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ORIGINAL ARTICLE

Factors Affecting Risky Alcohol Consumption, Smoking Addiction in Forced Syrian Migrants

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Main Points

- General anxiety level predicts cigarette addiction.
- Psychological cohesion and socio-cultural cohesion, which are sub-dimensions of acculturation, were predicted to increase risky alcohol consumption.
- It should be taken into consideration that forced migration may be at risk of developing addictive behavior.

Abstract

The purpose of this study is to investigate the post-migration factors that influence the cigarette addiction or risky alcohol consumption among forced migrants. In this context, daily stressors, general anxiety, perception of general health, perception of social support, intergroup contact and acculturation were examined as predictors cigarette addiction or risky alcohol consumption. For the purposes of the study, participants were informed about the Consent Form, Demographic Information Form, Daily Stressors Scale, Generalized Anxiety Disorder Assessment, World Health Survey, Social Support Scale, Scales for Adaptation, Cultural Distance Scale, and Acculturation Orientation Scale, Intergroup Contact Quantity Scale, Valenced Positive Contact Scale, Valanced Negative Contact Scale, Fagerstrom Test for Nicotine Dependence, and The Alcohol Use Disorders Identification Scale were applied. As a result of the Hierarchical Regression analysis, it was found that the general anxiety level predicted cigarette addiction. According to the Hierarchical Regression analysis on risky alcohol consumption, psychological cohesion and socio-cultural cohesion, which are sub-dimensions of acculturation, were found to predict risky alcohol consumption. It is thought that this study, which examines the addictive behaviors of refugees experiencing forced migration along with psychological and social factors beyond the psychology of the refugees, will contribute to the literature.
Keywords: Acculturation, cigarette addiction, forced migration, refugee, risky alcohol consumption

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Introduction

In general, addiction is a situation in which an individual loses control over a substance or behavior, and withdrawal symptoms are observed when the frequency of use or maladaptive behavior is reduced or stopped (Koob et al., 2001). It is known that psychological (Marlatt et al., 1988; Ögel, 2010), genetic (Bierut et al., 1998), biological (Marlatt et al, 1988) and socio-cultural (Marlatt et al., 1988; Ögel, 2010) factors are effective in the process of addiction development. On the other hand, it is an important question how the forced migration of individuals for reasons beyond their control affects their addictive behavior. Earlier studies suggest that there is a relationship between addiction and forced migration (Horyniak et al., 2015; Johnson, 1996; Weaver & Roberts, 2010).

Refugees who experience crucial changes in their lives with forced migration are exposed to many sources of stress before, during, and after migration (Miller et al., 2008; Silove et al., 2017; Giacco et al., 2018). Before the migration, refugees were exposed to extremely traumatic and stressful life events, together with war and oppression, and at the

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same time, they underwent a risky and stressful migration process, leaving their homeland for a future full of unknowns (Silove et al., 2017). Furthermore, during the pre-migration phase, they encountered challenges in obtaining essential necessities such as food, water, shelter, and other basic resources (Giacco et al., 2018). Numerous refugees have undertaken perilous journeys in unsafe boats, cramped trains, or trucks, and have traversed hazardous highways. Along the way, they frequently faced risks of physical harm, sexual violence, exposure to infectious diseases, extortion, and trafficking (Giacco et al., 2018). (Table 1)

The mental health of refugees is directly influenced by traumatic experiences both prior to and during the migration process. In addition, it is stated that various stressful life events experienced after migration may indirectly affect mental health (Miller et al., 2008), excessive exposure to these stress sources might increase the severity of post-traumatic stress disorder (PTSD), and the reduction of these stress sources may play a role in alleviating PTSD symptoms (Miller et al., 2002). Alcohol or substance use is observed as a coping mechanism for traumatic experiences before, during, and after migration (Durrant & Thakker, 2003).

Following the conflict in Syria, Syrian refugees left their country seeking safety, and Türkiye currently hosting 3.2 million Syrian refugees (Republic of Turkey Ministry of Interior Directorate General of Migration Management, 2023). There are many studies aimed at determining the risky situations and needs that Syrian refugees might be exposed to (Mowafi, 2011) (Table 2).

