

Reliability and Validity of the Turkish Version of the Social Adaptation Self-Evaluation Scale (SASS)

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Abstract

Objective: SASS is a new self-evaluation scale that assesses the level of social functioning in depressed patients for clinical research purposes. The aim of this study was to investigate the validity and reliability of the Turkish version of SASS.

Method: Data were obtained from 2 different sample groups that had no physical disturbances that could impair social functioning; healthy participants between the ages of 18 and 65 years ($n = 66$) and patients ($n = 227$) diagnosed with major depressive disorder (MDD). Assessment tools used in the study were SASS, Hamilton Depression Rating Scale, 17-item version, and Global Assessment of Functioning Scale.

Results: In the reliability analysis of both groups combined and the MDD group Cronbach's alpha values for the internal consistency of the scale were 0.90 and 0.87, respectively. Item-total score correlations were between 0.22 and 0.66 for both groups combined, and between 0.21 and 0.59 for the MDD group. The correlation coefficient of the scale's test-retest reliability was 0.770 ($P < 0.0001$) and the SASS value rose from 29.4 ± 8.1 to 37.8 ± 8.1 following treatment of depression ($P < 0.0001$). Four factors with Eigen values > 1 were obtained from the factor analysis. Factor 1, with an Eigen value of 7.169 explained 35.8% of the total variance and represented the entire scale alone.

Conclusions: The Turkish version of SASS, as the original scale, demonstrated adequate validity and reliability for the measurement of loss of social functioning in MDD patients and demonstrated that scores changed in accordance with treatment for depression.

Key Words: Depression, Social Adaptation Self-Evaluation Scale, validity, reliability

INTRODUCTION

Depression is a disabling condition that can affect a person's work and social life due to impairment in social functioning, in addition to other depressive symptoms (Wells et al., 1989; Broadhead et al., 1990). Social functioning is defined as a person's functioning in ability to perform activities related to work, home, and social life, as well as other pleasurable activities. In addition, it includes the success of and satisfaction with a person's roles as partner, parent, friend, and colleague (Kasper, 1999). A person's inability to fulfill his/her family and social responsibilities negatively impacts the social functioning of his/her close relatives (Coyne et al., 1987). A study

of 11,242 participants conducted by Wells et al. (1989) indicated that the social disability due to depression was equal to the social disability experienced by patients with coronary artery disease and was greater than the social disability seen in patients with diabetes, chronic pulmonary, hypertension, and arthritis.

Even though depression affects a person's social abilities and quality of life, in addition to its neuro-vegetative symptoms and its symptoms related to mood, the results of treatment are generally evaluated by measuring the severity of depressive symptoms; however, improvement of depressive symptoms doesn't necessarily result in improvement in social functioning (Kasper, 1999; Healy,

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2000; Akkaya, 2004). In recent years the social functioning of depressive patients has gained importance in out-patient treatment (Keller, 2001) and social disability has become an important factor in evaluating the outcome of therapy (Kasper, 1999).

Numerous studies indicate that improvement in depressive symptoms does not directly result in improvement in social functioning; consequently, depressive symptoms and social functioning should be evaluated separately (Healy and McMonagle, 1997; Bosc, 2000; Sarandöl and Akkaya, 2003; Akkaya et al., 2006). It has been reported that depressive symptoms regressed in a shorter time than social disability (Mintz et al., 1992). Even though the improvement of depressive symptoms was similar in longitudinal and cross-sectional studies, it was reported that improvement in social functioning is related to the duration of treatment, and that the 4th and 6th months are crucial for improvement in social functioning (Giller et al, 1988).

While there are data indicating a relationship between depression and social disability, their courses are different (Broadhead et al., 1990; Johnson et al., 1992). Although social disability is most severe during a depressive attack, it does not determine the severity (or vice versa) of depression (Paykel et al., 1978). Social disability frequently persists even though depressive symptoms abate (Weissman and Bothwell, 1976; Coryell et al., 1993). The predominant argument in recent years is that the treatment of depression does not eliminate depressive symptoms or improve social functioning (Wells et al., 1989; Keller, 2001).

