

ORIGINAL ARTICLE

Psychometric Properties of the Turkish Version of the Substance Abuse Self-Stigma Scale

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Main Points

- This study indicates that the Substance Abuse Self-Stigma Scale-TR is a reliable and valid instrument for determining self-stigma in individuals with substance use disorder (SUD).
- Healthcare professionals who worked with addictive behaviors can use the scale to determine self-stigma among individuals with SUD.
- The self-stigma prevention programs can be assessed with the scale.
- Before the discharge and the recovery process, the self-stigma has been evaluated in terms of relapse. Higher self-stigma levels can lead to relapse, so it is important to determine the risk and strengthen training for preventing the relapse.

Abstract

The aim of the study was to evaluate the psychometric properties of the Turkish version of the Substance Abuse Self-Stigma Scale-TR. The data were collected from 260 participants with substance use disorder history who were attending group therapy in the İstanbul Probation Department between April 4 and May 1, 2016. Using exploratory factor analyses, internal consistency, split-half reliability, construct validity, and concurrent validity were evaluated. The Cronbach's alpha reliability coefficient of the Substance Abuse Self-Stigma Scale-TR was .77. Item-total correlation coefficients for the scale items were between .30 and .63. According to confirmatory factor analysis, chi-square/degrees of freedom ratio was 1.69 and root-mean-square error of approximation was .05 ($p < .01$). There was a strong positive correlation between the Substance Abuse Self-Stigma Scale-TR and the Internalized Stigma of Mental Illness Scale ($r = .712$; $p < .001$). These preliminary findings should be confirmed in larger-scale, multi-center studies among patients in long-term treatment. This study indicates that the Substance Abuse Self-Stigma Scale-TR is a reliable and valid instrument for determining self-stigma in individuals with substance use disorder.

Keywords: Psychometrics, substance addiction, substance abuse, stigma, validation

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Introduction

Substance use disorders (SUD) are defined in the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (DSM-5), as pathological behaviors associated with any substance, such as impaired social behavior, lack of control over use, or risky use. The disorder is characterized by tolerance and withdrawal (American Psychiatric Association [APA], 2013). In addition to the many negative consequences that individuals experience as a result of SUD, they are also affected

by negative attitudes projected by society, their immediate circles, and from within themselves (Crapanzano et al., 2019; Luoma et al., 2013). Although most psychiatric disorders are also stigmatized, using alcohol and drug is believed to be under the responsibility and control of the patient, so individuals with SUD are perceived to be more dangerous compared to those with other psychiatric disorders (Crapanzano et al., 2019; Tuliao & Holyoak, 2019). The more controllable the cause and process of a disease is, the more punitive the attitudes of society may tend to be toward those

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afflicted. Therefore, SUD is more stigmatized than other mental disorders as individuals start using a substance by their own choice, which is considered a moral failure. These negative attitudes approach addiction as a lack of morals or willpower (Rey et al., 2019).

The internalized self-stigma of individuals with SUD is the expression to themselves of negative thoughts, beliefs, and feelings such as shame, perceived judgment from others, and fear (Luoma et al., 2007; Smith et al., 2016). Accepting the negative labels placed on them by society, called perceived stigma, individuals with SUD experience shame, feelings of worthlessness, self-blame, and social withdrawal (Hammarlund et al., 2018; Yang et al., 2019). This perceived stigma is also associated with lower self-esteem, depression, anxiety, and poor sleep (Birtel et al., 2017).

Public stigma can lead individuals to stigmatize themselves, which is referred to as self-stigma (Crapanzano et al., 2019; Luoma et al., 2013). In the public stigma, with the perception held by others that the individual is socially undesirable, some common stereotypes identified about the individuals who have SUD include difference/alienation, devaluation, moral weakness, lack of willpower, lack of work ethic, incompetence, hopelessness, blameworthiness, potential violence, unreliability, shame, and concealment (Grant et al., 2016; Luoma et al., 2013; Yang et al., 2017). Other stereotypes include labels such as unlikeable, dangerous, and impulsive/unpredictable (Nieweglowski et al., 2018).

