

DEVELOPMENT AND PSYCHOMETRIC EVALUATION OF A COVID-19 STIGMA SCALE: A FACTOR ANALYSIS INVESTIGATION IN A TURKISH POPULATION*

COVID-19 Stigma Ölçeğinin Geliştirilmesi ve Psikometrik Değerlendirmesi:
Türk Nüfusunda Bir Faktör Analizi Araştırması

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ABSTRACT

According to the World Health Organization, social stigma in the context of health is a negative association between a person or group of people who share certain characteristics and a certain disease. Pioneering studies reveal that COVID-19 disease causes fear, anxiety and stigma in humans. It is important to measure the effects of the COVID-19 pandemic with measurement tools that have good psychometric properties. The aim of this study was to develop the COVID-19 Stigma Scale to identify the stigma experienced by individuals who previously had COVID-19. For this purpose, based on the stigmatization dimensions proposed by Earnshaw and Chaudoir (2009), measurement tools used to measure stigmatization in past pandemics and various diseases were used. A total of 700 people aged 20 and over who had COVID-19 and who completed COVID-19 treatment at least one month ago participated in this research. In the analysis of the study, explanatory factor analysis, confirmatory factor analysis and criterion-related validity were performed. As a result of the analyses, a 13-item scale consisting of three dimensions (enacted stigma, anticipated stigma, and internalized stigma) was identified. In addition, criterion validity was supported by the Hospital Anxiety and Depression Scale (with depression, $r = 0.352$ and anxiety, $r = 0.299$). The Cronbach's alpha coefficient for the total items were .85; for the internalising stigma factor it was .84; for the enacted stigma it was .77; finally, for the expected stigma it was .89. Overall, the COVID-19 Stigma Scale has strong psychometric properties and reliable self-report scale that can be used to evaluate internalized, enacted and anticipated stigmatization in people over 20 years of age who have survived COVID-19 disease.

Keywords: Stigma; COVID-19 Pandemic; Enacted Stigma; Anticipated Stigma; Internalised Stigma

ÖZET

Dünya Sağlık Örgütü'ne göre, sağlık bağlamında sosyal damgalama, belirli özellikleri paylaşan bir kişi veya grup ile belirli bir hastalık arasındaki olumsuz ilişkidir. Öncü çalışmalar, COVID-19 hastalığının insanlarda korku, endişe ve damgalanmaya neden olduğunu ortaya koymaktadır. İyi psikometrik özelliklere sahip ölçüm araçları ile COVID-19 pandemisinin etkilerinin ölçülmesi önemlidir. Bu çalışmanın amacı, daha önce COVID-19 olan bireylerin yaşadığı damgalanmayı belirlemek için COVID-19 Stigma Ölçeği'ni geliştirmektir. Bu amaç doğrultusunda Earnshaw ve Chaudoir (2009) tarafından önerilen stigmatizasyon boyutlarına dayalı olarak geçmiş pandemilerde ve çeşitli hastalıklarda stigmatizasyonu ölçmek için kullanılan ölçüm araçları kullanılmıştır. Bu araştırmaya 20 yaş ve üzeri, COVID-19 olan ve COVID-19 tedavisini en az bir ay önce tamamlamış toplam 700 kişi katılmıştır. Araştırmanın analizinde açıklayıcı faktör analizi, doğrulayıcı faktör analizi ve ölçüt bağıntılı geçerlik yapılmıştır. Analizler sonucunda üç boyuttan (yaşanan damgalama, beklenen damgalama ve içselleştirilmiş damgalama) oluşan 13 maddelik bir ölçek belirlenmiştir. Ayrıca ölçüt geçerliği Hastane Anksiyete ve Depresyon Ölçeği (depresyon ile $r = 0.352$ ve anksiyete ile $r = 0.299$) ile desteklenmiştir. Toplam maddeler için Cronbach alfa katsayısı .85; içselleştirici damgalanma faktörü için .84 idi; yaşanmış damga için .77 idi ve beklenen damgalama için 0,89'du. Genel olarak, COVID-19 Stigma Ölçeği güçlü psikometrik özelliklere sahiptir ve COVID-19 hastalığından kurtulan 20 yaş üstü kişilerde içselleştirilmiş, yaşanmış ve beklenen damgalanmayı değerlendirmek için kullanılabilir geçerli ve güvenilir bir öz bildirim ölçeğidir.