The level of social functioning can not be precisely evaluated using scales that focus on the core symptoms of depression and that include only a few items related to social functioning, such as the Hamilton Rating Scale for Depression (HAM-D) (Hamilton, 1960) or the Montgomery-Asberg Depression Rating Scale (MADRS) (Montgomery and Asberg, 1979). In recent years different scales have been developed to measure the response to treatment because of the recognized importance of social functioning. These recent scales are generally self-administered (Weissman et al., 1974; Weissman and Bothwell, 1976) and trained interviewers are not necessary for their administration. Consequently, they cost less to use and interviewers cannot be prejudiced. Considering that social functioning is evaluated from the patient's point of view, self-evaluation may be superior (Keller, 2001).

A new self-administered scale for measuring so-

cial functioning, the Social Adaptation Self-evaluation Scale, (SASS) was developed by Bocs et al. (1997). It was designed to evaluate the level of social functioning in depressive patients (of all ages) for clinical research purposes. It is argued that as opposed to classical depression scales that measure only symptom improvement, it measures improvement in social functioning, which is a sign of recovery (Dubini et al., 1997a, 1997b; Healy, 2000).

SASS is a 21-item self-evaluation scale that evaluates 4 areas of social functioning: work, free time, family, and dealing with the environment. Participants respond to complementary questions about their motivations, behaviors, self-perception, different roles they assume in their daily lives, and their level of satisfaction. The form takes approximately 10-15 min to complete. Its validation study, which was conducted in France, included 496 patients with depression and > 3400 healthy individuals (Bosc et al., 1997). The 1st and 2nd items of the 21-item scale are answered according to job status and each person answers 20 items that are evaluated between 0-3 intervals. The scores of each item are added and the total score is obtained (Appendix 1). Scores range from 0 to 60 and the minimum score indicating a normal level of social functioning is 35. Scores < 25 indicate impaired social functioning. It was reported that the scale is sensitive to changes in depressive symptoms and is highly reliable.

There are no Turkish self-rating scales that can evaluate social functioning in the treatment of depression for the purposes of clinical research. The present study aimed to adapt SASS for use with the Turkish population by studying its validity and reliability.

METHOD

Sample

The study included patients (n = 227, 77.6%) that presented to Uludağ University's and Celal Bayar University's psychiatry out-patient departments between 1 January 2005 and 30 June 2006, and a healthy control group (n = 66, 22.4%). The patients were diagnosed with major depressive disorder (MDD, MDD group) by a psychiatric specialist based on the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV, American Psychiatric Association, 1994) criteria, following a semi-structured interview. The study protocols were approved by the relevant ethics committee.

Among the 293 participants, 76 were male and 217

were female. Mean age was 37.2 ± 12.3 years (range: 18-66 years) in the MDD group and 31.9 ± 8.8 years (range: 19-59 years) in the control group. The difference in mean age between the 2 groups was statistically significant ($T = 3.243$, $P = 0.001$). The MDD group included 57 male (25.1%) and 170 female (74.9%) patients; the control group consisted of 19 male (28.4%) and 47 female (71.6%) volunteers. The level of education in the MDD group was as follows: Primary school 29.5% ($n = 66$), middle school 9.8% ($n = 22$), high-school 26.3% ($n = 59$), and college 34.4% ($n = 77$). The mean level of education in the MDD group was significantly lower than that of the control group ($\chi^2 = 30.069$, $P < 0.0001$).

Criteria for Including and Excluding the Participants

The study included participants between 18 and 65 years of age. The MDD group included patients without any psychiatric disorder other than MDD and without any physical disorders that could affect social functioning. The control group included healthy volunteers. The patients in the MDD group scored ≥ 16 on the 17-item HAM-D. The control group included participants without a DSM-IV diagnosis and without physical disorders that could affect social functioning. All the participants were informed about the study protocol and agreed to participate in the study.

Data Collection Instruments

HAM-D and the General Evaluation of Functionality (GEF) were used as comparisons to SASS.

Hamilton Depression Rating Scale: This scale was developed by Hamilton et al. (1960) and measures the level of depression for clinical research purposes. Its validity and reliability for use with the Turkish population was founded by Akdemir et al. (1996). The correlation between SASS and HAM-D's 7th item (work and activities), which is the only item about functionality (because the total score of HAM-D doesn't represent this item), was also studied.

