

The Validity and the Reliability of Turkish Version of the Self-Stigma of Depression Scale



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SUMMARY

Objective: In this study, we aimed to the Self-Stigma of Depression Scale (SSDS), which evaluates self-stigmatization that can prevent both treatment consultation and compliance by depressed patients run Turkish adaptation, validity and reliability study of.

Method: The study included a total of 173 subjects consisting of 131 outpatients of the Psychiatry Polyclinic with past or recent major depression disorder (MDD) diagnosis and 42 non-depressed outpatients consulting the Geriatrics Polyclinics for other medical complaints. Each participant was evaluated with the Structured Clinical Interview for DSM IV Axis I Disorders (SCID-I), the Standardized Mini Mental State Examination (MMSE), the Turkish Self-Stigma of Depression Scale (SSDS-TR) and the Beck Depression Inventory (BDI). The MDD patients were further evaluated with the Internalized Stigma of Mental Illness (ISMI) scale. Test-retest reliability of the SSDS-TR was assessed with 27 participants 8-12 weeks after the first test. All analyses were carried out using the IBM-SPSS Statistics version 25 and the IBM SPSS AMOS version 25.

Results: In the exploratory factor analysis, the factor structure of SSDS TR differed from the original form. The structural validity of the 4-factor model formed after excluding one problematic item was tested by confirmatory factor analysis and proven to meet the goodness of fit criteria. The Cronbach's α coefficient of the SSDS-TR was 0.847, and a moderate correlation ($r=0.436$ $p=0.023$) was obtained by the test-retest analysis. The SSDS-TR scores moderately correlated with the ISMI scores ($r=0.485$, $p<0.001$) and weakly correlated with the BDI scores ($r=0.246$, $p<0.001$).

Conclusion: The SSDS-TR formed by excluding one item from the original scale was demonstrated to be a valid and reliable psychometric tool and is expected to fill a gap in the assessment of self stigmatization of MDD patients in Turkey.

Keywords: Stigma, depression, reliability, validity

INTRODUCTION

Depression is a major mental health problem, highly prevalent in all populations and their sectors as one of the leading causes of disease burden in the world (Lepine and Briley 2011). Depression, with a chronic course of repetitive episodes can lead to distinct disablement in functionality and to significant financial and moral losses by preventing social functionality and participation in the work life. Symptoms of avolition, anhedonia, hopelessness, pessimism, self-blaming and embarrassment are common in all types of depressive

disorders (American Psychiatric Association 2013). According to the World Health Organization (WHO), approximately 350 million people worldwide are affected by depression. School, work and family functioning of the affected persons are impaired and depression sometimes results in suicide. The WHO reports that the second cause of death in the 15-29-year age group in the world is suicide, resulting with 800 thousand losses of life each year; and that, despite the knowledge of effective therapies, less than half of the people affected by depression (less than 10%, in some countries) receive treatment (World Health Organisation 2016).

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Lack of resources, shortage of trained healthcare personnel and insufficient patient evaluation as well as abstention by patients from consulting/using healthcare services for fear of being labelled with mental disease are the important impediments to receiving effective therapy (World Health Organization 2016). The significance of overcoming these impediments is obvious given the prevalence and the adverse effects of depressive disorders on human populations and the possibility of reversing these effects.

Stigmatization may develop in relation to many individualised characteristics and behaviors, as well as physical and mental illness. The types of stigma frequently discussed in the psychiatric literature are personal stigmatization, perceived stigmatization and self-stigmatization. Personal stigmatization; refers to the stigmatizing attitude of a person towards other people. Perceived stigmatization expresses the belief of the individual of being the recipient of adverse and stigmatizing attitudes of others. Self stigmatization / internalized stigmatization refers to the stigmatising attitude of individuals towards themselves (Griffiths et al. 2004, Corrigan 1998, Corrigan and Watson 2002). Perceived stigmatization and self-stigmatization can prevent individuals from seeking help for treatment by the adverse approach to themselves and their situation (Vogel et al. 2007, Sharp et al. 2015); and can lead to non-compliance with treatment even among those seeking help for their problems.

Therefore, determining the type of stigmatization, the consequences of which are feared by the patients, and to fight against these should contribute to seeking and finding treatment.

The cited types of stigmatisation apply to depression as well as the other mental illnesses,. Many studies have shown the effects of differing sociodemographic and cultural characteristics such as age, gender and educational status on stigmatization in mental illness (Schomerus et al. 2015, Kim et al. 2015). As well as the sociodemographic and cultural factors, clinical features of mental disorders affect stigmatisation; which in cases of depressive disorders, include the severity of depression, number and total duration of the episodes, and the presence of depressive disorder in the family or close social environment (Livingston and Boyd 2010).

