

Investigation in to psychometric properties of self stigma scale by seeking psychological help in adolescent students[☆]

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ABSTRACT

Background: Stigmatization and help seeking are the one of the most important concepts of preventive interventions and mental health promotion in adolescent.

Methods: This study is in descriptive, correlational and methodological design. The sample of the study consisted of 250 volunteer students studying in a total of six schools. The Self Stigma Scale in Seeking Psychological Help was used as a data collection tool. Data were evaluated with content validity index based on expert opinion, exploratory and confirmatory factor analysis, Cronbach's Alpha coefficient.

Findings: Factor loadings explained 52% of the total variance in the two sub-dimensions. The KMO value was determined as 0.76 and the sample was found to be sufficient. The Cronbach's alpha coefficient of the entire scale was determined as .74. The alpha values of the sub-dimensions were determined as 0.76 and 0.74, respectively. In both exploratory and confirmatory factor analysis, all factor loads are >0.30. In confirmatory factor analysis, all fit indices were found to be >0.80 and the RMSEA value was determined as 0.067.

Conclusions: The results of the study revealed that it is a valid and reliable measurement tool that can be used to evaluate the level of self-stigma in seeking psychological help in adolescents. **Practice implications:** It is recommended that scale will be a guide in protective and preventive studies for researchers and school nurses working with students.

Introduction

Anxiety disorders are among the most prevalent mental health problems of adolescence. It is estimated that approximately 15–20% of adolescents experience anxiety disorders each year. Nevertheless, a significant proportion (approximately 80%) of adolescents requiring mental health services during their adolescence either fail to apply for treatment or refrain from seeking available resources (Bjornsen et al., 2019; Bjornsen et al., 2017; Lannin et al., 2016; Rozbruch, 2018).

Stigmatization is a complex and multidimensional concept that encompasses interpersonal relationships and serves as a moral and existential-universal phenomenon (Singh et al., 2022). Stigma is divided into two types: public stigma and self-stigma (Dubreucq et al., 2021). Public stigma refers to the perception held by the general public that a stigmatized group is socially unacceptable. Conversely self-stigma refers to the perception of an individual who has internalized public stigma

and believes that he or she is socially unacceptable (Munawar et al., 2022; Singh et al., 2022). Individuals may experience a sense of threat associated with the stigma of being identified as having mental health issues. This stigma can manifest in various forms, encompassing stereotypes, prejudice, and discrimination (Kutcher et al., 2016; Kutcher & Wei, 2020). Regarding the effects of public stigma and self-stigma on help-seeking, a systematic review and meta-analysis found that self-stigma was negatively associated with adherence to treatment (Divin et al., 2018; Livingston & Boyd, 2010). Different characteristics of individuals create discrimination over time and this discrimination may lead to stigmatization (Kapikiran & Kapikiran, 2013; Schachter et al., 2008; Yue-Tong & Xiao-Gang, 2012). If the individual expects the help to be useful, their self-stigmatization is reduced (Kutcher & Wei, 2020; Sriwichai et al., 2021). Serious ramifications occurs after a person internalizes the stigma from the public, chances are they will harbor the belief that they are being stereotyped and rejected by others (Link et al.,

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2020; Pfeiffer & In-Albon, 2023). The individual might even view seeking help as a sign of weakness or incompetence and thus refuse to seek help from others to maintain their self-esteem (Pfeiffer & In-Albon, 2023).

Previous studies have consistently found that the public has negative attitudes toward individuals who have been diagnosed with a mental illness and often holds a negative attitude toward them (DeLuca, 2020; Gulliver et al., 2010). The results of recent meta-analyses have shown that higher levels of self-stigma are associated with lower levels of hope, self-esteem, self-determination, social functioning, and quality of life (Livingston & Boyd, 2010; Morgan et al., 2018). The presence of stigma associated with seeking and receiving help can act as a significant barrier that deters young individuals from accessing mental health services (Lannin et al., 2016; Pfeiffer & In-Albon, 2023; Yue-Tong & Xiao-Gang, 2012).

Vogel et al. (2009) estimated that the role of public stigma and self-stigma in predicting attitudes toward seeking psychological help is associated with less positive attitudes and lower intentions to seek help. However, when self-stigma was included as a variable in the regression model, the influence of public stigma in predicting attitudes and willingness diminished and lost its statistical significance (Vogel et al., 2009).