Social Adaptation Self-evaluation Scale: This 21-item self-rating scale was developed by Bosc et al. (1997) and measures the level of social functioning in depression patients for clinical research purposes. A participant answers either the 1st or 2nd question based on his/her job situation, these are yes or no questions and answers 20 other questions which are rated between the intervals of 0-3. Factor analysis results of

SASS identified 3 main factors; factor 1 explains 32% of variance, factor 2 explains 8% of variance, and factor 3 explains 5% of variance. Nonetheless, factor 1 had the power to represent the whole scale with all its items.

The Global Assessment of Functioning (GAF): This scale helps clinicians monitor the clinical course of patients, with a general framework. GAF rates the social, occupational, and psychological functioning of adults, but doesn't measure impairment in functioning related to physical and environmental limitations. GAF is a numerical scale (1 through 100) used by clinicians to rate current and past levels of functioning in adults. (APA, 1994).

Turkish Translation

After receiving permission from the scale's developers SASS was translated by 3 translators for the purpose of studying its validity and reliability. Later, the translators compared their translations and following critical debate a consensus translation was reached. Some changes were made in order to adapt the scale for use with the Turkish population. The 14th item, which concerns the extent to which a person is involved in public life and refers to club, church, etc. as communal areas were changed to associations, gatherings, etc. to better reflect Turkish culture. The 5th, 7th, 8th, and 9th items of the scale are open-ended questions to which we added question marks so as to be more appropriate for Turkish orthographic rules. The final version of the scale, which was made by the consensus of the 3 translators, was administered to 20 volunteers from different sociocultural and socioeconomic backgrounds, and its intelligibility was determined. The scale was re-formed based on feedback, then re-translated into English by a translator blind to the original version. The present study began after the original scale's developers approved the re-translated version.

Process

All participants in the MDD group and the control group were administered SASS, GEF, and HAM-D during a semi-structured clinical interview by a psychiatric specialist according to DSM-IV criteria, and their sociodemographical characteristics were recorded. In addition, SASS was re-administered after 15 days to 50 participants in the MDD group to determine its test-retest reliability, and differences in SASS scores following anti-depressant treatment were noted after

Table I. Mean scale scores and standard deviations of the MDD and control groups.

GROUP	GEF	SASS	HAM-D
MDD	58.3 ± 10.1	30.2 ± 9.4	21.7 ± 4.7
Healthy Control	89.6 ± 3.1	44.5 ± 6.2	2.2 ± 1.7

4 and 8 weeks. All participants completed the scale in approximately 10 min, without any help.

Statistical Analysis

In order to test SASS's reliability, the Cronbach's alpha coefficient and item sum score correlation coefficients were used for external consistency. Additionally, 15 days after the first administration SASS was re-administered to determine its test-retest reliability. For the purpose of investigating whether SASS responded to changes due to anti-depressant treatment, SASS was re-administered after the response (HAM-D < 13) (the time from treatment initiation to response was determined as 4 or 8 weeks) and changes in the score that occurred as a result of treatment were analyzed. The non-parametric Wilcoxon test was used because 25 patients were taken under assessment while the change due to this treatment was being analyzed. In order to evaluate the simultaneous validity the correlation between SASS, and GEF, HAM-D, and HAM-D's 7th item was analyzed with Pearson's correlation analysis. Principal components analysis and factor analysis were used to measure construct validity. The factors with a self-value > 1 were evaluated and the items with a load factor > 0.4 were accepted. For the purpose of investigating how well SASS differentiated those in the control from those in the MDD group, as the 2 groups differed in terms of age and level of education, mean SASS scores of both groups were subjected to multivariate analysis of covariance (MANCOVA) in which age and level of education were covariants.

RESULTS

Mean scale scores of the MDD and control groups are presented in Table I.

In the analysis of the scale's reliability the internal consistency of the scale was assessed by calculating the Cronbach's alpha score. The Cronbach's alpha score was 0.90 for both groups combined and was 0.87 for the MDD group. The item sum score correlations were 0.22-0.66 (Table II) for both groups combined and

0.21-0.59 for the MDD group, and all these scores were statistically significant ($P < 0.01$). It was observed that the 17th and 20th items of SASS were low in terms of the item sum scores.

