

Turkish validity and reliability of the Internalized AIDS-Related Stigma Scale

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Abstract

Purpose: This study was conducted methodologically to adapt the Internalized AIDS-Related Stigma Scale (IA-RSS) to Turkish society.

Design and Methods: The universe of the study consisted of 250 people who were treated in the infectious diseases outpatient clinic. A total of 60 individuals living with human immunodeficiency virus (HIV) composed the sample. The Individual Information Form and IA-RSS were used for data collection.

Findings: All the statistical procedures performed in the validity and reliability stages of the study show that the scale is a valid, reliable measurement tool for the Turkish culture.

Practice Implications: The Turkish version of the IA-RSS was determined as a valid and reliable screening tool that measures internal stigmatization in living with HIV.

KEYWORDS

HIV(+)/AIDS, internalized stigma, validity and reliability

1 | INTRODUCTION

Stigma and stigma-related concepts were first described by the science of sociologists. According to the sociologist Goffman¹ who used this concept for the first time, the stigma occurs due to the individual's personality traits, physical characteristics, and the membership of a particular group. The stigmatization behavior for individuals living with human immunodeficiency virus (HIV) is explained as a combination of knowledge (ignorance), attitude (prejudice), and behavioral problems (discrimination) and is among the primary obstacles to the treatment of individuals with acquired immunodeficiency syndrome (AIDS). Some of the negative effects of stigma on people living with HIV/AIDS are social isolation, decreased perceived social support levels, loneliness,² worsening depressive symptoms,³⁻⁵ depression,^{6,7} impairment of physical and mental health,⁷ humiliation, exclusion by family and society, public embarrassment, feeling the need to hide

themselves for reasons such as exclusion by society, stigma, fear of losing their job, and social environment. Stigma in the work environment, regardless of whether the individual is right or wrong, damages the reputation of the employee.⁸ This fear causes a delay of treatment and failure to take necessary precautions when there is a risk of transmission to other people. Fear of exclusion also causes to adopt a hesitant attitude toward life and to cause problems in the evaluation of the opportunities they face. This situation reduces the satisfaction of individuals in their lives and reduces their motivation of self-realization. Therefore, HIV stigma is an important social determinant of health for individuals living with HIV/AIDS. Stigma may result in avoiding disclosure of HIV status to sexual partners⁹ and increased HIV virus burden due to delayed HIV testing associated with reduced participation and poor commitment to care and treatment services. Therefore, the reduction of stigma is also an important component in preventing HIV transmission.^{10,11}

The stigmatization of individuals living with HIV is divided into two concepts such as social stigmatization toward individuals and internal stigmatization toward individuals. Social stigma generally includes fear, avoidance, and rejection behaviors.¹² Internal stigma includes feelings such as guilt, pollution, shame, worthlessness, inadequacy, and behaviors such as detaching oneself from society and avoidance.^{13,14}

The identification of stigma is very important in preventing transmission, protection, and initiating the treatment early. Although there is a scale that measures the social stigma specific to people living with HIV/AIDS in Turkey, there is no measurement tool that measures the direction of internalized stigma. In this study, we aimed to overcome this deficiency in Turkey by conducting the Turkish Validity and Reliability Study of Internalized AIDS-Related Stigma Scale (IA-RSS).

2 | MATERIALS AND METHODS

2.1 | Type of the study

This study was methodologically conducted to adapt the IA-RSS to the Turkish Society. Its validity and reliability study was previously conducted by Tsai et al.¹⁵ in the Ugandan society.

2.2 | Universe and sample of the study

The universe of the study consisted of 250 individuals who were treated in the infectious diseases outpatient clinic of a training and research hospital located in the Anatolian side of Istanbul, between November 2018 and May 2019. In addition, 60 individuals living with HIV composed the sample. In the scale adaptation studies, it is stated that the sample size should be at least five times the total number of scale items in methodological studies.