According to Moses (2010a, 2010b), individuals who seek help from professionals may perceive themselves as inferior and incompetent, leading them to avoid seeking help to uphold a positive self-image. Similarly, adolescents might be reluctant to seek help if they perceive help-seeking as an admission of failure or a display of weakness (Moses, 2010a, 2010b).

Younger adolescents may struggle with social, biological, and hormonal changes (Pfeiffer & In-Albon, 2023) and fear being infantilized by mental health services (Gerlinger et al., 2013; Morgan et al., 2018) while older adolescents may feel challenged with school examinations and view help-seeking as a threat to their newly established sense of autonomy. Therefore, it would be beneficial to explore which stage of adolescence is most receptive to the breaking down of help-seeking barriers to maximize the success of future interventions (Divin et al., 2018; Gulliver et al., 2010).

Stigma toward seeking psychological help causes anxiety and hesitation in adolescence (Kutcher et al., 2016). School nurses have an important role in the assessment and diagnosis of potential mental health problems during adolescence (Link et al., 2020). The use of scales as a noninvasive quantitative monitoring tool in the diagnosis and grading of self-stigma in seeking help is necessary for implementing preventive interventions and promoting mental health (Bjornsen et al., 2017; Rozbruch, 2018).

The present study is aimed to evaluate the cultural appropriateness and psychometric properties of the Self Stigma Scale in Seeking Psychological Help (SSOSH) (Vogel et al., 2006). SSOSH was previously demonstrated to have adequate psychometric properties in university students (Kapıkıran & Kapıkıran, 2013). However, the validity and reliability of this scale have not been tested in adolescents. As age and environment can be important determinants of stigmatization demonstrating measurement properties of SSOSH in this age (12–18) group is crucial for its clinical and research-related utility.

Materials and methods

Study design

This was a descriptive-comparative study that included a correlational method to evaluate the psychometric properties of SSOSH.

Sample population and sampling

The sample for this study was recruited from a population of students attending six different secondary or high schools located in western part

of Türkiye.

The literature suggests the following recommended sample sizes for psychometric studies: ≥ 1000 excellent; 500–1000 very good; and 200–500 good (Bulut, 2023). In the case of factor analysis, it is recommended to enroll at least 200 people for both explanatory and confirmatory factor analyses (Büyüköztürk, 2019). The six schools included in the present study had approximately 550 students in adolescence. Thus, we aimed to recruit all the volunteers among 550 students by using a convenience sampling method (Büyüköztürk, 2019) to show the results clearly and to perform factor analysis with a sufficient sample. The study was completed with 250 volunteer students who agreed to participate. Following expert opinions, the comprehensibility of the scale was tested by applying it to 25 adolescent students in a different school with similar characteristics by conducting a pilot study. Since no negative feedback was received from the students regarding intelligibility no further revisions were made (Büyüköztürk, 2019). Inclusion criteria were as follows: being in the age range of 12–18 years and obtaining informed consent from both students and parents. The researchers obtained informed consent from the families by sharing an invitation letter through a mobile message and communication application link which contained comprehensive information regarding the purpose and procedures of the study.

Data collection instruments

Research data were collected with the SSOSH and sociodemographic data form.

Self-Stigma Scale in Seeking Psychological Help (SSOSH).

The scale developed by Vogel et al. (2006) consists of ten items. The scale is a one-dimensional 5-point Likert-type scale. Several items of the scale are scored inversely (1st, 3rd, 6th, 8th, 10th), and a high score indicates a high level of self-stigmatization in asking for help. The scale was adapted into by Kapıkıran and Kapıkıran (2013). The internal consistency of the scale was found adequate (Cronbach's alpha: 0.71), the Kaiser-Meyer-Olkin (KMO) value was calculated as 0.63 and Bartlett's test of sphericity ($X^2 = 226,126$, $df = 36$, $p < 0.001$) was found significant indicating construct validity of SSOSH. The factor loads of the single-factor scale were found to be between 0.36 and 0.68, and the single-factor structure explained 31.4% of the total variance. Additionally, DFA fit indices (CFI 0.93, GFI 0.90, RMSA 0.097) were at acceptable levels.

Two previous studies explored the validity of SSOSH in university students (aged 20–33) previously Kapıkıran and Kapıkıran (2013) detected a single-factor structure explained 31.4% of the total variance in their study. Following this, Kaya et al. (2015) found that a two-factor structure explained 45% of the total variance (Kaya et al., 2015).