A number of scales have been developed to enable the comprehensive evaluation of the patient's insight and beliefs about the disease and planning of the psycho-social interventions as well as the determination of treatment compliance problems in advance. There are scales that investigate the types of stigmatization specific to each disease, as well as for mental illnesses in general. 'The *Internalized Stigma of Mental Illness Scale*' (ISMI)₂ is a scale that evaluates the subjective stigmatization generally experienced by patients in relation to their mental disorders. ISMI is widely used in

the world and the study on its validity and reliability in the Turkish language has been made (Ersoy and Varan 2007). The dimensions of this scale on alienation, stereotype endorsement, perceived discrimination, social withdrawal and stigma resistance evaluate the types of stigma experienced by individuals with a mental illness. Depression, one of the frequently observed psychiatric disorders leading to significant disability and taking its share of stigmatization by prejudicial treatment which makes the patient reluctant to seek therapy, is studied in relation to determination of stigmatization, Stigmatisation can be assessed in psychometric scales as a subdimension evaluating the attitudinal characteristics towards depression and its treatment. An example of this is the '*Attitudes Towards Depression and Its Treatments Scale*' developed by Gabriel and Violato (2010), with aims to determine the attitudes of individuals diagnosed with depression towards depression and its treatment. Since the attitude of self-stigmatization has different characteristics than stigmatization by others, researchers have also developed scales that aim to evaluate objectively the level self-stigmatising in depressive patients. The '*Depression Self Stigma Scale*' (Kanter et al. 2008) and the '*Self-Stigma of Depression Scale*' (Barney et al. 2010) can be given as examples for scales evaluating self-stigmatisation. The *Self-Stigma of Depression Scale* (SSDS), evaluating shame, self-blame, social inadequacy, and help seeking inhibition specific to depression, is different from ISMI, which measures stigmatization associated with all mental illnesses. Another advantage of SSDS is that it can be used in field research on people who have no illnesses as well as in patients. Mental illnesses in general and depression in particular, are cases still approached with prejudice in our country; and, therefore, can remain without completed consultation for treatment. Further, a psychometric scale measuring self stigmatisation specific to depression is still not available in our language. It is hoped that the depression-specific assessment scale 'Self-Stigma of Depression Scale', will close the gap in this area in our country. Therefore, in this study, we aimed to translate to the Turkish language and analyze the validity and reliability of its Turkish language version SSDS-TR in order to use it in evaluating self-stigmatisation by depressed individuals in our population.

METHOD

This study was carried out within the scope of a study investigating the factors with effect on stigmatisation and the level of stigmatisation in young and elderly patients diagnosed with depression at Hacettepe University School of Medicine Department of Psychiatry and the Department of Geriatrics. The study was given the approval dated: 24.06.2015 and numbered GO 15/406-23 by Hacettepe University Ethics Committee. The SSDS was translated to the Turkish language by two qualified psychiatrists (Ö.E.A. and E.Ö.E.) and one psychiatry post-graduate resident (G.Z.K.), independently of

each other, and back-translated to English by a consultant psychiatrist fluent in both languages. With the aim of evaluating the difficulties of its administration and comprehension, the SSDS-TR was tested on a group of 12 working members of our clinic, including teaching staff, psychologists and research workers; and, adjustments were made on the first draft scale on the basis of the recommendations made, thus, forming the final version of the SSDS-TR.

The study included a total of 175 individuals, consisting of 133 outpatients, aged between 18 and 88 years, consulting

the Psychiatry Polyclinic and diagnosed with major depressive disorder (MDD) or being followed up with this diagnosis between July 2015 and June 2016 and accepting to participate in the study; and 42 non-depressive individuals aged between 65 and 94, consulting the Geriatric Clinic (GC) for medical reasons and accepting to participate in the study after referral by their physicians. Two of the participants were excluded from the study for not satisfactorily completing the SSDS-TR form.

Inclusion criteria of the study were being older than 18 years, having at least primary school education, scoring ≥ 24 on the MMSE, and being psychiatry outpatients with MDD diagnosis and patients of the GC without the MDD diagnosis. The exclusion criteria included diagnoses of dementia and neuropsychiatric illnesses such as mental retardation or any physical disease preventing the interviews, diagnoses of psychosis, schizophrenia, bipolar affective disorder and active psychotic depression. Sociodemographic and clinical features of the subjects are listed in Table 1.

Following the diagnostic interviews using the SCID-1, the Beck Depression Inventory (BDI), MMSE and the SSDS-TR were completed by the participants. The MDD patients were also tested on the ISMI. For test-retest reliability, the SSDS-TR was tested again after an interval of 8-12 weeks on 27 participants with MDD, randomly selected and agreed with for participation through phone calls. Statistics were done as in the study on the original SDSS, using the data of the whole group including all the participants at all age groups and with and without MDD diagnosis. Comparisons of the data between the young and elderly groups with and without MDD diagnosis are not presented in this article restricted to determining the reliability and validity of the SSDS-TR.

