https://doi.org/10.5455/kpd.26024438m000091

Lay beliefs about fatalism: Development of a General Fatalism Scale (GFAT)

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Keywords
fatalism, scale development, reliability, validity, psychology

Abstract
The growing body of research on the role of fatalism on the psychology of various health-related behaviors has witnessed various conceptualization and assessment efforts. The importance of the topic for its implications for behavioral change necessitates the need for better conceptualization and measurement of fatalism. The present study aimed to develop a reliable and valid self-report measure in Turkish for assessing lay beliefs about general fatalism (GFAT) in a predominantly Muslim and collectivistic culture. To this end, a scale development study was conducted 361 adult participants (M_{age} = 32.49, SD_{age} = 12.97) recruited via snowball sampling in social media platforms. The exploratory factor analyses conducted on the 62 GFAT items revealed a seven-factor structure with 58 items, explaining 59.89% of the total variance. The obtained multi-dimensional factor structure was represented with destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission subscales. The Cronbach's alpha coefficients of the GFAT subscales ranged between .74 and .95, demonstrating the internal consistency of the scale. The meaningful and significant correlations of the subscales with external control orientation, just world belief, and religiosity measures evidenced the construct validity of the scale. Overall, findings demonstrate that the GFAT Scale is a reliable and valid self-report measure for assessing individual differences in lay beliefs about fatalism. The developed scale can be used to measure the multifaceted construct of fatalism in future studies aimed at understanding its influence on the psychology of behavioral change, with implications for increasing the functioning of individuals and communities with respect to social and practical problems.

Anahtar kelimeler
kadercilik, ölçek geliştirme, güvenirlik, geçerlik, psikoloji

Öz
Kaderciliğe ilişkin yerleşik inançlar: Genel Kadercilik Ölçeğinin (GKAD) geliştirilmesi
Kaderciliğin sağlıkla ilgili çeşitli davranışların psikolojisi üzerindeki rolüne odaklanan araştırmalardaki artışa, kaderciliğin kavramsallaştırılmasına ve değerlendirilmesine yönelik çeşitli çabalar eşlik etmiştir. Konunun davranış değişikliği üzerindeki etkileri açısından sahip olduğu önem, kaderciliğin daha iyi kavramsallaştırılması ve ölçülmesi ihtiyacını ortaya koymuştur. Bu çalışmada, ağırlıklı olarak Müslüman ve toplulukçu bir kültürde genel kadercilige (GKAD) yönelik inançları ölçmek için güvenilir ve geçerli bir öz bildirime dayalı Türkçe bir aracın geliştirilmesi amaçlanmıştır. Bu kapsamda, sosyal medya platformlarından kartopu örneklemesiyle ulaşılan 361 yetişkin katılımcının ($Ort._{yaş}$ = 32.49, $S_{yaş}$ = 12.97) yer aldığı bir ölçek geliştirme çalışması yapılmıştır. 62 GKAD maddesiyle yapılan açımlayıcı faktör analizleri, toplam varyansın %59.89'unu açıklayan 58 maddelik yedi boyutlu bir yapı ortaya koymuştur. Elde edilen bu çoklu boyut yapısı kader, işlevsellik, çaresizlik, kontrol edilemezlik, biçilen değer, şans ve boyun eğme alt ölçekleriyle temsil edilmiştir. GKAD alt ölçeklerinin .74 ile .95 arasında değişen Cronbach alfa katsayıları ölçeğin iç tutarlığa sahip olduğunu göstermiştir. Alt ölçeklerin dışsal kontrol yönelimi, adil dünya inancı ve dindarlık değişkenleri ile anlamlı ve beklenen yöndeki korelasyonları ölçeğin yapı geçerliliğini destekler niteliktedir. Genel olarak, bulgular GKAD Ölçeğinin kadercilik inançlarındaki bireysel farklılıkları ölçmede güvenilir ve geçerli bir öz bildirim aracı olduğunu göstermiştir. Geliştirilen bu ölçek, kaderciliğin davranış değişikliğinin psikolojisi üzerindeki etkisini anlamayı amaçlayan ve bulguların sosyal ve pratik sorunlar bağlamında bireylerin ve toplulukların işleyişini iyileştirmek açısından doğurgulara sahip gelecek araştırmalarda kaderciliğin çok yönlü yapısını ölçmek için kullanılabilir.

To cite: Doğulu, C. (2022). Lay beliefs about fatalism: Development of a General Fatalism Scale (GFAT). *Journal of Clinical Psychology Research, 6*(2), 213-231.

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Received *Apr 2, 2022,* ***Revised*** *May 24, 2022,* ***Accepted*** *May 24, 2022*
Authors' Note: *This study was conducted as part of the author's doctoral dissertation (Doğulu, 2017) under the supervision of Prof. Nuray Sakallı at Middle East Technical University, Ankara, Türkiye. Portions of these findings were presented as a poster at the 2nd Congress of Social Psychology (2017), Eastern Mediterranean University, Famagusta, North Cyprus and the 19th National Congress of Psychology (2016), Tepekule Congress Center, İzmir, Türkiye.*

The last three decades have witnessed an increasing research interest in fatalistic beliefs and their influence on the psychology of various health-related behaviors. This growing interest in fatalism, especially in health psychology, included various efforts at conceptualizing and measuring fatalism. Drawing on this line of research, empirical insight into fatalistic beliefs has important implications for making behavioral change possible concerning a variety of risk-taking and protective behaviors. However, the validity of these findings, thus their capacity and strength to inform psychological research and practice, is dependent on the extent to which fatalism is conceptualized to reflect its complex and multifaceted nature and assessed with reliable and valid measures (Abraído-Lanza et al., 2007; Esparza et al., 2015; Shen et al., 2009; Valenti & Faraci, 2022). In view of the importance of better conceptualization and assessment of fatalism, the present study aimed to develop a reliable and valid self-report measure in Turkish to reveal individual differences in lay beliefs about fatalism in general in a sample characterized by predominantly Muslim and collectivistic culture. This scale development study focused on general fatalism (GFAT) as a global and multidimensional construct that captured fatalistic beliefs broadly, that is, without being restricted to a narrower operationalization reflecting fatalism about specific life domains such as health, traffic, and hazards.

Conceptualization and Assessment of Fatalism

GFAT, in a broad sense, can be described as "the propensity of individuals or groups to believe that their destinies are ruled by an unseen power or are played out inevitably rather than by their will" (Maercker et al., 2019, p. 2). The growing body of literature on fatalism has focused on exploring the role of fatalistic beliefs in the psychological processes involved in risk-taking and protective behaviors concerning domains of health such as cancer (e.g., Niederdeppe & Levy, 2007; Powe & Finnie, 2003) and diabetes (e.g., Egede & Bonadonna, 2003; Walker et al., 2012), safety (e.g., Dinh et al., 2020; Ngueutsa & Kouabenan, 2017; Nordfjaern et al., 2012; Rundmo & Hale, 2003), and hazards such as earthquakes (e.g., Baytiyeh & Naja, 2016; McClure, 2017; McClure et al., 2001, 2007) and the COVID-19 pandemic (e.g., Bogolyubova et al., 2021; Hayes & Clerk, 2021; Nordfjaern et al., 2021; Özdil et al., 2021). In parallel with this literature, fatalism has been conceptualized in various ways, especially in health research including both general health-related and mostly disease-specific conceptualizations (see Esparza et al., 2015; Shen et al., 2009; Valenti & Faraci, 2022). In the literature, fatalism has been typically characterized by an external locus of control (lack of personal control over life events due to external forces such as destiny, divine power, and luck; e.g., Cohen & Nisbett, 1998; Davison et al., 1992; Morgan et al., 2008; Neff & Hoppe, 1993; Straughan & Seow, 1998; Wheaton, 1983), belief in predetermination (e.g., Flórez et al., 2009; Plante & Sherman, 2001; Ross et al., 1983), acceptance of reality (e.g., Acevedo, 2005; Futa et al., 2001), learned helplessness and pessimism (e.g., Powe & Johnson, 1995; Scheier & Bridges, 1995), and coping skill (or adaptive response, e.g., Parker & Kleiner, 1966). These diverse conceptualizations usually portray fatalism as a cognitive construct typically associated with negative connotations (see Esparza et al., 2015; Shen et al., 2009; Valenti & Faraci, 2022). In more recent conceptualizations, fatalism has also been operationalized as a dual construct that embodies negative as well as positive connotations such as fatalistic voluntarism (Cheng et al., 2013) and active fatalism (Shahid et al., 2020).