Data collection process

The data were collected from students who met the inclusion criteria. The approach employed involved school administrators directing parents to pre-existing WhatsApp groups. Survey were collected from students via this group a link containing a Google survey. School administrators have also explained and supported the families to fill in the questionnaires by the students. It took approximately 5–7 min to fill out the questionnaire. During the data collection via Google survey, participants were not permitted to make multiple entries.

Data analyses

The IBM SPSS Statistics 26.0 package and IBM SPSS Amos version 25.0 were used for data analysis. Descriptive statistics were assessed. The content validity index (CVI) was calculated to determine the validity. Exploratory factor analysis (EFA) was performed to determine the item-factor relationship. Confirmatory factor analysis (CFA) was performed to evaluate whether the items and sub-dimensions explained the

original structure of the scale. It was required to have a factor loading of 0.30 or higher for an item to be included in a specific factor. Additionally, the factor loading of the item needed to be at least 0.10 points higher compared to its loadings under other factors. Cronbach's Alpha coefficient was calculated to determine the reliability of the scale. Item-total score analyses were performed, and split-half analysis was used. The significance was set at $p = 0.05$.

Prior to the data collection phase, three child psychiatry experts and two nursing educators were consulted to gather their opinions regarding the suitability and comprehensibility of the scale items for the targeted age group. The expert opinions demonstrated a high level of agreement, with a percentage of agreement (Content Validity Index, CVI) of 90%. Furthermore, the experts unanimously agreed that the application of the scale does not pose any harm.

Validity analysis of scale

Exploratory factor analysis was conducted using principal component analysis. Item-level content validity index (I-CVI) was used to determine the content validity of specialists. The I-CVI values higher than 0.78 was interpreted as the presence of harmony among the specialists (Büyüköztürk, 2019).

Varimax rotation was applied to obtain factors for the approximation of the simple structure. The adequacy of the data for factor analysis was evaluated by using the KMO test and Bartlett's test of sphericity. Eigenvalues greater than one (1) were used as cut-off dimensionality. Items were assigned to a factor based on factor loadings with a criterion of 0.40 or higher, indicating significance. The validity of the scales was assessed through various methods, including concordance validity, construct validity, and comparison with contrasted groups. Concordance validity was evaluated using the item level-content validity index. Construct validity was examined through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Following this, item-total score and split-half analysis were conducted. The model verification of CFA was conducted based on the chi-square test, degree of freedom, root-mean-square error of approximation (RMSEA, normal value: <0.05 ; Acceptable values: <0.08), the goodness of fit index (GFI, normal value: >0.95 ; Acceptable values: >0.90), comparative fit index (CFI, normal value: >0.95 ; Acceptable values: >0.90), and normal fit index (NFI, normal value: >0.95 ; Acceptable values: >0.90) (Şimşek, 2010).

Reliability analysis of scale

Pearson's correlation analysis was employed to examine the relationship between total-item scores of the scales and sub-dimensions. Additionally, Cronbach's Alpha coefficient was used to assess the internal consistency of the scales and sub-dimensions (Büyüköztürk, 2019).

Ethical considerations

Written Permission to use SSOSH in the 12–18 age group was obtained by e-mail from the authors who adapted the scale to the Turkish language. Ethical permission was obtained from the University of Dokuz Eylül Research Ethics Committee (2021/26–25) and the Turkish Ministry of National Education for the schools where the study was conducted. Additional permissions and explanations were also obtained from the school principal and teachers. Written informed consent was obtained from the students' parents. The link to the research information and informed consent form was disseminated to the parents of enrolled students via the school principals' existing communication groups.

Results

Thirty-four percent (34%, $n = 85$) of the participants were 15 years old, while 28% ($n = 71$) were 14 years old (mean age = 14.82). The gender distribution revealed that 52.8% of the participants were female,

while 47.2% were male. The academic levels of the participants ranged from grade 6 to grade 12, with the majority (51.6%) being in the 9th grade and 32% in the 10th grade.

Content validity

The agreement among experts for each item, as measured by the I-CVI ranged from 0.88 to 0.99. The overall I-CVI was 0.96, indicating a high level of agreement among the experts. Items with an average rating higher than 0.80 were considered to have adequate face validity. The scores given by the experts were consistent with each other.