However, it is noticed that these studies are mostly aimed at determining the basic needs in the first year of forced migration and are followed by mental health evaluations in the subsequent period (Alfadhli et al., 2018; Alpak et al., 2015; Kurt et al., 2021). When it comes to the twelfth year of forced migration in Türkiye, it is seen that studies on the contact of Syrian refugees with the local population in the post-migration period, psycho-social support, well-being, adaptation, and acculturation process have gained momentum (Alfadhli et al., 2018; Kurt et al., 2021). On the other hand, studies on the addiction processes of refugees are extremely limited. Considering that social groups at risk for addiction might be forcibly displaced persons (United Nations Office on Drugs and Crime [UNODC], 2018), it is important to accelerate these studies. Therefore, the objective of this study is to uncover the risk factors involved in the development of cigarette addiction and engaging in risky alcohol consumption among refugees. In some studies investigating the addiction processes among refugees, it is observed that factors such as acculturation processes, mental problems, socio-economic status, and stressful life events after migration are effective in the development of addiction (Johnson, 1996; Weaver & Roberts, 2010; Park et al., 2014; Horyniak et al., 2016; McCleary&Wieling,2016). Within this context, the study seeks to explore the post-immigration factors impacting cigarette addiction or the propensity for risky alcohol consumption among Syrian refugees. The predictive power of daily stressors, general anxiety, general health perception, social support perception, intergroup contact, and acculturation processes on refugees' cigarette addiction or risky alcohol consumption was investigated. While performing the hierarchical regression analysis, the variables related to the individual were entered in the first stages, while the variables related to the social process were entered in the later stages. The questions examined by the research are:

Table 1.
Demographic Features of Participants Using Cigarette Use or Alcohol Use

	n	100%
Gender		
Woman	67	29.4
Man	161	70.6
Cigarette Use		
Yes	223	97.8
No	5	2.2
Woman	67	70.0
Man	156	96.9
Alcohol Use		
Yes	96	42.1
No	132	57.9
Woman	28	29.2
Man	68	70.8
Cigarette and alcohol use	91	39.9

Table 2.
Means, Standard Deviations, and Ranges of Demographic Variables of the Study

	Mean	SD	Range
Demographic Variables			
Age	30.22	9.95	18-58
Woman	29.37	9.58	18-49
Man	30.57	10.12	18-58

"Does the level of anxiety, the level of daily stressors, the level of perception of social support, the level of general health perception, and the level of intergroup contact, and acculturation predict cigarette addiction?"

"Does the level of anxiety, the level of daily stressors, the level of perception of social support, the level of general health perception, and the level of intergroup contact, and acculturation predict risky alcohol consumption?"

Material and Methods

Sample

A total of 228 Syrians (67 females, Mage = 29.37 and SD = 9.58 and 161 males, Mage = 30.57 and SD = 10.12) were recruited from Adana, a city in southeast Türkiye, between November and March 2020 to participate in this study. Participants meeting the inclusion criteria (aged 18 or older and of Syrian origin) participated by completing an anonymous paper survey.

Procedure

Approval from the Ethics Committee Çukurova University was secured for the research (approval number: 30; date: 05.07.2019).

This study was designated as a substudy based on the ethics committee's decision dated July 5, 2019, with the reference number 30.

Measurement

The study ensured linguistic accuracy by translating all scales into Arabic, followed by back-translation into English and cross-verification with the original items. Participation was voluntary, and no compensation was offered to participants. The scales used to collect data in the study are as follows.

Informed Consent Form

The Informed Consent Form provided participants with details regarding the study's purpose, the reason for their invitation, and the anticipated duration of their involvement. No information such as name and surname regarding identity was obtained from the participants. Participants were reassured that their involvement in the study was entirely voluntary, and the information collected would be treated with confidentiality. It was clearly communicated that they had the option to withdraw from the study at any point if they so desired. The contact information of the researcher was shared so that they could inquire about the study.

