

Original Article

Psychometric Properties of the Multi-Dimensional Acculturative Stress Scale of Syrian Refugees in Turkey

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Abstract

Background: Immigrants experience acculturation stress when they are unable to overcome socio-cultural challenges in the host country. Acculturation stress affects not only the physical health of immigrants, but also their mental health and lifestyle behaviors

Objective: It was conducted to ensure the Validity and Reliability of the Multidimensional Acculturative Stress Scale for Syrian Refugees in Turkey.

Material and Methods: The study was carried out in methodological design, including 250 Syrian refugees to determine the validity of the scale; content validity, criterion validity, and construct validity were performed. The reliability of the scales was evaluated with internal consistency Cronbach's alpha, intraclass correlation, Hotelling's T2, an average of inter-item correlation coefficients, Floor-ceiling effect analysis (15% limit), and SEM tests.

Result: The CVI value of the scale was 0.987. The KMO value was calculated as 0.678, and Bartlett's test result was calculated as $\chi^2:2297.736$. The scale exhibited a 5-factor structure and explains 55,574% of the total variance. 24 items of the scale were included in the confirmatory factor analysis. The total score of the scale has a Cronbach Alpha coefficient of 0.754.

Conclusions: The Multidimensional Acculturative Stress Scale was found to be valid and reliable in Syrian Refugees in Turkey. The Multidimensional Acculturative Stress Scale can be used as an assessment tool to measure the nature and level of acculturation stress among Syrian immigrants.

Key Word: Acculturation, Acculturative stress, Syrian refugee, Immigrant

Introduction

The war in Syria, which started in March 2011, caused 5.6 million people to leave their country as one of the biggest refugee crises in history (Handan & Cerit, 2018). Most of them took refuge in Turkey. As of 2022, the number of registered Syrian refugees in Turkey is 3,763,652 (<https://multeciler.org.tr/>). This number, which is increasing day by day, is not only a priority for global health, but also the host country becomes the center of immigration policy. (Kurt et al., 2021).

In addition to the difficulties brought about by migration (shelter, job, education, etc.) to

Syrian immigrants, Turkey's lack of a legal framework for granting refugee status also leads them to uncertainty (Safak-Ayvazoglu et al., 2021). This uncertainty experienced by immigrants causes problems such as anxiety, low self-esteem, discrimination, low welfare level and incompatibility with the culture of the host country. This situation negatively affects the acculturation process and causes acculturation stress (Bilewicz et al., 2021).

Acculturation refers to the processes and changes that occur when individuals are exposed to a different culture from their original culture (Ponciano et al., 2020). When immigrants become part of a new country,

they experience acculturation stress to adapt to a new culture (El Khoury, 2019). In general, acculturation stress is defined as a stress response in response to life events or psychosocial stressors rooted in acculturation experiences or unfamiliarity with new traditions and social norms (Jibeen & Khalid, 2010). Immigrants experience acculturation stress when they fail to overcome socio-cultural difficulties (for example, language barriers and discrimination) in the host country and when they have difficulty communicating with or lack the support of significant others staying in their home country. Acculturation stress affects not only the physical health of immigrants but also their mental health and lifestyle behaviors (Liem et al., 2021). Deterioration in sexual behavior, suicidal tendencies, addictive substance use, and depression were observed frequently in immigrants experiencing acculturation stress (Alidu & Grunfeld, 2018).

Syrian individuals who have come to Turkey and taken under temporary protection have many difficulties in acculturation, accommodation, language, self-esteem and economics. There are also psychological and cultural pressures caused by participating in a new environment (Kardes & Akman, 2018). However, no study measures the level of acculturation and the level of acculturation stress with Syrian individuals taken under temporary protection. This study numerically reveals the acculturation attitudes of Syrian immigrants under temporary protection and the level of acculturation stress in Turkey. In multicultural societies, studies involving acculturation are guiding countries in terms of immigration policies. For this reason, we think that this study will contribute to both immigration policies and the physical and mental well-being of immigrants.

This study was carried out to determine the psychometric properties of the acculturative stress scale in Syrian refugees living in Turkey.