Exploratory factor analysis

Exploratory factor analysis results are presented in Table 1. The varimax rotation method was used in factor analysis, as in the original form of the scale. Factor analysis results confirmed that the scale consists of two sub-dimensions which explained 52% of the total variance. The factor loadings of the scale varied from 0.60 to 0.83. KMO was calculated as 0.760 and Bartlett's Test of Sphericity was detected as 644.054 (Df: 45).

Confirmatory factor analysis

CFA results of the scale are shown in Table 2 and Fig. 1. According to the CFA results, factor loads ranged from 0.31 to 0.79. The results further confirmed the two-factor intercorrelated model for SSOSH (χ^2 : 790.964), df: 33 ($p < 0.01$), RMSEA: 0.067, GFI: 0.95.

Reliability

The Cronbach's α of the SSOSH was calculated as 0.736. The valued action subscale α value was 0.765, and the subscale α value was 0.743. The results of the split-half analysis using the Spearman-Gutman split-half method are presented in Table 3. The correlations of the items with the total score ranged from 0.42 to 0.79, and the correlations of the item-subscale scores ranged from 0.42 to 0.77 (Table 3). The other calculated reliability coefficients for the scale were as follows: Spearman-Brown

Table 1
Results of explanatory factor analyses (n: 250).

ITEMS	Sub Scale 1 2
1 If I go to a therapist or counselor for psychological help, I will feel inadequate.	0.732
2 My self-confidence will not be threatened if I seek expert help	0.744
3 If I seek psychological help, it makes me feel less intelligent.	0.785
4 If I talk to a therapist or counselor, my self-confidence will increase.	0.745
5 My view of myself does not change because I prefer to see a therapist or counselor.	0.619
6 Seeking help from a therapist or counselor will make me feel humiliated.	0.837
7 If I choose to seek expert help, I will feel positive about myself.	0.771
8 When I go to a therapist or counselor, I feel less satisfied with myself.	0.816
9 If I seek help for a problem I cannot solve, my self-confidence will remain the same.	0.602
10 If I can't solve my own problems, I feel bad.	0.820

Extraction method: Principal component Analyses.
Rotation Method: Varimax with Kaiser Normalization.
Keiser – Meyer – Olkin Measure of Sampling Adequacy: 0.760.
Bartlett's Test of Sphericity: 644.054.
Df: 45.
Total variance: 52.

Table 2
Confirmatory Factor Analyses Goodness of Fit Indices (n: 250).

Models/Data-model fit indices	χ^2	sd	χ^2 /sd	RMSEA	CFI	IFI	TLI	GFI
Two-factor model	790.964	33	1.441	0.067	0.93	0.94	0.92	0.95

Notes: X2, Chi-square; df, Degrees of Freedom; RMSEA, Root Mean Standard Error Approximation; NFI, Normed Fit Index; SRMR, Standardized Root Mean Square Residual; CFI, Comparative Fit Index; IFI, Incremental Fit Index; TLI (NNFI), GFI, Goodness of Fit; Index Normed Fit Index; Trucker-Lewis Index; RFI, Relative Fit Index.