2.3 | Inclusion criteria

- Literate in Turkish.
- 18 years old or older.
- Living with HIV/AIDS.
- Accepted to participate in the study.

2.4 | Exclusion criteria

- Living without HIV/AIDS.

2.5 | Data collection tools

The data were collected by using the "Information Form" consisting of sociodemographic characteristics and the IA-RSS. The necessary

explanations about the purpose of the study and the content of the questionnaire were made by the researcher and the individuals who agreed to participate in the study were asked to answer the questions.

2.6 | Information form

This form consists of 20 questions and includes the demographic characteristics of the individual such as age, gender, marital status, knowledge about the disease, sexual orientation, and assessments of the transmission of the disease.¹⁶

2.7 | Internalized AIDS-Related Stigma Scale

The "IA-RSS" consists of six items that measure internalized stigma and its validity and reliability study was conducted by Tsai et al.¹⁵ in Uganda society. The statements in the scale are evaluated as "I agree"/"I do not agree." The total scale score is calculated as the sum of the items.

2.8 | Evaluation of the data

The data of the study were evaluated using the SPSS 25.0 program.

2.9 | Statistical analysis

Within the scope of validity, language, and content validity analysis were primarily performed. The Turkish language validity analysis of the IA-RSS was conducted by translating it into Turkish and retranslating back to its original language after receiving the opinions of experts in the field. The joint Turkish text obtained in the translation process has been translated back to English by another expert lecturer in the Department of Foreign Languages, who is blind to the process. Both translations were evaluated together and a joint text was created. The content validity analysis of the scale was made by getting expert opinions. In this context, three mental health and psychiatric nursing faculty members, two psychology department faculty members, three infectious diseases specialists, one clinical psychiatry specialist, one psychiatry faculty member, and five psychologists were asked to evaluate the comprehensiveness and suitability of each item of the scale.

2.10 | Validity

For the validity of the scale, the Kaiser–Meyer–Olkin (KMO) test and Bartlett's test were performed to determine whether the sample size and structure are suitable for factor analysis. To determine the

suitability of the data for factor analysis, the result of KMO should be higher than 0.60 and the result of Bartlett's test should be significant. Confirmatory factor analysis (CFA) and explanatory factor analysis (EFA) with varimax rotation were used to evaluate construct validity.¹⁷

2.11 | Reliability

Within the scope of reliability analysis, item analysis, internal consistency, and test-retest were examined. The item-total correlation explains the relationship between the scores obtained from the items of the test and the total score obtained from the whole test. A positive and high item-total correlation indicates that the items exemplified similar behaviors and the internal consistency of the test was high. The reliability of the scale was examined with Cronbach's alpha internal consistency coefficient. The corrected item-total correlations for the reliability of the items in the scale and the Cronbach's alpha values when an item was removed were examined. According to the literature, Cronbach's alpha values between 0.70 and 0.80 are acceptable.¹⁸

The intraclass correlation coefficient (ICC) and Kappa coefficient (*K*) were used in test-retest examinations. The statistical significance of the difference between the test-retest reliability analyses were investigated with the McNemar test. The consistency between the two applications with ICC at 15-day intervals was analyzed. ICC coefficients are evaluated as follows: <0.50: weak; 0.45-0.75: medium; 0.75-0.90: good; >0.90: very good.¹⁹

Descriptive statistical analyses (frequency, percentage, mean, and *SD*) were used in the analysis of the data; $p < 0.05$ was accepted as statistically significant.

2.12 | Ethical statement

- The ethical committee approval was obtained from the Clinical Research Ethics Committee (13.12.2018-92).
- Before the data were collected, the participants were informed about the purpose and procedures of the study and their written consents were obtained.

2.13 | Pilot study

A pilot study was carried out with 15 individuals to demonstrate how the items were understood by Turkish society in terms of content equivalence. The pilot study lasted 4 weeks.