Materials

The Structured Clinical Interview for DSM IV Axis I Disorders (SCID-I): This is a structured interview tool developed to diagnose the Axis 1 psychiatric disorders based on the DSM-IV (First et al. 1996). Adaptation to the Turkish language was made by Özkürkçügil et al. (1999). SCID-I was used in this study to confirm the diagnosis of depression, and to exclude other Axis 1 psychiatric disorders cited in the exclusion criteria. This interview was done by one of the researchers (G.Z.K.).

The Sociodemographic Form: This form was developed by the researchers and includes the information on sociodemographic features of the participants, duration of the present depression episode and the treatment methods used, the past depression episodes if any and treatments used, history of suicide, medical disorders with their treatment history, and other relevant clinical features.

Table 1. Sociodemographic and Clinical Characteristics of the Participants

	Number (%)
Sex	
Female	120 (69.4)
Male	53 (30.6)
Educational level	
Primary school	49 (28.3)
Middle school	19 (11.0)
High school	65 (37.6)
College and higher	40 (23.1)
Marital status	
Single	27 (15.6)
Married/living with a partner	119 (68.8)
Divorced	10 (5.8)
Widow	17 (9.8)
Working status	
Unemployed	7 (4.0)
Housewife	54 (31.2)
Working	30 (17.3)
Student	16 (9.2)
Retired	66 (38.2)
Depression status	
No	40 (23.1)
Remission	51 (29.6)
Partial improvement	31 (17.9)
Active depression	51 (29.5)
	Mean$\pm$SD (median(min-max))
Age	53.2 $\pm$ 19.4 (58.0(18-94))
MMSE	28.7 $\pm$ 1.6 (29.0 (24-30))
BDI	16.75 $\pm$ 12.1 (13.0 (0-54))
ISMI	60.8 $\pm$ 15.4 (58.5 (33-114))
SSDS	44.64 $\pm$ 10.4 (44.0(21-75))

Mean $\pm$ SD (median(min-max)): Mean $\pm$ Standard Deviation (median (minimum-maximum)); MMSE: Mini Mental State Examination, BDI: Beck Depression Inventory, ISMI: The Internalized Stigma of Mental Illness, SSDS: The Self-Stigma of Depression Scale

The Mini Mental State Examination (MMSE): This is a cognitive screening test developed by Folstein et al. (1975). Albeit of limited use in differentiating clinical syndromes from each other, this is a practical and standardized method in evaluating the global cognitive state. It comprises 11 items clustered under 5 main headings composed of orientation, memory, attention and calculation, recall and language. The MMSE total score is 30.

The Beck Depression Inventory (BDI): This is a self-report scale developed by Beck et al. (1961) to measure the level and the changes in depressive symptom severity in adults. Validity and reliability study of the Turkish language version was done by Hisli (1988). It is composed of 21 items, each with a self-evaluation phrase and scoring 0-3. Researchers reported that the inventory includes two sub-factors--the somatic and the cognitive (Dunkel et al. 2002, Helm and Boward 2003, Arkar and Şafak 2004). In our study we re-evaluated the correlation of both the BDI total scores and somatic/affective sub-factor scores (Arkar and Şafak 2003) with the SSDS-TR scores.

The Internalized Stigma of Mental Illness (ISMI): This is a 29-item self-report scale developed by Ritsher et al. (2003) to evaluate the internalised stigmatisation by the patient for having a psychiatric disorder. Validation and reliability study on the Turkish language version of ISMI was made by Ersoy and Varan (2007). The 5 sub-scales forming the ISMI include assessments of alienation (6 items), stereotype endorsement (7 items), discrimination experience (5 items), social withdrawal (6 items) and stigma resistance (5 items). Each item is rated on a 4-point Likert type scoring as “strongly disagree” (1 point), “disagree” (2 points), “agree” (3 points) and “strongly agree” (4 points). The items of “stigma resistance” are reverse-coded. The ISMI total score is obtained by adding all 5 sub-scale scores. Higher values indicate the severity of internalised stigmatisation experienced. The internal consistency Cronbach's α coefficient of the Turkish language version was reported as 0.93 and the split-half reliability as 0.89 (Ersoy and Varan 2007).

The Self-Stigma of Depression Scale (SSDS): SSDS is developed for evaluation of self-stigmatization related to depression (Barney et al. 2010). The scale, comprising 16 items, each with a 5-point Likert type scoring, evaluates the emotions, thoughts and attitudes on having depressive disorder. Total score is between 16 and 80, and the higher the score the higher is the severity of self-stigmatisation. Self-stigmatisation of the patient is assessed by using four sub-scales named as “embarrassment/ shame”, “self-blaming”, “social inadequacy” and “help-seeking inhibition”.

