

Original Research

Received 05 June 2026

Revised 19 July 2026

Accepted 02 Aug 2026

Natural Resources for Human Health 2026, Vol. 6 (15s):394–401

KEYWORDS:

Fatalism, Muslim, Turkish, Scale.

Turkish Validity and Reliability Study of the Religious Health Fatalism Questionnaire for a Muslim Population (RHFQ-M) A Methodological Study

Emced Elubeyd¹, Esra Yıldız²

¹ Department of Nursing, Faculty of Health Sciences, Mari Private University, Idlib, Syria., emcedelubeyd@mari.edu.sy Orcid : 0000-0002-6710-9719.

² Department of Community Health Nursing, Faculty of Nursing, Ataturk University, Erzurum, Türkiye. , esra.yildiz@atauni.edu.tr Orcid : 0000-0003-4445-7064.

Correspondence: emcedelubeyd@mari.edu.sy

ABSTRACT:

Purpose: This study aimed to evaluate the preliminary psychometric properties of the Turkish version of the Religious Health Fatalism Questionnaire for a Muslim Population (RHFQ-M).

Method: Data were collected from 148 Turkish-literate adults aged 18 years or older in Türkiye via social media and Google Forms between July and December 2023. Exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and internal consistency analyses were performed using SPSS 22.0 and AMOS.

Results: In the reanalysis of the eight retained items, the KMO value was .813 and Bartlett's test of sphericity was significant ($\chi^2 = 386.445$, $df = 28$, $p < .001$). A two-component solution explained 60.533% of the total variance. Cronbach's alpha was .826 for the eight retained items; coefficients based on the originally proposed subscale groupings were .720 and .694. CFA yielded $\chi^2 = 46.154$, $df = 16$, $\chi^2/df = 2.885$, GFI = .926, AGFI = .834, NFI = .885, IFI = .922, TLI = .858, CFI = .919, RMR = .089, and RMSEA = .113 (90% CI: .076–.152).

Conclusion: The Turkish RHFQ-M showed preliminary evidence of internal consistency and a two-component solution, but the CFA fit was mixed and the empirical EFA item allocation did not fully reproduce the originally proposed subscales. Further independent cross-cultural and psychometric validation is required.

1. INTRODUCTION

The concept of health fatalism refers to the belief that one's health is determined by fate or destiny. This belief can significantly shape how individuals view their health, influence their health-related behaviors, and ultimately affect their health outcomes. Fatalistic attitudes can strongly influence health-related decisions, so it is important to explore this concept of health fatalism in depth. The focus here is on how these fatalistic beliefs affect health behaviors and outcomes. Fatalistic beliefs of individuals can influence their risk for disease, treatment adherence, and access to health services. Therefore, understanding the relationship between health fatalism and actual health outcomes can help design more effective health policies and interventions. ⁽¹⁾

At the societal level, fatalism may shape perceptions of disease, treatment choices, and overall health outcomes. In this context, investigating social reflections on health is essential for promoting social justice and preventing social exclusion. ⁽²⁾

The health-fate relationship focuses on how individuals relate their health to their fate. This relationship is often interpreted as a direct link between one's health status and the fate one experiences. The notion of health fatalism is critical since it provides a theoretical and conceptual framework for understanding the relationship between health conditions and perceived fate.⁽³⁾ Reflections of health fatalism significantly influence access to health care services and perceptions of illness. The role that fatalism plays in access to health care services can create barriers that individuals encounter when seeking these services and shape how they cope with these barriers. Similarly, illness perceptions and fatalistic beliefs drive individuals' attitudes and behaviors in managing their health conditions. Consequently, the reflections of fatalism in health care profoundly shape how people approach their health and interact with health care services.⁽⁴⁾

Several factors, including socioeconomic status, geographic location, cultural beliefs, and personal experiences, contribute to the influence of fatalism on healthcare access. Fatalism is known to influence individuals' attitudes and behaviors in seeking health care. For example, individuals who hold fatalistic views may attribute negative health outcomes to fate, which can lead to a sense of hopelessness about seeking health care services. Therefore, studies on the role of fatalism in access to healthcare services can provide valuable insights for designing more effective health policies and practices.⁽⁵⁾

