Journal of Fundamentals of Mental Health
Mashhad University of Medical Sciences
Psychiatry and Behavioral Sciences Research Center

Original Article **Open Access**

The moderating role of social support in the relationship between acculturation stress and psychological problems among Afghan immigrants living in Iran

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Abstract

Introduction: Migration is a multifaceted and stressful experience often accompanied by acculturative stress, which can significantly affect the mental health of migrants. Perceived social support is considered an important protective factor that may buffer the adverse psychological effects of this stress. The present study aimed to examine the moderating role of different sources of social support in the relationship between acculturative stress and psychological symptoms among Afghan migrants living in Iran.

Materials and Methods: This descriptive-correlational study was conducted on 580 Afghan migrants aged 18 years and older, selected through convenience and snowball sampling. Data were collected using the Acculturative Stress Scale, the Multidimensional Scale of Perceived Social Support, and the Symptom Check List-90. Pearson correlation and moderation analysis using PROCESS Macro (Model 1) were performed.

Results: The findings indicated that acculturative stress was positively and significantly associated with all psychological symptoms, whereas social support showed a negative and significant relationship with these symptoms. Importantly, among the different types of social support, only support from friends demonstrated a significant moderating effect: higher levels of friend support attenuated the impact of acculturative stress on psychological symptoms.

Conclusion: These results highlight the protective role of social support particularly support from peers and underscore the need to strengthen social networks and peer-based interventions to promote the mental health of Afghan migrants.

Keywords: Acculturation, Immigrants, Psychological distress, Social support

Please cite this paper as:
Majedi P, Zarani F, Heidari M, Panaghi L. The moderating role of social support in the relationship between acculturation stress and psychological problems among Afghan immigrants living in Iran. Journal of Fundamentals of Mental Health 2026 Mar-Apr; 28(2): 93-102. DOI: 10.22038/jfmh.2026.93409.3318

Introduction

Iran has become a major destination for Afghan refugees, hosting approximately 750,000 registered and over 2.6 million undocumented Afghans (1). Despite this significant presence, Afghan migrants frequently face multidimensional vulnerabilities, including economic constraints, livelihood risks, limited access to formal services, social discrimination, and informal

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Received: Sep. 25, 2025
Accepted: Dec. 08, 2025

housing. These conditions contribute to increased psychological pressures and a decreased quality of life, potentially impacting their adaptation to the host society (2).

Moving between cultural contexts activates a complex process of acculturation, exposing individuals to psychological and social pressures known as acculturative stress. This stress involves cognitive, emotional, and behavioral reactions to adapting to host society norms, with factors like discrimination, language barriers, social network loss, and identity conflict intensifying it (3). Berry's acculturation model describes four strategies based on cultural identity maintenance and host interaction: integration (preserving heritage while engaging host culture, linked to positive outcomes), assimilation (adopting dominant culture, risking identity loss), separation (maintaining heritage while avoiding host interaction, potentially leading to exclusion), and marginalization (rejecting both cultures, associated with the most negative psychological consequences) (4). Research consistently shows that strategies with limited host engagement, such as separation and marginalization, correlate with higher acculturative stress and severe negative psychological outcomes (5). A substantial body of international research shows that migrants and refugees are at increased risk of mental health problems, particularly depression, anxiety, and post trauma stress disorder (6,7). However, the type and severity of psychological symptoms vary across cultural and contextual settings. In Iran, studies indicate that Afghan migrants experience elevated psychological distress due to discrimination, insecure residency status, economic hardship, and restricted access to services (8,9). This selection of four psychological symptoms depression, obsession-compulsion, aggression, and paranoid thoughts is based on preliminary data and international literature. Afghan populations, in particular, show elevated depression and anxiety (10-12) often stemming from acculturative stress, discrimination, and social exclusion (13). Some studies also suggest intergenerational transmission of obsessive-compulsive symptoms and trauma-related manifestations among Afghan refugees due to displacement and cultural-social stressors (14). Furthermore, perceived discrimination has been linked to heightened paranoid thoughts in migrant ethnic minorities (15).