The items were generated in the original study by using focus group discussions, and the final version of the scale was formed after 3 surveys including 408 university students, 330 persons recruited online from a depression support group and

1312 persons residing in communities contacted via mail in Australia. The statistics include item-based evaluations and factor analyses. The final items were consistent in all 3 studies. The Cronbach α coefficients in the original study were 0.87 for the total SSDS score, 0.83 for Shame, 0.78 for Self-blame, 0.79 for Social Inadequacy and 0.79 for Help-seeking-Inhibition. In the analyses of test-retest reliability, differences were not found between the mean scores of the sub-scales except that on “social inadequacy” which was significantly lower in the retest [$t(150) = 2.08, p = 0.039$] although the effect size was small (Cohen's $d = 0.17$). Construct validity, internal consistency and test-retest reliability were found to be at satisfactory levels. The SSDS is a scale estimating self-stigmatization with good psychometric properties, discriminating well between self-stigmatization and perceived stigmatization; and providing good information on self-imposed stigma related to depression (Barney et al. 2010). The SSDS-TR is a useful and promising tool in evaluating self-stigmatization and also the attempts to self-stigmatize in depressive patients. Permission was obtained from the authors in order to translate, validate and use the scale in the Turkish language regarding the above cited purposes.

Statistical analyses were carried out on the IBM SPSS version 25 and IBM SPSS AMOS version 25. Normal distribution of the data was shown after investigation by means of the Shapiro-Wilk's test. Both explanatory factor analysis and confirmatory factor analysis were used to determine the construct validity of the scale. Kaiser normalization and Quartimax rotation methods were used for explanatory factor analysis, and the items were distributed to the factors with more than 0.4 factor load. But explanatory factor analysis showed that the factor load on the eighth and ninth items' differed from those in the original SSDS. The construct validity of the four-factor model obtained by excluding the ninth item and loading the eighth item on a different factor was tested using confirmatory factor analysis, and the construct validity of the mentioned model was shown using root mean square error of approximation (RMSEA), comparative fit index (CFI) and Akaike information criteria (AIC). An interval of 0.05-0.08 for RMSEA and a value of ≥ 0.90 is accepted as goodness of fit for the model. Under the confirmatory factor analysis correlation analyses were done between model, item-subscale and item-total; and, the Cronbach's α coefficient was calculated for internal consistency. SSDS-TR data correlations with ISMI, which measures stigmatization in all mental disorders, were calculated for the external validity; and correlations with BDI, which rates depressive symptoms on the total score and subscale scores, were calculated to investigate the relation with depressive symptoms. Test-retest correlations were also evaluated. Pearson correlation analysis method was used for all correlation analyses.

RESULTS

Sample Adequacy and Explanatory Factor Analysis:

Kaiser-Meyer-Olkin Test for Sample Adequacy statistics was calculated as KMO= 0.820, implying the acceptable magnitude of the sample. Adequate correlations between items were found on the explanatory factor analysis according to Bartlett test ($X^2= 1073.966$, $p< 0.001$). Using explanatory factor analysis, the four subscales in SSDS-TR explained 62.37% of the total variance, and using the Quartimax rotation method in the factor analysis, 13 items were found to contribute to the four factors of the original scale as shown in Table 2.

The scale Items 1, 2, 3 and 4, which were loaded to the second factor, were collected under “Shame” subscale as in the original scale. Items 5,6, and 7 made most of the contribution to the third factor. Item 8 was seen as contributing to all factors and was not loaded to a particular subscale such as “Shame” despite the higher contribution to it (0.388), but included, with preference, in the “Self-blaming” subscale (0.205) since the meaning of the item was closer and the factor loadings were similar. This item was tested in the confirmatory factor analysis step as contributing to the “Self-blaming” subscale.

Items 10, 11 and 12, which were loaded on the 1st factor in the original scale, were found to contribute more to the “Social inadequacy” subscale. Contribution of the 9th item to the subscale factors was not prominent (0.146, -0.189, -0.352, -0.001). It was decided that this reverse scored item, worded

as was excluded from the final form of the scale since it would not be understood by those taking the test. While testing the model consistency, the confirmatory factor analysis was made after excluding this item.

Items 14,15 and 16 which contributed to the 4th factor in the original scale were found to load to the “help-seeking inhibition” factor in our study. Item 13, expressing “wouldn’t want people to know that I wasn’t coping”, contributing to this factor in the original SSDS, was found to contribute more to the “social inadequacy” factor in the SSDS-TR (0.449 versus 0.268)). This switch may have occurred due to differences in understanding the clause in Turkish and English languages. This item, seeming to be suitable for and contributing to both factors, was included in the 4th factor as in the original SSDS, when tested by the confirmatory factor analysis.