Hypotheses

H1: The Multidimensional Acculturative Stress Scale for Syrian Refugees is a valid and reliable measurement tool.

H2: Acculturation stress is influenced by sociodemographic characteristics

Methods

The study was conducted in a methodological design. The number of samples was determined based on the literature knowledge that the data of the reliability and validity study would not be generalized to a population, but 5-10 times the total number of items in the scale could be selected. (Tavsancil, 2002). In this regard, since the scale was developed by Jibeen and Khalid (Jibeen & Khalid, 2010). consists of 24 items, 250 people were included in the study, at least 10 times more for each item.

Data Collection Tools: Questionnaire questions were collected with a "personal information form" and a "Multidimensional Acculturative Stress Scale". Multidimensional Acculturative Stress Scale; It was developed by Jibeen and Khalid in 2010 (Jibeen & Khalid, 2010). The scale consists of 24 items and is a 4-point Likert type. Choices are as 1 = disagree, 2 = partially agree, 3 = partially agree, 4 = agree.

Low scores indicate low acculturative stress, while high scores indicate high acculturative stress. The scale consists of 5 sub-dimensions: "discrimination, under threat of ethnic identity, lack of opportunity for occupational and financial mobility, longing for home and language barrier". The Cronbach's alpha coefficient for the whole scale was 0.89. Items 1-7 = Discrimination; Items 8-13 = Threat to Ethnic Identity; Items 14-18 = Lack of Opportunities for Professional and Financial Mobility; Items 19-22 = Homesickness; Items 23-24 = Defines the language barrier sub-dimensions.

Research process: The study was conducted with Syrian citizens over the age of 18 who applied to Gulpinar Family Health Center 2 in the city of Adana, where there is a large number of Syrians, who do not have a communication disability. The data were collected by the participants with the form translated into Arabic. Bilingual coordinators were employed to assist the participants to undertake the questionnaires in other languages. These coordinators had experience working with senior women and spoke the languages in which the surveys were conducted. For the language adaptation of the original scale, the target language was translated into Arabic by experts in the field, and then these Arabic forms were translated

into Arabic and English. Consistency between forms was examined. For the content validity of the scale whose Arabic translation was completed, the opinions of 10 faculty members who are experts in their fields were taken. Depending on the evaluations made by the experts, necessary corrections were made on the scale items.

Statistical Analysis of Data: IBM SPSS 25 (Statistical Package for Social Sciences) was used to evaluate the data and AMOS program was used for confirmatory factor analysis. While considering the study data, frequency distribution for categorical variables and descriptive statistics for numerical variables are given. To determine the validity of the scales; content validity, criterion validity and construct validity (exploratory and confirmatory) and hypothesis testing were performed (CFA fit values are shown in table 3). The reliability of the scales was evaluated with internal consistency reliability coefficients (Cronbach's alpha) (Cronbach's alpha > 0.70), scoring consistency (intraclass correlation) ($p < 0.05$), floor-to-ceiling analysis (The total score of the scale is $\min < \%15$, $\max < \%15$), Hotelling's T^2 ($p < 0.05$), an average of inter-item correlation coefficients and SEM (measurement precision of the scales) ($SEM \leq SS/2$) tests.

Ethical Principles: The Declaration of Helsinki carried out each stage of the research. Written permission was obtained from the Clinical Research Ethics Committee of Cukurova University (Decision No: 109/58). Permission was obtained from the institution where the study was conducted.

Results

The Syrian refugees participating in the study are between the ages of 19-65 and have been living in Adana for 3-11 years (Table 1). To determine the validity of the scale; Content validity, criterion validity, and construct