Health fatalism has been operationalized in several condition-specific and general measures, including instruments addressing cancer, diabetes, epilepsy, and general fatalistic health beliefs (6–9). Nageeb et al. subsequently adapted religious health fatalism content for Muslim populations and developed the RHFQ-M, an eight-item measure with two proposed subscales after psychometric evaluation of a nine-item version (10). The RHFQ-M is intended to capture Islamic dimensions of health fatalism and was reported in the original development study to have acceptable internal consistency and evidence of convergent and discriminant validity (10).

The primary objective of this study was to examine the preliminary psychometric properties of a Turkish translation of the Religious Health Fatalism Questionnaire for a Muslim Population (RHFQ-M).

2. MATERIAL AND METHOD

2.1 Research Type

This study was methodologically designed to evaluate the reliability and validity of the Turkish version of the Religious Health Fatalism Questionnaire for a Muslim Population (RHFQ-M).

2.2 Research Time and Place

The research data were collected in Turkey between July and December 2023 using Google Forms through social media.

2.3 Study Population and Sample

The study population consisted of Turkish-literate social media users in Türkiye who were aged 18 years or older. Individuals who met these criteria and voluntarily agreed to participate were included. A total of 148 participants completed the study. The sample was obtained by convenience sampling through social media. Because EFA and CFA were conducted using the same study sample, the CFA was treated as a preliminary model assessment rather than an independent confirmation of the factor structure.

2.4 Ethical Considerations

To conduct the Turkish validity and reliability study of the Religious Health Fatalism Questionnaire for a Muslim population (RHFQ-M), Dr. Shaheen Nageeb, who developed the original form of the RHFQ-M, was first contacted by e-mail and written permission was obtained for both the original form of the questionnaire and this validity and reliability study. After receiving written permission, the study was submitted to the Atatürk University Faculty of Medicine Non-Interventional Ethics Committee and approval was obtained from the Ethics Committee (B.30.2.ATA.0.01.00 /75 number/26.01.2023 date).

2.5 Data Collection Instruments

The study used the "Participant Information Form" and the Turkish translation of the Religious Health Fatalism Questionnaire for a Muslim Population (RHFQ-M).

2.6 Participant Information Form

It consists of questions about the age, gender, marital status, and educational status of the participants. This form was used to obtain the socio-demographic data of the participants.

2.7 Religious Health Fatalism Questionnaire for a Muslim Population (RHFQ-M)

The RHFQ-M was developed by Nageeb et al. in 2018 among English-speaking Muslims in the United States to assess religious health fatalism and its relationship with health behaviors and outcomes. The original questionnaire contained nine items; one item (original Item 7) was removed in the original development study, resulting in an eight-item, two-subscale instrument. To avoid ambiguity, the present manuscript retains the original item numbering for the eight retained items (Items 1, 2, 3, 4, 5, 6, 8, and 9). The originally proposed Divine Provision subscale comprises Items 2, 5, 6, and 8, whereas Destined Plan comprises Items 1, 3, 4, and 9. Items are rated on a five-point Likert scale from Strongly Disagree to Strongly Agree. The original study reported a Cronbach's alpha coefficient of .79.(10)

Translation and Cultural Adaptation Procedure

The original English RHFQ-M was translated into Turkish by an expert translator. The Turkish version was subsequently evaluated by seven experts, including six nursing academics and one language and translation expert, to assess content appropriateness, linguistic clarity, and comprehensibility. Minor wording and expression revisions were made based on expert feedback. The revised Turkish version was then back-translated into English by an independent translator, and semantic equivalence between the original and back-translated versions was evaluated. Subsequently, a pilot study was conducted with 15 participants to assess the comprehensibility of the Turkish version. All items were reported to be clearly understood, and no items required further modification following the pilot testing.

