the characteristics of the sample. The distribution of the scale scores were examined by the mean and range.

#### *Content and discriminant validity*

Content validity of the DCSSES was determined by the experts' opinions. Discriminant validity of the DCSSES was assessed using Pearson's correlation analysis to determine the correlation between the DCSSES and the BDI. It was expected that the measures would be correlated negatively, as established in the literature (Burns & Grove, 2009).

#### *Reliability*

Reliability of the DCSSES was measured by using internal consistency and test-retest reliability. Internal consistency was measured using Cronbach's alpha coefficient. Test-retest reliability was examined, using Pearson's correlation analysis, with a sample of 49 depressed patients who completed the DCSSES 2 or 4 weeks after admission. Patients

**Table 1.** Individual characteristics of the depressed patients ( $n = 105$ )

Characteristic	N	%	Mean $\pm$ SD	Range
Age	–	–	38 $\pm$ 11.71	18–66
Age group (years)				
18–27	22	21.0	–	–
28–37	32	30.4	–	–
38–47	25	23.8	–	–
48–67	26	24.8	–	–
Sex				
Female	58	55.2	–	–
Male	47	44.8	–	–
Education				
Primary school	48	45.8	–	–
Secondary school	16	15.2	–	–
High school	25	23.8	–	–
University	16	15.2	–	–
Marital status				
Married	68	64.8	–	–
Single	37	35.2	–	–

who were discharged before this time period, and those hospitalized for > 4 weeks, were not included in the test-retest analysis.

Data analysis was carried out using SPSS 11.5 pocket program (SPSS, Chicago, IL, USA).

### Ethical considerations

In order to test the validity and reliability of the DCSES (Perraud, 2000). in Turkey, consent was obtained from the designer of the scale in the USA, Dr Suzanne Perraud. The study was approved by Ethical Board of Istanbul University. Ethical approval was also granted by the research ethics committee of the psychiatric hospital involved in the study. The purpose and benefits of the research were explained to the participants before they decided to take part. Written and verbal consent was obtained from all participants and their anonymity was preserved.

## RESULTS

### Participants' demographic and medical details

The mean age of the participants was 38  $\pm$  11.71 years (range: 18–66 years), with 30.4% in the 28–37 year age group. Of the sample, 55.2% were women, 44.8% were men, 64.8% were married, and 45.8% were primary-school graduates (Table 1).

The illness characteristics of the depressed patients are shown in Table 2. Of the sample, 39% had a history of mental illness in a first-degree relative and 94.3% had a major depressive disorder. The length of the illness was  $\geq$  3 years in 60% of the patients, 54.3% had experienced four relapses,

**Table 2.** Illness characteristics of the depressed patients ( $n = 105$ )

Characteristic	N	%
History of mental illness in the family		
First-degree relative	41	39.0
Second-degree relative	9	8.6
Both first- and second-degree relatives	3	2.9
NA	52	49.5
Diagnosis		
Major depressive disorder	99	94.3
Bipolar disorder (depressive episode)	6	5.7
Length of the illness		
0–12 months	24	22.8
1–2 years	9	8.6
2–3 years	9	8.6
$\geq$ 3 years	63	60.0
Number of relapses		
1	17	16.2
2	20	19.0
3	11	10.5
$\geq$ 4	57	54.3
Length of hospitalization (weeks)		
< 1	17	16.2
1–2	29	27.6
2–3	33	31.4
$\geq$ 3	26	24.8

NA, not applicable.

**Table 3.** Distribution of the Beck Depression Inventory (BDI) scores ( $n = 105$ )

BDI	N	%	Mean $\pm$ SD	Range
BDI total score	–	–	29.68 $\pm$ 13.45	0–58
Normal (0–9 points)	8	7.7	5.87 $\pm$ 2.75	0–9
Mild depressive symptoms (10–15 points)	10	9.5	12.90 $\pm$ 1.97	10–15
Moderate depressive symptoms (16–23 points)	16	15.2	19.19 $\pm$ 2.59	16–23
Severe depressive symptoms (24–63 points)	71	67.6	37.10 $\pm$ 3.39	24–58

and the length of hospitalization in 31.4% of the patients was 2–3 weeks.