validity (exploratory, confirmatory) analyses were performed. In line with the item scores given by the experts, the content validity of the scale CVI: 0.987 was found. Internal criterion validity was evaluated by lower-upper group comparison. In comparison of 27% lower - 27% upper group, a significant correlation ($r=0.718$) was found between the parts with the lowest and highest scores of 27% of the distribution within the total score ($p=.000$). KMO and Bartlett Tests were conducted for construct validity; KMO value was calculated as 0.678, Bartlett's test result as $\chi^2:2297.736$, $p < 0.001$. The scale exhibited a 5-factor structure with an Eigenvalue above 1 in the explanation of total variance. It explains 55,574% of the total variance. 24 items of the scale were included in the CFA for construct validity. Items 7, 8, 17 and 22 were omitted because the estimated value was below 0.30. EFA data quality (estimate) values of the remaining items; It is in the range of 0.323-1.03. To determine the reliability of the scale; The Cronbach Alpha coefficient is at the reliability level of 0.754. All sub-dimensions of the scale are above 0.70. Intraclass correlation value; $r=.748$ was determined. In this study, the suggested $SEM \leq S/2$ in the measurement precision of the scales was taken into account and their compliance with the equation was observed: $SEM(S/2)$ value is $1.92 \leq 3.8$. The floor and ceiling frequencies of the scales are below 15%. (The frequency of those who scored 41 = 0.4%, the frequency of those who scored 84 = 0.4%). The Hotelling's T^2 test value shows that the difference between the item averages is significant ($F= 51.019$, $p=.000$) (Table 2). The scores obtained from the fit indices of the scale are shown in Table 3.

The path diagram of the multidimensional acculturative stress scale is shown in Figure 1.

Table 1. Comparison of Descriptive Characteristics of Individuals and Multidimensional Acculturative Stress Mean Scores

Descriptive Characteristics	n	%	X±SD	Statistical analysis
Age				
19-25	60	24	62.71±8.17	F: 7.249 p=0.000
26-35	72	28.8	68.29±6.79	

36-45	67	26.8	67.19±7.84	
46 and above	51	20.4	67.47±6.23	
Year of residence				
3-4	49	19.6	68.69±6.47	F=5.242 p:0.006
5-7	121	48.4	66.93±7.7	
8 and above	80	32	64.47±7.57	
Gender				
Female	112	44.8	67.16±6.87	t:1.27 p>0.05
Male	138	55.2	65.94±8.13	
Education				
Not literate	14	5.6	64.64±5.59	KW**:10.10 p:0.03
Primary school	42	16.8	67.07±6.98	
Middle school	139	55.6	66.92±6.92	
High school	44	17.6	66.88±9.68	
University	11	4.4	59.63±7.60	
Marital status				
Married	205	82	67.40±7.15	MWU*: 3.010 p:0.000
Single	45	18	62.31±8.25	
Socioeconomic status				
Income less than expenses	192	76.8	67.38±7.03	MWU*: 4.034 p:0.001
Income equal to or more than expenses	58	23.2	63.53±8.68	
Working status				
Yes	109	43.6	65.87±7.99	MWU*:8.218 p>0.05
No	141	56.4	66.97±7.28	

**Kruskal Wallis *Mann Whitney U

Table 2. Findings regarding the validity and reliability of the scale

Items	X±SD	KM	AFA-VK	DFA-VK	α
1. Turkish people treat me like a foreigner.	2.44±0.90	0.689	0.517	0.623	0.736
I am treated differently because of my race.	1.81±0.69	0.524	0.451	0.544	0.741
I am constantly reminded of my minority status.	2.30±0.80	0.682	0.484	0.624	0.741
4. I think that I am deprived of many opportunities because I am Syrian.	2.63±0.89	0.754	0.589	0.721	0.733
5. I think that Turkish society discriminates against me just because I am Syrian.	2.71±0.82	0.644	0.462	0.574	0.731
6. I think that Turkish people do not treat me with respect.	2.64±0.71	0.638	0.450	0.539	0.737
7. People from other ethnic groups try to hinder my progress.	2.63±0.65	-	0.243	0.275	0.741
8. I worry that my children/future generations will be broad-minded.	2.86±0.80	-	0.333	0.241	0.732
9. I feel torn between Turkey and Syria.	2.85±0.79	0.726	0.537	0.501	0.745

