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Self-Narrated by Self: Psychometric Evaluation of the Persian Version of the Awareness of the Narrative Identity Questionnaire (ANIQ)

Golnaz Mazaheri-Nejad-Fard[1] (MSc), Mohammad Ali Mazaheri[1] (PhD), Laura Jobson[2] (PhD), Homa Mohammadsadeghi[3] (PhD), Mohsen Dehghani[1] (PhD)

1. Department of Psychology, Faculty of Psychology and Educational Sciences, Shahid Beheshti University, Tehran, Iran
2. School of Psychological Sciences and Turner Institute for Brain and Mental Health, Monash University, Australia
3. Psychiatrist, Central Queensland Hospital and Health Services, Queensland, Australia

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Corresponding Author:
Golnaz Mazaheri-Nejad-Fard,
Department of Psychology,
Faculty of Psychology and Educational Sciences,
Shahid Beheshti University,
Tehran,
Iran
E-mail: golnaz_mazaheri@yahoo.com

Abstract

Introduction: The main objective of this study was to examine the psychometric properties of the Persian version of the Awareness of Narrative Identity Questionnaire (ANIQ).
Method: The statistical population of this cross-sectional study comprised of all the students of the state universities of Tehran in the academic year 2023-2024, among whom 510 individuals were selected using the convenience sampling method. The final version of the ANIQ was distributed online after the process of translation, back-translation, and confirmation of content validity, together with the Depression, Anxiety, Stress Scale (DASS), and Ten-Item Personality Measure (TIPI). After collecting the data, exploratory and confirmatory factor analysis methods were used to perform the statistical analysis.
Results: Findings revealed the appropriateness of the three-factor model. Also, all three factors as well as the total score of the awareness of narrative identity had a significant negative correlation with neuroticism and a significant positive correlation with conscientiousness.
Conclusion: Considering the appropriateness of the psychometric properties of the Persian version of the ANIQ, specialists in the field of psychology in Iran are suggested to use it for research, diagnostic, and clinical purposes.

Keywords: Narrative Identity, Narrative-Self, Personality, Autobiographical Memory

Introduction

The self can be interpreted as a reflective arrangement of the subjective I and the constructed me, which evolves and expands throughout human life [1]. In addition, the self is a social actor or structure that emerges in interpersonal and social experiences [2]. Our perception of ourselves results from the significant connection of our communications and interpersonal experiences. We understand who we are and accordingly experience a coherent sense of self and self-continuity by accessing and reflecting on the memories related to these experiences at the heart of the self-structure [3,4].
Meanwhile, how individuals recognize and interpret their mental states, such as their thoughts, feelings, and motivations, plays a significant role in maintaining mental health and adapting to social environments. This concept or process can be considered as a mental

or reflective function [5,6]. The mentalization of the self generates a coherent and stable representation of the self by integrating various aspects of the inner psychological world, which helps the formation and evolution of an accepting perspective of the self [7]. Indeed, individuals create a narrative identity by integrating their past personal experiences and narratively reviewing them [8]. Accordingly, narrative identity encompasses basic self-knowledge about who they were in the past, who they are now, and how they see themselves in the future [9]. Thus, the narrative identity is a person's internalized and evolving life story, which combines the reconstructed past and imagined future to provide meaning to the person's life [10]. Moreover, narrative identity is closely associated with autobiographical memory, which is the memory of events, including memories, experiences, and personal issues of the individual's past [11,12].

According to McAdams and McLean [10], narrative identity can develop from a conversation between parents and their young children to the expression of complex meaning-making strategies in personal stories that appear in adolescence and the emerging years of adulthood. In fact, this part of the identity includes successive interactions of the individual with the social environment and identification with it during development [13]. The findings of some studies have indicated that the high level of coherence in individuals' narratives about life events has a significant relationship with their success in extracting meaning from these events [14] and plays a crucial role in important human functions, including orientation toward the world, problem-solving ability, human interactions, professional life, maintaining health, security, and social welfare [9,15–17]. On the other hand, lower levels of narrative coherence are associated with the development of psychopathological symptoms [18,19] such as depression [20], anxiety, and stress, as well as external behavioral problems [21,22]. Defects in narrative identity coherence have significant relationships with some mental disorders related to the structure of self and identity, such as disorders in which the sense of self is fragile and the identity is incoherent and chaotic, including disorders of the psychosis spectrum [23], trauma [11,24–26] and personality disorders, especially borderline personality organization [5,27–29].