2.14 | Results

Findings about the sociodemographic characteristics of the individuals are shown in Table 1. The mean age was 41 ± 12.09 ; 90% ($n = 54$) of them were men; 56.7% ($n = 34$) were single; 31.7% ($n = 19$) of them were high school graduates.

TABLE 1 Sociodemographic characteristics of the individuals ($N = 60$)

	<i>n</i>	%
Age	41 ± 12.09	
Gender		
Female	6	10.0
Male	54	90.0
Marital status		
Married	21	35.0
Single	34	56.7
Divorced	4	6.7
Live separated from the spouse	1	1.7
Having a child		
Yes	24	40.0
No	36	60.0
Educational status		
Illiterate	1	1.7
Literate	16	26.7
High school degree	19	31.7
College degree	4	6.7
Bachelor degree	18	30.0
Graduate degree	2	3.3

2.15 | Content validity

In this study, 16 experts were consulted for the content validity and the content validity index of the IA-RSS was calculated as 93%. The content validity ratio of each item was 0.81 and above.

2.16 | Construct validity

The results of KMO and Bartlett's tests were taken into account in determining whether the sample size and structure of the scale are suitable for factor analysis. According to the EFA results, the KMO value was 0.631 and Bartlett's test result was $p = 0.0001$ and thus the sample size of 60 individuals was sufficient. As a result of the EFA performed with varimax rotation, a two-factor structure emerged and the total variance of the two-factor structure was 63.8%. According to CFA results, the scale constitutes a single factor. The KMO value was 0.631 and the total variance was 40.39%. The findings of the EFA and CFA are shown in Table 2.

2.17 | Reliability

2.17.1 | Item analysis

When the relations of the items with the scale total scores were examined, it was seen that the highest relationship was obtained in

TABLE 2 Exploratory and confirmatory factor analyses results

1	Exploratory factor		Confirmatory factor
	2	1	
IA-RSS2	0.601	0.370	0.705
IA-RSS3	0.663	0.153	0.632
IA-RSS4	0.797	0.049	0.684
IA-RSS5	0.789	-0.058	0.616
IA-RSS1	0.190	0.866	0.649
IA-RSS6	-0.007	0.904	0.509

Abbreviation: IA-RSS, Internalized AIDS-Related Stigma Scale.

the fourth item. It was also determined that there was no significant change in Cronbach's alpha values when the item was removed. Findings of item-total correlation analysis are shown in Table 3.

2.17.2 | Internal consistency

Total Cronbach's alpha value was found to be 0.70.

2.17.3 | Test-retest reliability

The test-retest reliability for IA-RSS invariance against time was examined 2 weeks after application. The distribution of test-retest responses of individuals is shown in Table 4.

The ICC and Cohen's Kappa coefficient were used in test-retest analyses. McNemar's test was used to analyze whether there was a statistically significant difference between the test-retest analyses. According to these results, it was found that both the items and the total scores of the scale gave very reliable results. When the changes in test and retest analyses were examined, it was determined that there was no statistically significant change.

According to the data, the ICC and Cohen's Kappa values were found to be quite high. The ICC values ranged between 0.872 and

TABLE 4 Distribution of test-retest responses

	Test		Retest	
	n	%	n	%
IA-RSS1				
Agree	52	86.7	53	88.3
Disagree	8	13.3	7	11.7
IA-RSS2				
Agree	28	46.7	25	41.7
Disagree	32	53.3	35	58.3
IA-RSS3				
Agree	31	51.7	32	53.3
Disagree	29	48.3	28	46.7
IA-RSS4				
Agree	18	30.0	18	30.0
Disagree	42	70.0	42	70.0
IA-RSS5				
Agree	21	35.0	22	36.7
Disagree	39	65.0	38	63.3
IA-RSS6				
Agree	53	88.3	53	88.3
Disagree	7	11.7	7	11.7

Abbreviation: IA-RSS, Internalized AIDS-Related Stigma Scale.