### Beck Depression Inventory scores

The mean BDI score of the depressed patients was 29.68  $\pm$  13.45 (range: 0–58). The distribution of the BDI scores is shown in Table 3. Of the participants, 67.6% had severe depressive symptoms.

### Depression Coping Self-Efficacy Scale scores

The mean DCSES score of the depressed patients was 48.10  $\pm$  21.35 (range: 10–97) and 58.1% had low self-efficacy (Table 4).

**Table 4.** Depression Coping Self-efficacy Scale (DCSES) levels of the depressed patients ( $n = 105$ )

DCSES level	N	%	Mean $\pm$ SD	Range
DCSES total scale	–	–	48.10 $\pm$ 21.35	9.58–96.67
Low self-efficacy (< 50%)	61	58.1	32.92 $\pm$ 6.17	9.58–50
Moderate self-efficacy (50% and 75%)	29	27.6	61.59 $\pm$ 6.80	50.83–73.75
High self-efficacy (> 75%)	15	14.3	83.70 $\pm$ 6.38	75.42–96.67

## Psychometric properties

### Discriminant validity

The DCSES scores were correlated negatively with the BDI score ( $r = -0.71$ ,  $P < 0.001$ ).

### Reliability

The alpha coefficient for the Turkish version of the DCSES was 0.94 for the pilot study and 0.94 for the main study, indicating a high degree of internal consistency.

The test-retest reliability of the DCSES was 0.73. The average inter-item correlation of the DCSES was between 0.15 and 0.79. Only one item (Item 3: “refuse requests of others when I do not wish to do something that someone else wants me to do, including authority figures and strangers”) ( $r = 0.15$ ) loaded under 0.30. When the item was excluded from the DCSES, there was no change in the Cronbach’s alpha coefficient. These results show that the DCSES has satisfactory reliability.

## DISCUSSION

We found that it is possible to produce a standardized Turkish translation of the original DCSES. The forward-backward translation was conducted successfully and the few conceptual differences were related primarily to differences between the health-care systems and cultures. The Turkish version of the DCSES indicates good content validity because the CVI was 0.85.

The current study’s findings are consistent with those of other studies of the DCSES. A strong negative correlation was found between the BDI and DCSES. Perraud (2000) found a similar result. Tucker *et al.* (2002) reported that there was a negative correlation among inpatients regarding the Center for Epidemiological Studies Depression (CES-D) Scale at the time of admission and at discharge. Among the partial hospitalization program participants, the DCSES scores were negatively correlated with the CES-D Scale scores at the time of discharge.

The internal consistency of the translated DCSES was as satisfactory as the original, meaning that the items in the Turkish version fitted very well.

The test-retest reliability of the DCSES was 0.73. Nunnally (1978) stated that the reliability coefficient should be 0.60 for pilot studies, 0.80 for basic research, and 0.90–0.95 for clinical studies. Thus, a Cronbach’s alpha value of  $> 0.80$  for

depressed patients indicates that the DCSES has a high level of reliability (Nunnally, 1978). Perraud’s (2000) reliability study was conducted solely on the basis of the hospitalization data of patients ( $n = 51$ ), with a Cronbach’s alpha value of 0.93. The findings of our study are in agreement with the findings of Perraud.

As the scale was applied in a different culture, it was considered that the adaptation of the DCSES for a Turkish setting would provide evidence of the reliability of the scale and relevant data to support its validity, as well as its benefit in practice. The study confirmed that the DCSES is valid and reliable for determining depression coping self-efficacy of depressed patients in a Turkish population.