Therefore, there is an undeniable need for an accurate method/tool to measure the coherence of narrative identity. Before the last decade, qualitative methods were primarily applied to assess narrative identity. Although qualitative methods usually provide rich, accurate, and detailed information, they are mostly time-consuming and, in some cases, intensive. Hallford and Mellor [8] used a quantitative approach as a complementary method to solve these limitations and developed and validated the Awareness of Narrative Identity Questionnaire (ANIQ). ANIQ is a 20-item self-report tool that evaluates the general coherence level of individuals' autobiographical memories, along with their metacognitive awareness of having a narrative identity with one dimension of awareness (awareness of narrative identity) and three dimensions of the four dimensions proposed by Habermas and Bluck [30] for global coherence, including temporal coherence (the ability to accurately understand the sequence of experiences that occur over time), causal coherence (the ability to understand the meaningful connection of experiences with each other and the causal connection of events with one's identity) and thematic coherence (the skill to uncover commonalities among different experiences and recognize overarching themes that serve as unified explanations for these events). Hallford and Mellor [8] conducted three studies with a large sample group to investigate this tool's structural factors, validity, and reliability. The internal consistency coefficients for the awareness, temporal coherence, causal coherence, and thematic coherence were as much as 0.91, 0.96, 0.90, and 0.93, respectively. In addition, they reported the test-retest reliability between 0.72 and 0.79, good criterion validity, and good convergent and divergent validity for this tool. In another study, Balzen et al. [31] evaluated the psychometric properties of the ANIQ among adolescents aged 10 to 14. The results of this research confirmed the structural factor of ANIQ and showed high internal consistency. Convergent validity was also confirmed through negative correlations between ANIQ and borderline personality traits and identity diffusion. Dierdorp et al. [32] conducted a validation study to investigate the psychometric properties of this questionnaire in Dutch individuals aged 18 to 75. The findings of confirmatory factor analysis provided evidence for the four-factor structure of this tool, and the factor loadings of the items were between 0.67 and 0.96. In addition, ANIQ subscales with Cronbach's alpha from 0.86 to 0.96 demonstrated good to excellent internal consistency. This questionnaire has been validated by Sevim and Otrar [33] in Turkey. The results indicated good construct validity of this questionnaire and factor loadings for subscales were between 0.65 and 0.91. Additionally, the reliability coefficients of the internal consistency of the dimensions of the questionnaire ranged from 0.84 to 0.94, and the test-retest coefficients from 0.77 to 0.95.

Although various studies have been conducted to design a tool for measuring narrative identity and evaluating its validity and reliability [8,31–33], and the results of these studies indicate that the psychometric properties of this tool are acceptable in other countries, until now the psychometric properties of this scale have not been investigated in Iran. Due to linguistic and cultural differences on one hand, and on the other hand, as the concept of personality, self or identity and the related structures, including narrative identity, is mainly culture-dependent, it is not clear whether this tool which is standardized in other countries, can be directly used in research and clinical work in Iran Or not. Therefore, the current study aims to accurately translate, validate, and examine the psychometric properties of the ANIQ in the Persian language and the culture of the Iranian society.