Demographic Information Form

Considering the relevant literature, the questionnaire was created by the researcher to obtain non-discriminatory personal information about the participants. There is various demographic data such as age, gender, education level, employment status, and language proficiency.

Afghan Daily Stressors Scale

It is a scale that aims to measure the level of stress that participants are exposed to in daily life. Examples of stressors include "Being beaten by a family member", "Being unable to provide for my children's needs" and "Overcrowding in my house" (α = .89; 1 "Not at all stressful" to 3 "Very stressful") (Miller et al., 2008). Principal component factor analysis was used to assess construct validity. The Kaiser-Meyer-Olkin (KMO) coefficient was .93, and Barlett's test result was significant (χ^2 2356.070, p < .000). According to the results of the analysis, items 1, 4, 10, 13, 15, 16, 17, 19, 22, 23, and 26 were discarded because their eigenvalues were less than .40. The scale has a unidimensional structure (α = .84).

Generalized Anxiety Disorder Assessment

It is a scale that aims to measure the anxiety level of participants and consists of seven items, including "Feeling nervous, anxious, or on edge" and "Not being able to stop or control worrying" (α = .92; 1 "never" to 7 "always") (Spitzer et al., 2006). Principal component factor analysis was used to assess construct validity. The KMO coefficient was .85, and Barlett's test result was significant (χ^2 791.139, p < .000). The scale has a unidimensional structure (α = .84).

MOS Social Support Scale

It is a scale that aims to measure the level of social support of participants and consists of nineteen items. "Someone whose advice you really want" and "Someone to do something enjoyable with" (α = .91; 1 "None of the time" to 5 "All of the time") (Sherbourne & Stewart, 1991). Principal component factor analysis was used to assess construct validity. The KMO coefficient was .93, and Barlett's test result was significant (χ^2 2356.070, p < .000). The scale has a unidimensional structure (α = .94).

World Health Survey

It is a scale aiming to measure the level of general health perception of the participants. "Overall in the last 30 days, how much difficulty did you have with moving around?" and "Overall in the last 30 days, how much difficulty did you have with personal relationships or participation in the community?" (1 "never" to 7 "Always") (World Health Organization [WHO], 2002). Principal component factor analysis was used to assess construct validity. The KMO coefficient was .81, and Barlett's test result was significant (χ^2 588.913, p < .000). According to the results of the analysis, items 1, 9, and 10 were discarded because their eigenvalues were less than .40. The scale has a unidimensional structure (α = .83).

Scales for Adaptation, Cultural Distance, and Acculturation Orientation

It is a scale aiming to measure the level of psychological adaptation of the participants in the acculturation process. "How different or similar are these two countries in terms of Social environment (size of the community, pace of life, noise)?" "How often have you felt curious about things that are different in Syria" and "It is important for me to have Turkish friends to do things the way Turkish people do?" (Demes & Geeraert, 2014). Principal component factor analysis was used to assess construct validity. The KMO coefficient was .79, and Barlett's test result was significant (χ^2 2222.513, p < .000). The scale has a four-dimensional structure (Socio-Cultural Adaptation subscale α = .85, Perceived Cultural Distance subscale α = .80, Psychological Adaptation subscale α = .86, Cultural Orientation subscale α = .87).

Intergroup Contact Quantity Scale

It is a three-item scale that aims to measure the level of the quantity of the participants' contact with each other. "How much contact do you have with Turkish people as close friends?" and "How often do you engage in informal conversations with Turkish people?" (α = .75; 1 "Not at all" to 7 "Always") (Islam & Hewstone, 1993). Principal component factor analysis was used to assess construct validity. The KMO coefficient was .69, and Barlett's test result was significant (χ^2 185.233, p < .000). The scale has a unidimensional structure (α = .77).