2.8 Data Analysis

SPSS 22.0 and AMOS were used for statistical analysis. Frequencies and percentages were used to summarize sociodemographic characteristics. Expert ratings were summarized descriptively. Exploratory factor analysis was performed using principal component analysis with Varimax rotation. Sampling adequacy was evaluated using the Kaiser–Meyer–Olkin statistic and Bartlett's test of sphericity. For interpretation of the rotated solution, loadings of approximately .30 or greater were considered salient; weak and cross-loading items were interpreted cautiously. Confirmatory factor analysis was then performed in AMOS on the final eight-item dataset. Model fit was evaluated using χ^2 , χ^2/df , RMR, GFI, AGFI, NFI, IFI, TLI, CFI, and RMSEA. Maximum likelihood estimation was used for the five-point items. Because item-level distributional diagnostics and an ordinal-estimator sensitivity analysis were not available in the retained study records, the CFA is treated as preliminary and estimator choice is acknowledged as a limitation.

3. RESULTS

3.1 Descriptive Characteristics of the Participants

Of the individuals who participated in the study, 68.9% were between the ages of 18-25 years. It was found that 57.4% of the participants were female, 77.7% were single, and 77.7% were college graduates (Table 1). The mean age of the participants was 24.695 ± 7.35 years (min:18 - max:71).

Table 1. Descriptive characteristics of the participants.

Descriptive Characteristics	n	%
Age Groups		
18-25	102	68.9
26-35	31	20.9
36-45	13	8.8
46-60	1	0.7
61 and older	1	0.7

Gender		
Female	85	57.4
Male	63	42.6
Marital status		
Single	115	77.7
Married	33	22.3
Educational Status		
High School	4	2.7
Bachelor's Degree	115	77.7
Master's Degree	10	6.8
Doctorate	19	12.8
Total	148	100

3.2 Content Validity

The Turkish translation was reviewed by seven experts (six nursing academics and one language and translation expert). Items were rated from 1 (not appropriate) to 4 (completely appropriate) for content appropriateness and comprehensibility. Ratings were predominantly 3 or 4, and minor wording and expression revisions were made. The retained study records do not permit unambiguous reconstruction of item-level CVR, I-CVI, or S-CVI/Ave calculations; therefore, the previously labeled “CGI” value was removed rather than being reclassified retrospectively. Expert review is reported descriptively and is not presented as a substitute for a full cross-cultural adaptation procedure.

3.3 Exploratory Factor Analysis (EFA)

Exploratory factor analysis was conducted on the eight retained RHFQ-M items. Complete data for all eight items were available for 144 participants. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was .813, and Bartlett's test of sphericity was statistically significant ($\chi^2 = 386.445$, $df = 28$, $p < .001$), indicating that the correlation matrix was suitable for factor analysis. Principal component analysis with Varimax rotation identified two components with eigenvalues greater than 1. The eigenvalues were 3.637 and 1.206. Following rotation, Component 1 explained 33.685% of the variance and Component 2 explained 26.848%, yielding a total explained variance of 60.533%.

The rotated component matrix is presented in Table 2. Items 2, 3, 4, and 5 loaded predominantly on Component 1, whereas Items 6, 8, and 9 loaded predominantly on Component 2. Item 1 showed a comparatively weak and less distinct loading pattern, with loadings of .416 and .320 on Components 1 and 2, respectively, and a communality of .275. Thus, although a two-component solution emerged, the empirical allocation of items did not fully reproduce the originally proposed subscale composition. The exploratory findings were therefore interpreted cautiously and the proposed structure was further examined using CFA.

Table 2. Rotated component loadings, communalities, eigenvalues, and explained variance for the eight-item Turkish RHFQ-M.

Item	Component 1	Component 2	Communality
Item 1	.416	.320	.275
Item 2	.749	.229	.613
Item 3	.830	.125	.704

Item 4	.784	.138	.633
Item 5	.714	.299	.599
Item 6	.078	.850	.729
Item 8	.210	.811	.702
Item 9	.313	.699	.586
Eigenvalue	3.637	1.206	—
Rotated variance (%)	33.685	26.848	Total = 60.533

Note. Principal component analysis with Varimax rotation. KMO = .813; Bartlett's test of sphericity: $\chi^2 = 386.445$, $df = 28$, $p < .001$.