Among protective factors, social support plays a central buffering role. Social support encompasses emotional, informational, instrumental, and appraisal resources provided by family, friends, and broader social networks. Research suggests that social support reduces psychological distress by enhancing belongingness, decreasing isolation, and promoting adaptive coping strategies (16,17). Nevertheless, in Iran, the moderating role of social support in the relationship between acculturative stress and mental health among Afghan migrants has not been directly examined (18,19). Furthermore, severe structural pressures may weaken the buffering function of social support (20). This study aims to examine if perceived social support moderates the relationship between acculturative stress and depression, obsession-compulsion, aggression, and paranoid thoughts among Afghan migrants in Iran.

Materials and Methods

The present study is applied in terms of its objective and descriptive-correlational in terms of data collection. It was designed based on a moderation model in which the role of perceived social support as a moderating variable in the relationship between acculturative stress and psychological symptoms among Afghan migrants was examined. The study population included all Afghan migrants aged 18 and above residing in Iran. Due to the lack of a formal sampling frame, a non-probability convenience sampling method was used. The final sample consisted of 580 participants, exceeding the recommended minimum of 200-250 cases for multivariate analyses and moderation models using the PROCESS macro (21,22). Statistical power, calculated using G*Power software with an alpha of 0.05 and a medium-to-large effect size (f^2= 0.15-0.35), achieved 1.000. This indicates the sample size was more than sufficient to detect hypothesized moderation effects and enhance generalizability in interaction-effect models. Data were collected from two sources. In the first part, the online version of the questionnaire, designed on the Porsline platform, was published on social networks. In the second part, a paper-based version of the questionnaire was administered to increase participation among individuals with limited internet access; it was distributed at the Afghan Embassy among visitors from various

provinces, as well as within local Afghan communities residing in Tehran. Participants were included if they were Afghan immigrants residing in Iran, aged 18 years or older, had lived in Iran for at least six months, were able to understand Persian, and provided informed consent. Individuals with a history of severe psychiatric disorders, incomplete questionnaires were excluded.

Research instruments

A) Acculturative Stress Scale: Sandhu and Asrabadi developed this scale in 1994. In the present study, a revised and culturally adapted version specifically validated among Afghan migrants was employed (23). In this version, the original 36 items were reduced to 31 items following factor analysis and psychometric evaluation. The structure was reorganized from seven theoretical factors into four empirically derived factors: perceived discrimination (10 items), homesickness for homeland and compatriots (8 items), distress and insecurity (8 items), and feeling of alienation (5 items). Together, these four factors accounted for 57% of the total variance. Cronbach's alpha values ranged from 0.77 to 0.91 for the subscales and was 0.93 for the total scale. Participants in our study responded to each item on a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"), with higher scores indicating greater acculturative stress. The total score was obtained by summing across all items, yielding possible values between 31 and 155. Internal consistency in our sample was also high (Cronbach's alpha > 0.80), confirming the reliability of the measure in this population. Perceived social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS) (24). The scale consists of 12 items assessing three subscales family, friends and significant others. The questions are answered on a 7-point Likert scale (from 1= strongly disagree to 7= strongly agree), and a higher score indicates greater perceived social support. Both international and Iranian studies have confirmed the high reliability of this scale (25,26). For example, one study reported reliability coefficients of 0.86 for the total scale and 0.87, 0.83, and 0.89 for the family, friends, and significant others subscales, respectively (27). In the present study, Cronbach's alpha was 0.86 for the total scale and ranged from 0.85 to 0.89 across subscales, indicating good internal consistency.

B) The revised Psychological Symptom Checklist (SCL-90-R): This tool was designed by Dragotis et al. and revised in 1984 and consists of 90 items with a five-point Likert ranging from 0 ("not at all") to 4 ("extremely"), that assesses the individual's mental state in the past week. The SCL-90-R measures nine main dimensions of psychological symptoms and, in addition to the specific indices for each dimension, has a General Symptom Index (GSI) that indicates the overall severity of psychological distress. This questionnaire is one of the most widely used tools in assessing psychopathology, and studies in Iran have reported its reliability coefficient between 0.75 and 0.90 (28).