In line with the multiple conceptualizations of fatalism, different scales have been used for measuring this construct (Esparza et al., 2015; Valenti & Faraci, 2022). The majority of these scales were developed and used in health research for assessing cancer fatalism (Powe, 1995), diabetes fatalism (Egede & Ellis, 2010), and health beliefs in general (Shen et al., 2009). Rotter's Internal-External Locus of Control Scale (Rotter, 1966) and scales of associated constructs (e.g., coping skill, learned helplessness, pessimism, etc.) have also been used in the literature to measure fatalism (see Esparza, 2005; Valenti & Faraci, 2022).

Conceptual and Methodological Issues in Fatalism Research

Research on fatalism is characterized by various conceptual and methodological issues (Abraído-Lanza et al., 2007; Esparza et al., 2015; Shen et al., 2009; Valenti & Faraci, 2022). Particularly, the diversity of fatalism definitions in the literature makes it difficult to reach a consensus on how to conceptualize this construct. The conceptualization issue is further accompanied by methodological issues concerning the robustness of existing measures of fatalism as indicated by the use of reliable and valid scales (Abraído-Lanza et al., 2007; Esparza et al., 2015; Shen et al., 2009; Valenti & Faraci, 2022). In view of these issues, there has been an increasing acknowledgment of the need for grounding fatalism on more clear, comprehensive, and complex conceptualizations that reflect its multifaceted nature as well as employing more reliable and valid measures for assessing individual differences in fatalistic beliefs.

Conceptual and methodological issues in fatalism were first addressed by Abraído-Lanza et al. (2007) but this research had a focus on Latinos and cancer screening. Shen et al. (2009) further addressed the importance of clear conceptualization as well as reliable and valid measurement of fatalism in health context and attempted to develop a unidimensional and multifaceted measure of fatalism conceptualized as health-related beliefs with respect to predetermination, luck,

and pessimism. Later Esparza et al. (2015) developed a multidimensional fatalism measure in English and Spanish in an attempt to resolve issues of construct unity and psychometric quality concerning assessment of fatalism. Drawing on Esparza's (2005) analysis of different fatalism scales, this new measure consisted of five dimensions, namely fatalism, helplessness, internality, luck, and divine control, and was found to be reliable and valid with good psychometric properties (Esparza et al., 2015).

In a recent research, Valenti and Faraci (2022) conducted a systematic review of existing fatalism scales and provided a comprehensive and critical overview of the scales and their methodological robustness. Their findings revealed that scales used for assessing fatalism were limited in number in view of the growing body of literature on fatalism and that fatalism has been conceptualized and measured in multiple ways. Notably, Valenti and Faraci (2022) highlighted the need for researchers to develop fatalism scales with high methodological robustness, in favor of preference for multidimensional (vs. unidimensional) measures, utilization of reverse items, reporting of internal consistency for each subscale, testing of scale dimensionality with both exploratory (not principal component) and confirmatory factor analyses, investigation of test-retest reliability, and adaptation of original versions of existing scales to different cultural contexts and languages.

Fatalism Measures in Turkish

The existing scales of fatalism in Turkish are mostly health-related and disease-specific measures adapted from their original versions (prostate cancer fatalism, Aydoğdu et al., 2017; breast cancer fatalism, Ersin et al., 2018; religious health fatalism, Bobov & Capik, 2020). There was only one fatalism scale that was not health-related but general in its scope and that was originally developed in (not adapted to) Turkish language. This scale was developed by Kaya and Bozkur (2015) to measure fatalism tendencies within a general scope in high school and university students in Mersin, Turkey. The scale did not use qualitative interviews to inform its item generation process; the relevant literature, expert opinions for the initial version of the item pool, and a pilot study for its final version were used as the sources for item generation. The developed measure of fatalism tendencies consisted of a total of 24 items with four subscales, namely predetermination, personal control, superstition, and luck. The internal consistency reliability of the whole scale and its two-week test-retest reliability as well as the Cronbach's alpha coefficients of the subscales were found to be all satisfactory (Kaya & Bozkur, 2015).

The Present Study

The available measures of fatalism in Turkish are dominantly health-related and are adaptations of original scales developed for prostate cancer fatalism (Aydoğdu et al., 2017), breast cancer fatalism (Ersin et al., 2018), and religious health fatalism (Bobov & Capik, 2020), with only one scale originally developed in Turkish for assessing fatalism with a broad operationalization (Kaya & Bozkur, 2015). As mentioned earlier, the scale developed by Kaya and Bozkur (2015) had good psychometric properties. However, its assessment of fatalism, in general, was limited to predetermination, personal control, superstition, and luck dimensions – this scale did not capture fatalistic beliefs concerning the other fatalism conceptualizations in the literature such as pessimism, helplessness, acceptance of reality, and coping skill (Esparza et al., 2015). In this sense, Kaya and Bozkur's (2015) scale had a limited assessment scope as it did not fully capture the multidimensionality of the multifaceted nature of fatalism.

In view of the existing measures of fatalism in Turkish, thus, there was a need for a Turkish scale that could be used to assess lay beliefs about GFAT based on a broad operationalization that captures the multidimensionality of the global construct of fatalism more fully. This need was observed at a time point when the multidimensional fatalism measure developed by Esparza et al. (2015) in English and Spanish had not been published yet. In this regard, this study aimed to develop a reliable and valid self-report measure in Turkish to reveal individual dispositional differences in GFAT in a sample characterized by predominantly Muslim and collectivistic culture, in Turkey. In an attempt to establish the reliability and validity of the GFAT Scale along with its factor structure, a further aim of this study was to investigate how GFAT was associated with previously established measures of constructs potentially relevant to fatalism. These included measures of control orientation, just world belief, and religiosity and were used in the present study for investigating the convergent and discriminant validity of the GFAT Scale. Based on the existing conceptualizations of fatalism and relevant findings in the literature, it was predicted that fatalistic beliefs would show significant associations with the criterion measures, particularly, external control orientation, just world belief, and religiosity.

METHODS

Sample

A total of 393 participants were recruited through snowball sampling. The decision on sample size sufficiency was based on the conventional recommendation of a 5:1 minimum threshold as the sample (participants): variable (items) ratio (Costello & Osborne, 2005; Hair et al., 2018; Howard, 2016). According to the 5:1 threshold, the minimum sample size required for this study was 310 as the final version of the GFAT item pool used for data collection consisted of 62 items.

Table 1. Sociodemographic Characteristics of the Sample (N = 361)

Variables	Frequency *n*	Percentage %	Mean	SD	Range
Age			32.49	12.97	18-72
Gender					
Female	241	66.8			
Male	117	32.4			
Not indicated	3	.8			
Education					
Secondary school	5	1.4			
High school	96	26.6			
Vocational school	21	5.8			
University degree (undergraduate)	154	42.7			
University degree (postgraduate)	85	23.5			
Subjective social status			6.30	1.57	1-10
Marital status					
Single	219	60.7			
Married	117	32.4			
Divorced	19	5.3			
Widowed	6	1.7			
Place mostly lived in					
Town	3	.8			
Village	6	1.7			
Province	36	10.0			
City	90	24.9			
Metropolis city	226	62.6			
Political orientation			3.89	2.04	1-10
Religion					
Muslim	231	64.0			
Not belonging to any religion	110	30.5			
Other	20	5.5			
Religiousness (*n = 251*)			2.40	.96	1-5
Belief in fatalism			2.75	1.20	1-5

Considering the potential decrease in sample size during data screening, data was collected from 393 participants in total so that the minimum requirement of 310 participants could be met after data screening.

Upon screening data for univariate outliers on the fatalism items, 32 participants with *z* scores outside the range of -3.29 and 3.29 were excluded. The final sample with 361 participants (still above the minimum required sample size) consisted of 241 women (66.8%), 117 men (32.4%), and three (.8%) who did not indicate their gender. The mean age for the participants was 32.49 (*SD* = 12.97) ranging from 18 to 72. The majority of the participants were university graduates, single, and Muslim and reported having spent most of their lives in a metropolis city. Among participants who indicated themselves as belonging to a religion (*n* = 251; Muslim, Christian, Jewish, and other), the reported level of religiousness had a mean of 2.40 (*SD* = .96). The mean self-reported belief in fatalism was 2.75 (*SD* = 1.20). The details of the sociodemographic characteristics of the sample can be seen in Table 1.