10. I am worried that my children/future generations will not be able to continue the Syrian traditions.	2.96±0.78	0.607	0.566	0.609	0.729
11. I feel neither Turkish nor Syrian.	2.82±0.80	0.657	0.568	0.726	0.747
12. I am losing my Syrian identity.	2.48±0.96	0.548	0.490	0.626	0.749
13. I feel sad when I cannot see my cultural roots in this society.	2.89±0.66	0.542	0.326	0.323	0.746
14. My job/profession is uncertain.	2.64±0.89	0.793	0.650	0.739	0.744
15. I have few opportunities to earn more income.	2.49±0.89	0.774	0.643	0.769	0.736
16. My job falls short of my experience and qualifications.	2.47±0.91	0.842	0.725	0.742	0.748
17. After I came to Turkey, I was disappointed that my standard of living was not what I expected.	2.56±0.85	-	0.375	0.285	0.731
18. My work experience and education in Syria did go unnoticed in my work here.	2.46±0.96	0.763	0.616	0.683	0.738
19. I miss my country and my people.	3.60±0.67	0.865	0.763	0.809	0.750
20. I live away from my family, relatives and friends.	3.51±0.73	0.901	0.815	0.880	0.750
21. I miss my family, relatives and friends.	3.36±0.71	0.799	0.714	0.743	0.742
22. I think that my family's responsibilities have increased after I came to Turkey.	3.20±0.81	-	0.291	0.140	0.732
23. In some situations, I have difficulty in understanding Turkish.	3.06±0.90	0.893	0.857	1.03	0.731
24. I find it difficult to express my ideas because of the language difference.	3.02±0.98	0.912	0.872	0.852	0.739
KMO, Barlett's test	0.678, χ^2 :2297.736, $p<0.001$				
Interclass correlation	$r=0.748$, $F= 3.96$, $p=.000$				
Standard Error (SEM\leqSS/2)	$1.92\leq 3.8$				
Hotelling's T² test	$F= 51.019$, $p=0.000$				
Floor-to-ceiling impact analysis (15% limit)	Min.Fr=%0.4, Max.Fr= %0.4				
27% Lower - 27% Upper group comparison	$r:0.718$, $p=0.000$				

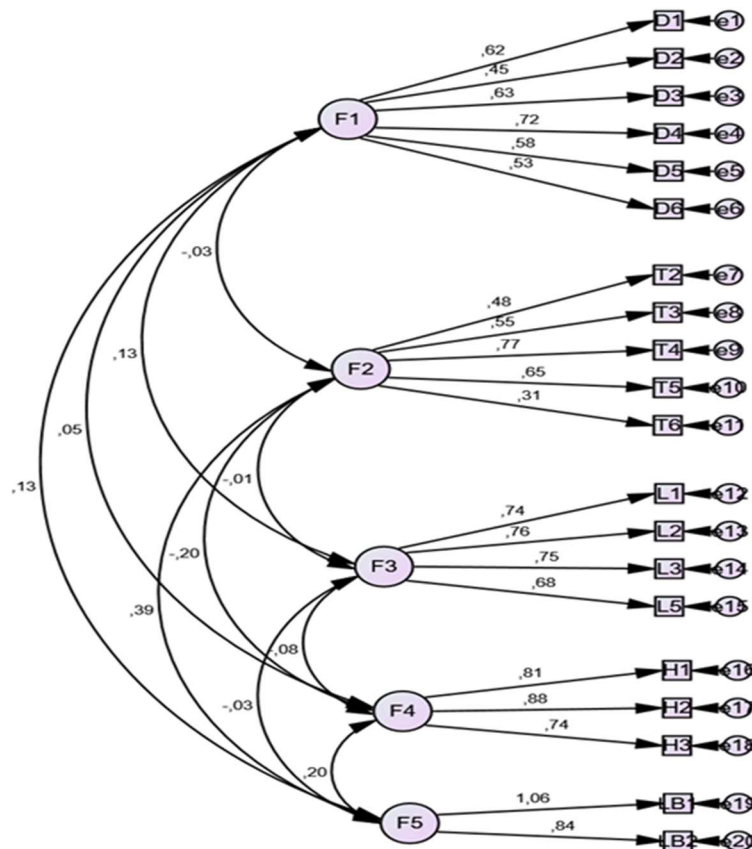
KM=Correlation Matrices, EFA DQ=EFA data quality, CFA data quality