The stigma that people with SUD experience becomes a barrier to achieving life goals that they consider important (Luoma et al., 2013). Even if they reduce or quit using the substance, self-stigma and perceived social stigma continue to have a negative effect on their recovery and seeking treatment (Birtel et al., 2017; Crapanzano et al., 2019). One study that focused on participants' experiences of addiction found that people struggling with addiction see themselves as having incorrigible conduct, inexcusable, and inevitable corruption. Using a substance and living in this situation is a self-compromise that leads to an endless cycle of hopeless conflict against drug use (Hsieh et al., 2017). The negative attitudes resulting from stigmatization can lead to practical difficulties such as renting a home, finding a job, or getting better health care (Corrigan et al., 2017). However, more research has to be done to determine the degree of their impact on decision-making regarding treatment (Hammarlund et al., 2018). In addition, addiction treatment is a long-term process, and patients may relapse after treatment. Therefore, it is essential to identify self-stigma in individuals with SUD not only to facilitate treatment but also to promote long-term well-being.

The scale related to internalized stigmatization in Turkey is for mental disorder and this scale is generally used in studies (Can & Tanriverdi 2015; Coskun & Gulen, 2012; Yildirim et al., 2012). However, substance addiction contains different stereotypes from general mental disorders and there is no scale measuring these substance addiction-specific stereotypes. Therefore, this methodology study aimed to validate the psychometric properties of the Turkish version of the Substance Abuse Self-stigma Scale (SASS-TR) for use in future studies.

Methods

Participants

A total of 260 individuals with a history of SUD who attended group therapy in Istanbul Probation Department were included in the methodological study. The total possible sample consisted of all the people registered at probation in 1 year. According to known universe ($N = 1440$ the 1 year universe of patients), based on a sample size calculation, 5% error and 95% confidence, a minimum of 210 participants was necessary for valid data collection. Inclusion criteria for the sample included regular group therapy attendance, diagnosis of a SUD based on DSM-5 criteria, and at least a 12-month history of substance use. The data were collected between April 4 and May 1, 2016. Table 1 shows the characteristics of the sample population in terms of age, marital status, occupation, previous treatment, and primary substance. The mean age of the participants was 28.68 ± 7.04 years. Most (97.3%) were men, 68.8% were single, and 23.5% were self-employed/freelance workers. Some of the participants (23.5%) had received treatment for SUD, most (86.4%) used cannabis, and 56.9% had polysubstance use (Table 1).

Measures

Data collection form consisted of a short information form, SASS, Internalized Stigma of Mental Illness (ISMI) Scale which was used as a parallel form. A short information form was used to obtain information about the participants' sociodemographic characteristics and substance use history.

Substance Abuse Self-stigma Scale: The SASS was developed by Luoma et al. in 2013. The 5-point Likert-type scale consists of 40 items in 4 sections: self-devaluation (8 items), fear of enacted stigma (9 items), stigma avoidance (13 items), and values disengagement (10 items). The scale is sometimes evaluated as three subscales, with the final two sections calculated together. Items 19, 20, 22, 23, 25, 29, 30, 31, 38, and 39 are reverse coded. The development of the scale started with determining the common stereotypes associated with addiction that were then refined according to feedback from focus groups of addiction treatment patients and professionals. This resulted in a revised 74-item scale with 4 hypothesized subscales. The scale was validated with 352 patients receiving treatment for SUD (91.8% outpatient, 8.2% residential). After a factor analysis, the scale was reduced to the current 40-item form. In the original study, Cronbach's alpha values were .86 for the total scale and .82 – .88 for the subscales (Luoma et al., 2013).

Internalized Stigma of Mental Illness Scale: The ISMI is a 29-item 4-point Likert-type scale with 5 subscales (alienation, stereotype endorsement, discrimination experience, social withdrawal, and stigma resistance) that measures internalized stigma in patients with psychiatric disorders. The scale was developed by Ritsher et al. (2003) and is used in research worldwide (Boyd et al., 2014). The ISMI was adapted to the Turkish language and culture by Ersoy and Varan (2007) without modification (ISMI-TR). As there have been no Turkish tools to assess self-stigma in SUD, the ISMI-TR has been used for studies of stigma in addiction (Can & Tanriverdi 2015; Coskun & Gulen, 2012; Yildirim et al., 2012). Therefore, this tool was used in the present study as a parallel (equivalent) form for reliability analysis. A higher total score

Table 1.
Characteristics of the Sample Population ($n = 260$)

Variables	<i>n</i>	%	Mean \pm Standard Deviation
Age (years)			28.68 \pm 7.04
Gender			
Female	7	2.7	
Male	253	97.3	
Marital status			
Married	81	31.2	
Single	179	68.8	
Occupation			
Student/does not work	48	18.5	
Self-employed/freelance workers	95	36.5	
Employee	74	28.5	
Industrial worker	17	6.5	
Private sector	26	10.0	
Previously received treatment			
Yes	61	23.5	
No	199	76.3	
Primary substance			
Alcohol	86	33.1	
Cannabis	224	86.2	
Synthetic cannabis	66	24.4	
Ecstasy	82	86.2	
Cocaine	21	8.1	
Opioid	12	5.8	
Inhaler	11	4.2	
Other	6	2.3	
Substance use			
Substance use	112	43.1	
Polysubstance use	148	56.9	

corresponds to more negative and severe internalized stigma. In the original study of the scale, Cronbach's alpha coefficient was .93 in individuals receiving treatment for substance misuse (Luoma et al., 2013); in this study, it was determined to be .84 among people with SUD.