Method

The statistical population of this cross-sectional study comprised of all the students of the state universities of Tehran in the academic year 2023-2024, among whom 510

individuals (270 males and 240 females) were selected as the sample group using the convenience sampling method. Examining the existing theoretical and research bases on determining the sample size for factor analysis indicates theoretical heterogeneity in this field. In this regard, the sample size was almost between 300 and 500 based on multivariate data analysis for examining path analysis and confirmatory factor analysis in this study [34]. The inclusion criteria consisted of being at least 18 years old, having a diploma or higher, non-use of drugs, and the absence of diagnosed mental disorders (based on the self-reported information of the participants collected in the demographic section). The exclusion criteria included failure to respond to at least 5% of the items of each questionnaire. To conduct this research, the English version of the ANIQ was first translated into Persian. In the first step, two experts proficient in English and Persian independently translated this questionnaire into Persian, and after consensus between them and resolving any disagreements, the first version of this questionnaire was prepared in Persian. Then, this questionnaire was back-translated by an expert fluent in English under the supervision of two experts in the field of personality psychology and autobiographical memory. After the original version of the questionnaire was prepared and its content validity was confirmed by experts including clinical psychologists, general psychologists, and psychometricians, the ANIQ was administered to 20 participants and their comments and feedback on the structure of the sentences, the comprehensibility of the items and the clarity and fluency of the sentences were recorded to ensure face validity. After preparing the final version, the online form of the research questionnaires was prepared through the use of a secure digital survey platform (Porsline) and made available to the sample group via university students' social media networks in Tehran. Information was collected after obtaining the consent of the participants. Participants were also reassured about the confidentiality of the protection of personal information. Data collection spanned three months and based on the screened information, all the data were entered into SPSS 25 and AMOS 24 software for statistical analysis including exploratory and confirmatory factor analysis.

The tools applied in this study were as follows:

Awareness of Narrative Identity Questionnaire (ANIQ): A self-report questionnaire was developed by Hallford and Mellor in 2017, consisting of 20 items on an 11-point Likert scale (from 0=strongly disagree to 10=strongly agree). This questionnaire evaluates individuals' level of general coherence of their autobiographical memories, along with their metacognitive awareness of having a narrative identity. ANIQ has four subscales of awareness (items 1 to 5), temporal coherence (items 6 to 10), causal coherence (items 11 to 15), and thematic coherence (items 16 to 20). Items within each subscale are summed, with a possible range of 0 to 50. The internal consistency coefficients for the awareness, temporal coherence, causal coherence, and thematic coherence subscales were calculated at 0.91, 0.96, 0.90, and 0.93, respectively. Also, Hallford and Mellor [8] reported the test-retest reliability between 0.72 and 0.79, good criterion validity, and good convergent and divergent validity for this tool. In this study, Cronbach's alpha and reliability of the questionnaire were 0.93.

Depression, Anxiety, Stress Scale (DASS): This scale was developed by Lovibond and Lovibond [35], and consists of three self-report subscales designed to assess negative emotional states related to depression, anxiety, and stress. Each sub-test of this scale consists of 7 items (21 items in total), where individuals specify their status for each symptom on a 4-point Likert scale. The minimum score in each subscale is 0 and the maximum score is 21. The results of calculating the correlation between the three factors of this questionnaire revealed a correlation coefficient of 0.48 between depression and stress, 0.53 between anxiety and stress, and 0.28 between anxiety and depression. Lovibond and Lovibond [35] reported internal consistency coefficients for the three subscales: 0.91 for depression, 0.81 for anxiety, and 0.89 for stress. In the research of Sahebi et al. [36], the validity of the Persian version of this scale was calculated through the factor analysis method, and the construct validity of this instrument was reported as appropriate. Cronbach's alpha was 0.77 for depression, 0.79 for anxiety, and 0.78 for stress. In this study, Cronbach's alpha values for depression, anxiety, and stress were calculated at 0.83, 0.74, and 0.77.

Ten-Item Personality Measure (TIPI): The TIPI is a 10-item self-report measure of the Big Five (or Five-Factor Model) dimensions including extraversion, agreeableness, conscientiousness, neuroticism (emotional stability), and openness to experience developed by Gosling et al. [37]. Each personality dimension consists of two items (extraversion: items 1 and 6, agreeableness: items 2 and 7, conscientiousness: items 3 and 8, neuroticism: items 4 and 9, and openness to experience: items 5 and 10) that individuals determine the degree of similarity with that personality trait on a 7-point Likert scale (from strongly disagree to strongly agree). The reverse-scored items are 2, 4, 6, 8, and 10. Gosling et al. [37] reported the test-retest reliability of this scale as 0.72. In the research of Khodaparast [38], it was aimed to examine the validity of the Persian version of this scale, the construct validity of this instrument was reported as appropriate. In addition, Cronbach's alpha was 0.60 for TIPI in this study. In the present study, Cronbach's alpha and the reliability of the scale were 0.85.