Table 3. CFA Compliance Values

Indices	Compliance Values	
	Obtained compliance values	Acceptable compliance values
X ² /sd	2.810	0 < X ² /sd ≤ 3, ≤ 5
CFI	.845	0.90 ≤, 0.80 ≤ CFI ≤ 1.0
IFI	.848	0.80 ≤ IFI ≤ 1.0
GFI	.859	0.90 <, 0.85 ≤ GFI ≤ 1.0
AGFI	.815	0.85 <, 0.80, 0.70 <, ≤ AGFI ≤ 1.0
RMSEA	.008	0.00 < RMSA < 0.10 < 0.08
RMR	.052	0.00 < SRMR < 0.10

(Schermelele-Engel & Moosbrugger, 2003)

Figure 1. Path Diagram of Scale



Discussion

This study was carried out to determine the psychometric properties of the acculturative stress scale in Syrian refugees living in Turkey. It is thought that the study will contribute to the literature in terms of not being a tool to measure acculturation stress in Syrian refugees and the lack of studies on acculturation. The validity of the scale was determined by content validity, criterion validity (internal and external criteria) and construct validity (exploratory and confirmatory) analyses.

Expert opinions were taken to ensure content validity. The Content Validity Index (CVI) was used to evaluate expert opinions. For the scale and item content validity to be sufficient, the value should be 0.80 and above (Polit et al., 2006). Since the content validity index value of the scale items was over 0.80, it was found that the scale was valid in terms of scope.

Internal criterion validity was used since there is no similar scale that evaluates the acculturative stress of Syrian refugees. 27% lower and 27% upper group comparisons were made to ensure internal criterion validity. The fact that there is a significant difference between the item score averages of the 27% lower and 27% upper groups indicates that the scales can distinguish between two opposite groups (Erkus, 2002). Accordingly, it was determined that the scale could distinguish between two extreme groups.

Exploratory and confirmatory factor analyses are used to determine the construct validity of measurement tools. Before performing the factor analysis, the KMO coefficient should be above 0.60 and the Bartlett test should be significant (Buyukozturk, 2018). According to the results of KMO and Bartlett tests, it was determined that the scale was suitable for factor analysis and the sample size was sufficient. Factor load (communalities) of the items as a result of EFA; Four items (7,8,17,22) below .30 were removed. The scale exhibited a 5-factor structure with an eigenvalue above 1 in the explanation of total variance.

In confirmatory factor analysis (CFA), the model developed in the mind of the researcher

is tested to whether it is verified with the available data. The data quality and fit indices of the models that emerged as a result of CFA were evaluated (Gunduz & Akarcay, 2019). In the results of the confirmatory factor analysis applied, the items (7,8,17,22) that were below 0.30, which gave the data quality, were excluded. The fit indices examined in this study are; CMIN/DF (X^2 /s.d), RMSEA, RMR, CFI, IFI, GFI and AGFI (Table 3).

CMIN/DF (X^2 /s.d) value is the most basic measurement used to test the general fit of the model. CMIN/DF (X^2 /s.d) value of three or lower indicates a good fit, and a value of five or lower indicates an acceptable fit (Karagöz, 2016). In this study, the general fit of the scale appears to be good. A CFI value of 0.80 and above indicates that the model is acceptable (Gündüz and Akarçay, 2019). In this study, the CFI value of the scale was found to be above 0.80. IFI takes values between 0 and 1 (Karagöz, 2016). In this study, the IFI value is at an acceptable level. A GFI value of 0.85 and above indicates an acceptable fit (Waltz et al., 2010). In this study, 0.85 indicates an acceptable fit. AGFI Value ranges from 0-1 and must be above a minimum of 0.70. The value in this study indicates an acceptable fit. An RMSEA value of 0.08 and below indicates an acceptable fit (İlhan and Çetin, 2014). The RMSEA value in this study is at an acceptable level. RMR, it is understood that as this value approaches zero, the tested model shows better goodness of fit (Gunduz and Akarcay, 2019). In this study, it was determined that the RMR value showed a good fit. Multidimensional Acculturative Stress Scale for Syrian Refugees in Turkey It is a valid measurement tool (H1 hypothesis has been confirmed).

