

Modeling the General Health of Iranian Immigrants Based on Cognitive Flexibility, Resilience, and Perfectionism with the Mediation of Acculturation Stress

Farzaneh. Hasheminejad¹, Mahdiah. Salehi^{2*}, Nastaran. Sharifi³

¹ PhD Student in Health Psychology, Department of Psychology, Central Tehran Branch, Islamic Azad University, Tehran, Iran

² Assistant Professor, Department of Psychology, Central Tehran Branch, Islamic Azad University, Tehran, Iran

³ Assistant Professor, Department of Psychology, Roudehen Branch, Islamic Azad University, Roudehen, Iran

* Corresponding author email address: Iranpour1000@yahoo.com

Article Info

Article type:

Original Research

How to cite this article:

Hasheminejad, F., Salehi, M., & Sharifi, N. (2024). Modeling the General Health of Iranian Immigrants Based on Cognitive Flexibility, Resilience, and Perfectionism with the Mediation of Acculturation Stress. *Journal of Assessment and Research in Applied Counseling*, 6(1), 158-169. <http://dx.doi.org/10.61838/kman.jarac.6.1.18>



© 2024 the authors. Published by KMAN Publication Inc. (KMANPUB), Ontario, Canada. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

Objective: The current study aimed to determine the fit of the proposed model of Iranian immigrants' general health based on cognitive flexibility, resilience, and perfectionism mediated by acculturation stress.

Methods and Materials: The research method was correlational. The population included all Iranian immigrants residing legally in Western Europe, North America, or Oceania. Using convenience sampling, 224 participants were selected and responded to Goldberg's General Health Questionnaire (1979), Dennis and Vander Wal's Cognitive Flexibility Inventory (2010), Connor and Davidson's Resilience Scale (2003), Hill et al.'s Perfectionism Scale (2004), and Havighurst and King's Cultural Stress Scale (1996). Data analysis was conducted using structural equation modeling with LISREL software 8.80.

Findings: The results showed that the proposed model of general health for Iranian immigrants based on cognitive flexibility, resilience, and perfectionism mediated by acculturation stress was a good fit. The findings also indicated that cognitive flexibility had a negative inverse effect on general health ($\beta = -0.46$; $p < 0.01$); resilience had a negative inverse effect on general health ($\beta = -0.42$; $p < 0.01$); overall perfectionism had a negative inverse effect on general health ($\beta = -0.42$; $p < 0.01$). Acculturation stress had a direct positive effect on general health ($\beta = 0.76$; $p < 0.01$). Cognitive flexibility mediated by acculturation stress had an indirect effect on general health ($\beta = -0.67$; $p < 0.01$); resilience mediated by acculturation stress had an indirect effect on general health ($\beta = -0.74$; $p < 0.01$); and perfectionism mediated by acculturation stress had an indirect effect on the general health of Iranian immigrants ($\beta = -0.65$; $p < 0.01$).

Conclusion: It can be concluded that increasing cognitive flexibility and resilience, along with reducing maladaptive perfectionism, leads to a decrease in acculturation stress and an improvement in the general health of immigrants. Therefore, it is recommended that self-help groups, special information sessions, and stress management psychological workshops for immigrants be organized, emphasizing perfectionism, acculturation, and coping strategies to reduce the physical and psychological health impacts of acculturation stress.

Keywords: General health of immigrants, cognitive flexibility, resilience, perfectionism, acculturation stress.

1. Introduction

The desire to immigrate and live in large cities and countries as a result of development (Castells-Quintana, 2018) and the Significant Diversity of Wealth and Resources in Immigrant-Receiving Regions (Liddle, 2017). Immigration is a dual factor that creates a stressful environment requiring new adaptations, generating psychological pressures. According to the World Health Organization, general health is defined as the complete state of physical, social, and mental well-being, not merely the absence of disease or disability (Besharat et al., 2020; Rahimian Boogar & AsgharnejadFarid, 2008; Sadri Damirchi et al., 2018; Tabatabaei & Rasouli, 2018). Immigration can be studied as one of the factors affecting stress. Immigrants experience various forms of psychological pressure, including harassment, physical and sexual violence, and life-threatening situations before and during the immigration process, which can have severe and long-term consequences on mental health (Sangalang et al., 2019).

It appears that one of the factors related to adaptation and maintaining mental health during the immigration process is cognitive flexibility. Cognitive flexibility is defined as a dynamic process responsible for an individual's positive adaptation to the environment, such that a flexible individual, despite experiencing opposing or harmful experiences, can adapt to changing environmental stimuli (Dennis & Vander Wal, 2010). Cognitive flexibility can be an important part of bicultural values, as it can reflect the ability of bicultural individuals to face potential conflicts in two different cultural norms (Kim & Omizo, 2005). Additionally, immigrants bring new customs and ideas that may serve as diverse experiences for the local population, potentially enhancing creativity through cognitive flexibility in the host country's people (Ritter et al., 2012). Research results have shown a relationship between cognitive flexibility and mental health (Aghajani & Samadifard, 2019). Cognitive flexibility is also a good predictor of suicidal thoughts (Miranda et al., 2013) and depression severity (Dickstein et al., 2007).

On the other hand, psychological flexibility in immigrants likely increases resilience to facilitate coping with adversities, especially in facing challenging events (Garcini et al., 2022). Psychological resilience is an individual's ability to maintain a biopsychosocial balance in hazardous situations and goes beyond merely surviving life's stresses, aligning with positive growth, adaptability, and

achieving a level of equilibrium (Connor & Davidson, 2003). Studies have shown that resilience plays an effective role in explaining depression (Al-Buoghobeish et al., 2015). The study by Rahimian Boogar & Asgharnejad Farid (2008) found a positive relationship between self-resilience and mental health. Samani et al. (2007) also showed that resilience leads to reduced problems and increased mental health satisfaction and life satisfaction.