Measures

General Fatalism Scale (GFAT) The item generation process for developing a self-report measure of general fatalistic beliefs in Turkish was completed in three phases. In the first phase, semi-structured interviews with 20 participants reached via snowball sampling were conducted to layout the qualitative foundation of the GFAT Scale development for assessing individual differences in dispositional fatalism (Doğulu, 2017). Particularly, the goal of this qualitative study was to explore lay beliefs about fatalism in general. Thematic analysis (Braun & Clarke, 2006, 2013) was used to identify patterned responses and meanings within the interview data set. Themes were coded deductively based on the different conceptualizations of fatalism in the literature. Participants' accounts that captured the essence and nature of fatalism were used to inform the item generation process. Thematic analysis revealed several themes regarding perceptions of fatalism in general. These included functionality (beliefs about the life facilitating/complicating role of fatalism), submission (beliefs about one's lack of ability to change their destiny), helplessness (beliefs about one's powerlessness for things one cannot explain or are incapable of doing), personal control (beliefs about control internality/externality), predetermination (beliefs about life as predetermined), divine control (beliefs about life as determined and controlled by a superior entity such as God), centrality (beliefs about the prevalence of fatalism with respect to various life domains), and luck (beliefs about the role of luck in one's life) (Doğulu, 2017). The findings showed that GFAT was viewed as reflecting aspects that were in parallel

with the typical characterization of fatalism in the literature including external locus of control, belief in predetermination, acceptance of reality, or a coping skill (Esparza et al., 2015). Overall, the findings provided support for fatalism as a psychological construct that bears on multiple dimensions which are not necessarily mutually exclusive (Doğulu, 2017).

In the second phase, existing scales that included relevant content on fatalistic beliefs were reviewed. These included the Multidimensional Fatalism Measure in English and Spanish (Esparza et al., 2015), Free Will and Determinism Scale (FAD-plus; Paulhus & Carey, 2011), Ways of Coping Inventory (Folkman & Lazarus, 1980; Kesimci, 2003; Siva, 1991), Internal-External Locus of Control Scale (Dağ, 1991, 2002; Rotter, 1966), Belief in Good Luck Scale (Darke & Freedman, 1997; Öner-Özkan, 2003) as well as scales for assessing cancer fatalism (Powe, 1995), Traffic Locus of Control Scale (TLOC; Özkan & Lajunen, 2005; Warner et al., 2010), and health fatalism (Shen et al., 2009). The first two phases of the item generation process evidenced the content validity of the developed fatalism measure, resulting in the generation of 54 scale items (20 of which were reversed).

In the third and last phase, this initial item pool was revised by the author based on the feedback of an expert panel (consisting of five social psychologists) and two lay people. The obtained feedback concerned the wording and content of the items for redundancy, quality, ease of understanding, and relevance to the construct of interest (i.e., fatalism). Based on the feedback, the initial item pool was revised by adding/removing items as well as improving the wording of the items, which enabled further content validation. Upon completion of the three phases, the item pool was finalized with a total of 62 items (22 of which were reversed; see Appendix). This 62-item fatalism measure was used for the data collection and analysis of the GFAT Scale development study. Participants indicated their agreement with each item using a 6-point Likert scale (1 = strongly disagree to 6 = strongly agree; the neutral option neither agree nor disagree was not included). Responses were coded such that higher scores reflected higher levels of lay beliefs about fatalism in general.

Locus of Control (LOC) Scale Rotter's internal-external LOC Scale (Rotter, 1966) was used to assess control beliefs. The measure consisted of 29 pairs of statements and for each pair, participants chose the option that they thought was more representative of themselves (e.g., option a "What happens to me is my own doing"; option b "Sometimes I feel that I don't have enough control over the direction my life is taking"). Six pairs used as buffers were not included in the scoring. For the remaining 23 pairs, options reflecting external LOC were scored one point, and options reflecting internal LOC were scored zero point. Thus, the possible score range was 0-23, with higher scores indicating external LOC (and lower scores indicating internal LOC). Rotter's LOC Scale was established as a reliable measure with acceptable internal consistency (ranging from .65 to .79) and test-retest (ranging from .49 to .83) reliability (Rotter, 1966). The Turkish adapted version of the scale (Dağ, 1991; internal consistency reliability α = .71, test-retest reliability r = .83) was used in the present study and found to have internal consistency reliability of .79 (n = 324).

General Belief in a Just World (GBJW) Scale General Belief in a Just World (GBJW) Scale (Dalbert, 1999; Dalbert et al., 1987) was used to assess just world beliefs. The scale consisted of six items (e.g., "I am confident that justice always prevails over injustice") rated on a 6-point Likert scale (1 = strongly disagree to 6 = strongly agree). Participants' GBJW scores were computed by averaging the scores of their responses to the six items, with higher scores indicating higher levels of just-world beliefs. The original measure was found to be reliable with the Cronbach's alpha coefficients of .82 and .81 for the German and English versions, respectively (as cited in Furnham, 2003). The Turkish translated version of the scale (Yalçın, 2006; the Cronbach's alpha coefficient for the GBJW items was not reported in this study) was used in the present study and had an internal consistency reliability of .78 (n = 332).

Muslim Religious Orientation (MRO) Scale The Muslim religious orientation (MRO; the revised version) and intrinsic religious motivation (IRM) scales were used to assess participants' religious tendencies. Participants who reported their religion as Muslim completed the MRO Scale and participants who reported themselves as belonging to a religion (i.e., Muslim, Christian, Jewish, and other) completed the IRM Scale.

The MRO Scale was originally developed by Harlak et al. (2008) and revised by Ercan (2009) and Ceylan (2016). The recently modified version of the scale with 22 items (Ceylan, 2016) was used in the present study. This version consisted of four subscales: intrinsic religious orientation (IRO; 6 items; e.g., "When I feel God's presence, I give thanks to God"), extrinsic religious orientation (ERO; 6 items; e.g., "I try to stick to my religion in order to have a good place in society"), quest religious orientation (QRO; 5 items; e.g., "As I change, my religious beliefs change and develop with me"), and fundamentalist religious orientation (FRO; 5 items; e.g., "As a believer, I am against the loose implementation of religious rules"). Participants rated their degree of agreement with each item on a 6-point Likert scale (1 = strongly disagree to 6 = strongly agree). Means of the responses given to each subscale were used to obtain subscale scores with higher scores reflecting higher levels of

IRO, ERO, QRO, and FRO. Ceylan (2016) established the internal consistency reliability of the scale for a shorter version with 16 items based on the findings of the exploratory factor analysis for the four-factor solution: The Cronbach's alpha coefficient was .84 for the whole scale and the subscales had sufficient internal consistency (IRO with 4 items, α = .74; ERO with 4 items, α = .63; QRO with 4 items, α = .79; and FRO with 4 items, α = .84). In the current study, the Cronbach's alpha coefficient for the scale was .76 (n = 208) with the subscales IRO (6 items; α = .82), ERO (6 items; α = .76), QRO (5 items; α = .79), and FRO (5 items; α = .82) showing good internal consistency.

Intrinsic Religious Motivation (IRM) Scale In the current study, the translated version of the IRM Scale (Yilmaz & Bahçekapili, 2015; α = .78 for the eight items used) developed by Hoge (1972) as a reliable measure to assess religious devotion to God was used. The original scale consists of 10 items (e.g., "I try hard to carry my religion over into all my other dealings in life") rated on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). In this study, participants rated their degree of agreement on the 10 items using a 6-point Likert scale (1 strongly disagree to 6 strongly agree) (n = 226; α = .92). IRM scores were computed by averaging participants' responses to all the items, with higher scores indicating higher levels of devotion to God.

Sociodemographic Information Participants indicated their age, gender, education, subjective social status (using a 10-step ladder measure of participants' self-reported standing in their community relative to other people; 1 = the bottom to 10 = the top), marital status, the place they lived in most of their life, political orientation (using a continuum ranging from 1 = left to 10 = right), religion, religiousness (using a 5-point Likert scale, 1 = not at all to 5 = very much), and belief in fatalism (using a 5-point Likert scale, 1 = not at all to 5 = very much).

Procedure

Ethical approval for conducting the study was obtained from Middle East Technical University Human Subjects Ethics Committee (Protocol Number: 2016-SOS-018; Date: February 10th, 2016). The study was announced via a social media platform (Facebook), inviting adults aged 18 and older to participate in an online survey on fatalism. Data collection took place online (via Qualtrics) from February to April 2016. Upon reading the informed consent and agreeing to participate, participants first answered sociodemographic questions and then completed the GFAT Scale (all items were presented randomly). This was followed by measures of LOC, GBJW, MRO, and IRM; their order was counterbalanced across participants. Only participants who indicated belonging to a religion (Muslim, Christian, Jewish or other) were presented with the three GFAT items related to religion and the religious orientation measures. Lastly, participants were asked to indicate their impression of the study and share any comments they have. At the end of the survey, participants were thanked for their collaboration.