Confirmatory Factor Analysis: It was found by explanatory factor analysis that the 4- factor structure of the SSDS-TR differed from that of the original SDSS. The scale was tested without considering the factor structure and results of using confirmatory factor analysis with respect to the structure shown in Figure 1.

At completion of explanatory factor analysis, the SSDS-TR was found to have differentiated to a structure different from that of the original SSDS. Therefore, the SSDS-TR was evaluated irrespective of its factor structure and tested by confirmatory analysis according to the structure shown in Figure 1, where the 4-factor structure, formed by exclusion of item 9 from the scale and item 8 placed under “Self-blame”

Table 2. Common Factors and Exploratory Factor Analysis

Common Factors		Factor Structure and Factor Loading			
SSDS Item		Social Inadequacy	Shame	Self-Blame	Help-Seeking Inhibition
1	0.810		0.853		
2	0.805		0.826		
3	0.641	0.670	0.436		
4	0.717	0.542	0.649		
5	0.630			0.787	
6	0.777			0.881	
7	0.694			0.826	
8	0.334	0.317	0.388	0.205	0.204
9	0.181	0.146	-0.189	-0.352	-0.001
10	0.702	0.835			
11	0.781	0.876			
12	0.638	0.765			
13	0.306	0.449			0.268
14	0.670				0.773
15	0.767				0.862
16	0.526				0.625

Principle Component Analysis. Rotation Method: Kaiser Normalization with Quartimax
SSDS: The Self-Stigma of Depression Scale

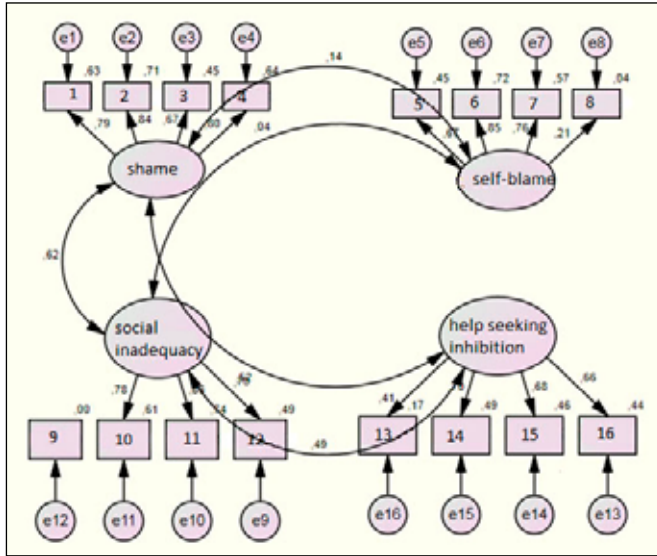


Figure 1. Four-Factor Structure Testing in Confirmatory Factor Analysis without Item 9

Model consistency measures: $\chi^2(100)=220.6$, $p<0.001$; CFI=0.89; RMSEA=0.08 (95% confidence interval 0.07-0.09); AIC=292.6

subscale, was tested for model fit. According to this, model consistency measures were found to be $\chi^2(100)=220.6$, $p<0.001$, CFI=0.89, RMSEA=0.08 (95% CI 0.07-0.09), AIC=292.6, and considered as indicating satisfactory goodness of fit.

Item-Total Correlations: Item-total score correlations were calculated for the confirmed item structure and statistically significant ($p<0.001$) and positive correlations ($r=0.216-0.732$) were found between the items and the total score.

Item-Factor Correlations: Items 1,2,3 and 4 under the “shame” factor were found to have a statistically significant positive correlation with the score on the “shame” subscale, with the correlation coefficients being in the $r=0.763-0.877$ range ($p<0.001$). Correlation coefficients of items 5, 6,7 and 8 items and the “self-blaming” subscale were in the range $r=0.671-0.787$ ($p<0.001$). Items 10, 11 and 12 correlations with the “social inadequacy” subscale were found to be in the range $r=0.822-0.887$ ($p<0.001$). Correlation coefficients between items 13, 14, 15 and 16 and “help-seeking inhibition” subscale was in the range $r=0.617-0.764$ ($p<0.001$).

External Validity: Firstly the additivity of the scores of the scale items were investigated using Tukey additivity test and the non-additivity was calculated as $p<0.001$ indicating that the item scores could be used by totaling. For determining the external validity of the SSDS-TR, correlations between the SSDS-TR score, the ISMI score and the total and subscale scores on the BDI were calculated to assess the relation between the SSDS-TR items and symptoms of stigmatization in mental disorders and the depressive symptoms, respectively.. The SSDS-TR and ISMI total and subscale scores correlated moderately ($r=0.485$, $p<0.001$) (Table 3).