Statistical Analysis

A statistical analysis of the study data was performed using the IBM SPSS (Statistics Package Program for Social Sciences) version 21.0 (IBM Corp., Armonk, NY, USA) for Windows and LISREL 8.80. The sociodemographic questionnaire was evaluated with descriptive analyses. Exploratory and confirmatory factor analyses were used for the construct validity of the scale. Internal consistency and item-total correlation were examined. Regarding internal consistency, Cronbach's alpha was calculated as the coefficient of recommended reliability, while the item-total correlation was estimated using Pearson's correlation coefficient.

Spearman – Brown test was performed for internal consistency. The Guttman split-half coefficient was determined by dividing the total set of items. Results were evaluated within a 95% confidence interval at a significance level of $p < .05$.

Ethical Issues

Ethical approval was obtained (Decision No. 02.06.2015/271) and written approval was given by one of the universities in İstanbul. Both a short and a long report were sent to the probation after the completion of the research. In addition, the participants were informed about the aim of the research, their permission was requested, and assured that their personal data would be kept confidential.

Results

Validity Analyses

The SASS was translated from the original English to Turkish by three professionals in psychiatry and psychiatric nursing who are proficient in both languages. These translations were reviewed for meaning and combined into a single preliminary Turkish version, which was translated back into English by an English Language and Literature professional. This back-translated English version was sent to Dr Jason Luoma for an assessment of differences and congruence of meaning. A content validity analysis was performed with a panel of eight mental health professionals (six academicians in psychiatric nurse and two psychiatry specialists) and content validity was determined to be .95. Item 32 (.62) was revised again based on the panel evaluation and sent to the developers for approval. They evaluated the suitability of these statements on a 4-point Likert scale (completely disagree: 1, disagree: 2, agree: 3, completely agree: 4).

Pilot Study

A pilot study was carried out with 22 individuals with a history of SUD to determine the readability and comprehensibility of the items. The items were revised according to the reliability results. The Cronbach's alpha of the scale in the pilot study was .79. When using the parallel form (ISMI-TR), the participants had difficulty understanding the questions due to confusion about the different definitions of mental illness and addiction. Therefore, the term "mental illness" was changed to "substance addiction/abuse" in the ISMI-TR, as described in other studies (Ahern et al., 2007; Luoma et al., 2007).

Reliability

The Hotelling's T^2 test value of the scale was found to be statistically significant ($T^2 = 1282.65, p < .00$). A reliability analysis was performed by determining Cronbach's alpha coefficient of internal consistency for the scale and subscales. Cronbach's alpha was .77 for the SASS-TR overall and .66 – .81 for the subscales (Table 2).

Reliability Analysis of the Substance Abuse Self-Stigma Scale-TR

A parallel form analysis using Pearson's correlation test demonstrated a significant positive correlation between ISMI-TR and the SASS-TR ($r = .60; p < .001$). For the SASS-TR, the Guttman split-half reliability coefficient was .74 and the Spearman – Brown correlation was .75 (Table 3).

Table 2.
Reliability Analysis of the Substance Abuse Self-stigma Scale-TR

Scale	Original Study	In This Study
Total items	0.86	0.77
Self-devaluation	0.82	0.80
Fear of enacted stigma	0.88	0.81
Stigma avoidance subscale	0.86	0.66
Values disengagement subscale	0.82	0.77

Table 4 shows that that item – total correlations were fair to moderate (.30 – .63). According to analysis of variance with Tukey’s test for non-additivity analyses, the total score could be calculated (75.47, $p < .000$).