Data Analysis

All data analyses were performed using IBM SPSS v.20. The amount and distribution of missing values were not evaluated as the survey was designed on the online survey software (Qualtrics, LLC) to record only the responses of participants who completed all the GFAT Scale items. Factor analyses were conducted with a sample of 361 participants using pairwise deletion for managing missing values on the three GFAT items bearing on religion. The reason for having these missing values was that participants who described their religion as not belonging to any religion (n = 110) were not presented with these items.

RESULTS

Factor Structure of the General Fatalism Scale

Exploratory Factor Analysis (EFA)

An exploratory factor analysis (EFA) using varimax rotation[1] was conducted on the 62 items (22 of which

[1] From a theoretical standpoint, oblique rotations (factors are allowed to correlate) are more appropriate given that most factors studied in behavioral sciences tend to be correlated (Schmitt, 2011). For this reason, initially an EFA with an oblique rotation (using direct oblimin) was conducted as it allows the factors to correlate with each other. With regards to conceptualization and assessment of fatalism in the literature, there are only two empirical EFA studies conducted for developing a multidimensional measure of fatalism in general (Esparza et al., 2015; Kaya & Bozkur, 2015). One is the Multidimensional Fatalism Scale (in English and Spanish) developed by Esparza et al. (2015) and the other one is the Fatalism Tendency Scale (in Turkish) developed by Kaya and Bozkur (2015). The first scale consists of five factors (fatalism, helplessness, internality, luck, and divine control) and the second scale consists of four factors (predetermination, personal control, luck, and superstition). These two studies, measuring different number of dimensions with partially similar factor conceptualizations (factors pertaining to luck, control, and predetermination beliefs seem to be similar), provide empirical evidence for the correlations among the obtained factors (all factors significantly correlated with each other in Esparza et al. [2015] with a range of .10 and .50; item-total correlations of the factors in Kaya and Bozkur [2015] were all higher than .50; with a range of .54 and .74). However, given the diversity of fatalism conceptualizations and the relatively weak comprehensive theoretical framework provided for the multidimensionality of the fatalism construct in the literature, the existing empirical evidence (Esparza et al., 2015; Kaya & Bozkur, 2015) can be considered as providing only a limited conceptual and empirical support for the expected factor structure (i.e., the number and patterns of common factors; including the correlations among the factors) of the GFAT Scale that aims to assess fatalism as a multidimensional construct with a broad focus (not limited to a particular life domain such as health). For this reason, an EFA with an orthogonal rotation (using varimax) was also conducted as it does not allow the factors to correlate with each other. When the factor structures obtained with oblique (direct oblimin) and orthogonal (varimax) rotations were

were reversed) of the GFAT Scale. Initially, an inspection of the inter-item correlations revealed that there was no correlation coefficient above .80, indicating that there was no evidence of multicollinearity. Examination of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity revealed that data was suitable for factor analysis (KMO = .77; $\chi^2(1891) = 9866.53$, $p < .001$) (Tabachnick & Fidell, 2007). Principal components were used as the extraction method for examining the factor structure of the items, with the maximum number of iterations set at 99. The cut-off point used for factor loadings was .40 (Brown, 2006; Stevens, 2002).

The Kaiser criterion of eigenvalues over 1.0, the Cattell scree plot test, parallel analysis, and the interpretability of factors were the criteria used for determining the number of factors. The initial analysis revealed 11 factors with eigenvalues over 1.0, explaining 64.28% of the total variance whereas the scree plot and parallel analysis supported seven- and six-factor structures, respectively. Subsequently, a series of EFA limited to various number of factors were conducted on the 62 GFAT items to explore which solution revealed the most interpretable factor structure. The seven-factor solution produced the clearest factor structure in terms of conceptual interpretability and explained the highest total variance (57.01%, 54.66%, and 51.77% for the seven-, six, and five-factor solutions, respectively). In the EFA for 62 items limited to seven factors, the following four items (with communality scores .35 and lower; Tabachnick & Fidell, 2007) did not load on any of the factors and were eliminated: "One should not succumb to their fate", "Life should not be accepted as it is", "Destiny is about the predestination of human life", and "It cannot be predicted in advance how a person will live". The seven-factor solution with a total of 58 items (19 of which were reversed) with communality scores all higher than .35 accounted for 59.89% of the variance. There were seven cross-loaded items with primary factor loadings higher than .40, however, their alternative factor loadings were above .30 and their difference loadings between their primary and alternative factor loadings were below .20 (except for one item). For a cross-loaded item to be satisfactory, it should have a primary factor loading above .40, an alternative factor loading below .30, and a difference loading below .20 (Howard, 2016). Based on this recommendation, the seven cross-loaded items of the GFAT Scale did not meet this .40-.30-.20 rule. However, when the content of these items was inspected in terms of their meaning and their contribution to the conceptual interpretability of the factors, they were retained in their primary factor.

Overall, upon examination of the seven factors based on their item content, they were named as destiny (factor 1), functionality (factor 2), helplessness (factor 3), uncontrollability (factor 4), valuation (factor 5), luck (factor 6), and submission (factor 7). The factor structure of the scale with items, factor loadings, item-total correlations, eigenvalues, proportions of explained variance, and reliability values are summarized in Table 2. The first factor destiny consisted of 20 items (5 reversed) reflecting destiny beliefs (e.g., "Things like birth and death are predetermined"), explaining 20.59% of the total variance. The second factor functionality included 11 items (no reversed) tapping functions of fatalism (e.g., "Belief in fate gives people psychological relief"), explained 10.57% of the total variance. The third factor helplessness included 7 items (no reversed) representing fatalism as helplessness (e.g., "One cannot prevent certain things"), explaining 6.63% of the total variance. The fourth factor uncontrollability consisted of 5 items (all reversed) pertaining to the uncontrollability of fate (e.g., "One can direct their destiny with reason and logic" – reversed item), explaining 5.92% of the total variance. The fifth factor valuation included 6 items (all reversed) reflecting fatalism as having high value (e.g., "Resorting to fate makes people passive" – reversed item), explaining 5.78% of the total variance. The sixth factor luck consisted of 4 items (2 reversed) representing fatalism in relation to belief in luck (e.g., "Luck is part of life"), explaining 5.24% of the total variance. The seventh factor submission consisted of 5 items (1 reversed) pertaining to submission to fate (i.e., ineluctability of fatalism; e.g., "No matter how hard one tries, it is not possible for a person to change their fate"), explaining 5.16% of the total variance.

Item-Total Correlations

The item-total correlations ranged between .80 and .37 for the first factor destiny, .74 and .56 for the second factor functionality, .67 and .45 for the third factor helplessness, .61 and .47 for the fourth factor uncontrollability, .69 and .50 for the fifth factor valuation, .73 and .53 for the sixth factor luck, and .61 and .35 for the seventh factor submission. With an overall range between .35 and .80 (see Table 2), all the item-total correlations were above the criteria of at least .30 (Tabachnick & Fidell, 2007).

Intercorrelations among the GFAT Factors

For examining the intercorrelations among the seven factors, i.e., the subscales, of the GFAT Scale, the mean score of the responses given to the subscale items was used as the score for each subscale. Higher scores reflected higher levels of fatalism concerning des-

evaluated in terms of their theoretical meaningfulness, varimax rotation did provide a better factor structure with more conceptual interpretability. Overall, due to both conceptual and practical considerations for obtaining the clearest factor structure, the EFA with varimax rotation was reported.

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Table 2. The Factor Structure of the GFAT Scale

Factors (n = 7) and Items (N = 58)	Item-Total Correlations	Factor Loadings						
		F1	F2	F3	F4	F5	F6	F7
Factor 1: Destiny *(20 items)*								
1. Things like birth and death are predetermined.	.80	.87						
2. Human life has been determined by a higher power/being than themselves.	.75	.85						
3. *Destiny is nothing but superstition.	.75	.79						
4. What will happen to one is known from eternity.	.77	.79						
5. Only God knows what will happen to us.	.79	.78						
6. Destiny has an important place in a one's life.	.77	.74						
7. God has a plan for everyone.	.78	.73						
8. Everything happens for a reason.	.70	.72						
9. *Nothing in life is predetermined.	.65	.71						
10. God knows what is good or bad for us.	.73	.70						
11. *After doing one's best, the rest is destiny.	.70	.69						
12. A person lives what is in their destiny.	.73	.69						
13. Destiny concerns many areas of life.	.76	.67						
14. *There is no will that determines a person's life higher than themselves.	.64	.66						
15. Destiny brings balance to one's life.	.68	.58						
16. It is for one's good to live what they are destined to.	.64	.57						.43
17. Everything one experiences is because of destiny.	.55	.56						.46
18. If something is going to happen, it will.	.59	.56						
19. *Destiny is not a decisive thing for human life.	.55	.54						
20. Miracles happen in life.	.37	.47						
Factor 2: Functionality (11 items)								
21. Belief in fate gives people psychological relief.	.74		.82					
22. Fate makes it easier for a person to accept what has happened to themselves.	.68		.78					
23. Believing in destiny is consoling.	.68		.77					
24. When one cannot find a way out, it is comforting to attribute events to fate.	.62		.75					
25. Resorting to fate after negative events/experiences gives strength to people.	.70		.70					
26. Believing in fate makes it easier to hold on to life.	.72		.69					
27. Believing in fate helps a person accept the things they cannot change.	.56		.65					
28. People who believe in fate are more patient.	.66		.65					
29. Belief in fatalism gives people the strength to continue in life despite difficulties.	.68	.40	.62					
30. By believing in fate one gives meaning to their experiences.	.57		.57					
31. By believing in fate, one balances between positive and negative events/situations in their life.	.57	.44	.51					
Factor 3: Helplessness (7 items)								
32. One cannot prevent certain things.	.64			.73				
33. Some things are beyond one's power.	.65			.72				