0.949 while Kappa values ranged from 0.772 to 0.900. This finding showed that the scale items are very reliable. The McNemar's test was used to analyze whether there was a statistically significant difference between the test-retest analyses and thus there was no statistically significant difference in the items examined. Test-retest reliability results according to the items are shown in Table 5.

3 | DISCUSSION

In this study, the adaptation of IA-RSS to the Turkish language and Turkish culture and the validity and reliability analyses of the scale were evaluated. For the validity of the IA-RSS, first language and

Item-total correlations	This study		Tsai et al. ¹⁵	
	Cronbach's alpha coefficients after the removal of the item	Item-total correlations	Cronbach's alpha coefficients after the removal of the item	
IA-RSS1	0.433	0.664	0.67	0.72
IA-RSS2	0.500	0.636	0.66	0.69
IA-RSS3	0.437	0.659	0.64	0.71
IA-RSS4	0.513	0.632	0.74	0.66
IA-RSS5	0.431	0.660	0.55	0.72
IA-RSS6	0.286	0.698	0.70	0.69

Abbreviation: IA-RSS, Internalized AIDS-Related Stigma Scale.

TABLE 3 Item-total correlations results

TABLE 5 Test by item–retest reliability results

	ICC	Goodness of fit	McNemar's test	K
IA-RSS1	0.872	57 (95%)	1	0.772
IA-RSS2	0.949	57 (95%)	0.25	0.899
IA-RSS3	0.948	57 (95%)	1	0.900
IA-RSS4	0.914	56 (93.3%)	1	0.841
IA-RSS5	0.943	57 (95%)	1	0.891
IA-RSS6	0.912	58 (96.7%)	1	0.838

Abbreviations: IA-RSS, Internalized AIDS-Related Stigma Scale; ICC, intraclass correlation coefficient.

content validity were examined. As a result of the translations, it was determined that the Turkish version of the IA-RSS is understandable and easily applicable in Turkish society. With language validity, it is aimed to reach the most appropriate meaning of scale items in Turkish. Therefore, it is important that the experts are fluent in both languages and experienced in the field. If the words used are not suitable and understandable to the culture of the society, the results of the study are negative since the validity and reliability are affected.²⁰ In this study, language validity was provided by obtaining the opinions of the experts. In addition to language validity, the content validity of the scale was also tested. The CVI coefficient of the IA-RSS was found to be 0.93, and thus it was revealed that the scale's content validity is sufficient and the scale is feasible.²¹

3.1 | Factor analysis

The construct validity of the scale was measured by factor analysis. When the integrity of the scale is testing with factor analysis, it is also ensured that the variables not related to the measured subject are removed. According to the results of EFA analysis for IA-RSS, it was found that the data had a normal distribution and the sample size was sufficient. The sample size should be 5–10 times the number of scale items.²²

EFA and CFA were used for the structure of the scale. According to the literature, KMO and Barlett tests were carried out for this purpose. The value range for KMO is between 0 and 1 where 0.6 is the minimum value for good factor analysis.¹⁷ The Barlett's test gives χ^2 value and determines the factors with a significance level of $p < 0.05$. In Barlett's test, if the significance value is $p > 0.05$, the variance level is not at the desired level and therefore, the factor analysis of the scale cannot be performed.²³ In this study, according to the CFA results, the scale constituted of a single factor, the KMO value was 0.631, and Bartlett's test significance value was $p = 0.0001$ and sufficient. The goodness-of-fit values obtained as a result of the CFA showed that IA-RSS is acceptable. In this study, as a result of EFA performed with varimax rotation, a structure with two sub-factors emerged. While the four items (2, 3, 4, and 5) of the scale were classified as feeling worthless, dirty, shameful, and guilty; the

other two items (1 and 6) presented a classification related to disclosure. This study is similar to the study of Chan et al.¹⁴ in terms of the factor structure, Chan et al.¹⁴ found a two-factor structure. While the four-item factor includes the feelings of self-loathing, shame, the two-item factor revealed a structure related to disclosure. However, Kalichman et al.²⁴ did not show any difference compared with our results in terms of the factor structure.