Although the DCSES is useful as a self-report measure in depressed populations, there is a gap in the comparison of diverse cultures regarding the self-efficacy capabilities of depressed patients. In the current study, the sample consisted only of depressed Turkish patients. Self-efficacy in relation to depression coping is very important in order to determine the prognosis and efficiency of treatment during the course of the illness. Most of the patients had a low level of depression coping self-efficacy in this study. For clinicians, it is not possible to observe patients’ behavior in settings outside of the hospital. The number of relapses in depression is high and can lead to functional disability. Taking into consideration these outcomes, it is clear that the use of the DCSES will provide a guide to understand what is needed to enhance a patient’s condition and treatment regimes. In Turkey, pharmacological approaches are very common in the treatment of depressed persons. The DCSES will be able to show Turkish clinicians other ways to manage patients’ symptoms and difficulties.

The strengths of the DCSES include its ease of use and relevance to clinical practice and research. The DCSES can provide guidance to depressed individuals by helping them to question their own capability in managing their depressive symptoms and in providing the necessary care for themselves at home and helping them to realize their incomplete aspects. The DCSES also can provide guidance to health-care professionals about the assessment of patients’ needs and for planning treatment.

Additionally, the DCSES will provide guidance in using a more appropriate and clearer approach to selecting and defining patient initiatives, establishing targets, assessing the efficacy of the applied initiatives, and measuring and evaluating patient outcomes. However, having a low average on item 3 for inter-item correlation could be interpreted that the Scale was not fully appropriate for depressed people. However, excluding this item did not affect the reliability

level of the DCSES. Further studies are needed to evaluate this item's relevance.

There were also limitations to the study. Owing to the relatively small sample size, it is difficult to generalize the study's findings. Also, the findings of this study are the result of a preliminary investigation of the Turkish version of the DCSES in one hospital. Furthermore, findings of this current study do not relate to people with depression in the community.

## CONCLUSION

The present study showed that the Turkish version of the DCSES is a suitable instrument to measure the depression coping self-efficacy of depressed Turkish patients. The DCSES is appropriate to use in the treatment and care of depressed patients in Turkey. Thus, a strength of the DCSES is that it provides guidance for health-care staff during treatment and care. Also, the routine assessment of depression coping self-efficacy will assist in determining patients' readiness for discharge and in identifying patients at risk for relapse.

However in this study our sample size was small. The next step in future research should be to assess the validity of this version of the DCSES with a larger and more diverse group of people with depression in Turkey. The relationship of various variables among depressed populations also needs to be considered.

## ACKNOWLEDGMENTS

The authors wish to express their appreciation to Dr. Suzanne Perraud for her advanced advice. We also would like to thank the patients who participated in the study and the staff of the hospital involved.