Valenced Positive Contact Scale

It is a scale that aims to measure the level of positive contact between the participants and consists of four items. "How often do you have interesting conversations with Turkish people?" and "How often have you experienced satisfied feelings during your contact with Turkish people?" (α = .88; 1 "Not at all" to 7 "Always") (Pettigrew & Tropp, 2008). Principal component factor analysis was used to assess construct validity. The KMO coefficient was .79, and Barlett's test result was significant (χ^2 406.454, p < .000). The scale has a unidimensional structure (α = .85).

Valanced Negative Contact Scale

It is a scale that aims to measure the level of negative contact between the participants and consists of three items. "How often has a Turkish people pestered you?" and "How often have you experienced irritated feelings during your contact with Turkish people?" (α = .88; 1 "Not at all" to 7 "Always") (Pettigrew & Tropp, 2008). Principal component factor analysis was used

to assess construct validity. The KMO coefficient was .70 and Barlett's test result was significant (χ^2 402.667, $p < .000$). The scale has a unidimensional structure ($\alpha = .88$).

Fagerstrom Test for Nicotine Dependence

It is a valid self-report scale consisting of six items developed to measure the strength of nicotine dependence. "How soon after you wake up do you smoke your first cigarette" and "How many cigarettes a day do you smoke" (Fagerstrom, 1978). Principal component factor analysis was used to assess construct validity. The KMO coefficient was .79, and Barlett's test result was significant (χ^2 310.060, $p < .000$). The scale has a unidimensional structure ($\alpha = .69$).

The Alcohol Use Disorders Identification Test

It is a ten-item self-report scale that determines drinking habits, alcohol consumption amounts, and problems related to alcohol use. "How many drinks containing alcohol do you have on a typical day when you are drinking?" and "How often during the last year have you found that you were not able to stop drinking once you had started?" (Babor et al., 2001). Principal component factor analysis was used to assess construct validity. The KMO coefficient was .92, and Barlett's test result was significant (χ^2 1880.294, $p < .000$). The scale has a unidimensional structure ($\alpha = .94$).

Statistical Analysis

Data analysis was conducted using the IBM Statistics SPSS 22 program. Pearson correlation analysis was employed to examine the relationships between the variables presented in the table. Then, Hierarchical Regression analysis was carried out to further understand the relationship between daily stressors, anxiety level, social support level, general health perception, intergroup contact, acculturation, cigarette addiction, and risky alcohol consumption among Syrian refugees. Before performing the regression analysis, it was examined whether the data met the normality and linearity assumptions, and it was found that the data met these assumptions. In addition, Mahalanobis distance values were determined, and it was observed that there were no extreme values in the sample that would cause damage to the linearity and normality assumptions. When the tolerance and variance inflation values (VIF) were examined, it was seen that there was no multicollinearity problem. After all assumptions were met, hierarchical regression analysis was performed.

Results

Descriptive Analyses

Correlations Between Study Variables

Pearson Correlation analysis was utilized to explore the relationships between the variables outlined in the study (Table 3). Based on the analysis, a statistically significant positive relationship ($r = .25$, $p < .01$) was identified between the level of cigarette addiction and the level of risky alcohol use. Furthermore, a statistically significant positive correlation was observed between the level of cigarette addiction and the general health perception level ($r = .13$, $p < .05$), anxiety level ($r = .31$, $p < .01$), and valenced negative contact ($r = .13$, $p < .01$). There is a positive relationship with the general health perception level ($r = .20$, $p < .01$), anxiety level ($r = .16$, $p < .05$), and psychological adjustment ($r = .26$, $p < .01$). Additionally, a significant negative correlation was observed between the level of risky alcohol use and cultural orientation ($r = -.18$, $p < .01$).

Findings Regarding the Variables Predicting Cigarette Addiction

Hierarchical Regression analysis was carried out to further understand the relationship between general anxiety, general health perception, daily stressors, acculturation, intergroup contact, social support levels, and cigarette addiction in these individuals. While performing the hierarchical regression analysis, the variables related to the individual were entered in the first stages, while the variables related to the social process were entered in the subsequent stages.