Confirmatory Factor Analysis

Kaiser-Meyer-Olkin (KMO) and Barlett’s tests were used to determine whether the sample size was large enough for factor analyses of the scale. Kaiser-Meyer-Olkin value (.85) was showed that sampling adequate, it was over 0.5, and Barlett test result was significant ($p < .000$). In the confirmatory factor analysis, Chi-squared (χ^2), degrees of freedom (df), root-mean-square error of approximation (RMSEA), standardized root-mean-square residual (SRMR), goodness-of-fit index (GFI), and comparative fit index (CFI) were evaluated. In the confirmatory factor analysis of the initial model fit, χ^2/df was 1.67, RMSEA was 0.051, GFI was 0.81, and CFI was 0.83. The first model did not demonstrate adequate fit, so it required modification. Model comparisons done before and after modification showed improvement in the χ^2/df and RMSEA values (Table 5). The scale items were distributed to four factors having eigenvalues above 1 and explaining 70.6% of the total variance.

After modification, χ^2/df was 1.34, RMSEA was 0.063, GFI was 0.084, and CFI was 0.90. The modified model is shown in Figure 1.

Discussion

The purpose of this study was to create a Turkish version of the SASS and investigate its psychometric properties. Before this, there had been no specific tools to evaluate self-stigma in substance abuse in Turkey, so this is the first study to validate the psychometric properties of the new SASS-TR in persons with SUD. Previously, the ISMI-TR was generally used to determine

Table 3.
Substance Abuse Self-stigma Scale Split-Half Analyses (n = 260)

Scale-half 1 (r)	.86
Internal consistency scale-half 2 (r)	.81
Total item	40
Correlation value between scales	.60
Spearman – Brown (r)	.75
Guttman split-half (r)	.74

Table 4.
Correlation Analyses for the Item-Total Score (n = 260)

Item No.	Total Item Correlation	If Item Deleted Cronbach Alpha
Item 1	.372**	.902
Item 2	.490**	.900
Item 3	.352**	.902
Item 4	.292**	.902
Item 5	.420**	.901
Item 6	.351**	.902
Item 7	.538**	.900
Item 8	.518**	.900
Item 9	.575**	.899
Item 10	.474**	.901
Item 11	.346**	.901
Item 12	.583**	.899
Item 13	.600**	.899
Item 14	.637**	.898
Item 15	.618**	.899
Item 16	.563**	.899
Item 17	.567**	.899
Item 18	.335**	.902
Item 19	.481**	.900
Item 20	.505**	.900
Item 21	.307**	.903
Item 22	.395**	.902
Item 23	.388**	.902
Item 24	.343**	.902
Item 25	.426**	.901
Item 26	.557**	.899
Item 27	.349**	.902
Item 28	.458**	.901
Item 29	.412**	.901
Item 30	.418**	.901
Item 31	.374**	.902
Item 32	.407**	.901
Item 33	.468**	.901
Item 34	.444**	.901
Item 35	.488**	.900
Item 36	.448**	.901
Item 37	.489**	.900
Item 38	.487**	.900
Item 39	.471**	.901
Item 40	.415**	.902

Note: Pearson correlation: ** $p < .01$.

Table 5.
Confirmatory Factor Analysis Results of Scale ($n = 260$)

Fit Indicators	Good Fit	Acceptable Fit	Before Modification	After Modification
χ^2/SD	$0 \leq \chi^2/df \leq 2$	$2 \leq \chi^2/df \leq 3$	1.67	1.34
RMSEA	$0 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$	0.051	0.036
RMR	≤ 0.05	≤ 0.08	0.13	0.12
SRMR	$0 \leq SRMR \leq 0.05$	$0.05 \leq SRMR \leq 0.10$	0.07	0.06
GFI	$0.95 \leq GFI \leq 1.00$	$0.90 \leq GFI \leq 0.95$	0.81	0.84
AGFI	$0.90 \leq AGFI \leq 1.00$	$0.85 \leq AGFI \leq 0.90$	0.79	0.82
CFI	$0.97 \leq CFI \leq 1.00$	$0.90 \leq CFI \leq 0.97$	0.83	0.90

CFI = comparative fit index; GFI = goodness-of-fit index; RMR, root-mean-square residual; RMSEA, root-mean-square error of approximation; SD, standard deviation; SRMR, standardized root-mean-square residual.

self-stigma in SUD in Turkey (Can & Tanriverdi 2015; Coskun & Gulen, 2012; Yildirim et al., 2012). However, the main purpose of the ISMI is to assess internalized stigma for people with psychiatric disorders, mostly schizophrenia and other chronic mental illnesses. Based on feedback received from patients in this study, the term “mental illness” used in the ISMI caused confusion in patients with SUD, and during the pilot study, it was found that SUD patients did not want to identify themselves as mentally ill or having psychiatric disorders. This demonstrated that a new, more specific scale was needed to identify self-stigma in addiction. The SASS-TR demonstrated good reliability and validity under analysis.