Results

In the present study, which was conducted to determine the psychometric properties of the ANIQ, there were 510 participants, 240 (47.1%) were women and 270 (52.9%) were men. In terms of education level, 69 individuals (13.5%) had a diploma degree, 163 individuals (32%) had a bachelor's degree, 206 individuals (40.4%) had a master's degree, and 72 individuals (14.1%) had a doctorate. In terms of marital status, the research sample consisted of 345 single (67.6 percent), 127 married (24.9 percent), 18 engaged (3.5 percent), 13 divorced (2.5 percent) individuals, and 7 people (1.4 percent) which had other cases. It should be noted that the average (mean)

and standard deviation of the age of the participants were 26.12 and 9.08, respectively. Before performing the statistical analysis, in order to determine cross-validity, the research sample was divided into two parts. On the first part, exploratory factor analysis, and on the second part, confirmatory factor analysis and validity calculations were performed simultaneously.

Before implementing the factor analysis, the assumptions of Keyser/Meir/Elkin sampling adequacy (KMO) (0.927) and Bartlett's sphericity (χ^2=2984.524, p=0.001) indicate the appropriateness of the ability of the scale items to measure their factors. In the following, to evaluate the construct validity of the ANIQ, exploratory factor analysis with varimax rotation was used. In order to determine the number of optimal factors that should remain in the analysis, Kaiser's eigenvalue criterion and scree plot diagram were applied.

The results of Table 1 and Figure 1 in the scree plot diagram showed that the eigenvalues of factor 3 were higher than the eigenvalues of 1 in Kaiser's criterion. According to Table 1, it can be seen that the first factor with the highest eigenvalue (8.98) is the most important extracted factor, and it can also be seen that the three extracted factors explain 63% of the total variance. Table 2 presents the rotated factor loadings of ANIQ items on the corresponding components.

Table 1. Values of Eigenvalue and Variance Extracted in Principal Component Analysis with Varimax Rotation

Factors	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.98	44.92	44.92	8.98	44.92	44.92
2	2.01	10.03	54.94	2.01	10.03	54.94
3	1.54	7.69	62.63	1.54	7.69	62.63

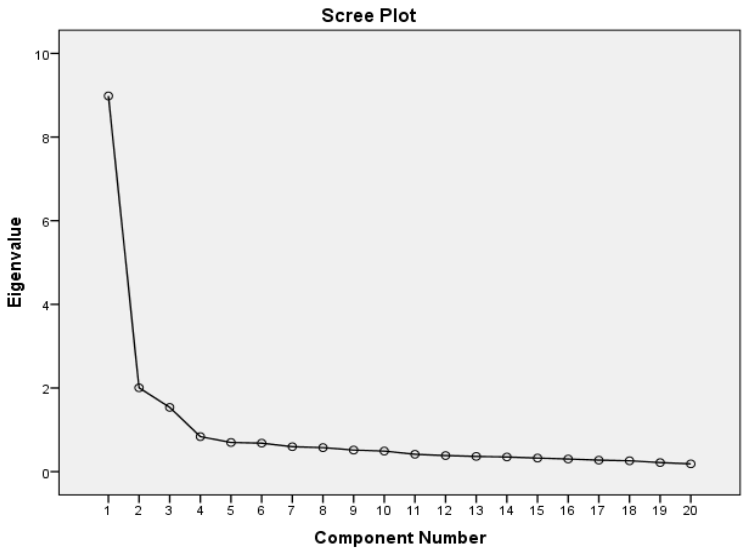

Figure 1. Scree plot diagram for determining the number of factors.

Table 2. Rotated factor loadings of ANIQ items on the corresponding components.