Another factor influencing the decision to immigrate appears to be perfectionism with negative traits. According to Freud (1920), perfectionism is an excessive compulsion, and the main driver in the lives of perfectionists is not happiness but achieving superiority, which is a sign of mental illness (Cohen, 2020). Hill et al. (2004) described adaptive and maladaptive aspects of perfectionism; perfectionist concerns consistently show positive relationships with traits, processes, and outcomes considered undesirable or maladaptive (such as neuroticism, avoidant coping, negative affect). In contrast, perfectionist strivings often show positive relationships with traits, processes, and outcomes considered desirable or adaptive (such as conscientiousness, active coping, positive affect) (Hill et al., 2004). The study by Macedo et al. (2015) showed that perfectionism predicts most psychological distress (Macedo et al., 2015).

As studies have shown, individuals who migrate to a new country may experience acculturation stress (Cano et al., 2017; Ertl et al., 2019; Mayorga et al., 2018). According to Williams and Berry (1991), acculturation refers to the changes that groups and individuals undergo in contact with another culture. Acculturation stress refers to the stress that directly results from the acculturation process and may lead to a specific set of emotions and behaviors, including depression and anxiety, feelings of marginalization and alienation, increased psychosomatic symptoms, and identity confusion. The effort to maintain inherited cultural identities, beliefs, and values may lead to acculturation stress in immigrants (Castillo et al., 2015). In this regard, the study by Dillon et al. (2013) showed that acculturation stress peaks during the early years of immigration for immigrants in the United States (Dillon et al., 2013). Studies have also shown that increased acculturation stress is associated with increased depression symptoms (Bae, 2020; Cano et al., 2015). Moreover, post-migration stressors impact the emotional and behavioral problems of children (Stevens et al., 2015).

Research literature reviews have shown that multiple factors play a role in the health of immigrants, but the

majority of these factors are beyond the control of immigrants, and for this research to be practical, the researcher has sought variables that are trainable and changeable. Identifying these factors plays a significant role in enhancing the general health of immigrants in that training these factors can reduce the stress of immigrants, increase their general health, and thereby improve the quality of life. Therefore, given the evidence mentioned, this research raises the question of whether acculturation stress plays a mediating role in the relationship between cognitive flexibility, resilience, and perfectionism with the general health of immigrants.

2. Methods and Materials

2.1. Study Design and Participants

The research method was correlational, utilizing structural equation modeling. The population of this study included all Iranian immigrants who had been residing legally in a country in Western Europe, North America, or Oceania for more than one year, were over 18 years of age at the time of migration, and were between 20 and 60 years old at the time they responded to the questionnaires. The sampling method was convenience sampling. Given that the sampling method and sample size determination are considered fundamental aspects of any study and play a decisive role in the research outcomes, it was necessary to pay more attention to the sampling method and sample size according to the data analysis method. Since there is no absolute method for determining sample size, some researchers consider a minimum sample size of 100 in structural equation modeling and describe a sample size of 200 or more as desirable. In this study, the sample size was determined based on Kline's (2016) recommendation that the sample number for all research indices should be between 10 to 20 samples, with a minimum sample size of 200 (10 minimum and 20 maximum). Considering all indices of the current model study (total 22 indices), the initial sample size estimate was 10 samples per index, totaling 220 samples. After sending about 504 questionnaire links, data from 224 samples were finally analyzed statistically ($n = 224$). Among the 224 samples, the smallest age group was individuals aged 21 to 30 (with 31 individuals) and the largest was those aged 31 to 40 (with 67 individuals). The lowest educational level was diploma and below (with 13 individuals), and the highest was master's degree and above (with 91 individuals). The fewest years of residency were 30 years and more (with 5 individuals), and the most common were 1 to 10 years

(with 132 individuals). The least common country of residence was Australia (with 2 individuals), and the most common was Canada (with 75 individuals). Most of the sample consisted of women (with 190 individuals).

Data collection was conducted through online questionnaires created on the Porsline site. As the researcher was in close contact with many Iranian immigrants, links to the questionnaires were placed in virtual groups such as Telegram and Instagram, where the researcher had access and Iranian immigrants were members. All questionnaires were anonymous, and participants were assured that their information would remain confidential and used only for research purposes. Participants responded to the General Health Questionnaire by Goldberg (1979), the Cognitive Flexibility Inventory by Dennis and Vander Wal (2010), the Resilience Scale by Connor and Davidson (2003), the Perfectionism Scale by Hill et al. (2004), and the Cultural Stress Scale by Havighurst and King (1996). In addition, demographic information such as age, gender, education, country of residence, years of immigration, and marital status were collected. The researcher provided their ID or phone number at the end of the questionnaire form as a contact method for participants if they encountered any ambiguities in completing the questionnaires. Out of more than 500 questionnaire links sent, 224 were completed and the data from these questionnaires were available in an Excel file format. Thus, data from 224 samples were subjected to statistical analysis.

Data collection in this study was conducted using both library and field methods. Library studies refer to those studies on topics that are not available to the researcher and are generally related to the past, either distant or recent. In this study, to collect literature and background on the topic, both Persian and Latin library sources such as articles, books, and reputable online databases were used, and at the end of the process, classification and utilization of the information were carried out. Moreover, data collection using questionnaires is a very common method in field studies, facilitating data gathering on a large scale.

2.2. Measures

2.2.1. General Health

The General Health Questionnaire was developed by Goldberg in 1979 and used for screening mild mental disorders in various situations. The 28-item form of this questionnaire was created by Goldberg and Hiller (1979). This questionnaire includes four subscales: somatic

symptoms, anxiety symptoms, social dysfunction, and depression, each consisting of seven questions. A four-point Likert scale is used for scoring, ranging from 0 (for option A) to 3 (for option D). Scores for each participant on each subscale are determined separately, and then the total of the subscale scores represents the overall general health score. In this questionnaire, a higher score indicates poorer general health. The cutoff score for each subscale is 10.5. The minimum score in this questionnaire is 0 and the maximum score is 84. The lower score range is 0 to 28, the average range is 28 to 42, and the higher range is over 42. The cutoff score for the entire questionnaire is 42. In the study by Goldberg and Williams (2000), the split-half reliability coefficient for the entire questionnaire was reported as 0.95. In the study by Tabatabaei and Rasouli (2018), the Cronbach's alpha value for the questionnaire was 0.96, and this coefficient for the different subscales ranged from 0.96 to 0.73 (Tabatabaei & Rasouli, 2018).