Correlations of the SSDS scores with the BDI total score, cognitive subscale scores and somatic-affective subscale scores, as depicted by Arkar and Şafak (2004), were calculated separately in order to distinguish stigmatizing attitudes and cognitive symptoms of depression. Results were presented in Table 4.

The Cronbach Alpha Coefficient: Cronbach α coefficient indicating the internal consistency of the scale was found to

Table 3. Correlation Between the Total Scores and Subscale Scores of the SSDS and the ISMI Scales

	ISMI	Alienation	Stereotype Endorsement	Perceived Discrimination	Social Withdrawal	Stigma Resistance
SSDS total	0.485**	0.544**	0.377**	0.420**	0.400**	0.132
Shame	0.505**	0.515**	0.400**	0.407**	0.411**	0.172
Self-Blame	-0.064	-0.013	-0.145	-0.053	-0.018	-0.014
Social Inadequacy	0.514**	0.496**	0.386**	0.492**	0.395**	0.194*
Help-seeking inhibition	0.332**	0.401**	0.317**	0.236*	0.268**	-0.059

Pearson Correlation Analysis was used. P values were given as abbreviation. * $p<0.05$ and ** $p<0.001$. ISMI: The Internalized Stigma of Mental Illness, SSDS: The Self-Stigma of Depression Scale

Table 4. Correlation of the Beck Depression Inventory Scores and the Self-Stigma of Depression Scale Scores

	Beck Total	Beck Cognitive Subscale	Beck Somatic-Affective Subscale
SSDS total	$r=0.246^{**}$	$r=0.271^{**}$	$r=0.161^*$
Shame	$r=0.287^{**}$	$r=0.348^{**}$	$r=0.176^*$
Self-Blame	$r=-0.133$	$r=-0.137$	$r=-0.110$
Social Inadequacy	$r=0.293^{**}$	$r=0.348^{**}$	$r=0.223^{**}$
Help-seeking inhibition	$r=0.192^*$	$r=0.208^{**}$	$r=0.132$

Pearson Correlation Analysis was used. P values were given as abbreviation. * $p<0.05$ and ** $p<0.001$. SSDS: The Self-Stigma of Depression Scale

be 0.847. Cronbach α values for the respective SSDS-TR subscales were 0.854 for “shame”, 0.637 for “self-blaming”, 0.822 for “social inadequacy” and finally 0.686 for “help-seeking inhibition”.

Test-Retest Reliability: SSDS-TR was retested on a randomly selected group of 27 MDD participants, who were reached for confirmation of participating in retesting 8-12 weeks after the first testing date. First test and retest scores were compared using the Pearson correlation analysis to evaluate test-retest reliability. A statistically significant correlation was found between SSDS-TR total and retest scores ($r=0.436$, $p=0.023$). Significant correlations were also found between test and retest scores of “self-blaming” and “social inadequacy” subscales ($r=0.422$, $p=0.028$; $r=0.635$, $p<0.001$ respectively). But the correlations between test and retest scores of “shame” and “help-seeking inhibition” subscales were not statistically significant ($r=0.166$, $p=0.403$; $r=0.350$, $p=0.074$ respectively).

DISCUSSION

It was aimed in this study to evaluate the validity and reliability of the Self Stigma of Depression Scale (SSDS) in a Turkish population. After adaptation of the scale to the Turkish language (SSDS-TR), a four-factor model similar to the original form of SSDS was obtained using explanatory factor analysis, with the subscales headed as “shame”, “self-blame”, “social inadequacy” and “help seeking-inhibition”. However, the item loading of SSDS-TR differentiated from the original one with the exclusion of the 9th item as it did not contribute to any of the 4 factors in the Turkish language format and did not correlate with the scale scores. Confirmatory factor analysis was carried out on the final 4-factor model which indicated satisfactory goodness of fit. Investigation of the external validity, internal consistency and test-retest reliability of the SSDS-TR demonstrated acceptable validity and reliability.