To determine the reliability of the scale; Internal consistency analysis (Cronbach's alpha), scoring consistency, Hotelling's T^2 , average of inter-item correlation coefficients, Floor-ceiling effect analysis (15% limit) and standard error analyses were performed.

It is stated that a Cronbach's alpha coefficient above 0.70 is an indicator of the reliability of the scale (Karagoz, 2016). A Cronbach's alpha coefficient of this scale above 0.70 indicates that it is reliable.

Scoring consistency is evaluated by looking at intraclass correlation. It gives information

about the reliability of the scale in terms of structural features. A score of consistency between two measurements between 0.60 and 0.80 indicates a good level of reliability (Erkus, 2002). In this respect, the fit of the scale can be evaluated as good.

The floor and ceiling effects of the scale were analyzed with the percentages of the lowest and highest scores in the total scores. When the distribution of the scores obtained is examined, it is seen that the floor and ceiling effect ratio of all scales is below 15%, and there is no floor and ceiling effect in the distribution of the scores (the frequency of those who score 41 = 1.0%, the frequency of those who score 84 = 7.3%) (Pontes & Griffiths, 2015).

The standard error (SEM) is equal to the product of the square root of the difference to one of the reliability coefficients times the standard deviation. A standard deviation less than or equal to half is accepted as an acceptable measure of precision (Sencan, 2005). SEM, which is an important measurement tool in reflecting the stability level of the scale, showed that the scale was stable in this study.

Whether the item averages are equal to each other is tested with Hotelling's T^2 method. If Hotelling's T^2 analysis $p < 0.05$, it means that there is a difference between the scale items on average. As the p-value of Hotelling's T^2 test, which was performed as a result of the reliability analysis, was less than 0.05, it was determined that there was no response bias and there was a significant difference between the averages of the questions (Sencan, 2005).

The Multidimensional Acculturative Stress Scale for Syrian Refugees in Turkey is a reliable measurement tool (H1 hypothesis has been confirmed).

In the study, it is seen that the socio-demographic characteristics of refugees affect acculturation stress. Increasing age, short residence time, low education level and low economic income increase acculturation stress (H2 hypothesis has been confirmed). Studies conducted with refugees in various countries around the world support the results of these studies.

In the study of Lumley et al. (2018) with Bhutanese refugees in Australia, the

acculturation stress score was found to be higher for those residing in Australia for less than 2 years. In addition, it has been stated that cultural stress increases with age and decreases as education level increases (Lumley et al., 2018). The study of Ayvazoglu et al., in which they examined the psychological and socio-cultural adaptations of Syrian refugees in Turkey; stated that low economic level increases psychological disorders and cultural stress (Safak-Ayvazoglu et al., 2021). In the study conducted by Gursoy & Ertasoglu with Syrian refugees in 2018, they stated that age, employment and length of stay in the country affect integration into the host society (Gursoy & Ertasoglu, 2019).

The results of the study are valuable for policymakers to anticipate acculturation concerns for refugees and host countries and to establish preventive measures before potential integration concerns arise. It will further contribute to the work of academics, psychologists, social workers, counselors, educators and other professionals who assist refugees in the intercultural adaptation process.

Limitations: Syrian refugees settled in many countries of the world. Since this study was conducted only with Syrian refugees living in Turkey, it will be insufficient to measure the acculturation of all Syrian citizens. For this reason, it is limited only to Syrian refugees living in Adana. In addition, collecting the study data with the help of an interpreter is another limitation of this study. Since quantitative studies yield numerical results, it is recommended that future research be supported by qualitative studies that provide rich and detailed data that will enable us to understand human behavior and the process of change in social life in its context and holistically.

Conclusions: The Multidimensional Acculturative Stress Scale was found to be valid and reliable in Syrian Refugees in Turkey. The Multidimensional Acculturative Stress Scale can be used as an assessment tool to measure the nature and level of acculturation stress among Syrian immigrants. Providing positive acculturation of Syrian refugees who have taken refuge in many countries of the world is important for

their socio-cultural and psychological health. The Multidimensional Acculturative Stress Scale, which was found to be valid and reliable in this study; It can help Syrian refugees in other countries implement public health policy.

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