The ISMI measures the same concepts as the SASS but includes different items. A parallel form reliability analysis revealed significant positive correlation between the ISMI-TR and the SASS-TR ($r = .594$; $p < .001$). Some authors have stated that correlation coefficients of $.50 - 1.00$ or $>.40$ represent a strong association, while others have cited the $.30 - .70$ range as representing a moderate correlation (Buyukozturk, 2002; Erkus, 2016; Secer, 2015). The results of the parallel form analysis indicate there is an acceptable correlation by all of these criteria.

In this study, Cronbach’s alpha was $.77$ for the whole SASS-TR and ranged from $.61$ to $.81$ for its subscales. Internal consistency values of $.60 - .80$ indicate the scale is highly reliable (Costello & Osborne, 2005). On the other hand, Cronbach’s alpha values in the original study were between $.82$ and $.88$ (Luoma et al., 2013). This suggests that Cronbach’s alpha values may vary in different sample groups. The split-half reliability analysis showed that the Spearman – Brown correlation ($r = .75$) and the Guttman split-half ($r = .074$) values were acceptable. In terms of scale adaptation and development, scales with reliability values of $.70$ or higher are considered adequately reliable (Secer, 2015). In this study, item-total correlations ranged from $.30$ to $.63$, which is consistent with the range reported in the original study ($.15 - .60$). All correlation coefficients in the present study were above $.30$, indicating good item-total consistency for all items (Costello & Osborne, 2005; Ratner, 2009). The two items with the lowest correlation were “I have the thought that I can’t be trusted” (item 4) and “when I feel incompetent at something I want to do, I stop trying” (item 21). A possible explanation for the low scores in these items is that most of the participants were employed or running their own businesses, and employed

participants might not want to describe themselves as unreliable. Similarly, these respondents were all on probation, which is based on self-reported abstinence. This may also lead to hesitance to present themselves as untrustworthy. In addition, being in group therapy may both strengthen the participants’ self-confidence and encourage persistence even when they feel inadequate, and seeing others facing the same problems may serve as an added source of strength. Furthermore, support from mental health professionals in group therapy increases willpower and improves coping skills, which further develops their ability to persevere despite self-doubt and feelings of incompetence. Also, the factor loads can be increased by larger sample size (Ximénez, 2015).

Model fit was evaluated using confirmatory factor analysis based on three indices: χ^2/df , CFI, and RMSEA. A χ^2/df value <2 (Simsek, 2007) or <3 (Secer, 2015) shows a good fit. Comparative fit index values ≥ 0.90 and RMSEA values ≤ 0.06 reflect a good fit (Secer, 2015; Simsek, 2007). In the present study, χ^2/df was 1.34 and RMSEA was 0.036 , indicating a good fit. The original study reported an RMSEA of 0.06 . Standardized root-mean-square residual values of $0.05 - 0.10$ and CFI values of $0.090 - 0.095$ indicate an acceptable fit (Ratner, 2009). In this analysis, SRMR (0.06) and CFI (0.90) also showed a good fit and were consistent with the values reported in the original study (SRMR = 0.06 , CFI = 0.87).

Limitations and Directions/Suggestions for Future Research

Although this study demonstrates a good fit for the model, there are some limitations that should be discussed. One limitation is that this study was conducted in a single probation office and the sample represents a limited population. In addition, the sample included only group therapy patients and most were men. Collecting data from a rehabilitating group is important for research, as these patients have heightened awareness. However, group therapy likely strengthened these patients mentally and may mitigate the effect of social stigmatization, thereby reducing internalized stigmatization. The SASS-TR should be applied with larger samples, in different centers, and on individuals receiving long-term treatment.