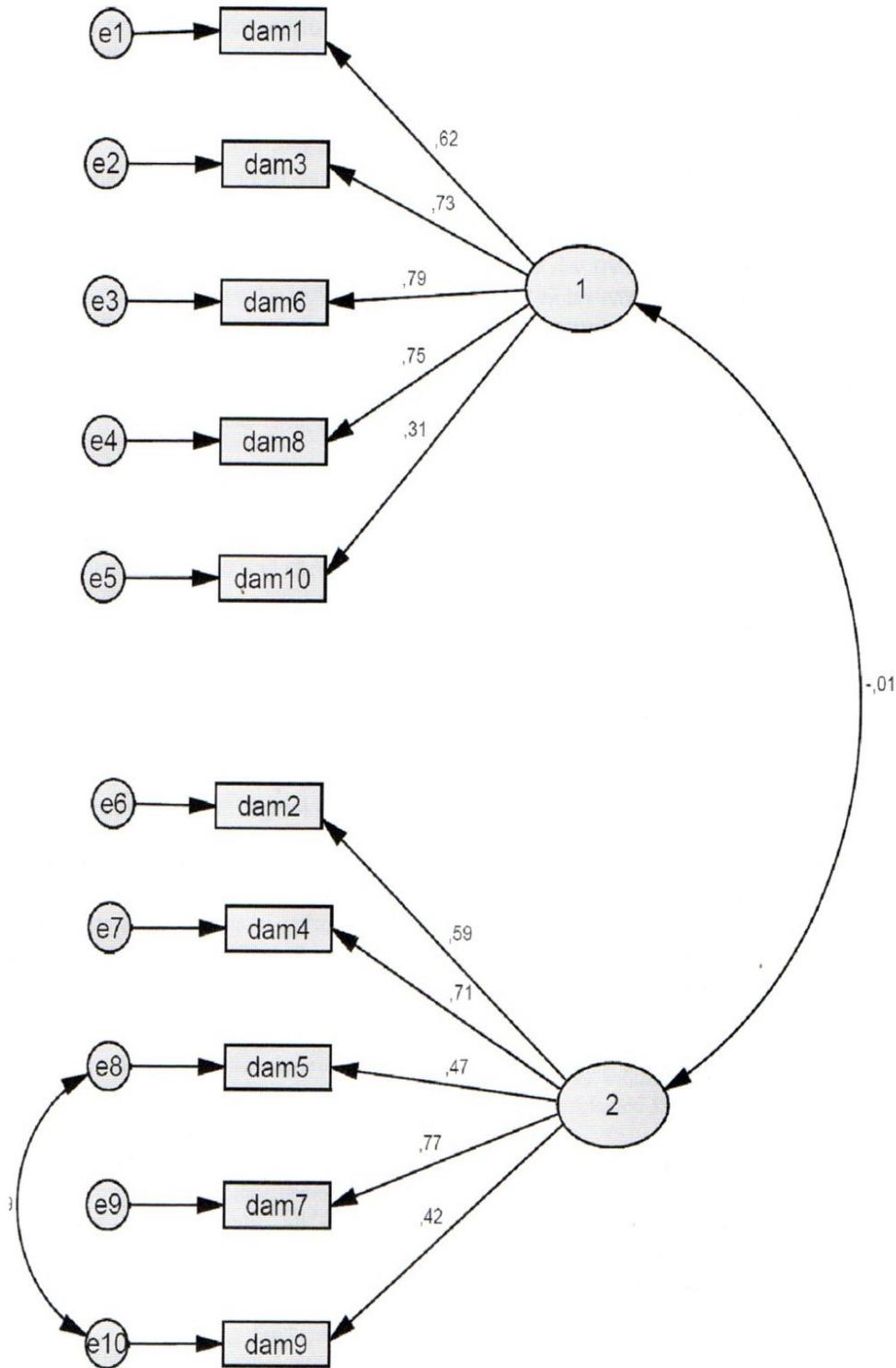


Fig. 1. Confirmatory factor analyses of two factor model.

coefficient was 0.946, the Guttman split-half coefficient was 0.943, and the correlation between the two halves of the scale was 0.897.

Discussion

The present study was performed to investigate the psychometric properties of SSOHS in adolescents. Both item-level and scale-level content validity indices exceeded the threshold of 0.80 and a high

level of agreement was found among the experts that items of the scale sufficiently represented the possible self-stigmatization in this age range (DeVellis, 2012). These results supported the content validity of the scale.

Construct validity of the scale

The suitability of the collected data and the adequacy of the sample

Table 3
Reliability analyses of scale and sub- dimensions ($n = 250$).

Scale Sub scale	Cronbach α	Split Half		Spearman-Brown	Guttman split-half	Two Half correlation
		First Half Cronbach α	Second Half Cronbach α			
Scale Total	0.937	0.890	0.867	0.946	0.943	0.897
F1	0.765					
F2	0.743					

size for factor analysis were evaluated using the KMO coefficient and Bartlett's test. A KMO value >0.60 indicates that the dataset is suitable for factor analysis, while the significance of Bartlett's test suggests that the sample size is sufficient for conducting factor analysis.

The findings of this study indicate that the two sub-dimensions accounted for 52% of the total variance in adolescents. According to the EFA, the factor loads were found to be above 0.30 in all sub-dimensions. A total variance explained ranging from 30% to 60% is typically considered acceptable (Büyüköztürk, 2019) and exceeding 50% is an indicator of strong construct validity. The high explained variance and factor loadings exceeding 0.30 in all sub-dimensions were interpreted as a marker of good construct validity (Büyüköztürk, 2019; Şimşek, 2010). The results of the present study show a more robust structure in adolescents compared to university students in the original scale by Kapıkıran and Kapıkıran (2013). The factor loadings of the single-factor scale were found to be between 0.36 and 0.68, and the rate of explained variance was calculated to be 31.40% in the study by Kapıkıran and Kapıkıran (2013). Conversely, Kaya et al. (2015) reported significant results with a two-factor structure that accounted for 45% of the total variance for SSOSH which aligns with the results obtained in this study.