Table 2 (continued)

34. There are things one cannot choose.	.59			.70				
35. There are things in life that one's power does not suffice.	.67			.70				
36. There are things that one cannot explain.	.58			.57				
37. There are times when people are helpless.	.46			.53				
38. Some things in life have to be accepted.	.45			.44				
Factor 4: Uncontrollability (5 items)								
39. *One can direct their destiny with reason and logic.	.58				.71			
40. *The control of life is in one's own hands.	.53				.69			
41. *One can create their own destiny with their will.	.61				.68			
42. *If a person is determined, they can change their destiny.	.56				.63			
43. *How one lives depends on themselves.	.47				.61			
Factor 5: Valuation (6 items)								
44. *Resorting to fate makes people passive.	.69					.68		
45. *Fatalism is like living without purpose.	.58					.61		
46. *Attributing events to fate is just an excuse.	.66					.60		
47. *People place too much importance on fate.	.58	.45				.53		
48. *Attributing the course of life to fate puts a person in a dead end.	.50					.50		
49. *It is pointless to attribute everything to fate.	.50					.42		
Factor 6: Luck (4 items)								
50. Luck is part of life.	.73						.84	
51. Some things are just luck.	.72						.83	
52. *It doesn't matter how lucky you are in life.	.65						.82	
53. *There is no room for coincidences in life.	.53						.66	
Factor 7: Submission (5 items)								
54. No matter how hard one tries, it is not possible for a person to change their fate.	.61				.43			.58
55. One cannot change what will happen to themselves.	.61	.40						.56
56. Faith is beyond one's power.	.56							.54
57. What's been done can't be undone.	.35							.52
58. *Believing in fate without questioning is not healthy.	.39							.42
Eigenvalue		11.94	6.13	3.85	3.44	3.35	3.04	2.99
Explained variance (%)		20.59	10.57	6.63	5.92	5.78	5.24	5.16
Internal consistency (α)		.95	.91	.83	.78	.82	.83	.74

Note. For factor analysis, the pairwise deletion method was used to deal with missing data. Item-total correlations and internal consistency values are based on $N = 251$ for Factor 1 and $N = 361$ for the remaining six factors. Bold loadings indicate the subscale that the cross-loaded items belong to based on the author's evaluation of the items in terms of their meaning fit to the primary and alternative factors. F*n* = Factor *n.* ** Reverse items (n = 19)*

Table 3. Correlations among the GFAT Subscales

Subscales	F1	F2	F3	F4	F5	F6	F7
Destiny	-						
Functionality	.45**	-					
Helplessness	.54**	.47**	-				
Uncontrollability	.43**	.18**	.29**	-			
Valuation	.71**	.44**	.43**	.41**	-		
Luck	-.07	.07	.17**	.05	-.05	-	
Submission	-.63**	.30**	.40**	.58**	.50**	.05	-

Note. $N = 361$. Pairwise deletion method was used to deal with missing data in the first factor ($n = 251$). Higher scores on the subscales (rated on a 6-point Likert scale with 1 = *strongly disagree*; 6 = *strongly agree*) indicate higher levels of destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission. F*n* = Factor *n*. $^*p < .05$, $^{**}p < .01$.

tiny, functionality, helplessness, uncontrollability, valuation, luck, and submission beliefs.

Results showed that all the subscales were significantly and positively correlated with each other (ranging from .17 to .71, $p < .01$) – except for luck, which had a significant correlation only with helplessness ($r = .17$, $p < .01$) (see Table 3). Unexpectedly, luck was not correlated with destiny, functionality, uncontrollability, valuation, and submission.

Reliability Analyses

The reliability of the GFAT subscales was assessed with Cronbach's alpha coefficient for internal consistency. The alpha coefficient of the subscales ranged between .74 and .95, all higher than the criteria of .70 (Tabachnick & Fidell, 2007), showing that the subscales reliably measured the seven dimensions of general fatalistic beliefs.

Validity of the GFAT Scale

The construct validity of the GFAT Scale was assessed with convergent and discriminant validity based on the correlations of the subscales with the selected criterion measures, namely LOC, GBJW, MRO (i.e., IRO, ERO, QRO, and FRO), and IRM (see Table 4).

Destiny, functionality, helplessness, valuation, and submission subscales significantly correlated with all the criterion variables. As expected, higher scores on these subscales were associated with external LOC (ranging from .26 to .43), higher levels of GBJW (ranging from .12 to .40), IRO (ranging from .20 to .57), ERO (ranging from .29 to .60), FRO (ranging from .33 to .62), and IRM (ranging from .31 to .74), and lower levels of QRO (ranging from -.18 to -.48). The Destiny subscale had the largest correlations with religiosity measures (ranging from -.48 to .74). The Uncontrollability subscale showed significant correlations with LOC, FRO, IRM, and QRO as higher scores on this subscale were associated with external LOC ($r = .33$), higher levels of FRO ($r = .16$) and IRM ($r = .13$), and lower levels of QRO ($r = -.27$). There were no significant correlations between uncontrollability and the criterion variables GBJW, IRO, and ERO. The Luck subscale showed significant correlations with LOC, GBJW, FRO, and IRM. Particularly, higher scores on this subscale were associated with external LOC ($r = .37$) and lower levels of GBJW ($r = -.31$), FRO ($r = -.27$), and IRM ($r = -.31$). There were no significant correlations between luck and the criterion variables of IRO, ERO, and QRO.

These results suggest that people high in GFAT regarding destiny, functionality, helplessness, valuation, and submission beliefs tended to have extrinsic LOC and higher levels of belief in a just world, intrinsic, extrinsic, and fundamentalist religious orientations, and devotion to God. These expected patterns of correlations provide support for the convergent validity of these four GFAT subscales. As for the Uncontrollability subscale, significant correlations with LOC, QRO, FRO, and IRM indicate convergent validity whereas non-significant correlations with GBJW, IRO, and ERO indicate discriminant validity for this subscale. As for the Luck subscale, significant correlations with LOC, GBJW, FRO, and IRM are indicative of convergent validity whereas non-significant correlations with IRO, ERO, and QRO are indicative of discriminant validity for this subscale. Overall, the meaningful correlations of the GFAT subscales with the criterion measures (LOC, GBJW, MRO [IRO, ERO, QRO, FRO], and IRM) provide support for convergent validity whereas the small-to-moderate magnitude of these correlations provide support for the discriminant validity of the developed scale.

Discriminant validity of the GFAT subscales was further assessed with respect to how GFAT differed from LOC with respect to their correlations with the criterion measures GBJW, MRO (namely, IRO, ERO, QRO, and FRO), and IRM. GFAT subscales tended to show significant correlations with GBJW (except for uncontrollability; ranging from -.31 to .40) and IRM (ranging from -.31 to .74) whereas LOC did not correlate with GBJW ($r = -.06$, $p = .29$) and IRM ($r = .13$, $p = .06$). As for the MRO subscales, overall, GFAT subscales tended to have larger correlations with IRO, ERO, and QRO (see Table 4) than LOC did ($r = .18$, $p < .05$; $r = .22$, $p < .01$; and $r = -.14$, $p < .05$ respectively for IRO, ERO, and QRO). All fatalism subscales were significantly correlated with FRO (ranging from -.27 to .62) whereas LOC did not correlate with FRO ($r = .12$, $p = .08$). Overall, these correlations suggest that the GFAT subscales shared more of the variance with GBJW, MRO, and IRM than does LOC. These results