3.4 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis was performed using AMOS to evaluate the proposed factor structure of the final eight-item Turkish RHFQ-M. The model yielded $\chi^2 = 46.154$ with 16 degrees of freedom ($p < .001$), and the χ^2/df ratio was 2.885. The fit indices were RMR = .089, GFI = .926, AGFI = .834, NFI = .885, IFI = .922, TLI = .858, and CFI = .919. RMSEA was .113 (90% CI: .076–.152; PCLOSE = .004). The indices provided mixed evidence of model fit: χ^2/df , GFI, IFI, and CFI were acceptable or near commonly used thresholds, whereas NFI and TLI were below .90 and RMSEA was elevated. Accordingly, the CFA should not be interpreted as demonstrating unequivocally good fit and provides only preliminary, mixed support for the proposed structure. EFA and CFA were conducted in the same study sample, so the CFA does not constitute independent confirmation.

Table 3. Confirmatory factor analysis fit indices for the eight-item Turkish RHFQ-M.

Fit index	Obtained value
χ^2	46.154
df	16
p	< .001
χ^2/df	2.885
RMR	.089
GFI	.926
AGFI	.834
NFI	.885
IFI	.922
TLI	.858
CFI	.919
RMSEA	.113
RMSEA 90% CI	.076–.152
PCLOSE	.004

3.5 Reliability Analysis

Internal consistency was re-evaluated using the eight retained items. Cronbach's alpha for the full eight-item set was .826. When the items were grouped according to the originally proposed subscales, Cronbach's alpha was .720 for Divine Provision (Items 2, 5, 6, and 8) and .694 for Destined Plan (Items 1, 3, 4, and 9). The second subscale coefficient is slightly below .70 and should therefore be interpreted cautiously. Because the RHFQ-M is multidimensional, the overall alpha should not by itself be interpreted as evidence supporting a single total score.

4. DISCUSSION

4.1 Validity

Construct validity was examined using EFA and CFA. In the reanalysis of the eight retained items, KMO was .813 and Bartlett's test was significant ($\chi^2 = 386.445$, $df = 28$, $p < .001$), supporting the suitability of the correlation matrix for factor analysis. Two components with eigenvalues greater than 1 were identified and together explained 60.533% of the variance. However, the empirical allocation of the items did not completely reproduce the originally proposed subscales: Items 2–5 loaded predominantly on Component 1, Items 6, 8, and 9 on Component 2, and Item 1 showed a comparatively weak and less distinct pattern. Therefore, the two-component EFA solution should not be described as a direct confirmation of the original subscale composition. These findings should also be distinguished from the Turkish validation of the broader 17-item Religious Health Fatalism Scale by Bobov and Çapık, which was evaluated in 500 individuals and reported a single-factor Turkish structure with Cronbach's $\alpha = .91$ (16). The present study concerns the Muslim-specific RHFQ-M developed by Nageeb et al., which is a shorter instrument with Islamic-context wording and two originally proposed subscales; therefore, the two Turkish studies evaluate related but non-equivalent instruments. The difference in dimensionality further supports cautious interpretation and the need for independent replication of the RHFQ-M structure in Türkiye.

The re-estimated CFA also produced mixed evidence of fit. The χ^2/df ratio was 2.885, and GFI (.926), IFI (.922), and CFI (.919) were above .90. In contrast, NFI (.885) and TLI (.858) were below .90, while RMSEA was elevated at .113 (90% CI: .076–.152; PCLOSE = .004). These findings do not support a claim of uniformly good model fit. In addition, because EFA and CFA were performed using the same study sample, the CFA cannot be considered an independent confirmation of the factor structure. Taken together, the findings provide preliminary but not definitive evidence regarding the dimensional structure of the Turkish RHFQ-M.