According to CFA, factor loads of the two subdimensions varied between 0.31 and 0.79 (Fig. 1) similar to the results obtained by Kapıkıran and Kapıkıran (2013) and Kaya et al. (2015). The results of both EFA and CFA in this study provide further support for the structural validity of the scale.

Internal consistency analysis of the scale and its sub-dimensions

A Cronbach's alpha coefficient ranging from 0.80 to 1.00 indicates a high level of reliability for a scale (Büyüköztürk et al., 2018). The Cronbach's alpha coefficient for the whole scale was calculated as 0.90, indicating a high level of internal consistency in the present study. Additionally, Cronbach's alpha values for the two sub-dimensions were all above 0.70, further supporting the reliability of the scale. These values were highly similar to the results of the previous studies by Kapıkıran and Kapıkıran (2013), and Kaya et al. (2015) who calculated Cronbach's alpha as 0.71 and 0.70 for SSOSH, respectively. Besides, the split-half method revealed that both sections of the scale exhibited Cronbach's alpha values over 0.80, indicating high internal consistency. Furthermore, a strong and significant relationship was observed between the halves. These results provide crucial evidence affirming the reliability of the scale in this specific age group.

Item-total score and item sub-dimension total score correlations are expected to be >0.20 , with a preference for values as close to possible to 1 since higher values indicate the ability of individual items in capturing the construct (Büyüköztürk, 2019; Şimşek, 2010). All item correlations with the scale total scores and subscale total scores exceeded 0.40 in the present study. This is consistent with the results reported in previous studies by Kapıkıran and Kapıkıran (2013) and Kaya et al. (2015). These findings suggest that each item in the scale is strongly associated with all scales and subscales. Therefore, the scale appears to effectively measure self-stigma in seeking psychological help for the 12 to 18-year-old age group and demonstrates high item reliability for both the scale and its sub-dimensions.

Practice implications

This scale is recommended to be used in practice by school nurses in the diagnosis and follow-up of students. Thus, it helps planning and implementing preventive interventions and promoting mental health. Our findings can be beneficial for the identification of risk groups, the development of novel mental health promotion interventions (stepped care models, nurse family partnership programs, mobile and internet-based school community projects, etc.), and the evaluation of their effectiveness in adolescents. We believe that this study serves as an early intervention in identifying potential risk factors for other researchers and school nurses engaged in protective and preventive mental health studies with students.

Limitations

The strength of this study lies in its inclusion of children from diverse socioeconomic backgrounds and different age groups. However, the present study does have several limitations. Firstly, the data were collected from adolescent students, which may introduce a potential for social desirability bias, as children may have reported their desired situations rather than their actual experiences. Secondly, the absence of other scales measuring attitudes toward seeking psychological help specifically in adolescents within the country prevented the establishment of concurrent validity. Future research could benefit from employing scales that measure self-disclosure, as it is positively associated with attitudes toward seeking psychological help. Additionally, the study was conducted exclusively in the western region of the country, utilizing a random sampling method. These limitations may impact the generalizability of the study's findings. Nonetheless, this study provides a foundation for examining adolescent stigmatization related to help-seeking and highlights knowledge gaps that should be addressed in future interventions.

Conclusion

The results of the study revealed that SSOSH is a valid and reliable measurement tool to evaluate the level of self-stigmatization in adolescents for Turkish sample. Validity and reliability analyses demonstrate that the scale possesses satisfactory psychometric properties. SSOSH may be useful in assessing students' levels of self-stigma and gaining a clearer understanding of their attitudes toward seeking psychological help in clinical and research settings. In addition, cross-cultural comparative studies can be planned using scales.

Contribution to the article

Both authors participated in the design, scanning of the articles, interpretation of the results, writing and critical review of the article.

Credit statement

Study conception and design: SÖ, ÖÖ; Acquisition of data: ÖÖ, SÖ; Analyses and interpretation of data: ŞÖ ÖÖ; Drafting of manuscript: SÖ ÖÖ; Critical revision: SÖ ÖÖ; All authors approved the final manuscript.

Both authors alone are responsible for the content and writing of the

article.

Declaration of Competing Interest

The authors report no conflict of interest. Both authors alone are responsible for the content and writing of the article.

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