Table 4. Correlations of the GFAT Subscales with LOC, GBJW, MRO, and IRM

Subscales	LOC (n = 324)	GBJW (n = 332)	MRO (n = 208)				IRM (n = 226)
			IRO	ERO	QRO	FRO	
Destiny	.43**	.40**	.57**	.60**	-.48**	.62**	.74**
Functionality	.26**	.12*	.31**	.40**	-.21**	.36**	.38**
Helplessness	.41**	.13*	.42**	.30**	-.18**	.37**	.46**
Uncontrollability	.33**	.06	.06	.08	-.27**	.16*	.13*
Valuation	.41**	.25**	.24**	.36**	-.31**	.33**	.43**
Luck	.37**	-.31**	-.02	-.13	.05	-.27**	-.31**
Submission	.39**	.28**	.20**	.29**	-.36**	.42**	.31**

*Note. P*airwise deletion method was used to deal with missing data. LOC = Locus of Control; GBJW = General Belief in a Just World; MRO = Muslim Religious Orientation Scale; IRO = Intrinsic Religious Orientation; ERO = Extrinsic Religious Orientation; QRO = Quest Religious Orientation; FRO = Fundamentalist Religious Orientation. Higher scores on the GFAT subscales (rated on a 6-point Likert scale with 1 = *strongly disagree*; 6 = *strongly agree*) indicate higher levels of destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission. Higher scores on LOC, GBJW, MRO, and IRM indicate external LOC (with lower scores indicating internal LOC); higher levels of belief in a just world; higher levels of IRO, ERO, QRO, and FRO; and higher levels of intrinsic religious motivation (i.e., higher levels of devotion to God), respectively. * $p < .05$, ** $p < .01$.

further provide support for the discriminant validity of the GFAT Scale, showing that its subscales are related to, but different from, LOC.

GFAT Subscales and Sociodemographic Differences

Sociodemographic differences for the seven GFAT subscales were inspected with respect to age, gender, education, and subjective social status as well as self-reported levels of religiousness and belief in fatalism (each with a single question). Initially, the correlations of the subscale mean scores with the key sociodemographic variables were examined (see Table 5). Age showed significant correlations with destiny, functionality, valuation, and submission (ranging from -.17 to .16). As participants' age increased, their destiny, functionality, and valuation scores decreased, and submission scores increased. Gender had significant negative correlations with destiny and valuation (r = -.18 and -.16, respectively, ps < .01). The significant association between gender and the GFAT subscales was further examined with independent samples t-tests to compare female and male participants for the GFAT subscales. The results revealed that women scored significantly higher than men on the destiny and valuation subscales, but no gender differences were observed in the remaining subscales, corroborating the correlation findings (see Table 6). Education had significant negative correlations with destiny, valuation, and submission (ranging from -.22 to -.15, ps < .01). Subjective social status was significantly and negatively correlated with destiny, helplessness, uncontrollability, and submission (ranging from -.17 to -.11).

The GFAT subscales all correlated significantly with religiousness (ranging from -.25 to .57, p < .01; except for uncontrollability with r = .05, p = .41) and belief in fatalism (ranging from -.16 to .82, p < .01) (see Table 5). As for religiosity, participants who reported higher levels of religiosity scored higher on destiny, functionality, helplessness, valuation, and submission but lower on luck. As for belief in fatalism, participants who reported stronger belief in fatalism scored higher on all the GFAT subscales except for luck; as belief in fatalism increased, luck beliefs decreased.

DISCUSSION

The present study established the factor structure as well as the construct validity (both convergent and discriminant) of the GFAT Scale, a new self-report measure developed in Turkish for assessing lay beliefs about GFAT and revealing individual differences in dispositional fatalism. The findings of the EFA showed that the GFAT Scale, with its seven subscales (destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission) and 58 items, is a reliable and valid measure with a good factor structure.

The only fatalism scale that was originally developed in Turkish to assess fatalistic beliefs in general, was Kaya and Bozkur's (2015) scale aimed at measuring fatalism tendencies of high school and university students in Turkey. This scale did not use qualitative interviews to inform its item generation process. Using an item pool drawing on the relevant literature, expert opinions for the initial version, and a pilot study for the final version, this fatalism measure had a multidimensional structure with four subscales, namely predetermination, personal control, superstition, and luck, consisting of 24 items in total and explaining 48% of the variance (Kaya & Bozkur, 2015).

The GFAT Scale developed in the present study used an item pool that was additionally based on qualitative insight on fatalistic beliefs (obtained via the qualitative interviews conducted by the author; Doğulu, 2017) as a source for item generation. Moreover, feedback from lay people on the initial version of the item pool was also obtained to establish the content validity of the GFAT Scale in addition to the relevant literature (on the conceptualization and assess-

Table 5. Correlations of the GFAT Subscales with the Key Sociodemographic Variables

Subscales	Age	Gender	Education	Subjective social status	Religiousness	Belief in fatalism
Destiny	-.17**	-.18**	-.22*	-.12*	.57**	.82**
Functionality	-.11*	-.09	-.02	-.05	.23**	.40**
Helplessness	-.07	.05	-.07	-.15**	.32**	.43**
Uncontrollability	.03	-.04	-.06	-.11*	.05	.30**
Valuation	-.15**	-.16**	-.15**	-.01	.38**	.64**
Luck	-.05	.05	.08	.01	-.25**	-.16**
Submission	.16**	.01	-.15**	-.17**	.21**	.45**

Note. $N = 361$. Pairwise deletion method was used to deal with missing data ($N = 251$ for religiousness correlations). Higher scores on the subscales (rated on a 6-point Likert scale with 1 = *strongly disagree*; 6 = *strongly agree*) indicate higher levels of destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission. Gender coded as 1 = female; 2 = male; 3 = other/prefer not to say. Education coded as 1 = never went to school; 2 = primary school; 3 = secondary school; 4 = high school; 5 = vocational school; 6 = university degree (undergraduate); 7 = university degree (postgraduate). Higher ratings on subjective social status (1 = *the bottom*; 10 = *the top*), religiousness (1 = *not at all*; 5 = *very much*), and belief in fatalism (1 = *not at all*; 5 = *very much*) indicate higher levels of social status, religiousness, and fatalism. *$p < .05$, **$p < .01$.

Table 6. Gender Differences in the GFAT Subscales

Subscales	General ($N = 358$)		Female (N = 241)		Male (N = 117)		*t*	*p*	*95% CI*
	M	*SD*	*M*	*SD*	*M*	*SD*			
Destiny	3.49	1.22	3.64	1.16	3.16	1.29	3.39[a]	.00	[.20, .75]
Functionality	4.18	.92	4.24	.92	4.06	.92	1.64	.10	[-.03, .38]
Helplessness	4.62	.73	4.60	.74	4.65	.69	-.57	.57	[-.21, .12]
Uncontrollability	2.39	.73	2.41	.71	2.38	.77	.36	.72	[-.13, .19]
Valuation	2.72	1.00	2.82	1.03	2.51	.90	2.92[a]	.00	[.10, .52]
Luck	4.41	1.00	4.38	1.02	4.44	.95	-.53	.60	[-.28, .16]
Submission	2.65	.89	2.63	.87	2.69	.95	-.52	.60	[-.25, .15]

Note. $N = 358$ (Three participants who did not indicate their gender were excluded from the total $N = 361$). Higher scores on the subscales (rated on a 6-point Likert scale with 1 = *strongly disagree*; 6 = *strongly agree*) indicate higher levels of destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission. [a]The assumption of the equality of variances was not met for the subscales *destiny* and *valuation*. For these, values for "equal variances not assumed" were reported.

ment of fatalism) and feedback from experts in social psychology. Addressing the conceptual issues of fatalism as have been pointed out by Abraído-Lanza et al. (2007), Esparza et al. (2015), Shen et al. (2009), and Valenti and Faraci (2022), the GFAT Scale captured the multifaceted nature of the fatalism construct better than the Fatalism Tendency Scale of Kaya and Bozkur (2015). This is evidenced by, compared to the Fatalism Tendency Scale, the greater variance explained by the GFAT Scale (56%) consisting of seven subscales (namely destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission). Though both scales did not fully address the methodological issues outlined by Valenti and Faraci (2022) (for instance, they both lacked testing of scale dimensionality with both exploratory and confirmatory factor analyses), based on their content and construct validity as well as convergent and discriminant validity, the GFAT Scale seems to be more robust compared to the Fatalism Tendency Scale developed by Kaya and Bozkur (2015).

The GFAT Scale reflected a conceptualization that was consistent with the cognitive nature of the fatalism construct in the literature. The developed scale consisted of seven subscales, representing fatalistic beliefs about destiny (reflecting fate, divine control, and predetermination beliefs), functionality (functions of fatalism), helplessness (reflecting powerlessness and pessimism), uncontrollability (reflecting external control over the course of life), valuation (reflecting fatalism as a positive and valuable belief), luck (reflecting a belief in luck), and submission (reflecting acceptance of reality along with resignation). Overall, the seven GFAT subscales were based on the typical multidimensional conceptualization in the literature including external locus of control (reflecting lack of personal control over life events due to external forces such as destiny, divine power, and luck), belief in predetermination, acceptance of reality, learned helplessness and pessimism, and coping skill (or adaptive response) (see Esparza et al., 2015; Shen et al., 2009; Valenti & Faraci, 2022).