2.2.2. Cognitive Flexibility

The Cognitive Flexibility Inventory was developed by Dennis and Vander Wal (2010) and is a brief self-report tool of 20 questions used to measure a type of cognitive flexibility necessary for an individual's success in challenging and replacing inefficient thoughts with more effective ones. This questionnaire is used to assess an individual's progress in clinical and non-clinical work and to evaluate the advancement of flexible thinking in treating diseases, attempting to measure three aspects of cognitive flexibility: 1) the inclination to perceive difficult situations as controllable (control), 2) the ability to understand multiple alternative explanations for life events and human behaviors (alternatives for behaviors), and 3) the ability to generate multiple alternative solutions for difficult situations (alternatives). Questions are set on a seven-point Likert scale (ranging from strongly disagree, score 1, to strongly agree, score 7). This questionnaire has a total score that can range from 20 to 140. The higher the individual's score, the greater their cognitive flexibility. The lower score range is 20 to 40, the average range is 40 to 80, and the higher range is over 80. The cutoff score for the entire questionnaire is 80. Dennis and Vander Wal (2010) obtained Cronbach's alpha reliability for the entire scale, control, and alternatives respectively as 0.91, 0.84, and 0.91, and test-retest reliability respectively as 0.81, 0.75, and 0.77 (Soltani et al., 2013).

2.2.3. Resilience

The Resilience Scale was prepared by Connor and Davidson (2003) after reviewing research literature from 1979 to 1991 in the field of resilience, with the aim of measuring resilience levels in different individuals. The Connor-Davidson Resilience Scale consists of 25 statements rated on a five-point Likert scale from one (completely false) to five (completely true). The range of scores for this scale is between 25 to 125, and higher scores indicate greater resilience in the subject. The lower score range is 25 to 50, the average range is 50 to 75, and the higher range is over 75. The cutoff score for the entire questionnaire is 75. The Cronbach's alpha reliability coefficient was 0.85 and the test-retest reliability coefficient was 0.71. In the study by Mehdiyar and Nejati (2015), the reliability was assessed by test-retest and Cronbach's alpha methods, yielding reliability coefficients of 0.93 and 0.83, respectively. In the aforementioned study, using exploratory factor analysis with principal component analysis and varimax rotation for the resilience against suicide questionnaire, three factors were identified that explained 72.74% of the total variance.

2.2.4. Perfectionism

In this study, to measure perfectionism, the Perfectionism Questionnaire by Hill et al. (2004) was used. This questionnaire includes 59 statements and assesses six subscales: negative self-view, order and organization, goal orientation, perceived parental pressure, striving for excellence, and high standards for others. The statements are rated on a five-point Likert scale (ranging from strongly disagree, score 1, to strongly agree, score 5). The lower score range is 59 to 118, the average range is 118 to 177, and the higher range is over 177. The cutoff score for the entire questionnaire is 177. Hill et al. (2004) reported high internal consistency for the perfectionism questionnaire, ranging from 0.83 to 0.91 for all subscales. This questionnaire was validated in Iran by Jamshidi et al. (2009). The calculated Cronbach's alpha coefficient of 0.90 indicated acceptable reliability of the tool. Initial expectations of the relationship between negative dimensions of perfectionism and mental health were also confirmed. The factor structure analysis of the scale indicated the existence of six factors that together explained 43% of the total variance. The overall reliability of this questionnaire using the Cronbach's alpha method was obtained as 0.93 (Besharat et al., 2020).

2.2.5. *Acculturation Stress*

The Cultural Stress Scale was created by Havighurst and King (1996) and consists of 16 statements. The original 60-item version of this scale was developed by Padilla et al. (1985) and was reduced to 36 questions by Mena et al. (1987) (as cited in Havighurst & King, 1996). This questionnaire measures cultural stress in four areas: social, attitudinal, familial, and environmental. The statements are set on a four-point Likert scale (ranging from strongly agree, score 1, to strongly disagree, score 4). The total score for acculturation stress is obtained from the sum of the scores of the four factors, with higher scores indicating lower cultural stress. The lower score range is 16 to 32, the average range is 32 to 40, and the higher range is over 40. The cutoff score for the entire questionnaire is 40. The SAFE was preliminarily implemented in a group consisting of 12 Korean-American adolescents aged 12 to 18 years. Havighurst and King (1996) reported that the SAFE, based on 26 items, had an internal reliability of 0.89, and based on 16 items, Cronbach's alpha coefficient in the study by New (1999) was 0.76 (Rezai et al., 2019).

2.3. *Data analysis*

In the current study, descriptive and inferential statistics were used for data analysis. Descriptive statistics included frequency tables, mean, standard deviation, skewness, and kurtosis. In descriptive statistics, the normality of data distribution was first examined using skewness and kurtosis values. The method of data analysis in this research was

structural equation modeling. This method is a very general and robust multivariate analysis technique from the family of multivariate regression and more precisely an extension of the general linear model that allows the researcher to test a set of regression equations simultaneously. Structural equation modeling is a diagram that connects independent, mediating or intervening, and dependent variables. For data analysis, version 26 of the SPSS software and version 8 of the LISREL software were used.

3. **Findings and Results**

Individuals aged 31-40 years comprise the largest segment of the sample at 29.91%. Those aged 21-30 years make up the smallest portion of the sample at 13.84%. Women, at 84.80%, form the majority of the sample, while men, at 15.20%, represent the smallest group. Individuals with a bachelor's degree are the most common education level in the sample, representing 39.70%, while those with a diploma or less are the least common at 5.80%. Participants who have resided between 1-10 years constitute the largest portion of the sample at 58.92%, and those who have resided for 30 years or more are the smallest group at 2.23%. Participants residing in Canada make up the largest portion of the sample at 33.50%, and those in Australia are the smallest group at 0.09%. The mean, standard deviation, maximum, and minimum scores of the components of variables (perfectionism, resilience, cognitive flexibility) and criterion (general health) and the mediator acculturation stress are shown in Table 1.