In the present sample, the Cronbach's alpha coefficient was 0.92 for the total scale and between 0.77 and 0.88 for the subscales. In the present study, according to the objectives of the study only four subscales of paranoid thoughts, aggression, depression, and obsessive-compulsive were used. Higher scores indicate greater severity of psychological symptoms, and the SCL-90-R served as a valid and reliable measure of Afghan migrants' mental health in this study.

Data analysis was performed to test the moderating role of social support in the relationship between acculturative stress and psychological symptoms. The analyses were performed using Hayes' PROCESS macro (2017) in SPSS version 26.

Before running the model, the key assumptions of multiple regression, including relative normality of residuals, independence of errors, and especially the absence of severe multicollinearity, were examined, and the results indicated that the assumptions were met. To test the moderating role, PROCESS model 1 was used, in which psychological symptoms (based on SCL-90 subscales) were entered as the dependent variable, acculturative stress as the independent variable, and perceived social support (family, friends, and significant others) as the moderating variable.

The moderating effect was evaluated through the interaction term (acculturative stress × perceived social support).

To enhance the accuracy of statistical inferences, a bootstrapping procedure with 5,000 resamples and a 95% confidence interval was applied.

Finally, considering the confirmation of the significance of the interaction effect, simple

slope analysis was performed to more accurately interpret the moderating function to examine the relationship between acculturation stress and psychological symptoms at low, medium, and high levels of social support.

Results

The study sample consisted of 580 participants, including 384 men (66.2%) and 196 women (33.8%), with ages ranging from 18 to 58 years. Among them, 153 (26.4%) were students and 427 (73.6%) were immigrants. Regarding marital status, 256 participants (44.1%) were single, while 324 (55.9%) were married. To provide an initial understanding of the distribution patterns of the study variables and to examine the overall status of the data, descriptive statistics including mean, standard deviation, minimum, maximum, skewness, and kurtosis were calculated for all main variables. Table 1 presents the descriptive statistics for all variables.

Table 1. Descriptive statistics of the study variables

Variable	Mean	Standard deviation	Skewness	Kurtosis	Minimum	Maximum
Acculturative stress	101.93	28.61	-0.327	-0.234	32	155
Family support	21.07	5.58	-0.955	0.489	4	28
Friends support	18.99	5.97	-0.594	-0.281	4	28
Significant others' support	19.62	6.79	-0.641	-0.508	4	28
Paranoid thoughts	9.52	5.65	0.255	-0.734	0	24
Aggression	8.36	5.55	0.504	-0.379	0	24
Depression	18.33	11.86	0.463	-0.718	0	52
Obssessive-compulsive disorder	22.10	7.44	0.236	-0.699	9	41

As shown in Table 1, the descriptive indicators of the variables revealed that the mean score of acculturative stress in the sample was approximately 102 (out of a possible range of 31 to 155), indicating a relatively high level of acculturative pressure experienced by participants. The mean score of total social support was about 60, and the scores of the family, friends, and significant others subscales suggested that participants benefited from relatively favorable levels of perceived social support. Regarding psychological symptoms, the mean scores of depression, obsessive-compulsive symptoms, aggression, and paranoid thoughts fell within a wide range. This pattern indicates that, despite receiving social support, participants also experienced considerable levels of acculturative stress and psychological symptoms. Moreover, the skewness and kurtosis values for all variables fall within the acceptable range (± 2), indicating that the data distribution is appropriate for parametric analyses. To examine the relationships among the study variables, a Pearson correlation matrix was calculated. As shown in Table 2, these coefficients indicate the strength and direction of the associations between acculturative stress, social support, and the psychological symptoms. The correlation matrix also provides a basis for subsequent analyses.

Table 2. Pearson correlation matrix of the study variables

Variable	1	2	3	4	5	6	7	8
1. Acculturative stress	1							
2. Paranoid thoughts	0.183***	1						
3. Aggression	0.283***	0.679***	1					
4. Depression	0.277***	0.714***	0.692***	1				
5. Obssessive-compulsive disorder	0.253***	0.707***	0.658***	0.747***	1			
6. Family	−0.274***	−0.259***	−0.326***	−0.329***	−0.277***	1		
7. Friends	−0.271***	−0.218***	−0.212***	−0.298***	−0.260***	0.364***	1	
8. Significant others	−0.249***	−0.266***	−0.242***	−0.358***	−0.292***	0.418***	0.417***	1