When Table 4 is examined, it was seen that the anxiety and general health perception variable entered in the first step of the hierarchical regression model made a significant contribution to the model and explained 10% of cigarette addiction ($F = 10.1$, $p < .01$). The analysis revealed that the effect of anxiety on the model was significant ($\beta = .34$, $p < .01$), whereas the effect of general health on the model was not significant ($\beta = -.03$, $p > .05$).
When daily stressors were added to the model in the second block of the analysis, the model explained 11% of the observed variance ($F = 7.57$, $p < .01$), but the contribution of daily stressors to the model ($\beta = -.04$, $p > .05$) was not significant.

When variables related to the acculturation process were added in the third block, the model explained 13% of the observed variance ($F = 3.81$, $p < .01$). Variables that measure acculturation processes include cultural distance ($\beta = -.08$, $p > .05$), sociocultural adjustment ($\beta = -.08$, $p > .05$), cultural orientation ($\beta = -.01$, $p > .05$) and psychological adaptation ($\beta = .01$, $p > .05$). It was found that the contribution of fit to the model was not significant.

When variables related to intergroup contact were added in the fourth block, the model explained 14% of the observed variance ($F = 2.76$, $p < .01$). The contribution of positive contact between groups ($\beta = .005$, $p > .05$), negative contact between groups ($\beta = .02$, $p > .05$) and the quantity of intergroup contact ($\beta = .07$, $p > .05$) to the model that measures intergroup contact was found to be insignificant.

When the perception of social support is added in the fifth block, the model explains 15% of the observed variance ($F = 2.76$, $p < .01$). It was found that the contribution of the perception of social support to the model ($\beta = -.12$, $p > .05$) was not significant.

Findings Regarding the Variables Predicting Risky Alcohol Consumption

Hierarchical Regression analysis was carried out to further understand the relationship between general anxiety, general health perception, daily stressors, acculturation, intergroup contact, social support levels, and risky alcohol consumption in these individuals. While performing the hierarchical regression analysis, the variables related to the individual were entered in the first stages, while the variables related to the social process were entered in the subsequent stages.

According to Table 5, the anxiety and general health perception variables, included in the first step of the hierarchical regression

Table 3.
Correlations Between Cigarette Addiction, Risky Alcohol Use, and Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Cigarette addiction	1												
2. Risky alcohol use	.25**	1											
3. General health	.13*	.20**	1										
4. Anxiety	.31**	.16*	.54**	1									
5. Daily stressors	.007	.10	.31**	.32**	1								
6. Cultural distance	−.09	−.06	−.04	.08	−.03	1							
7. Sociocultural adaptation	−.08	−.10	.07	.08	.05	.29**	1						
8. Psychological adaptation	.004	.26**	−.15*	−.21**	−.20**	−.10	−.11	1					
9. Acculturation orientation	−.07	−.18**	−.10	.05	.06	.41**	.28**	−.21**	1				
10. Valanced positive contact	.01	−.12	−.05	.09	.21**	.24**	.18**	−.09	.52**	1			
11. Valanced negative contact	.13*	.06	.10	.19**	.11	−.06	−.16*	−.18**	−.17**	−.10	1		
12. Contact quality	.03	−.06	−.09	−.03	.06	.23**	−.07	.007	.24**	.49**	.17**	1	
13. Social support	−.06	−.02	−.07	.05	.16*	.23**	.20**	−.19**	.21**	.20**	.10	.16*	1
M	5.53	4.58	21.33	23.16	26.24	22.29	23.89	13.73	18.83	16.25	8.49	10.2	58.45
SD	2.66	7.8	10.06	10.86	6.3	8.29	9.19	7.31	6.99	6.88	5.48	5.05	18.19

Note: *$p < .05$.
**$p < .001$.

model, were found to explain 2% of the observed variance. However, the model did not reach statistical significance ($F = 1.91$, $p > .05$). Furthermore, the contributions of anxiety ($\beta = .14$, $p > .05$) and general health to the model ($\beta = 0.004$, $p > .05$) were deemed not significant.