In the test-retest reliability analysis the correlation coefficient value of the 2 tests that were administered to 50 patients 15 days apart was 0.770 ($P < 0.0001$). After administering SASS to patients following treatment response, SASS value increased from 29.4 ± 8.1 (pre-treatment) to 37.8 ± 8.1 , and the difference between pre- and post-treatment values was statistically significant ($Z = -3.845$, $P < 0.0001$).

The validity of the scale was analyzed using simultaneous and construct validity. In the simultaneous validity analysis the correlation between SASS and GEF for both groups combined was 0.620 ($P < 0.0001$), its correlation with HAM-D was $r = -0.597$ ($P < 0.0001$), and its correlation with HAM-D's 7th item was $r = 0.569$ ($P < 0.0001$). The correlation coefficients were statistically significant in two ways.

Principal components analysis was used to determine the scale's construct validity. The results of the factor analysis provided 4 factors, each with a self-value > 1. Among these factors, only the first factor solely represented the entire scale by explaining 35.8% of the total variance with a self-value of 7.169. When the items with a load factor > 0.4 were taken into account it was observed that only the 20th item (difficulty managing resources and income) was loaded with a load factor < 0.4. The other factors were not considered since their self-values were < 2 and they represented small percentages of the variance. The variance and self-value of the factors obtained in the factor analysis are presented in Table III.

When SASS's ability to differentiate the MDD patients from the healthy controls was examined mean SASS score of the MDD group was 30.2 ± 9.4 versus 44.5 ± 6.2 for the control group. The results of MANCOVA, which was conducted by controlling for age and level

Table II. SASS item sum score correlations.

Items	Both Groups Combined	Depression Group
1 and 2	0.6251	0.5270
3	0.6562	0.5743
4	0.6386	0.5242
5	0.5495	0.3864
6	0.5803	0.4534
7	0.4963	0.3052
8	0.6300	0.5158
9	0.5019	0.4951
10	0.6141	0.5658
11	0.5462	0.5865
12	0.5010	0.4175
13	0.3807	0.4175
14	0.5983	0.5104
15	0.5531	0.5694
16	0.6113	0.5725
17	0.3726	0.2365
18	0.5717	0.4696
19	0.5222	0.5128
20	0.2186	0.2051
21	0.4622	0.4232

of education, showed that the difference between the 2 groups was statistically meaningful and that the scale differentiated the 2 groups ($F = 209.73$, $P < 0.0001$).

DISCUSSION

In general, this study revealed that the Turkish version of SASS, as the original version, was able to measure impairment in social functioning in MDD patients, its reliability and validity scores were satisfactory, and it was sensitive to changes due to treatment for depression. The scale was found to be appropriate to evaluate loss of social functioning and transform it into numerical data. Moreover, the scale was determined to be easily understandable by all of the participants and easy to administer.

The reliability of the Turkish version of SASS for use with MDD patients was determined by calculating the Cronbach's alpha internal consistency coefficient. The internal consistency of the Turkish version of SASS was high. In this study the Cronbach's alpha internal consistency coefficient was 0.90 for both groups combined and was 0.87 for the MDD group. The fact that these values were > 0.80 (Nunnally and Bernstein, 1994) suggests that it was sufficient in terms of internal consistency. While the Cronbach's alpha internal consistency coefficient for the Spanish version of the scale (Bobes et al., 1999) is consistent with the value obtained in this study, it is higher than the original scale's value of 0.74. During the reliability analysis, when the item sum score correlations were examined the values were as follows: 0.22-0.66 for both groups combined and 0.21-0.59 for the MDD group. The fact that the adjusted item sum correlations were higher than the desired value of 0.20 (Nunnally and Bernstein, 1994) for all 21 items highlights the sufficiency of the scale's internal consistency. The relatively low item sum score of the 17th item (difficulty expressing opinions) may be explained by the limited display of emotion in Turkish society compared to western societies. In addition, the low item sum score of the 20th item (difficulty managing resources and income) might be related to the general difficulty discussing income and subsistence in Turkey. Additionally, the fact that income is primarily earned by men in Turkey and that our sample group included mostly women may have been responsible for the low item sum score of the 20th item.