The dimensionality of the GFAT Scale was similar to that of the Multidimensional Fatalism Scale (Esparza et al., 2015) which consisted of five subscales, namely fatalism, helplessness, internality, luck, and divine control. With its greater number of subscales reflecting a more comprehensive and clearer conceptualization, the GFAT Scale seems to reflect the multifaceted nature of fatalism better than Esparza et al.'s (2015) scale. Both scales had a core dimension of fatalistic beliefs which was represented by the Destiny Subscale in the former and the Fatalism subscale in the latter. However, in the GFAT Scale, this core dimen-

sion seemed to capture the essence of fatalism more comprehensively than Esparza et al.'s scale as the destiny subscale of the GFAT Scale reflected the multiple definitions of fatalism with items bearing on fate, divine control, and predetermination beliefs. Moreover, the GFAT Scale also included subscales that assessed beliefs regarding the functionality and valuation of fatalism. In fact, these subscales can be considered as representing a more refined conceptualization of fatalism in line with the recent studies emphasizing the dual nature of fatalism that encompasses positive (active and adaptive aspects) as well as negative (passive and maladaptive aspects) connotations in its conceptualization (Cheng et al., 2013; Shahid et al., 2020).

Concerning the correlations among the subscales, as expected, all showed significant and positive associations with each other, except for the Luck subscale which was significantly associated with only helplessness (but not with the remaining subscales). This unexpected finding for the Luck subscale might indicate that concerning the multidimensionality of the fatalism construct, conceptualization of fatalism with respect to luck beliefs can be independent of the destiny, functionality, uncontrollability, valuation, and submission beliefs. Though Kaya and Bozkur's (2015) Fatalism Tendency Scale included luck as a subscale, the correlations among the subscales were not reported in this study. For this reason, the only study whose inter-factor correlational findings for luck could be compared to the unexpected finding of the present study is Esparza et al. (2015). Specifically, in their scale development study for multidimensional fatalism which included luck as a subscale, Esparza et al. (2015) found that luck was significantly associated with the fatalism, helplessness, internality, and divine control subscales (except for internality, all correlations were positive). Thus, the correlational findings regarding the absence of association between luck and other GFAT subscales (except for helplessness) seem to be inconsistent with what Esparza et al. (2015) found. It is even more puzzling considering that the Luck subscale of GFAT was not significantly associated with the Destiny subscale, which is in fact the core dimension that captures the essence of fatalism across the whole scale. For this reason, there is a need for future studies that explore cross-culturally the association of luck with the remaining conceptualizations of fatalism with larger and more representative samples as well as examine whether and how these associations are influenced by religion-related variables.

Concerning the sociodemographic differences for the seven GFAT subscales, destiny was the only subscale that significantly correlated with age, gender, education, and subjective social status. As mentioned earlier, this subscale seems to reflect the core of the GFAT measure as it represents multiple conceptualizations of fatalism such as fate, divine control, and predetermination. Given its capacity for conceptual plurality, the destiny subscale might have turned out as the factor with the highest sensitivity to sociodemographic differences. Moreover, the small-to-large significant correlations of the GFAT subscales (except uncontrollability) with the sociodemographic measures of religiosity (only for the subsample with participants who identify themselves as belonging to a religion) and belief in fatalism point out that conceptually one's endorsement of GFAT is closely linked to the extent to which they identify themselves as religious and fatalistic. With regards to how the GFAT subscale scores vary as a function of sociodemographic characteristics, in the present study the subscales did not show a general consistent pattern of correlations with age, gender, education, and subjective social status. Gender differences were observed in Destiny and Valuation subscales, with female participants scoring higher than male participants on both. Only the Destiny subscale, as the core of the GFAT Scale, showed a consistent pattern of relationships with the sociodemographic variables: being younger, being female, having lower educational attainment, and having lower subjective social status (i.e., perception of one's rank as lower relative to others in the community) were associated with higher destiny beliefs (based on mean scores on the Destiny GFAT subscale). Previous studies investigating the sociodemographic predictors of fatalism showed that fatalism was influenced by age, gender, educational attainment, and social class (D'Orlando et al., 2011; Maercker et al., 2019; Ruiu, 2013). However, given the differences in the conceptualization and assessment of the fatalism construct in these studies and the lack of a consistent pattern of associations between fatalism and the sociodemographic factors, it would not be meaningful to compare the findings of the present study to previous studies. Thus, further work is required to delineate how the different conceptualizations of fatalism are associated with different sociodemographic and cultural factors and provide a comprehensive comparative outlook on these associations.

In the present study, the multifaceted nature of the fatalism construct was further supported by findings on the convergent and discriminant validity of the GFAT Scale. This was evidenced by the meaningful correlations of the GFAT subscales with external control orientation, just world belief, and religiosity measures and the small-to-moderate magnitude of these correlations. Thus, the findings of this study demonstrated that fatalism as assessed by the GFAT Scale is related to but at the same time distinguishable from external control orientation, just world beliefs, religious orientation, and religious motivation. This finding is consistent with what Norenzayan and Lee (2010) highlighted in their study investigating the cultural variations in fate attributions. They noted that establishing the uniqueness of the fatalism construct is important for negating the problem of confounding

fate beliefs with other related constructs (Norenzayan & Lee, 2010). In this respect, the present study contributes to resolving the confounding problem observed in fatalism research with a psychometric tool developed originally in Turkish that was informed by qualitative insight on the topic as well as the relevant literature, feedback of experts, and lay people in the item generation process, and quantitative insight on its psychometric properties.

The present study further contributes to the existing psychological research on fatalism in several ways. Firstly, this study introduced a reliable and valid self-report measure in Turkish to reveal individual differences in lay beliefs about fatalism in general in a sample characterized by a predominantly Muslim and collectivistic culture, Turkey. Specifically, the GFAT Scale can be used for assessing fatalism as a global and multidimensional construct that captures fatalistic beliefs broadly (not limited to a particular life domain) with respect to the seven dimensions destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission. Secondly, the obtained findings on the construct validity of the GFAT Scale contributed to the literature on the conceptualization of fatalism, particularly by delineating how fatalism is associated with external control orientation, just world belief, and religiosity in a predominantly Muslim and collective culture. Thirdly, considering that the existing fatalism measures in the literature are mostly domain-specific such as health and cancer, the GFAT Scale can be used in future studies to assess lay beliefs about fatalism in general with respect to destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission beliefs. Lastly, the multidimensionality of the GFAT Scale developed in Turkish will allow researchers to conduct separate analyses for the core dimension (i.e., the Destiny subscale) and the remaining associated dimensions, which will contribute to minimizing conceptual confusion and maximizing specific and exact findings on their predictive power for outcome measures such as health behaviors (Esparza et al., 2015).

Notwithstanding these contributions to the literature, it is also important to acknowledge the limitations of the present study. One limitation concerns the methodological robustness of the GFAT Scale as it did not fully address the methodological suggestions of Valenti and Faraci (2022). The multidimensionality of the fatalism construct, utilization of reverse items, and reporting of internal consistency for each subscale were addressed in this scale development study, however, the dimensionality of the GFAT Scale was tested only with EFA and test-retest reliability was not investigated. Thus, future studies should test the multidimensionality of the GFAT Scale with both exploratory and confirmatory factor analyses and examine its test-retest reliability. Furthermore, future research can explore, using both experimental and non-experimental designs, how fatalistic beliefs as measured with the GFAT Scale change in response to negative life events. This line of research would contribute to a better understanding of fatalism as a coping skill and/or an adaptive response (e.g., Cheng et al., 2013; Parker & Kleiner, 1966; Shahid et al., 2020). Another limitation concerns the sample employed in the present study. The findings obtained for the reliability and validity of the GFAT Scale were based on an online study for which participants were recruited through snowball sampling. Future studies can test the psychometric properties of the GFAT Scale with representative community samples and field studies. Furthermore, future studies can employ larger samples for increasing the generalizability of the findings obtained from this study sample to other samples and populations (Costello & Osborne, 2005). This would also address the low statistical power concern in the present study – though the minimum 5-to-1 sample-to-item ratio was met, testing the factor structure of the GFAT Scale with a sample that meets the 10:1 ratio would be ideal (Costello & Osborne, 2005; Hair et al., 2018).