Table 1

Descriptive Statistics

Variable	Mean	SD	Max	Min	Skewness	Kurtosis
Resilience	95.08	4.27	122	54	-0.395	-0.493
Personal Competence Perception	29.63	4.82	38	17	0.400	-0.299
Trust in Personal Instincts and Tolerance of Negative Affect	26.15	5.55	35	11	-0.404	-0.319
Positive Acceptance of Change and Secure Relationships	19.95	3.96	25	8	-0.535	-0.651
Control	11.53	1.87	15	6	-0.258	-0.368
Spiritual Influences	7.80	1.56	10	4	-0.583	-0.311
Cognitive Flexibility	48.14	5.39	60	38	0.927	0.523
Control	19.12	2.59	24	12	-0.395	-0.493
Alternatives for Human Behaviors	4.83	1.03	6	2	-0.507	-0.579
Alternatives	24.18	3.02	30	17	0.364	0.178
General Health	77.32	3.28	72	30	-1.038	-1.437
Somatic Symptoms	17.12	2.37	21	10	-0.167	-0.020
Anxiety Symptoms	23.41	3.06	28	13	-0.992	1.106
Social Dysfunction	23.37	2.63	28	16	-0.784	-0.235
Depression	23.41	2.85	28	10	-1.014	-1.190
Perfectionism	104	3.50	98	37	-1.381	-1.329
Negative Self-Perception	31.36	3.03	38	19	-0.975	1.367

Order and Organization	31.37	3.03	39	19	-0.977	1.366
Goal Orientation	29.66	2.85	35	21	-0.881	-0.748
Perceived Parental Pressure	20.15	2.14	24	14	-0.701	-0.163
Striving for Excellence	18.26	2.39	22	10	-0.924	1.037
High Standards for Others	16.78	2.11	20	8	-1.114	1.610
Acculturation Stress	61.24	5.88	79	34	-0.374	-0.527
Social	15.36	2.71	19	7	-0.391	-0.772
Attitudinal	15.41	3.05	20	7	-0.500	-0.133
Familial	15.39	3.04	20	6	-0.395	-0.335
Environmental	15.07	3.45	20	5	-0.541	-0.092

Data in Table 1 also indicate that all variables have skewness and kurtosis statistics in the range of -2 to 2, indicating a normal distribution. Subsequently, the results of Pearson correlation coefficients between exogenous and

mediating variables with endogenous as well as exogenous with mediating variables are presented in the correlation matrix.

Table 2

Results of Pearson Correlation Coefficients Between Research Variables

Variables	1	2	3	4	5
1. Resilience	1				
2. Cognitive Flexibility	.370**	1			
3. Perfectionism	.450**	.511**	1		
4. Acculturation Stress	-.711**	-.654**	-.674**	1	
5. General Health	-.421**	-.469**	-.423**	.763**	1

Pearson correlation results indicated a significant negative relationship between perfectionism and general health ($r = -.423$; $p < .01$), between resilience and general health ($r = -.421$; $p < .01$), and between cognitive flexibility and general health ($r = -.469$; $p < .01$). A significant positive relationship exists between acculturation stress and general health ($r = .763$; $p < .01$). There is a significant negative

relationship between resilience and acculturation stress ($r = -.711$; $p < .01$), between cognitive flexibility and acculturation stress ($r = -.654$; $p < .01$), and between perfectionism and acculturation stress ($r = -.674$; $p < .01$). Table 3 shows the model fit indices along with desirable values.

Table 3

Fit Indices for the Revised Model

Fit Index	Value	Criterion	Interpretation
Absolute			
Chi-square (χ^2)	434.17	-	-
Degrees of Freedom (df)	151	-	-
Significance Level	.001	< .05	Good fit
Chi-square to df Ratio (χ^2/df)	434.17 / 151	< 3	Good fit
Goodness of Fit Index (GFI)	.911	> .90	Good fit
Adjusted Goodness of Fit Index (AGFI)	.867	> .85	Good fit
Comparative			
Relative Fit Index (RFI)	.935	> .90	Good fit
Incremental Fit Index (IFI)	.923	> .90	Good fit
Comparative Fit Index (CFI)	.921	> .90	Good fit
Tucker-Lewis Index (TLI)	.923	> .90	Good fit
Normed Fit Index (NFI)	.916	> .90	Good fit
Parsimonious			
Root Mean Square Error of Approximation (RMSEA)	.048	< .10	Good fit
Normed Fit Index Parsimonious (PNFI)	.666	> .50	Good fit
Parsimonious Goodness of Fit Index (PGFI)	.672	> .50	Good fit

The results in Table 3 indicate that the Chi-square statistic (χ^2) is 434.17 with 151 degrees of freedom, resulting in a Chi-square to degrees of freedom ratio (2.87) of less than 3, which suggests an excellent model fit. The Goodness of Fit Index (GFI) is 0.911, indicating a satisfactory model fit.

Therefore, the proposed model of general health for Iranian immigrants based on cognitive flexibility, resilience, and perfectionism mediated by acculturation stress is confirmed. Table 4 presents the direct effect coefficients and significance levels between the research variables.

Table 4

Estimates of Direct Effects of Independent Variables on Dependent Variable

Path	Standard Coefficients	Standard Error	Critical Ratio	Significance Level
Perfectionism ---> General Health	-0.42	0.265	-4.35	0.0005
Resilience ---> General Health	-0.42	0.327	-5.40	0.0005
Cognitive Flexibility ---> General Health	-0.46	0.344	-5.44	0.0005
Acculturation Stress ---> General Health	0.76	0.310	8.74	0.0005

Results from Figure 1 and Table 4 demonstrate the analysis of other research hypotheses with direct effect

coefficients. Table 5 shows the results from the bootstrap method in the macro program for mediating relationships.