The factor structure of SSDS-TR after the factor analysis was similar to the original scale and the subscale naming was done accordingly (Barney et al. 2010). It was found in this study that item 3, “would feel disappointed in myself, and item 4, “would feel inferior to other people” contributed to the “social inadequacy” subscale as well as the “shame” subscale that originally comprised items 1,2,3 and 4. This may be due to feelings of inferiority and disappointment in one’s self, relating to both the “shame” and “social inadequacy” as well as reflecting the characteristics of the participant sample of this study. Item 8, “I think I only had myself to blame”, contributed moderately to all the factors, but it was placed under the “self-blame” subscale as in the original SSDS because it was both semantically better related to and contributed relatively more to the “self-blame” factor and goodness of fit was demonstrated on this model by confirmatory factor

analysis. Item 9, “I feel like I was good company”, under the “social inadequacy” factor in the original SSDS, did not contribute to the 3 factors and slightly contributed to the “self-blame” factor in our study (-0.352). Hence, item 9, developed for Australian communities, was excluded from the SSDS-TR lest it would be misunderstood or not understood at all by the Turkish participants due to cultural differences between these two populations. Analyses should be repeated in other studies using this scale with a different translation of this item, with the aim to resolve any translation based weakness. Items 13, 14, 15 and 16 loaded the 4th factor or the “help seeking inhibition” subscale. Item 13, “wouldn’t want people to know that I wasn’t coping”, was shown to contribute more to “social inadequacy” scale in this study contrary to the original one. This result may have originated from the comprehensibility of the phrase after translation. While this item loads semantically both factors and contributes to both factors, it was seen to have a good fit with the model when covered by the “help seeking inhibition” subscale.

The SSDS-TR was found to be similar to the original SSDS despite the observed differences of factor analysis. SSDS scale has also been translated to other languages; one of them being the validity and reliability study in Arabic by Darraj et al. (2017). In this study the SSDS-TR was found to be clustered under the same factors as in the original SSDS and the factor loads were found to be very high. Hence, psychometric properties of SSDS may change in different languages and cultures. Additional studies are needed for these properties to be understood.

Regarding external reliability, a moderate correlation with the Internalized Stigma of Mental Illness scale (ISMI) and a low correlation with BDI were found. It was valuable to show a significant correlation between SSDS-TR and ISMI which also measures self-stigmatizing attitudes. This correlation pointed to the value of the SSDS-TR in evaluating self-stigmatizing attitudes. But SSDS measures depression-related shame, self-blaming, social inadequacy and help-seeking inhibition while ISMI is not confined to depression only, and measures the general mental-health related stigmas. Also, ISMI, which evaluates different sorts and dimensions of stigma including alienation, stereotype endorsement, discrimination experience, social withdrawal, and stigma resistance, is structurally different from the SSDS. Therefore, the moderate correlation indicated by our results between these two scales was not unexpected.

The correlation between the severity of depressive symptoms and stigmatization is well-known (Pyne et al. 2004, Livingston and Boyd 2010); this relationship was also shown in our study and accepted as an indicator of the SSDS-TR reliability. Likewise, a weak but statistically significant correlation between depressive symptoms and the total score

of the original SSDS had been shown in the validity reliability study of the scale. In our study, following the investigation of correlations between BDI factors and the SSDS-TR score, determination of a weak but significant correlation between the cognitive factor score, but not with the BDI somatic-affective factor score, has suggested that cognitive distortion by depression may have a role in the depression related self stigmatization. Lack of correlation between the SSDS-TR and the BDI somatic-affective factor may point to the lack of a relationship between depression severity and depression-related self stigmatization measured by the SSDS. Alternatively, an existing correlation might not have been demonstrated on account of the small sample size. Also, these results are different from those of Pyne et al. (2004) who reported a weaker correlation between the perceived stigmatization and the cognitive symptoms of depression as compared to that with psychomotor symptoms of depression; and concluded that the severity of self stigmatization was associated with the severity of the depressive disorder rather than cognitive distortions, such that increasing disease severity lead to higher exposure to self stigmatization. This difference in results might be due to differences in the sample characteristics and in the types of stigmatization evaluated with differing scales, as Pyne et al. (2004) used the “5-Item Stigma Scale for Receiving Psychological Help”. Also, the weak correlation of self-stigmatization measured by the SDSS-TR with the total depression severity and cognitive symptoms measured by BDI has implied that, although affected by symptom severity of depression, self-stigmatizing could not be explained by depressive cognitions.

The Cronbach's α coefficient assessing the internal consistency of the SSDS-TR was 0.847 which is close to the α coefficient value of the original form of the SSDS. Cronbach α values of the SSDS-TR subscales were calculated as 0.854 for Shame, 0.637 for Self-Blame, 0.822 for Social Inadequacy and 0.686 for Help-Seeking Inhibition. These values corresponded to the moderately-high reliability range that Murphy and Davidshofer reported in the classification of reliability tests in 1988 (Peterson 1994), according to which, shame and social inadequacy subscales are considered to have a medium-high reliability and the other two subscales are considered to have a low-level reliability. Cronbach α values of shame and social disability subscales of the SDSS-TR are similar to the ones of the original form of the SSDS (0.83 and 0.78, respectively), while the Cronbach α values of the other two subscales are lower (0.79 and 0.79, respectively). The internal consistency test results on the Arabic version of the SSDS were similar to the results of this study, but the Cronbach α values of the subscales of the SSDS-TR were higher than those of the Arabic version (Darraj et al. 2017). However, the Arabic version of SSDS consisted of 16 items. The different psychometric properties of these three scales in different languages may

be related to the cultural characteristics of the Australian, Arabic and the Turkish populations and the differences in the characteristics and translations of the languages (Barney et al. 2010, Darraj et al. 2017).