A Turkish validation of the parent 17-item Religious Health Fatalism Questionnaire (RHFQ) was previously reported by Bobov and Çapık in a sample of 500 individuals, with a one-factor Turkish solution and Cronbach's alpha of .91. The present study evaluates the Muslim-specific RHFQ-M rather than the parent RHFQ. The RHFQ-M was developed through Muslim-focused theological adaptation and, in its original development study, yielded an eight-item measure with two proposed subscales. Accordingly, the difference in dimensionality between the Turkish parent RHFQ and the present RHFQ-M should not be interpreted as a direct replication failure; however, it reinforces the need for independent confirmation of the Turkish RHFQ-M structure.

4.2 Reliability

The reanalysis yielded a Cronbach's alpha coefficient of .826 for the eight retained items. Based on the originally proposed subscale groupings, alpha was .720 for Divine Provision and .694 for Destined Plan. Thus, internal consistency was adequate for the first subscale and borderline for the second. The overall alpha should be interpreted cautiously because a high coefficient across all items does not, by itself, establish that a multidimensional instrument can be treated as a single total scale.

The study assessed internal consistency only. Test–retest reliability, McDonald's omega, convergent validity, discriminant validity, and criterion-related validity were not assessed; consequently, no claims regarding these psychometric properties can be made from the present data.

5. LIMITATIONS

The findings should be interpreted in light of several limitations. Although the adaptation process included translation into Turkish by an expert translator, expert review, independent back-translation, evaluation of semantic equivalence, and pilot testing with 15 participants to assess comprehensibility, multiple independent forward translations and a formal reconciliation stage were not undertaken. EFA and CFA were conducted using the same study sample, so the CFA does not constitute

independent confirmation. The convenience sample was predominantly young and highly educated, limiting generalizability. The EFA item allocation did not fully reproduce the originally proposed subscale composition, and Item 1 had a low communality and comparatively weak loading pattern. CFA fit was mixed, including RMSEA = .113 and TLI/NFI values below .90. Test–retest reliability, McDonald's omega, convergent, discriminant, and criterion-related validity were not assessed. Maximum-likelihood CFA was applied to five-point ordinal items; item-level skewness/kurtosis diagnostics and an ordinal-estimator sensitivity analysis were not available in the retained study records. The available AMOS output contains the global model-fit summary but not the item-level standardized regression-weight table with standard errors and p values. These quantities were therefore not reconstructed or invented retrospectively. These limitations mean that the present findings should be viewed as preliminary and require independent replication.

6. CONCLUSIONS

The Turkish RHFQ-M demonstrated preliminary evidence of internal consistency and a two-component exploratory solution in the present sample. However, the empirical EFA item allocation did not fully reproduce the originally proposed subscales, and the CFA yielded mixed model-fit evidence, including an elevated RMSEA. These findings, together with the absence of multiple independent forward translations and a formal reconciliation stage in the adaptation process, the use of the same study sample for EFA and CFA, and the absence of additional reliability and validity evidence, preclude a definitive claim that the Turkish RHFQ-M has been fully validated. Further studies using independent, larger, and more diverse Turkish samples and comprehensive cross-cultural adaptation and psychometric procedures are required.

Author: Contributions: For Conceptualization, E.E. and E.Y.; methodology, E.E. and E.Y.; software, E.E. and E.Y.; formal analysis, E.E. and E.Y.; investigation, E.E. and E.Y.; resources, E.E. and E.Y.; data curation, E.E. and E.Y.; writing—original draft preparation, E.E. and E.Y.; writing—review and editing, E.E. and E.Y.; supervision, E.E. and E.Y.; project administration E.E. and E.Y.; All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was approved by the ethics committee of Atatürk University Faculty of Medicine Non-Interventional (B.30.2.ATA.0.01.00 /75 No./26.01.2023 date).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding authors. The data are not publicly available due to privacy or ethical restrictions.

Acknowledgments: The authors thank all participants involved in this study.

Conflicts of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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