## REFERENCES

- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV-TR* (4th text revision ed.). Washington, DC: American Psychiatric Association, 2000.
- Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychol. Rev.* 1977; **84**: 191–215.
- Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine* 2000; **25**: 3186–3191.
- Beck AT, Ward CH, Mendelson M. An inventory for measuring depression. *Arch. Gen. Psychiat.* 1961; **4**: 461–471.
- Boyd MA. Psychosocial Theoretic Basis of Psychiatric Nursing. In: Boyd MA (ed.). *Psychiatric Nursing. Contemporary Practice*. Philadelphia: Lippincott Williams & Wilkins, 2008; 56–74.
- Burns N, Grove S. *The Practice of Nursing Research. Appraisal, Synthesis, and Generation of Evidence*. St Louis, MO: Saunders-Elsevier, 2009.
- Chesney MA, Neilands TB, Chambers DB, Taylor JM, Folkman S. A validity and reliability study of the coping self-efficacy scale. *Br. J. Health Psychol.* 2006; **11**: 421–437.
- Cutler CG. Self-efficacy and social adjustment of patients with mood disorder. *J Am Psychiatr Nurses Assoc* 2005; **11** (5): 283–289.
- Erefe I. [Quality of instruments.] In: Erefe I (ed.). *Research in Nursing*. Istanbul: Odak Ofset, 2002; 180–181 (in Turkish).
- Erol N, Kiliç C, Ulusoy M, Kececi M, Simsek Z. [Mental Health Profile in Turkey: Main Report of the Turkish Republic.] Ankara: Ministry of Health, 1998 (in Turkish).
- Fiori KL, McIlvane JM, Brown EE, Antonucci TC. Social relations and depressive symptomatology: Self-efficacy as a mediator. *Aging Ment Health* 2006; **10** (3): 227–239.
- Gjersing L, Caplehorn J, Clausen T. Cross cultural adaptation of research instruments: language, setting, time and statistical considerations. *BMC Med. Res. Methodol.* 2010; **10**: 1–10.
- Gözüm S, Aksayan S. [Reliability and validity of the Turkish version of a self-efficacy scale.] *Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi* 1999; **2**: 21–34 (in Turkish).
- Grant JS, Davis LL. Selection and use of content experts for instrument development. *Res. Nurs. Health* 1997; **20**: 269–274.
- Hermann KS, Betz NE. Path models of the relationships of instrumentality and expressiveness, social self-efficacy and self esteem to depressive symptoms in college students. *J. Soc. Clin. Psychol.* 2006; **25**: 1086–1106.
- Hisli N. [The validity and reliability of Beck Depression Inventory for university students.] *Turkish J. Psychol.* 1989; **6**: 3–13 (in Turkish).
- Luszczynska A, Scholz U, Schwarzer R. The General Self-Efficacy Scale: Multicultural Validation Studies. *J Psychol* 2005; **139** (5): 439–457.
- Maciejewski PK, Prigerson HG, Mazure CM. Self-efficacy as a mediator between stressful life events and depressive symptoms. *Brit. J. Psychiat.* 2000; **176**: 373–376.
- Nunnally JC. *Psychometric Theory*. New York: McGraw-Hill, 1978.
- Perraud S. Development of the Depression Coping Self-efficacy Scale (DCSES). *Arch. Psychiat. Nurs.* 2000; **14**: 276–284.
- Perraud S, Fogg L, Kopytko E, Gross D. Predictive validity of the Depression Coping Self-efficacy Scale (DCSES). *Res. Nurs. Health* 2006; **29**: 147–160.
- Polit DF, Beck CT. The content validity index: are you sure you know what's being reported? Critique and recommendations. *Res. Nurs. Health* 2006; **29**: 489–497.
- Rezaki M. [Depression in patients who were admitted to a primary health center.] *Turkish J. Psychiat.* 1995; **6**: 13–20 (in Turkish).
- Richards E, Digger K. Compliance, Motivation and Health Behaviours of the Learner. In: Bastable SB. *Nurse as Educator. Principles of Teaching and Learning for Nursing Practice*. Massachusetts: Jones and Barlett Publishers, 2008, 199–228.
- Tonge B, King N, Klimkeit E, Melvin G, Heyne D, Gordon M. The Self-efficacy Questionnaire for Depression in Adolescents (SEQ-DA). Development and psychometric evaluation. *Eur. Child Adolesc. Psychiatry* 2005; **14**: 357–361.
- Tucker S, Brust S, Richardson B. Validity of the Depression Coping Self-efficacy Scale. *Arch. Psychiat. Nurs.* 2002; **16**: 125–135.
- Turkish Statistical Institute. *Address Based Population Registration System Population Census*. Ankara: Turkish Statistical Institute, 2009.
- Yildirim F, İlhan IO. Validity and reliability study of the Turkish form of general self-efficacy scale. *Turkish J. Psychiat* 2010; **21**: 1–8 (in Turkish).
- Zeiss AM, Gallagher-Thompson D, Lovett S, Rose J, McKibbin C. Self-efficacy as a mediator of caregiver coping: development and testing of an assessment model. *J. Clin. Geropsychol.* 1999; **5**: 222.