**Note. ***All coefficients marked with are significant at $P< 0.001$ (2-tailed)

As shown in Table 2, acculturative stress was positively and significantly associated with all psychological symptoms, including paranoid thoughts, aggression, depression, and obsessive-compulsive disorder. This indicates that higher levels of acculturative stress are accompanied by greater severity of psychological symptoms. In contrast, social support showed negative and significant correlations with all psychological symptoms. The strongest negative associations were observed with depression and obsessive-compulsive symptoms. The subscales of family support, friends support, and significant others support demonstrated a similar pattern, indicating that higher perceived social support was associated with lower levels of psychological symptoms. In addition, the psychological symptom subscales (paranoid thoughts, aggression, depression, and obsessive-compulsive symptoms) all displayed positive and relatively strong correlations with one another, reflecting a considerable overlap among different types of psychological symptoms in the present sample. Overall, the pattern of correlations indicates that higher acculturative stress is accompanied by increased psychological symptoms and reduced social support, whereas higher social support is related to lower levels of psychological symptoms. These findings provide a theoretical basis for testing the moderating role of social support in the relationship between acculturative stress and psychological symptoms.

Before conducting the main moderation regression analysis, it was essential to examine and confirm the statistical assumptions of the linear model to ensure the validity and reliability of the results. The key assumptions include the absence of multicollinearity, the normality of residuals, and the homogeneity of error variances. The results indicated that multicollinearity was not a concern in the model, as the highest Variance Inflation Factor (VIF) value was 1.250 well below the commonly accepted threshold of 10 and all Tolerance values exceeded the minimum acceptable level of 0.10 (29). The assumption of normality of residuals was supported by the Kolmogorov-Smirnov test (P= 0.200), and the linearity assumption was confirmed by the deviation from linearity test (P= 0.133). The only assumption that was not met was the homogeneity of error variances, as the Breusch-Pagan test was significant (χ^2= 13.92, P< 0.01). However, due to the use of bootstrapping with 5,000 resamples and the large sample size, the moderation regression results were considered robust to this violation.

To examine the moderating role of different types of social support in the relationship between acculturative stress and clinical symptoms, twelve moderation regression models (Model 1 in the PROCESS macro) were conducted. In these analyses, the four psychological symptoms including paranoia, obsessive-compulsive symptoms, depression, and aggression were entered as dependent variables, and the three forms of social support (family, friends, and significant others) were entered as moderating variables.

The Table 3 reports the main effect coefficients of acculturative stress as well as the interaction coefficients between acculturative stress and each type of social support, indicating which form of support was able to weaken or moderate the relationship between acculturative stress and psychological symptoms.

Table 3. Main and interaction effects of acculturative stress and social support on clinical symptoms

Clinical symptom (Y)	Moderator (W)	Model R^2	Main effect of stress (B)	P	Interaction B × W	P
Paranoid thoughts	Family	0.0810	0.0461	< 0.0001	−0.0005	0.7405
	Friends	0.0848	0.0527	< 0.0001	−0.0048	0.0003
	Significant others	0.0889	0.0459	< 0.0001	−0.0018	0.1331
Obssessive-compulsive disorder	Family	0.1106	0.0497	< 0.0001	+0.0001	0.9717
	Friends	0.1189	0.0545	< 0.0001	−0.0051	0.0028
	Significant others	0.1202	0.0502	< 0.0001	−0.0008	0.5775
Depression	Family	0.1472	0.0859	< 0.0001	−0.0028	0.3435
	Friends	0.1505	0.0949	< 0.0001	−0.0098	0.0003
	Significant others	0.1665	0.0835	< 0.0001	−0.0013	0.5818
Aggression	Family	0.1485	0.0417	< 0.0001	−0.0014	0.3207
	Friends	0.1197	0.0545	< 0.0001	−0.0046	0.0004
	Significant others	0.1135	0.0465	< 0.0001	−0.0013	0.2673

The results presented in Table 3 indicated that acculturative stress had a significant main effect on all clinical symptoms, including paranoia (B= 0.046, *P*< 0.001), obsessive-compulsive symptoms (B= 0.050, *P*< 0.001), depression (B= 0.086, *P*< 0.001), and aggression (B= 0.042, *P*< 0.001).