The test-retest reliability coefficient of 0.770 indicated that SASS didn't show variability in the course of time and remained fixed. Additionally, the fact that the scale displayed meaningful variation based on the effect of treatment for depression demonstrated SASS's utility for clinical studies.

In order to assess the construct validity of SASS factor analysis was conducted using principal components analysis. As a result of that analysis, unlike the original study, which is grouped under 3 factors, we found that the items were grouped under 4 factors. Similar to this study, the Spanish version of the scale is also grouped under 4 factors (Bobes et al., 1999). When the correlation between the items belonging to the same factor was analyzed, the high correlation of these factors with each other suggested that they could be grouped under the same factor; however, the analysis of the original scale focused mainly on the question whether the items are grouped under one factor or not, rather than the scale

Table III. SASS factor structure.

Items	F1	
1 and 2	0.683	Job and Home work interest
3	0.713	Work enjoyment
4	0.698	Interest in hobbies
5	0.605	Quality of spare time
6	0.627	Family seeking behavior
7	0.550	Family relationship quality
8	0.688	Gregariousness
9	0.573	Relationship seeking behavior
10	0.671	External relationship quality
11	0.611	External relationship appreciation
12	0.565	Social attractiveness
13	0.443	Social compliance
14	0.659	Community
15	0.623	Social inquisitiveness
16	0.673	Intellectual interest
17	0.415	Communication difficulties
18	0.618	Rejection sensitivity
19	0.580	Vainness
20	0.248	Difficulties in coping with resources
21	0.525	Control of surroundings
Eigen value	7.169	
Variance	35.8%	

dimension. Hence, since there was a distinctive linear correlation between SASS's total value and factor 1, we determined that factor 1 by itself represents SASS's ability to measure social functioning (Bosc et al., 1997). Positive relationships between factor 1 and each additional item of the scale and its contribution to the total value were determined. It was stated that Factor 1

represented all the items of the original scale and that all the items on the scale might be evaluated under 1 factor. Likewise, according to the results of our factor analysis, all the items were grouped under just 1 factor in this study, which indicated that the scale has a uniform structure; however, the fact that the 20th item (difficulty managing resources and income) had a load factor < 0.4

(0.25) might have been related to the relatively low item sum score of this item.

The present study investigated SASS's relationship to GEF and HAM-D. The results showed a positive correlation between SASS and GEF, and a negative correlation between SASS, and HAM-D and HAM-D's 7th item, indicating that SASS was sensitive to loss of social functioning caused by MDD and severe depressive symptoms, and that loss of social functioning exacerbated as the severity of depression measured by SASS increased. Mean SASS scores displaying meaningful variation between MDD patients and healthy controls are indicative of SASS's sensitivity to psychopathology and its ability to differentiate.

Clinical studies that were conducted using the classical scales (e.g. HAM-D and MADRS) are inadequate for determining at which point the effects of drugs used in the treatment of depression differ from each other, and the antidepressants are only distinguished in terms of their side effects and reliability. These studies focused on the final values, and defined recovery and response based on HAM-D score; therefore, most of the studies measured clinical recovery and response while disregarding social functioning. Evaluating only the severity of depression seems ineffective for emphasizing the differences between drugs. Two different studies that used SASS found that even though the antidepressant effect measured by classical depression scales were similar, levels of social functioning measured by SASS displayed some differences (Dubini et al., 1997a; Massana et al., 1999).

Recently, it has been suggested that response to MDD treatment is not enough and that residual symp-

toms might be related to the high prevalence rate, severe loss of social functioning, and risk of suicide (Bakish, 2001). Recovery on the other hand is a concept emerging in studies that compare treatment efficiency, and it shows that there are no residual symptoms (Ferrier, 2001). Accordingly, it may be suggested that recovery is only possible when social functioning to the level prior to illness is achieved; therefore, it is crucial to measure social functioning.

Limitations of the present study include having used just 1 scale to measure loss of social functioning in order to investigate the simultaneous validity, and a healthy group that was younger and better educated than the MDD group. Due to the lack of another Turkish scale for measuring loss of social functioning in MDD patients, simultaneous validity analysis was conducted by using GEF, HAM-D, and HAM-D's 7th item, which is another important limitation of the study. We attempted to compensate for the differences between the healthy control and MDD groups, in terms of age and level of education, by applying the MANCOVA test in which age and level of education were treated as covariates. Additionally, the fact that the groups were different in size might have created some confounding variables. It is appropriate to evaluate the current study by taking these limitations into account.