Items	Component		
	1	2	3
ANIQ15	0.82		
ANIQ16	0.75		
ANIQ14	0.75		
ANIQ13	0.73		
ANIQ19	0.7		
ANIQ17	0.66		
ANIQ18	0.65		
ANIQ12	0.65		
ANIQ20	0.60		
ANIQ11	0.56		
ANIQ9		0.83	
ANIQ7		0.82	
ANIQ8		0.80	
ANIQ6		0.69	
ANIQ10		0.65	
ANIQ3			0.78
ANIQ4			0.74
ANIQ2			0.70
ANIQ5			0.68
ANIQ1			0.67

As it can be seen in Table 2, the amount of factor loadings of all the items on their underlying component is more than 0.30, which indicates the appropriateness of the observed variables to measure their underlying latent variable. According to the factor loadings of the research items on each factor, the first factor was named as causal-thematic coherence, the second factor was named as temporal coherence, and the third factor was named as awareness.

In the following, the confirmatory factor analysis method was applied to confirm the construct validity of the factor structure of the questionnaire.

Absolute and adaptive fit indices were used to determine the hypothetical model fit. RMSEA and SRMR are the main indicators of model fit. For optimal fit of the model, the RMSEA value should be less than 0.1 and preferably less than 0.08. Also, the SRMR value should be less than 0.08. For CFI, TLI, and IFI indices, values above 0.9 indicate model acceptance and values above 0.95 indicate good model fit [39].

Table 3. Hypothetical Model Fit Indices

Fit indices	Chi-Square	Chi-Square/df	RMSEA	SRMR	CFI	IFI	TLI
Three-factor model	360.65	2.22	0.06	0.05	0.93	0.9	0.91
Admission threshold	-	Less than 3	Less than 0.08	Less than 0.08	More than 0.90	More than 0.90	More than 0.90

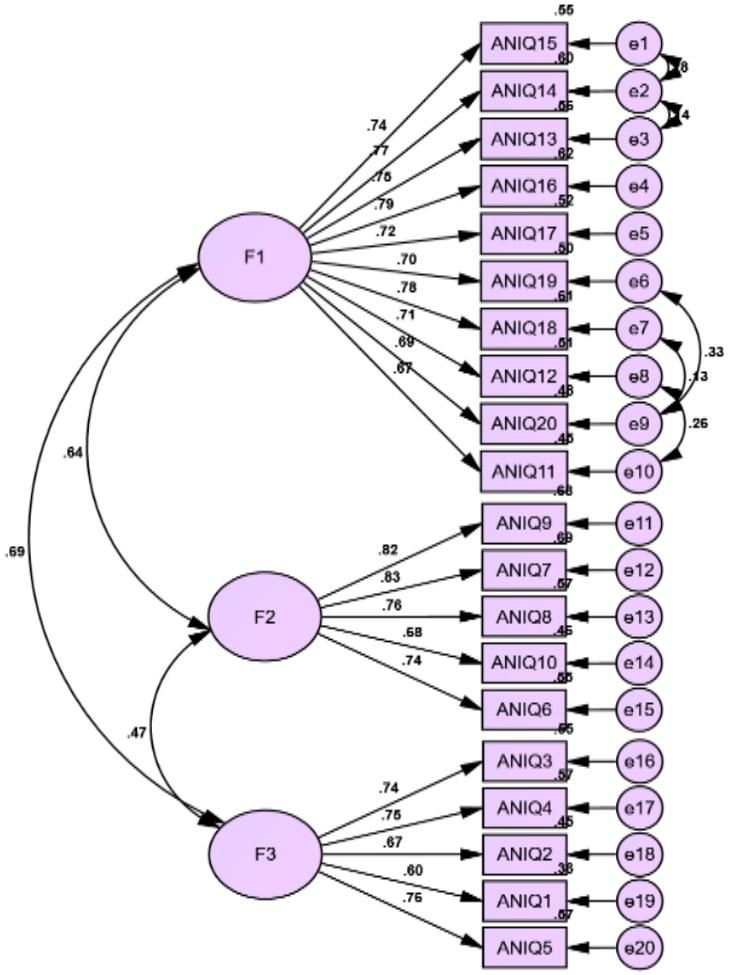

Figure 2. Standard path coefficients of latent to observed variables (F1: Causal-thematic coherence, F2: Temporal coherence, F3: Awareness).