Looking at the results of the test-retest reliability analysis, it was observed that the total score of the SSDS-TR moderately correlated with the test-retest score. Compared to the SSDS-TR, the test-retest results of the Arabic form of the SDSS showed higher correlation with the original SSDS form; and, the observed higher reliability can be explained by the learning effect since the time span between the two tests was only two weeks in the study (Darraj et al. 2017). This difference may be related to the better psychometric properties of the Arabic version of the SSDS as well as the differences in study designs such as the time of retesting or the number of the people tested. It is possible that within the 8-12-week time period between the test-retest on the SSDS-TR, changes may have occurred in the severity of self-stigmatisation among the MDD patients and that the severity of depression might have been dampened down by therapy received leading to lowered correlation between the test and the retest scores of the SSDS-TR. Although the positive correlation between the BDI and the SSDS-TR scores may support this argument, the low level of this correlation suggests that the leading cause of the low correlation between the test and retest scores cannot be lowered depression scores. Also, as the severity of depression was not assessed at retest in our study, effect of any recovery in depression on reduced self-stigmatisation cannot be proven.

Before the introduction of the SSDS-TR, another scale for determining specifically self stigmatisation in depression was not available. The ISMI, adapted to the Turkish language earlier, consists of items related to different types of stigmatisation in all mental disorders, without a subscale specific to depression (Ritsher et al. 2003, Ersoy and Varan 2007). In this respect, SSDS-TR differs from ISMI, in being the only tool assessing specifically the level of self-stigmatisation in relation to depression alone.

Another psychometric tool in the Turkish language is a questionnaire, with a section designed to evaluate negative attitudes and judgments in relation to depression, developed by the Psychiatric Research and Education Center in Turkey for the “Public Attitudes About Mental Illnesses” project. This particular section of the questionnaire enables the recognition of case-related depression, the beliefs on the aetiology and of the treatment of depression, and discriminatory attitudes such as desire for social distance (Özmen et al. 2003). This tool, however, can be used as a descriptive survey but not as a rating scale. Therefore, the SSDS-TR is the appropriate choice for not only measuring the severity of self stigmatization in depression but also for the follow up of treatment and of the

effects of social interventions to reduce stigmatization. SSDS-TR, in being applicable to non-depressive individuals, can also be used in community based studies to determine the level of stigma related to depression in individuals who do not apply to clinics.

Limitations of the Study

One limitation of this study was having had to use the ISMI, the psychometric tool for assessment of different elements of internalized stigmatization and perceived stigmatization in patients with mental illness, to test the external validity of SSDS-TR since any other scale assessing self-stigmatising specifically in depression is not available in the Turkish language. Another limitation is the extraction of an item of the original SSDS from the SSDS-TR during the factor analysis, as it didn't contribute to the diagnostic power of the scale, and can be attributed to cultural differences between the Australian and Turkish populations. and/or to the effect of translation. In further studies, it is recommended to repeat the analyses after making other changes suiting our language to the items of the scale.

The number of participants used in the study is not large enough to enable generalisation of the results to the general population. Also, the small sample size used for retesting SSDS-TR may have decreased test-retest reliability. Further, 8-12 weeks selected for the interval between test and retest may be long enough for the occurrence of changes in the level of self stigmatisation.reflected to the results.

.In future studies using the SSDS-TR, it is necessary to make re-testing on a larger sample size in a shorter time period after the initial testing and repeating assessment of depression severity in order to exclude the effect of the possible changes in symptom severity of depression on the severity of self stigmatisation.

CONCLUSION

Varying attitudes of MDD patients towards depression and its treatment may adversely affect help seeking and treatment compliance. Despite the inadequacy of education by itself on the negative attitudes towards depression and its treatments (Corrigan 2016), there are studies reporting improvements after interventions involving training programs encompassing psychoeducation (Vergouwen et al. 2009).

Considering that self-stigmatizing attitude can prevent patients from applying for treatment and impair treatment compliance, its evaluation creates an opportunity for treatment teams to focus on frequently met attitudes and their possible consequences, and is important for the treatment response. The SSDS-TR, with a few characteristics differing

from those of the original form of the SSDS, is a valid and reliable scale for the evaluation of self-stigmatization in depression.

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