Figure 1

Model with Beta Values

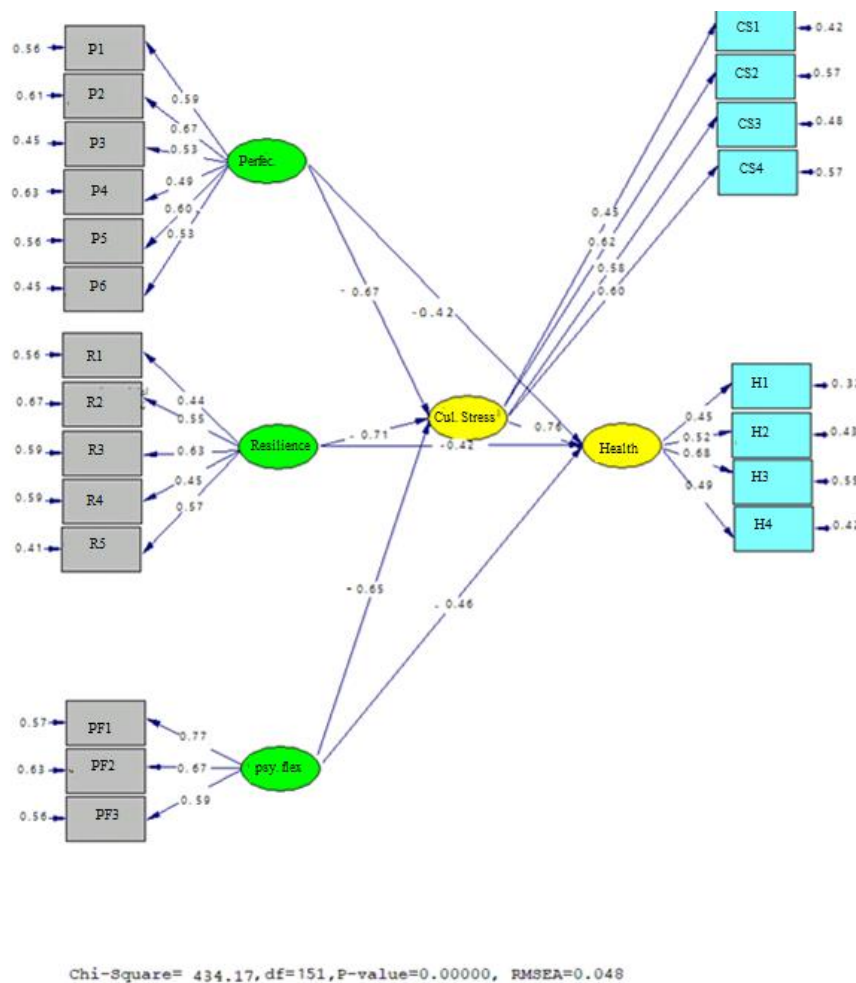


Table 5

Estimation of Indirect Paths in the Model Using Bootstrap

Exogenous Variable	Mediator	Endogenous Variable	Estimate	Upper Bound	Lower Bound	Significance Level	Confidence Interval
Perfectionism	Acculturation Stress	General Health	-0.653	0.245	0.132	0.006	95%
Resilience	Acculturation Stress	General Health	-0.741	0.124	0.101	0.001	95%
Cognitive Flexibility	Acculturation Stress	General Health	-0.674	0.154	0.118	0.005	95%

The results in Table 5 for the analysis of research hypotheses show that based on Figure 1 and Table 7, the indirect effect coefficient of cognitive flexibility on general health through the mediation of acculturation stress is estimated at -0.674. This path coefficient is significant at a 95% confidence level because the bootstrap test results for the indirect effect showed that the lower and upper bounds of this path coefficient do not include zero (0.154 to 0.118: 95% CI), thus confirming the role of the mediator acculturation stress in the current hypothesis. The indirect effect of resilience on general health through the mediation of acculturation stress is estimated at -0.741, which is significant at a 95% confidence level because the bootstrap results showed that the lower and upper bounds of this path coefficient do not include zero (0.124 to 0.101: 95% CI), confirming the role of the mediator acculturation stress. The indirect effect of perfectionism on general health through the mediation of acculturation stress is estimated at -0.653, which is significant at a 95% confidence level because the bootstrap results showed that the lower and upper bounds of this path coefficient do not include zero (0.245 to 0.132: 95% CI), thus confirming the role of the mediator acculturation stress in the hypothesis.

4. Discussion and Conclusion

The present study aimed to determine the fit of a proposed model of general health for Iranian immigrants based on cognitive flexibility, resilience, and perfectionism with the mediation of acculturation stress. The results indicated that perfectionism, resilience, and cognitive flexibility, mediated by acculturation stress, affect the general health of immigrants. Concerning the impact of perfectionism on the general health of immigrants, these findings are consistent with the prior studies (Besharat et al., 2020; Macedo et al., 2015). Besharat and Farahmand (2017) demonstrated that dimensions of perfectionism can predict depression and anxiety (Besharat et al., 2020).

Regarding the impact of resilience on the general health of immigrants, these findings align with the previous studies (Rahimian Boogar & AsgharnejadFarid, 2008; Samani et al., 2007). In a study by Rahimian Boogar and Asgharnejad Farid (2008), researchers demonstrated a positive and significant relationship between self-resilience and mental health in individuals who had experienced trauma, indicating that resilience has a significant predictive power for mental health (Rahimian Boogar & AsgharnejadFarid, 2008). In the study by Samani et al. (2007), resilience led to life satisfaction by reducing problems (or enhancing mental health levels) (Samani et al., 2007). Indeed, according to Connor and Davidson (2003), psychological resilience represents an individual's capacity and potential to overcome stress. Resilience is used for resistance and tolerance of individuals against negative events and is a method to measure an individual's ability to cope with stressors and factors that threaten mental health. Immigrants with sufficient resilience do not exhibit self-destructive behavior, are emotionally calm, and are capable of handling the demands of the host country (Connor & Davidson, 2003). Resilience reduces anxiety and psychological stress in these individuals. Immigrants with sufficient resilience accept that the presence of challenges in the host country is part of the immigration process and, having features such as an internal locus of control, problem-solving skills, and desirable coping strategies, effectively cope with stressful conditions and enjoy good mental and general health.