Importantly, only social support from friends moderated these associations, weakening the impact of acculturative stress on paranoia (B= −0.0048, *P*= 0.0003), OCD (B= −0.0051, *P*= 0.0028), depression (B= −0.0098, *P*< 0.001), and aggression (B = −0.0046, *P*< 0.001).

This finding highlights the unique buffering role of peer support in migrant contexts, whereas family and significant others did not show comparable moderating effects, possibly due to disrupted family ties or limited availability of other supportive figures during displacement.

To further clarify the moderating role of friends' support in the relationship between acculturative stress and psychological symptoms, a simple slopes analysis was conducted. In line with standard procedures the moderator variable (friends' support) was mean‐centered and participants were divided into three groups based on their scores: low support (−1 SD below the mean), average support (mean), and high support (+1 SD above the mean). This categorization allowed us to examine the conditional effect of acculturative stress on psychological symptoms at different levels of friends' support. In the present sample (N= 580), 108 participants (18.6%) fell into the low support group, 118 participants (20.3%) into the average support group, and 354 participants (61.0%) into the high support group. The results of the simple slopes analysis are presented in Table 4.

Table 4. Conditional effects of acculturative stress on psychological symptoms at different levels of friends' support

Clinical symptom	Slope at low support (−1 SD)	P	Slope at mean support	P	Slope at high support (+1 SD)	P
Paranoia	0.0584	< 0.001	0.0299	< 0.001	0.0014	0.895
Aggression	0.0779	< 0.001	0.0506	< 0.001	0.0233	0.024
Depression	0.1535	< 0.001	0.0949	< 0.001	0.0362	0.096
Obssessive-compulsive disorder	0.0851	< 0.001	0.0545	< 0.001	0.0240	0.083

The results presented in Table 4 indicate that the simple slopes analysis for the four significant interactions between acculturative stress and friends' support confirms a strong protective effect of peer support against psychological symptoms. As shown, at low levels of friends' support, acculturative stress is strongly and significantly associated with increased symptoms of paranoia, aggression, depression, and obsessive-compulsive tendencies (*P*< 0.001). As the level of support increases, the strength of these associations decreases substantially. At high levels of friends' support, the relationships between acculturative stress and paranoia (*P*= 0.895), depression (*P*= 0.096), and obsessive-compulsive symptoms (*P*= 0.083) become non-significant, indicating that peer support effectively neutralizes the impact of acculturative stress on these outcomes. The only exception is aggression: although the strength of the association is notably reduced (B= 0.0233), the relationship remains statistically significant (*P*= 0.024). This suggests that while friends' support attenuates the effect of acculturative stress on aggression, it does not fully eliminate it. Overall, these findings highlight the importance of friends' support as a meaningful protective factor that mitigates the negative psychological consequences of acculturative stress among Afghan migrants.

Discussion

The present study investigated the moderating role of different social support sources in the relationship between acculturative stress and psychological symptoms among Afghan migrants. Our findings demonstrate that acculturative stress is a strong predictor of psychological vulnerability, including depression, obsessive-compulsive symptoms, paranoia, and aggression. This pattern is consistent with recent literature on Afghan refugees in the region, which identifies post-migration stressors and difficulty in cultural

adaptation as primary determinants of psychological distress (30). Recent evaluations of Afghan refugees in Iran (specifically Tehran) also confirm high prevalence rates of anxiety and depressive symptoms, often linked to low quality of life in social relationship domains (31). A significant finding of this study was that among the three sources of social support (family, friends, and significant others), only support from friends effectively moderated the impact of acculturative stress on clinical symptoms. This result aligns with contemporary scoping reviews suggesting that peer support is a critical survival mechanism in collectivist societies and migrant networks (32). While some research on international students suggests that social support generally reduces stress (33), our study highlights a more nuanced reality for forced migrants. For Afghan migrants in Iran, family units are often simultaneously exposed to the same structural stressors such as economic hardship and legal instability which may diminish the family's capacity to act as an effective psychological buffer (34). In contrast, friends who share similar lived experiences of discrimination and cultural incongruence provide a "mutual aid" framework that is more situationally empathetic and practical (32,35).