When daily stressors were added to the model in the second block of the analysis, the model explained 2% of the observed variance, but the model was not significant ($F = 1.35$, $p > .05$). Furthermore, it was observed that the contribution of daily stressors to the model ($\beta = -.04$, $p > .05$) was not deemed significant.

When variables related to the acculturation process were added in the third block, the model explained 17% of the observed variance ($F = 5.05$, $p < .01$). Among the variables measuring acculturation processes, cultural orientation ($\beta = -.16$, $p < .05$) and psychological adjustment ($\beta = .32$, $p < .01$) contributed significantly to the model, but cultural distance ($\beta = .11$, $p > .05$) It was found that the contribution of sociocultural adjustment ($\beta = -.11$, $p > .05$) to the model was not significant. On the other hand, anxiety, which was not significant in previous models, became significant by adding acculturation variables to the model ($\beta = .18$, $p < .05$).

When variables related to intergroup contact are added in the fourth block, the model explains 20% of the observed variance ($F = 4.01$, $p < .01$). Among the variables measuring intergroup contact, the quantity of positive contact between groups ($\beta = -.01$, $p > .05$), negative contact between groups ($\beta = .10$, $p > .05$) and quantity of intergroup contact ($\beta = -.15$, $p > .05$) It was found that the contribution to the model was not significant.

When the perception of social support is added in the fifth block, the model explains 20% of the observed variance ($F = 3.82$, $p < .01$). It was found that the contribution of social support to the model ($\beta = .10$, $p > .05$) was not significant. On the other hand, sociocultural adaptation, a sub-dimension of acculturation processes, which was not significant in previous models, became significant with the addition of social support to the model ($\beta = -.15$, $p < .05$).

Discussion

The focus of the present study was to examine post-migration factors influencing cigarette addiction or risky alcohol consumption among Syrian refugees. The predictive power of daily stressors, general anxiety, general health perception, social support perception, intergroup contact, and acculturation processes on refugees' cigarette addiction or risky alcohol consumption was examined. The results showed that the general anxiety level predicts cigarette addiction, and risky alcohol consumption. Psychological cohesion and socio-cultural cohesion, which are sub-dimensions of acculturation, were found to predict risky alcohol consumption (Table 5).

Studies investigating the relationship between forced migration and cigarette addiction state that human-made disasters increase cigarette use (Lo et al., 2016; Idris et al., 2018; Solak et al., 2018;

Table 4.
Hierarchical Regression Analysis Results on Cigarette Addiction

		Unstandardized Coefficients		Standardized Coefficients					
Step	**Predictor**	***B***	***SE***	***β***	***p***	R^2	R^2 **Change**	***p***	***F***
Model 1						.105	.105	.000	10.1
	Anxiety	.08	.21	.34	.000				
	General health	−.01	.02	−.03	.65				
Model 2						.117	.012	.000	7.57
	Anxiety	.08	.02	.36	.000				
	General health	−.003	.02	−.01	.89				
	Daily stressors	−.04	.03	−.11	.12				
Model 3						.138	.02	.001	3.81
	Anxiety	.08	.02	.37	.000				
	General health	−.003	.02	−.01	.90				
	Daily stressors	−.04	.03	−.11	.16				
	Cultural distance	−.02	.02	−.08	.32				
	Sociocultural adaptation	−.02	.02	−.08	.26				
	Acculturation orientation	−.005	.03	−.01	.88				
	Psychological adaptation	.004	.02	.01	.87				
Model 4						.144	.006	.004	2.76
	Anxiety	.08	.02	.37	.000				
	General health	−.002	.02	−.006	.94				
	Daily stressors	−.05	.03	−.12	.13				
	Cultural distance	−.03	.02	−.10	.24				
	Sociocultural adaptation	−.01	.02	−.06	.42				
	Acculturation orientation	−.01	.03	−.03	.76				
	Psychological adaptation	.003	.02	.008	.92				
	Valanced positive contact	.002	.04	.005	.96				
	Valanced negative contact	.01	.04	.02	.73				
	Contact quality	.03	.05	.07	.43				
Model 5						.157	.013	.003	2.76
	Anxiety	.08	.02	.37	.000				
	General health	−.006	.02	−.02	.79				
	Daily stressors	−.04	.03	−.10	.21				
	Cultural distance	−.02	.02	−.07	.39				
	Sociocultural adaptation	−.01	.02	−.04	.57				
	Acculturation orientation	−.01	.03	−.03	.75				
	Psychological adaptation	−.002	.02	−.005	.94				
	Valanced positive contact	.005	.04	.01	.90				
	Valanced negative contact	.01	.04	.03	.65				
	Contact quality	.04	.05	.08	.38				
	Social support	−.01	.01	−.12	.11				