Concerning the impact of cognitive flexibility on the general health of Iranian immigrants, this finding is in line with the studies by Aghajani and Samadifar (2018) and Sadri Damirchi et al. (2018), which showed a relationship exists between cognitive flexibility and mental health (Aghajani & Samadifard, 2019; Sadri Damirchi et al., 2018). This finding is also consistent with the studies indicating that cognitive flexibility is a good predictor of suicidal thoughts and the severity of depression (Dickstein et al., 2007; Miranda et al., 2013). Flexible individuals, having an adaptable and easy-

going demeanor, evoke positive responses from others. These individuals not only possess good interpersonal skills but also initially display signs of coping skills. As cognitive flexibility develops, individuals gain a greater ability to use cognitive approaches such as reappraisal to regulate their emotions. As a result, they experience greater mental health. In fact, cognitive flexibility is one of the components of cognitive communication skills and may be a key determinant in understanding the self-efficacy needed to make decisions in a healthy lifestyle; decisions that ultimately can affect the psychological well-being and general health of immigrants.

Regarding the impact of acculturation stress on the general health of Iranian immigrants, this finding corresponds with the results of studies by Bae (2020) and Cano et al. (2015). These researchers showed that increased acculturation stress is associated with increased depression symptoms (Bae, 2020; Cano et al., 2015). In the same vein, Stevens et al. (2015) showed that post-migration stressors affect individuals' emotional and behavioral problems (Stevens et al., 2015). This finding can be explained by the fact that major sources of stress in immigrants can include personal relationships, work pressures, lack of control over affairs, environmental pressures, and internal conflicts, and acculturation stress is a consequence of these pressures and problems. If individuals fail in the acculturation process, they experience psychological pressures and stress, which lead to various problems in life. When individuals face changes and challenges such as learning a new language, cultural and normative differences, and distancing from their ancestral culture, the process of adapting to the new environment is stressful. Therefore, in the adaptation process, obstacles lead to stress, which also affects other aspects of their lives. All these factors increase after immigration, so immigrants will experience more stress than before migration.

Regarding the impact of perfectionism on the acculturation stress of Iranian immigrants, this finding is consistent with the study by Rice et al. (2012), which showed that the interaction of self-critical perfectionism with acculturation stress is significant among international students in the USA (Rice et al., 2012). This finding is also in line with the study by Huang and Mussap (2018), indicating that there is a positive relationship between maladaptive perfectionism and acculturation stress, causing increased depression in Asian international students. In fact, maladaptive perfectionism is defined as perceived maladjustment, indicating failure to meet personal

performance standards (Huang & Mussap, 2018). Individuals with maladaptive perfectionism feel pressured to succeed. They may also be under stress due to the high cost of living in the host country. When facing cultural stressors such as language problems, neurotic perfectionists are likely to expect to quickly overcome their language difficulties. However, those with maladaptive perfectionism may perceive their slow or modest progress in language skills as a personal failure (i.e., negative aspects of performance). This sense of failure can be very distressing and threatening for neurotic perfectionists, as they aim to perform well in the new culture, increasing acculturation stress. On the other hand, individuals with maladaptive perfectionism, due to unrealistic expectations of themselves, may compare their achievements and pace of progress with native individuals or others who migrated earlier, which also increases their acculturation stress. This comparison may involve comparing with newcomers to the new culture; i.e., those who migrated earlier compare themselves with newer immigrants. They may have higher expectations of themselves and believe they should perform better than those who have been in the country for a shorter period. When such immigrants realize that they do not necessarily perform better due to longer residency in the host country, they likely consider their achievements insignificant, experiencing higher acculturation stress, which may lead to feelings of depression and a decline in general health.

Regarding the impact of resilience on the acculturation stress of Iranian immigrants, this finding is consistent with the study by Rezai et al. (2019), which indicated a significant negative correlation between acculturation stress and resilience in adolescents. This finding can be explained by the fact that resilience is a process of confronting high-risk situations that can help immigrants maintain themselves in difficult situations of confrontation and adaptation to the culture of the host country (Rezai et al., 2019). Since immigrants face various traumatic events during the migration process, these events can create or increase acculturation stress. However, some immigrants, due to their personal trait of resilience, have the ability to cope with these pressures and continue their lives in the host country, despite all the limitations and pressures of acculturation. As mentioned in the study by Rezai et al. (2019), the factor of self-efficacy can predict the resilience of immigrants with regard to developmental tasks and psychological well-being (Rezai et al., 2019). Therefore, the personal trait of resilience in immigrants can influence their adaptation to the environment and reduce acculturation stress. In this context,

Masten (2001) believes that resilience, through indirect adaptive processes, including cognitive development, behavioral regulation, and interaction with the environment, occurs and enables humans to achieve unexpected outcomes in the face of adverse conditions, risks, and hardships (Masten, 2021). These challenges include learning a new language, cultural and normative differences, distancing from ancestral culture, ignorance of immigration laws, financial problems, social disorders, and psychological disturbances, all of which are manifestations of acculturation stress. When immigrants encounter changes and these challenges during migration, the adaptation process becomes stressful, and resilience acts as a buffer, reducing acculturation stress.