The present study provides meaningful empirical support for the stress-buffering model, demonstrating that support from friends can attenuate the negative effects of acculturative stress. However, our results indicated that while friend support neutralized the effects of stress on internalizing symptoms like depression and paranoia, its effect on aggression was limited. As noted in recent ecological assessments, the buffering effect of social support may become limited or more complex under conditions of severe stress or persistent discrimination (36,37).

This suggests that externalizing behaviors like aggression may be driven by deeper "collective trauma" or systemic injustices that peer-level support alone cannot mitigate (30,38). In these cases, aggression may represent a behavioral response to perceived social exclusion and structural injustice in the host society (39). Comparisons with recent meta-analyses suggest that while social support increases general resilience, it often fails to buffer the most severe mental health outcomes unless accompanied by structural and community-based policies (40,41).

Furthermore, recent research indicates that Afghan migrants in Iran due to structural discrimination, economic hardship and limited access to supportive services require multidimensional approaches to improving mental health beyond informal social networks (31,34).

Our findings echo longitudinal studies in other migrant populations which suggest that when familial ties are disrupted by forced migration, friends often step in as fictive kin (42). However, the capacity of these networks to buffer severe psychological distress depends heavily on the intensity of external stressors and the level of perceived social support (42,43).

From a methodological and population perspective, our findings echo recent research in Pakistan and Turkey. For instance, studies on Afghan refugees in Pakistan found that acculturation challenges are directly linked to identity crises and high psychological distress (44). Similarly, comparative data from Turkey indicates that Afghans experience significantly higher levels of post-displacement stressors compared to other refugee groups, necessitating targeted protective factors (45). Our study contributes to this regional body of evidence by identifying peer support as a specific, underutilized resource that can be integrated into culturally safe mental health interventions (46,47). Despite the value of its findings, this study has several limitations that should be considered when interpreting the results. First, the cross-sectional design restricts the ability to draw causal inferences. Second, the use of self-report measures introduces the possibility of response bias. In addition, the focus on a specific sample of Afghan migrants limits the generalizability of the findings.

Future research is encouraged to employ longitudinal designs to examine how social support dynamics evolve over time during the resettlement process. Investigating other psychological variables such as coping styles and resilience may also provide a more comprehensive understanding of the mechanisms that protect mental health in the face of acculturative stress. Investigating other psychological variables such as coping styles and resilience, as well as examining different dimensions of social support (emotional, instrumental, and informational) may provide a more comprehensive understanding of the mechanisms that protect mental health.

Conclusion

The findings of this study demonstrate that acculturative stress plays a significant role in increasing psychological symptoms including depression, obsessive-compulsive symptoms, aggression, and paranoid thoughts among Afghan migrants living in Iran. Although perceived social support was generally associated with lower psychological symptoms, only support from friends functioned as a significant moderating factor. Higher levels of friend support substantially weakened, and in some cases eliminated, the adverse effects of acculturative stress on mental health outcomes. These results highlight the unique protective value of peer relationships within migrant communities, particularly in contexts where family structures may be disrupted and formal support systems are limited. Strengthening social connectedness, enhancing opportunities for peer interaction, and designing culturally sensitive mental-health interventions may play a critical role in improving psychological well-being among Afghan migrants.

Acknowledgments

This article is derived from a Ph.D. dissertation. The authors would like to express their sincere appreciation to all individuals who contributed to the completion of this research.

Conflict of Interest

The authors declare that there is no conflict of interest.

Funding

No funding

Ethical Considerations

Participants were informed about the study objectives and provided informed consent. Data confidentiality was ensured, and the study was approved by the Ethics Committee of Shahid Beheshti University in accordance with ethical guidelines.

Code of Ethics

IR.SBU.REC.1402.024

Authors' Contributions

Parwiz Majedi, designed and conducted the study, collected and analyzed the data, and drafted the initial manuscript. Fariba Zarani, provided overall supervision, conceptual guidance, and critical revision of the manuscript. Mahmood Heidari, contributed to study design, assisted in data interpretation, and supported manuscript editing. Leili Panaghi, contributed to study design, assisted with literature review, validation of findings, and final manuscript review.

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