Note: N = 175. SE = Standard error of *B*; Anxiety = Generalized Anxiety Disorder-7 Questionnaire; General Health = WHO Health Survey; Daily Stressors = Daily Stressors Scale; Cultural Distance, Sociocultural Adaptation, Acculturation Orientation; Psychological Adaptation = Scales for Adaptation, Cultural Distance, and Acculturation Orientation; Valanced Positive Contact = Valanced Positive Contact Scale; Valanced Negative Contact = Valanced Negative Contact Scale; Contact Quality = Contact Quality Scale; Social Support = MOS Social Support Scale.

Table 5.
Hierarchical Regression Results on Risky Alcohol Consumption

		Unstandardized Coefficients		Standardized Coefficients					
	Predictor	***B***	***SE***	***β***	***p***	R^2	R^2 Change	***p***	***F***
Model 1						.022	.022	.15	1.91
	Anxiety	.08	.05	.14	.11				
	General health	.002	.05	.004	.96				
Model 2						.024	.001	.25	1.35
	Anxiety	.08	.05	.15	.09				
	General health	.008	.05	.01	.89				
	Daily stressors	−.04	.08	−.04	.62				
Model 3						.177	.154	< .001	5.05
	Anxiety	.10	.04	.18	.03				
	General health	.02	.05	.04	.64				
	Daily stressors	.04	.07	.04	.55				
	Cultural distance	.08	.06	.11	.14				
	Sociocultural adaptation	−.08	.05	−.11	.12				
	Acculturation orientation	−.14	.07	−.16	.05				
	Psychological adaptation	.27	.06	.32	.000				
Model 4						.2	.022	< .001	4.01
	Anxiety	.09	.05	.15	.07				
	General health	.02	.05	.03	.69				
	Daily stressors	.06	.07	.06	.44				
	Cultural distance	.10	.06	.14	.09				
	Sociocultural adaptation	−.09	.08	−.13	.08				
	Acculturation orientation	−.08	.05	−.09	.35				
	Psychological adaptation	.31	.06	.36	.000				
	Valanced positive contact	−.01	.09	−.01	.91				
	Valanced Negative contact	.11	.09	.10	.2				
	Contact quality	−.18	.11	−.15	.10				
Model 5						.208	.009	< .001	3.82
	Anxiety	.09	.05	.15	.07				
	General Health	.03	.05	.04	.58				
	Daily Stressors	.04	.07	.04	.57				
	Cultural Distance	.08	.06	.11	.16				
	Sociocultural Adaptation	−.10	.05	−.15	.05				
	Acculturation Orientation	−.08	.08	−.09	.35				
	Psychological Adaptation	.32	.06	.37	.000				
	Valanced Positive Contact	−.01	.09	−.01	.86				
	Valanced Negative Contact	.11	.09	.09	.23				
	Contact Quality	−.19	.09	−.15	.09				
	Social Support	.03	.02	.10	.18				

Note: N = 172. SE = Standard error of *B*; Anxiety = Generalized Anxiety Disorder-7 Questionnaire; General Health = WHO Health Survey; Daily Stressors = Daily Stressors Scale; Cultural Distance, Sociocultural Adaptation, Acculturation Orientation, Psychological Adaptation = Scales for Adaptation, Cultural Distance, and Acculturation Orientation; Valanced Positive Contact = Valanced Positive Contact Scale; Valanced Negative Contact = Valanced Negative Contact Scale; Contact Quality = Contact Quality Scale; Social Support = MOS Social Support Scale.