Regarding the impact of cognitive flexibility on acculturation stress in Iranian immigrants, this finding is in line with the study by Kim and Omizo (2005), which showed that adherence to Euro-American cultural values is a positive predictor of cognitive flexibility among Asian American college students (Kim & Omizo, 2005). In another compatible study, Shimogori (2013) showed that biculturalism has a positive correlation with cognitive flexibility in bilingual English-Japanese adults, and cognitive flexibility was associated with the individual's perception of being bicultural and related fundamental experiences (Shimogori, 2013). This finding can be explained by the fact that cognitive flexibility is the ability to change cognitive arrays in order to adapt to changing environmental stimuli (Dennis & Vander Wal, 2010). Therefore, cognitive flexibility in Iranian immigrants increases adaptation to challenges related to acculturation and can reduce acculturation stress. Immigrants with greater cognitive flexibility try to think about issues from the perspectives of others and consider all available information and facts when concluding the causes of behavior. This, while increasing the individual's adaptation and compatibility with the native culture of the host country, leads to increased interpersonal communications and the development of language skills in Iranian immigrants. With increased interpersonal communications, racial biases in the natives of the host country are reduced, and Iranian immigrants are more accepted in communities and become more familiar with the culture of the host country. In this way, it can be explained that psychological flexibility reduces acculturation stress in Iranian immigrants.

5. Limitations & Suggestions

As this research was conducted cross-sectionally, it presents limitations in terms of interpreting and attributing causality to the variables under study, which must be considered. Also, the findings of this research cannot be generalized to non-Iranian immigrants, and generalizing them to other immigrants should be done cautiously. The accuracy of the reported personal data depends on the respondent's honesty; therefore, it is recommended that other data collection methods, including semi-structured interviews, be developed in future research to compensate for the shortcomings of the used tool. Future research could be based on a comparative causal research design or longitudinal methods to confirm causal relationships between variables.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed in this article.

References

- Aghajani, S., & Samadifard, H. R. (2019). The Role of Cognitive Failures, Alexithymia and Cognitive Flexibility in Predicting the Social Health of Elderly. *Advances in Cognitive Science*, 20(4), 62. <https://www.magiran.com/paper/1928315>
- Bae, S. M. (2020). The relationship between social capital, acculturative stress and depressive symptoms in multicultural adolescents: Verification using multivariate latent growth modeling. *International Journal of Intercultural Relations*, 74, 127-135. <https://doi.org/10.1016/j.ijintrel.2019.11.007>
- Besharat, M. A., Farahmand, H., & Ebrahimi, F. (2020). The association of perfectionism dimensions with depression and anxiety symptoms: The mediating role of difficulties in emotion regulation. *Rooyesh-e-Ravanshenasi*, 9(7), 1-14. <https://www.magiran.com/paper/2190817>
- Cano, M. Á., Sánchez, M., Trepka, M. J., Dillon, F. R., Sheehan, D. M., Rojas, P., Kanamori, M. J., Huang, H., Auf, R., & De La Rosa, M. (2017). Immigration Stress and Alcohol Use Severity Among Recently Immigrated Hispanic Adults: Examining Moderating Effects of Gender, Immigration Status, and Social Support. *Journal of Clinical Psychology*, 73(3), 294-307. <https://doi.org/10.1002/jclp.22330>
- Cano, M. Á., Schwartz, S. J., Castillo, L. G., Romero, A. J., Huang, S., Lorenzo-Blanco, E. I., Unger, J. B., Zamboanga, B. L., Des Rosiers, S. E., Baezconde-Garbanati, L., Lizzi, K. M., Soto, D. W., Oshri, A., Villamar, J. A., Pattarroyo, M., & Szapocznik, J. (2015). Depressive symptoms and externalizing behaviors among Hispanic immigrant adolescents: Examining longitudinal effects of cultural stress. *Journal of adolescence*, 42(1), 31-39. <https://doi.org/10.1016/j.adolescence.2015.03.017>
- Castells-Quintana, D. (2018). Beyond Kuznets: Inequality and the size and distribution of cities. *Journal of Regional Science*, 58(3), 564-580. <https://doi.org/10.1111/jors.12368>
- Castillo, L. G., Navarro, R. L., Walker, J. E. O., Schwartz, S. J., Zamboanga, B. L., Whitbourne, S. K., Weisskirch, R. S., Kim, S. Y., Park, I. J., & Vazsonyi, A. T. (2015). Gender matters: The influence of acculturation and acculturative stress on Latino college student depressive symptomatology. *Journal of Latina/o Psychology*, 3(1), 40. <https://psycnet.apa.org/journals/lat/3/1/40/>
- Cohen, E. D. (2020). The psychoanalysis of perfectionism: Integrating Freud's psychodynamic theory into logic-based therapy. *International Journal of Philosophical Practice*, 6(1), 15-27. https://www.pdcnet.org/ijpp/content/ijpp_2020_0006_0001_0015_0027
- Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety*, 18(2), 76-82. <https://onlinelibrary.wiley.com/doi/abs/10.1002/DA.10113>
- Dennis, J. P., & Vander Wal, J. S. (2010). The cognitive flexibility inventory: Instrument development and estimates of reliability and validity. *Cognitive therapy and research*, 34, 241-253. <https://link.springer.com/article/10.1007/s10608-009-9276-4>
- Dickstein, D. P., Nelson, E. E., McClure, E. B., Grimley, M. E., Knopf, L., Brotman, M. A., Rich, B. A., Pine, D. S., & Leibenluft, E. (2007). Cognitive flexibility in phenotypes of pediatric bipolar disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*, 46(3), 341-355. <https://www.sciencedirect.com/science/article/pii/S0890856709616786>
- Dillon, F. R., De La Rosa, M., & Ibañez, G. E. (2013). Acculturative stress and diminishing family cohesion among recent Latino immigrants. *Journal of Immigrant and Minority Health*, 15, 484-491. <https://link.springer.com/article/10.1007/s10903-012-9678-3>
- Ertl, M. M., Rentería, R., Dillon, F. R., Babino, R., De La Rosa, M., & Brenner, R. E. (2019). Longitudinal associations between marianismo beliefs and acculturative stress among Latina immigrants during initial years in the United States. *Journal of counseling psychology*, 66(6), 665-677. <https://doi.org/10.1037/cou0000361>
- Garcini, L. M., Cadenas, G., Domenech Rodríguez, M. M., Mercado, A., Campos, L., Abraham, C., Silva, M., & Paris, M. (2022). Lessons learned from undocumented Latinx immigrants: How to build resilience and overcome distress in the face of adversity. *Psychological Services*, 19(Suppl 1), 62-71. <https://doi.org/10.1037/ser0000603>
- Hill, R. W., Huelsman, T. J., Furr, R. M., Kibler, J., Vicente, B. B., & Kennedy, C. (2004). A New Measure of Perfectionism: The Perfectionism Inventory. *Journal of Personality Assessment*, 82(1), 80-91. https://doi.org/10.1207/s15327752jpa8201_13
- Huang, S. L., & Mussap, A. J. (2018). Maladaptive perfectionism, acculturative stress and depression in Asian international university students. *Journal of Psychologists and Counsellors in Schools*, 28(2), 185-196. <https://journals.sagepub.com/doi/abs/10.1017/jgc.2016.18>
- Kim, B. S. K., & Omizo, M. M. (2005). Asian and European American Cultural Values, Collective Self-Esteem, Acculturative Stress, Cognitive Flexibility, and General Self-Efficacy Among Asian American College Students. *Journal of counseling psychology*, 52(3), 412-419. <https://doi.org/10.1037/0022-0167.52.3.412>
- Liddle, B. (2017). Urbanization and Inequality/Poverty. *Urban Science*, 1(4).
- Macedo, A., Soares, M. J., Amaral, A. P., Nogueira, V., Madeira, N., Roque, C., Marques, M., Maia, B., Bos, S., Valente, J., & Pereira, A. T. (2015). Repetitive negative thinking mediates the association between perfectionism and psychological distress. *Personality and individual differences*, 72, 220-224. <https://doi.org/10.1016/j.paid.2014.08.024>
- Masten, A. S. (2021). Resilience of children in disasters: A multisystem perspective. *International journal of psychology*, 56(1), 1-11. <https://doi.org/10.1002/ijop.12737>
- Mayorga, N. A., Jardin, C., Bakhshaie, J., Garey, L., Viana, A. G., Cardoso, J. B., & Zvolensky, M. (2018). *Acculturative stress, emotion regulation, and affective symptomatology among Latino/a college students* [doi:10.1037/cou0000263].
- Miranda, R., Valderrama, J., Tsypes, A., Gadol, E., & Gallagher, M. (2013). Cognitive inflexibility and suicidal ideation: Mediating role of brooding and hopelessness. *Psychiatry research*, 210(1), 174-181. <https://doi.org/10.1016/j.psychres.2013.02.033>
- Rahimian Boogar, E., & AsgharnejadFarid, D. A. A. (2008). The Relationship between Psychological Hardiness also Ego-resiliency and Mental Health in Adolescent and Adult Survivors of Bam Earthquake. *Iranian Psychiatry and Clinical Psychology*, 14(1), 8. <https://www.magiran.com/paper/518911>
- Rezai, B., Heydarinasab, L., Roshan, R., & Gholami Fesharaki, M. (2019). Evaluating the Validity of Acculturative Stress Scale on Afghan Refugee Adolescents in Iran. *Journal of Health Education and Health Promotion*, 7(1), 46-54. <https://www.magiran.com/paper/1948497>
- Rice, K. G., Choi, C.-C., Zhang, Y., Morero, Y. I., & Anderson, D. (2012). Self-critical perfectionism, acculturative stress, and depression among international students. *The counseling psychologist*, 40(4), 575-600. <https://journals.sagepub.com/doi/abs/10.1177/0011000011427061>