Conclusion

The current study developed a reliable and valid self-report scale for measuring lay beliefs about fatalism in general and revealing individual differences in dispositional fatalism with respect to destiny, functionality, helplessness, uncontrollability, valuation, luck, and submission beliefs. The GFAT Scale can be used in future studies to investigate the influence of dispositional fatalism, as a multifaceted and general construct, on attitudes and behaviors concerning a variety of domains for which psychological insight is needed. This line of research would be especially fruitful in understanding the psychological processes involved in risk-taking and protective behaviors pertaining to major life events such as natural hazards, traffic accidents, and diseases that have major impacts on human life. These findings can be used to inform both researchers and practitioners as well as policymakers in their efforts at promoting behavioral change for increasing the functioning of individuals and communities with respect to social and practical problems.

DECLARATIONS

Compliance with Ethical Standards Ethical approval for this study was obtained from Middle East Technical University Human Subjects Ethics Committee (Protocol Number: 2016-SOS-018; Date: February 10th, 2016). All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Conflict of Interest The author(s) declare that they have no conflict of interest.

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APPENDIX. The General Fatalism (GFAT) Scale
Genel Kadercilik (GKAD) Ölçeği

Aşağıda kaderci düşünmeyle ilgili bir dizi ifade yer almaktadır. Lütfen verilen ifadeleri dikkatlice okuyunuz ve her bir ifadeye ne derece katılıp katılmadığınızı ölçekteki sayılardan uygun olan seçeneği işaretleyerek (o seçeneğin üstüne tıklayarak) belirtiniz.

Madde No		1 Kesinlikle katılmıyorum	2 Katılmıyorum	3 Biraz katılmıyorum	4 Biraz katılıyorum	5 Katılıyorum	6 Kesinlikle katılıyorum
	Kader *(20 madde)*						
1	Doğum, ölüm gibi şeyler önceden belirlenmiştir.	❍	❍	❍	❍	❍	❍
2	İnsanın hayatı, kendinden daha üstün bir güç/varlık tarafından belirlenmiştir.	❍	❍	❍	❍	❍	❍
3	*Kader, batıl inançtan başka bir şey değildir.	❍	❍	❍	❍	❍	❍
4	İnsanın başına gelecekler ezelden bellidir.	❍	❍	❍	❍	❍	❍
5	Başımıza ne geleceğini bir Allah/Tanrı bilir.	❍	❍	❍	❍	❍	❍
6	Kader, insanın hayatında önemli bir yere sahiptir.	❍	❍	❍	❍	❍	❍
7	Allah'ın/Tanrı'nın herkes için bir planı vardır.	❍	❍	❍	❍	❍	❍
8	Her işte bir hayır vardır.	❍	❍	❍	❍	❍	❍
9	*Hayatta hiçbir şey önceden belirlenmiş değildir.	❍	❍	❍	❍	❍	❍
10	Bizim için neyin iyi ya da kötü olduğunu Allah/Tanrı bilir.	❍	❍	❍	❍	❍	❍
11	*Elinden geleni yaptıktan sonra gerisi kaderdir.	❍	❍	❍	❍	❍	❍
12	İnsan, kaderinde ne varsa onu yaşar.	❍	❍	❍	❍	❍	❍
13	Kader, hayatın birçok alanını ilgilendirir.	❍	❍	❍	❍	❍	❍
14	*İnsanın hayatını belirleyen kendinden daha üstün bir irade yoktur.	❍	❍	❍	❍	❍	❍
15	Kader, insanın hayatına denge getirir.	❍	❍	❍	❍	❍	❍
16	İnsanın kaderinde olanı yaşaması onun iyiliğinedir.	❍	❍	❍	❍	❍	❍
17	İnsanın her yaşadığı kaderdendir.	❍	❍	❍	❍	❍	❍
18	Bir şeyin olacağı varsa olur.	❍	❍	❍	❍	❍	❍
19	*Kader, insan hayatı için belirleyici bir şey değildir.	❍	❍	❍	❍	❍	❍
20	Hayatta mucizeler olur.	❍	❍	❍	❍	❍	❍
	İşlevsellik *(11 madde)*						
21	Kader inancı insanı psikolojik olarak rahatlatır.	❍	❍	❍	❍	❍	❍
22	Kader, insanın başına gelenleri kabullenmesini kolaylaştırır.	❍	❍	❍	❍	❍	❍
23	Kadere inanmak insanı teselli eder.	❍	❍	❍	❍	❍	❍
24	Bir çıkış yolu bulamadığında olayları kadere bağlamak insanı rahatlatır.	❍	❍	❍	❍	❍	❍
25	Olumsuz olaylar/yaşantılar sonrasında kadere sığınmak insana güç verir.	❍	❍	❍	❍	❍	❍
26	Kadere inanmak, hayata tutunmayı kolaylaştırır.	❍	❍	❍	❍	❍	❍
27	Kadere inanmak, insanın değiştiremeyeceği şeyleri kabul etmesine yardımcı olur.	❍	❍	❍	❍	❍	❍
28	Kadere inanan insan daha sabırlı olur.	❍	❍	❍	❍	❍	❍
29	Kader inancı, insana zorluklara rağmen hayata devam etme gücü verir.	❍	❍	❍	❍	❍	❍
30	İnsan kadere inanarak yaşadıklarına anlam yükler.	❍	❍	❍	❍	❍	❍
31	İnsan, kadere inanarak hayatındaki olumlu ve olumsuz olaylar/durumlar arasında denge kurar.	❍	❍	❍	❍	❍	❍

	Çaresizlik *(7 madde)*						
32	İnsan bazı şeylere engel olamaz.	❍	❍	❍	❍	❍	❍
33	Bazı şeyler insanın elinde değildir.	❍	❍	❍	❍	❍	❍
34	İnsanın seçemediği şeyler vardır.	❍	❍	❍	❍	❍	❍
35	Hayatta insanın gücünün yetmediği şeyler vardır.	❍	❍	❍	❍	❍	❍
36	İnsanın açıklama getiremediği şeyler vardır.	❍	❍	❍	❍	❍	❍
37	İnsanın çaresiz kaldığı zamanlar olur.	❍	❍	❍	❍	❍	❍
38	Hayatta bazı şeylere razı olmak gerekir.	❍	❍	❍	❍	❍	❍
	Kontrol edilemezlik *(5 madde)*						
39	*İnsan akıl ve mantıkla kaderini yönlendirebilir.	❍	❍	❍	❍	❍	❍
40	*Hayatın kontrolü insanın kendi elindedir.	❍	❍	❍	❍	❍	❍
41	*İnsan, iradesiyle kendi kaderini yaratabilir.	❍	❍	❍	❍	❍	❍
42	*İnsan kararlı olursa kaderini değiştirebilir.	❍	❍	❍	❍	❍	❍
43	*İnsanın neyi nasıl yaşayacağı kendisine bağlıdır.	❍	❍	❍	❍	❍	❍
	Biçilen değer *(6 madde)*						
44	*Kadere sığınmak insanı pasifleştirir.	❍	❍	❍	❍	❍	❍
45	*Kadercilik, amaçsız yaşamak gibidir.	❍	❍	❍	❍	❍	❍
46	*Olayları kadere bağlamak sadece bahanedir.	❍	❍	❍	❍	❍	❍
47	*İnsanlar kadere gereğinden fazla önem veriyor.	❍	❍	❍	❍	❍	❍
48	*Hayatın gidişatını kadere bağlamak insanı çıkmaza sokar.	❍	❍	❍	❍	❍	❍
49	*Her şeyi kadere bağlamak anlamsızdır.	❍	❍	❍	❍	❍	❍
	Şans *(4 madde)*						
50	Şans hayatın bir parçasıdır.	❍	❍	❍	❍	❍	❍
51	Bazı şeyler şans işidir.	❍	❍	❍	❍	❍	❍
52	*Hayatta şanslı olmanın bir önemi yoktur.	❍	❍	❍	❍	❍	❍
53	*Hayatta tesadüflere yer yoktur.	❍	❍	❍	❍	❍	❍
	Boyun eğme *(5 madde)*						
54	Ne kadar çabalarsa çabalasın, insanın kaderini değiştirmesi mümkün değildir.	❍	❍	❍	❍	❍	❍
55	İnsan, başına gelecekleri değiştiremez.	❍	❍	❍	❍	❍	❍
56	Kader, insanın elinde olan bir şey değildir.	❍	❍	❍	❍	❍	❍
57	Başa gelen çekilir.	❍	❍	❍	❍	❍	❍
58	*Sorgulamadan kadere inanmak sağlıklı değildir.	❍	❍	❍	❍	❍	❍

** Ters kodlanan maddeler.*