In this study, internal consistency was analyzed to evaluate the reliability of the scale and the test–retest method was used to determine the invariance. The Cronbach's alpha reliability coefficient and item analysis tests were performed to evaluate the internal consistency. The Cronbach's alpha value for the internal consistency of the IA-RSS was found to be 0.70. In the study of Tsai et al.,¹⁵ the alpha value was 0.73; in the study of Chan et al.,¹⁴ the alpha value was 0.79; in another study in South India, the alpha value was 0.80. In the studies of Kalichman et al.²⁴ conducted in Cape Town, Swaziland, and Atlanta, the alpha values were found to be 0.73, 0.74, and 0.76, respectively. This result is similar to the results of other studies. A higher Cronbach's alpha coefficient indicates that the items in the scale consist of items that are consistent with each other and they examine the factors of the same characteristic. While Sharma¹⁸ classified a Cronbach's alpha coefficient between 0.70 and 0.80 as acceptable reliability. In the literature, there are studies indicated that the low alpha value may be due to the low number of items in the scale and there may be unnecessary questions on the scale for alpha value above 0.90.²⁵

It was determined that there is no statistically significant change in the consistency of the test and test–retest analyses, which is another method for the internal consistency of the IA-RSS. This is a positive result that shows us the stability of the scale over time and is supported by other studies.^{15,24,26} In the test–retest analyses, ICC and Cohen's Kappa coefficient were used. It was also investigated whether there was a statistically significant difference between the test–retest analyses. The goodness of fit between the two applications at 15-day intervals was analyzed with ICC. If the ICC coefficient is less than 0.50, the goodness of fit is weak; if the ICC coefficient is between 0.50 and 0.75, the goodness of fit is below moderate; if it is between 0.75 and 0.90, the goodness of fit is good; if it is more than 0.90; the concordance is very good.¹⁹ In this study, the ICC coefficients ranged between 0.87 and 0.94. These results revealed that the scale provides similar measurement values in repeated measurements, does not show temporal variability and is a highly reliable scale. Tsai et al.¹⁵ found ICC to be 0.40 as a different result compared with this study.

The item–total correlation coefficient of 0.30 and above is interpreted as good for reliability. However, it is not used alone to eliminate the items below this value and the decision is made by evaluating the effect of the unused item on Cronbach's alpha coefficient.²⁷ In this study, only the sixth item was found to be with a item–total correlation coefficient of less than 0.30 ($r = 0.28$) However, it was decided not to remove the item from the scale since the Cronbach's alpha value did not change significantly. The results were similar to the results of other studies conducted in different societies.^{15,24}

3.2 | Conclusion and recommendations

The findings of the study have indicated that the Turkish version of the IA-RSS is valid and reliable. It has shown that individuals living with HIV/AIDS in Turkish society experience internalized stigma. As a result of the EFA analysis in this study, a two-factor structure emerged. More studies are recommended in Turkish society to understand the correlations and effects of this two-factor structure.

For the success of the global HIV/AIDS treatment, the organization of educational campaigns for stigma and contact interventions in the fight against stigmatization should be added to the curricula of discrimination and stigma issues from primary education.

3.3 | Implications for nursing practice

It is anticipated that the Turkish version of the IA-RSS will be an important tool for determining internalized stigma. The relationship between knowledge and decision making is the most decisive factor in the professionalization of nursing. IA-RSS enables nursing practices to become scientific. The main purpose of nursing practice is to provide a solid foundation for stigma include internalized stigma and to ensure that it is best used for nurses. To increase the quality of nursing care, to make a difference in clinical applications and patient care results, to increase patient satisfaction, to develop the science of nursing and nursing care, to provide evidence-based standardization of care and nursing practices, and to provide autonomy, IA-RSS will be possible.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

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