- Ritter, S. M., Damian, R. I., Simonton, D. K., van Baaren, R. B., Strick, M., Derks, J., & Dijksterhuis, A. (2012). Diversifying experiences enhance cognitive flexibility. *Journal of Experimental Social Psychology*, 48(4), 961-964. <https://doi.org/10.1016/j.jesp.2012.02.009>
- Sadri Damirchi, E., Mohammadi, N., & Rahimi Zarj Abad, N. (2018). Prediction of Mental Health based on Moral Intelligence and Cognitive Flexibility in Nursing Students. *Journal of Medical Ethics*, 12(43), 16. <https://www.magiran.com/paper/2354491>
- Samani, S., Jokar, B., & Sahragard, N. (2007). Effects of Resilience on Mental Health and Life Satisfaction. *Iranian Psychiatry and Clinical Psychology*, 13(3), 290. <https://www.magiran.com/paper/458565>
- Sangalang, C. C., Becerra, D., Mitchell, F. M., Lechuga-Peña, S., Lopez, K., & Kim, I. (2019). Trauma, post-migration stress, and mental health: A comparative analysis of refugees and immigrants in the United States. *Journal of Immigrant and Minority Health*, 21, 909-919. <https://link.springer.com/article/10.1007/s10903-018-0826-2>
- Shimogori, Y. (2013). *Impact of biculturalism on self-efficacy and cognitive-flexibility of Japanese adults*. The Claremont Graduate University. <https://search.proquest.com/openview/15cb642c393c4778fcf572f0ea3de236/1?pq-origsite=gscholar&cbl=18750>
- Soltani, E., Shareh, H., Bahrainian, S. A., & Farmani, A. (2013). The mediating role of cognitive flexibility in correlation of coping styles and resilience with depression. *Researcher Bulletin of Medical Sciences*, 18(2), 88-96. <https://www.magiran.com/paper/1182944>
- Stevens, G. W., Walsh, S. D., Huijts, T., Maes, M., Madsen, K. R., Cavallo, F., & Molcho, M. (2015). An internationally comparative study of immigration and adolescent emotional and behavioral problems: Effects of generation and gender. *Journal of Adolescent Health*, 57(6), 587-594. <https://www.sciencedirect.com/science/article/pii/S1054139X15002803>
- Tabatabaei, S., & Rasouli, Z. (2018). The Reliability and validity of Persian Version of the General Health Questionnaire (GHQ-60) in Industry Staff. *Iran Occupational Health*, 15(3), 45-54. <https://www.magiran.com/paper/1889829>