In Table 4, the reliability values of the questionnaire factors are presented using the internal consistency method and its concurrent validity with depression, anxiety, stress, neuroticism, and conscientiousness.

The results of Table 4 show that the Cronbach's alpha values of the components of the present research instrument are higher than 0.70, which indicates appropriate internal consistency of the instrument.

Table 4. Internal consistency and correlation of ANIQ factors with variables of depression, anxiety, stress, neuroticism, and conscientiousness

Variables	Cronbach's alpha	Depression	Anxiety	Stress	Neuroticism	Conscientiousness
Factor 1	0.92	-0.28**	-0.01	0.11	-0.17**	0.21**
Factor 2	0.88	-0.22**	-0.03	-0.11	-0.19**	0.29**
Factor 3	0.77	-0.04	0.12*	-0.11	-0.36**	0.49**
ANIQ Total	0.93	-0.24**	0.020	-0.06	-0.32**	0.43**

** p <0.01، * p <0.05

Accordingly, the first factor of ANIQ has negative and significant correlations with depression and neuroticism and a positive correlation with conscientiousness. The second factor of ANIQ has negative and significant correlations with depression and neuroticism and a positive correlation with conscientiousness. The third factor of ANIQ has positive and significant correlations with anxiety and conscientiousness and a negative and significant correlation with neuroticism. Eventually, the ANIQ total score has negative and significant correlations with depression and neuroticism and a positive correlation with conscientiousness.

Discussion

This research aimed to translate, validate, and examine the psychometric properties of the Persian version of the ANIQ. The results of the exploratory factor analysis indicated that the observed variables of awareness, temporal coherence, and causal-thematic coherence were appropriate for measuring the underlying latent variable of narrative identity in the modified three-factor model of the present study, as previously proposed in the four-factor model by Hallford and Mellor [8]. The causal-thematic coherence factor emerged as the most essential extracted factor with the highest eigenvalue (8.98), and all three extracted factors explained 63% of the total variance. Additionally, the factor loadings of all items exceeded 0.30 on the narrative identity component. In terms of the awareness factor, which pertains to narrative identity awareness, the highest factor loading was associated with item number 3: *'The experiences from my past shape the story of who I am'*, with a factor loading of 0.787. In contrast, the lowest factor loading corresponded to item 1: *'My memories are like stories that help me understand my identity'*, with a factor loading of 0.67. In addition, temporal and causal-thematic coherence emerged regarding individuals' perception of the coherence of autobiographical memories. For the temporal coherence factor, the highest factor loading was associated with item number 9: *'I have a good awareness of the sequence in which events and experiences in my life happened'*, with a factor loading of 0.831. Conversely, the lowest factor loading corresponded to item 10: *'When I think about experiences in my past, I find it easy to remember what came before and after them*', with a factor loading of 0.656. Regarding the causal-thematic coherence factor, the highest factor loading was related to item 15: *'I can understand how experiences in my life have occurred, with one thing leading to another'*, with a factor loading of 0.821. The lowest factor loading was associated with item number 11: *'I understand how the story of my life has unfolded'*, with a factor loading of 0.568.

The results of the confirmatory factor analysis of the obtained model indicated the appropriateness of the three-factor model compared to the four-factor model. In the four-factor model of Hallford and Mellor [8], there was a significant correlation between the fourth factor, thematic coherence, and the third factor, causal coherence (more than 0.90), indicating the existence of a very high collinearity between these two factors. In fact, these two factors explained the same variance and the factors seemed not separate and independent. Furthermore, the correlation of the thematic coherence factor with the awareness factor was also high (over 0.80) in this four-factor model, and it was unclear whether the thematic coherence factor was an independent factor in this model or not. Additionally, in the research of Sevim and Otrar [33] and Balzen et al. [31], the findings demonstrated a high correlation of 0.80 and 0.82 between the thematic coherence factor and the causal coherence. According to Tabachnick and Fidell [40], caution should be taken to include two or more factors with a correlation of 0.70 or more in an analysis because the factors can have multicollinearity and not be separate factors. In this regard, the correlations between the factors were optimal and reasonable (from 0.47 to 0.69) in the modified three-factor model in the current study by removing the fourth factor.