Oda et al., 2021). We found that general anxiety levels predict cigarette addiction. In a systematic review study, it was found that violence in conflict areas is associated with smoking (Lo et al., 2016). In a study conducted with Syrian university students, 53% of the participants reported an increase in the number of cigarettes they consume daily since the beginning of the war (Idris et al., 2018). In a study examining the first 2 years of Syrian refugees settled in Canada, it was observed that smoking rates were higher than those in the host society (Oda et al., 2021). In other studies, it is stated that the increase in the level of anxiety reduces the success rate of treatment in the smoking cessation process (Solak et al., 2018). It is important to evaluate the level of anxiety in the programs to be developed for the smoking cessation process of Syrian refugees and to develop practices to reduce anxiety.

When compared to other studies which are conducted among refugees from different cultures, our finding regarding acculturation processes on risky alcohol consumption seems to be compatible with the existing literature. We found that psychological cohesion and socio-cultural cohesion, which are sub-dimensions of acculturation, predict risky alcohol consumption. In Myanmar, a study was conducted with the Karen community affected by turmoil within the state. It found that conflict and displacement have damaged Karen culture and directly led to increased alcohol use (McCleary & Wieling, 2016). In another study involving young refugees, the causes of alcohol and substance use were examined. These included pre-migration experiences of torture and trauma, familial conflicts, challenges in post-migration adaptation such as language, culture, education, and employment, exposure to and availability of substances, maladaptive coping strategies, and self-medication. These factors were categorized into six main themes, with access to information and services being one of them (Posselt et al., 2015). In a study investigating the correlation between cultural adaptation and alcohol – substance use among young Iranian refugees, the findings revealed a negative relationship between the success of cultural adaptation and alcohol – substance use. At the same time, alcohol – substance use was found to be used as a maladaptive coping strategy (Zangeneh et al., 2004). Yee and Thu (1987) found that among Indian refugees fleeing the Vietnam War and later adapting to the new cultural environment in the United States, Indian refugees used tobacco, alcohol, or substances as a coping mechanism. Refugees with cultural adjustment failure are at risk for alcohol and substance abuse (Westermeyer, 1996). Park et al. (2014) searched the correlation between maladaptive alcohol use and acculturation and found that among Vietnamese immigrants, acculturation stress and discrimination experienced by refugees with an unsuccessful acculturation process were associated with alcohol use behavior.

In conclusion, in this study in which the factors predicting smoking addiction and risky alcohol use in Syrian refugees were investigated, it was found that general health perception, daily stressors, acculturation, contact, and social support did not predict smoking addiction significantly. It was found that general anxiety level, general health perception, daily stressors, contact, and social support did not predict risky alcohol use.

Limitations, Directions/Suggestions for Future Research

Due to the small number of Syrian refugees who applied to addiction treatment centers in Adana during the study period, data could not be collected from these centers. At the same time, the COVID-19 pandemic, which affected the whole world during the data collection phase, prevented reaching more participants. A diagnostic assessment inventory was not used to identify alcohol addiction. This study is cross-sectional in nature, as the data were collected within a specific timeframe, and no longitudinal follow-up was conducted.

The study was carried out by collecting data from the Adana Governorate Provincial Migration Management Data Collection Center and from the neighborhoods where Syrian refugees live heavily.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

Ethics Committee Approval: This study was approved by Ethics Committee of Çukurova University (approval number: 30; date: 05.07.2019).

Informed Consent: Written informed consent was obtained from the participants who agreed to take part in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – D.D., M.G.; Design – D.D., M.G.; Supervision – M.G.; Resources – D.D.; Materials – D.D., M.G.; Data Collection and/or Processing – D.D.; Analysis and/or Interpretation – D.D., M.G.; Literature Search – D.D., M.G.; Writing – D.D., M.G.; Critical Review – M.G.

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