In conclusion, the Turkish version of SASS might be considered a reliable and valid tool for measuring loss of social functioning in MDD patients; therefore, determining if antidepressants have different effects on social functioning may be investigated using this scale in clinical studies.

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APPENDIX I

DO YOU FEEL

Name, Surname:

Date: / /

Age: Gender:

You are requested to answer the following questions according to your present thoughts. Please answer all questions and give only one response to each question. Thank you.

Do you have an occupation? Yes No

If yes:

1. How interested are you in your occupation?

() Very () Moderately () A little () Not at all

If no:

2. How interested are you in your home-related activities?

() Very () Moderately () A little () Not at all

3. Do you pursue this occupation, these activities with:

() A lot of enjoyment? () Some enjoyment?
() Only a little enjoyment? () No enjoyment at all?

4. Are you interested in hobbies/leisure?

() Very () Moderately () A little () Not at all

5. Is the quality of your spare time:

() Very good? () Good?

() Fair? () Unsatisfactory?

6. How frequently do you seek contacts with your family members (spouse, children, parents etc.)?

() Very frequently () Frequently
() Rarely () Never

7. Is the state of relations in your family:

() Very good? () Good?

() Fair? () Unsatisfactory?

8. Outside of your family, do you have relationships with:

() Many people? () Some people?
() Only a few people? () Nobody?

9. Do you try to form relationships with others:
- () Very actively? () Actively?
- () Moderately activity? () In no active way?
10. How – in general – do you rate your relationships with other people?
- () Very good () Good
- () Fair () Unsatisfactory
11. What value do you attach to your relationships with others?
- () Great value () Some value
- () Only a little value () No value at all
12. How often do people in your social circle seek contact with you?
- () Very often () Often () Rarely () Never
13. Do you observe the social rules, good manner, politeness, etc.?
- () Always () Most of the time () Rarely () Never
14. To what extent are you involved in community life (such as club, church etc.)?
- () Fully () Moderately () Slightl () Not at all
15. Do you like searching for information about things, situations and people to improve your understanding of them?
- () Very much () Moderately () Not much () Not at all
16. Are you interested in scientific, technical or cultural information?
- () Very () Moderately () Only slightly () Not at all
17. How often do you find it difficult to express your opinions to people?
- () Always () Often () Sometimes () Never
18. How often do you feel rejected, excluded from your circle?
- () Always () Often () Sometimes () Never
19. How important do you consider your physical appearance?
- () Very () Moderately () Not very much () Not at all
20. To what extent do you have difficulties in managing your resources and income?
- () Always () Often () Sometimes () Never
21. Do you feel able to organize your environment according to your wishes and needs?
- () Very much so () Moderately () Not very () Not at all

APPENDIX II

SASS SCORING KEY

1. How interested are you in your occupation?
 Very 3; Moderately 2; A little 1; Not at all 0
2. How interested are you in your home-related activities?
 Very 3; Moderately 2; A little 1; Not at all 0
3. Do you pursue this occupation, these activities with:
 A lot of enjoyment 3; Some enjoyment 2;
 Only a little enjoyment 1; No enjoyment at all 0
4. Are you interested in hobbies/leisure?
 Very 3; Moderately 2; A little 1; Not at all 0
5. Is the quality of your spare time:
 Very good 3; Good 2;
 Fair 1; Unsatisfactory 0
6. How frequently do you seek contacts with your family members (spouse, children, parents etc.)?
 Very frequently 3; Frequently 2; Rarely 1; Never 0
7. Is the state of relations in your family:
 Very good 3; Good 2;
 Fair 1; Unsatisfactory 0
8. Outside of your family, do you have relationships with:
 Many people 3; Some people 2; Only a few people 1; Nobody 0
9. Do you try to form relationships with others:
 Very actively 3; Actively 2;
 Moderately activity 1; In no active way 0
10. How – in general – do you rate your relationships with other people?
 Very good 3; Good 2;
 Fair 1; Unsatisfactory 0

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