In addition, the results showed that there was a negative and significant correlation between the factor of causal-thematic coherence, temporal coherence, and the total score of the awareness of narrative identity with depression. This finding aligns with the research by Hallford and Mellor [8], which indicated a negative but weak relationship between temporal coherence, causal coherence, and thematic coherence, factors related to the coherence of autobiographical memories, and depressive symptoms which is also consistent with previous studies [41,42]. Narrative identity, closely related to personal memory and life experiences, can be affected by negative emotional states making it difficult to retrieve autobiographical memories in a specific and detailed manner. On the other hand, individuals with depressive symptoms also experience an inflexible negative sense of self, represented in their fixed narratives with themes of worthlessness, helplessness, and despair, which are usually very general, lacking details, and unchangeable. In fact, it can be said that as depressive symptoms increase, the ability to integrate new and various experiences and images of oneself into a coherent narrative identity becomes difficult more and more.

Eventually, the results indicated that all three factors as well as the total score of the awareness of narrative identity had a significant negative correlation with neuroticism on one hand and a significant positive correlation with conscientiousness on the other hand. This finding is in line with McAdams' study which showed a significant relationship between neuroticism and negative narratives [43]. It can be stated that individuals with lower levels of neuroticism have more emotional stability and are less likely to experience negative emotions including anxiety and depression [44]. As a result, they can experience more positive and flexible themes and stories about themselves and integrate them in the form of an integrated narrative identity. Besides, individuals with more conscientiousness possess better skills in organizing and focusing on details and have a greater sense of agency, which leads to a better ability to integrate their personal experiences into coherent narratives,

contributing to their overall psychological well-being.
Some limitations of this study should be considered when interpreting its findings. First, using solely the non-clinical sample in this research may limit the diagnostic validity of the ANIQ. Therefore, it is suggested that future studies include more diverse samples, allowing researchers to check whether this tool can distinguish between one or more clinical and non-clinical populations or not. Moreover, the variables in the present study were evaluated using only self-report measures, and it is recommended that multiple complementary methods including interviews or laboratory studies, be used to assess this category of personality characteristics in future research.

Conclusion

Considering the role of narrative identity in the degree of compatibility/incompatibility of the organization and the performance of individuals' personalities, and also noting that the self-report tool for measuring this component has not been validated in Iran so far, the awareness of narrative identity questionnaire, which was translated and psychometrically examined in the present study, can be helpful for future research, specifically in the field of personality. In fact, it can assist researchers in investigating the relationship between this component and other variables related to the structure of personality. By studying these variables in the mediator and moderator conceptual models, researchers can clarify the complex relationships among these variables. Moreover, this questionnaire can be used in the process of assessment and diagnosis to measure the coherence of individuals' narrative identity, which is an important factor in adaptive personality functioning, in different settings, including the clinical environment, such as individual consultations.
Considering the appropriateness of the psychometric properties of the Persian version of the ANIQ, specialists in the field of psychology in Iran are suggested to use it for research, diagnostic, and clinical purposes.

Conflict of Interest

The authors declare no conflicts of interest.

Ethical Approval

This article has been taken from the doctoral dissertation of the first author in the field of psychology in the Faculty of Psychology and Educational Sciences, Shahid Beheshti University. The ID of the ethics approval is IR.SBU.REC.1401.123. In order to maintain the observance of ethical principles in this study, an attempt was made to collect information after obtaining the consent of the participants. Participants were also reassured about the confidentiality of the protection of personal information and the presentation of results without mentioning the names and details of the identity of individuals.

Declaration of Generative AI and AI-assisted Technologies

The authors of this study did not use any AI –assisted technologies.

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