In conclusion, this study shows that the SASS-TR is a valid and reliable measurement tool for the assessment of self-stigma in patients with a history of SUD. Parallel form, split-half reliability,

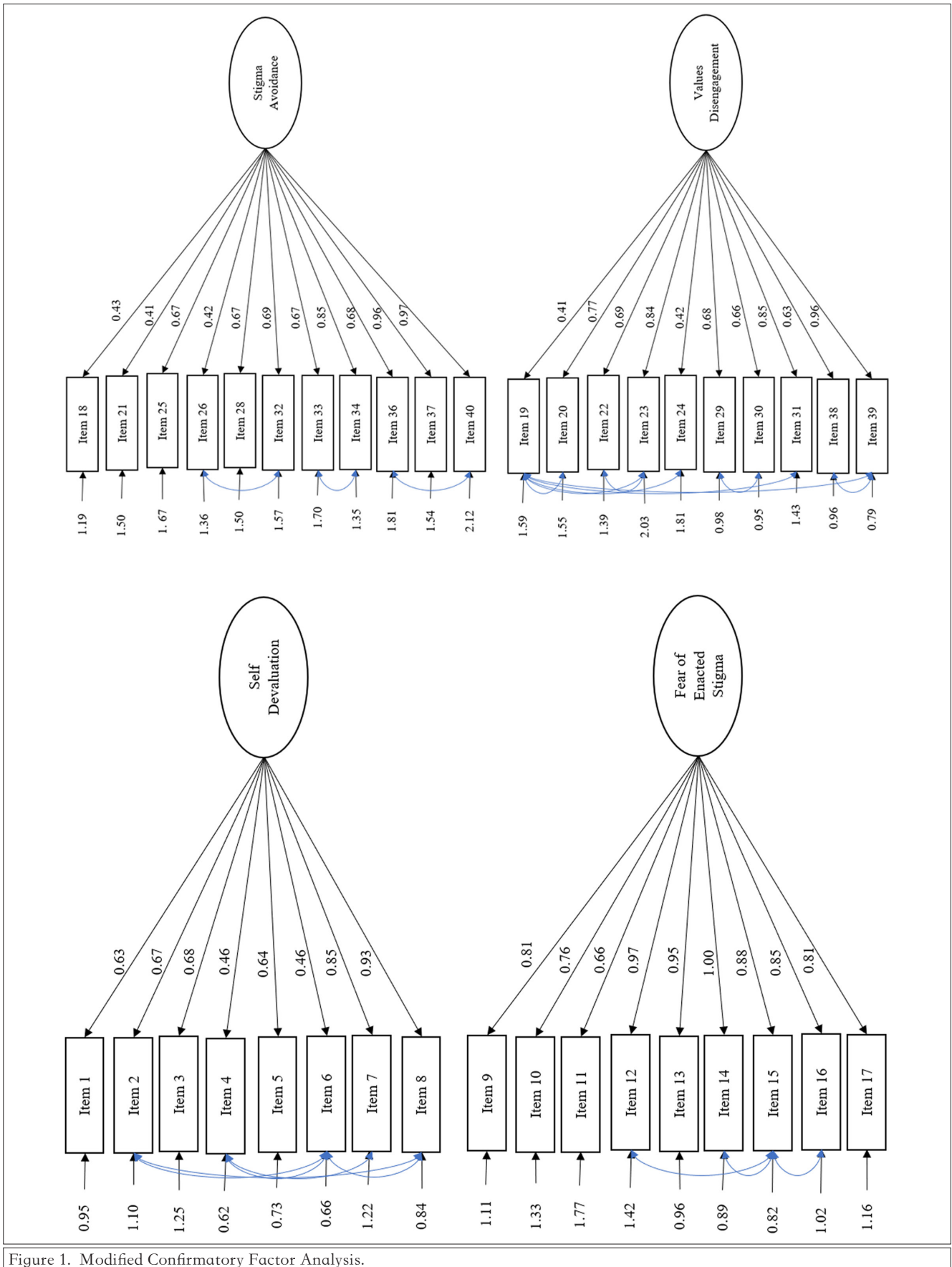


Figure 1. Modified Confirmatory Factor Analysis.

and internal consistency analyses demonstrated a reliable structure. The SASS-TR can be used in Turkish culture to evaluate people who have substance abuse or addiction problems.

Until now, there has been no special instrument in the Turkish language to determine self-stigma in substance abuse, so Turkish studies often use the ISMI-TR. Now, the Turkish version of the SASS is a specific tool for determining the self-stigma of individuals with SUD. Self-stigma is an important condition that has to be assessed because it can lead to relapse among individuals who have SUD. Psychiatric nurses in the clinic and community require an instrument like this to ensure and maintain appropriate treatment, to break patients' relapse cycles, and to help them learn to live in the community without prejudice. Psychiatric nurses should also develop psychological education programs about substance abuse to prevent self-stigma and develop self-confidence.

Ethics Committee Approval: Ethical committee approval was received from the Ethics Committee of Medipol University, (Approval No: 271).

Informed Consent: Informed consent was obtained from all participants who participated in this study.

Peer-review: Externally peer-reviewed.

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