Anahtar Kelimeler: Damgalama, COVID-19 Pandemisi, Yaşanmış Damgalama, Beklenen Damgalama, İçselleştirilmiş Damgalama

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GENİŞLETİLMİŞ ÖZET

Dünya Sağlık Örgütü'ne göre, sağlık bağlamında sosyal damgalama, belirli özellikleri paylaşan bir kişi veya bir grup insan ile belirli bir hastalığı arasında olumsuz ilişkidir. Dolayısıyla damgalama süreci boyunca, bireyler, belirli bir özelliğe sahip oldukları veya belirli bir grubun üyesi oldukları için belirli türdeki sosyal etkileşimlerden sistematik olarak dışlanırlar. COVID-19 hastalığının kişiden kişiye bulaşma zincirlerinin yoğunluğu, nispeten uzun kuluçka süresi ve bazı asemptomatik COVID-19 vakalarının olması gibi özellikleri, halk arasında virüsün son derece bulaşıcı, ölümcül ve kontrol edilemez olduğuna yönelik bilgilerin yaygınlığı, korkuyu tetiklediği için bu hastalar iyileşse bile damgalanmalarına neden olarak yaşam kalitelerini ve psikolojik durumlarını kötü etkileyebilir. Daha önce yaşanan bulaşıcı hastalıklara ilişkin yapılan çalışmalar, bu kişilerin işten ayrılma, iş bulamama, boşanma, eğitimini yarıda bırakma, hatta sosyal ortamından ve toplumdan uzaklaşmaya varabilen psikososyal problemler yaşayabileceğini göstermiştir. Tüm bunlar bulaşıcı hastalıklara yakalanan kişilerin, semptomlar son aşamaya gelene kadar tedavi yardımıyla kaçınıklarını, hastalıklarını çevrelerinden gizlemeye yöneldiklerini ve bununda bulaş riskini artırarak toplumsal maliyeti arttırdığını göstermiştir (Gilbert ve diğerleri, 1998; Major, O'Brien, 2005; Hebl, Dovidio, 2005). Bu kapsamda, Earnshaw ve Chaudoir'a (2009 s. 1163) göre bulaşıcı bir hastalıkla enfekte olan kişiler, durumlarının sosyal olarak son derece değersizleştirilmiş bir yönü olduğunu bilirler ve bu bilgi en az üç önemli damgalama mekanizmasıyla deneyimlenir: uygulanmış damgalama, beklenen damgalama ve içselleştirilmiş damgalama. Uygulanmış damgalanma kişinin hastalık süreci ve sonrasında günlük yaşamında karşılaştığı ayırıcı davranışları kapsarken, beklenen damgalanma, enfekte kişinin gelecekte başkalarından hastalığına yönelik önyargı ve ayrımcılık deneyimleyeceği beklentisinin derecesine karşılık gelir (Markowitz, 1998). İçselleştirilmiş damgalama ise, enfekte olan kişilerin kendileri hakkındaki hastalıkla ilişkili olumsuz inançları ve duyguları onaylama derecesini ifade eder (Scheff, 1966; Link, 1987). Mevcut çalışma kapsamında COVID-19 hastalığı geçirmiş kişilerde damgalanmayı ölçmek amacıyla oluşturulacak ölçek maddeleri, geçmişte yaşanan pandemi ve çeşitli hastalıklarda Earnshaw ve Chaudoir'ın (2009) ortaya koymuş olduğu üç boyutu değerlendiren ölçek maddelerinin zaman ve bağlama uyarlanmasıyla oluşturulmuştur. Bu amaç doğrultusunda COVID-19 Damgalanma Ölçeğini geliştirmek için birkaç adım atılmıştır. İlk olarak Link ve Phelan (2001), Brakel (2006) ve Earnshaw ve Chaudoir (2009) yapmış oldukları çalışmalar incelenerek damgalanma kavramı ve ele alınacak boyutlar belirlendi. İkinci aşamada daha önce yaşanmış olan pandemilerde damgalanma ve bunların ölçümüne yönelik çalışmalar incelendi (Opala & Boillot 1996; Person ve ark., 2004; Lee ve ark., 2005; Chang ve Cataldo, 2014; Karamouzian ve Hategekimana, 2015; Maleche ve ark., 2017; Overholt ve ark., 2018). Üçüncü aşamada COVID-19 hastalığına ilişkin yapılmış damgalanma çalışmaları ele alınarak sonuçları ve ölçüm yöntemleri değerlendirildi (Duan, Bu ve Chen, 2020; Abuhammad, Alzoubi ve Khabour, 2020; Ransing ve ark., 2020; Imran ve ark., 2020; Shokri ve ark. 2020; Villa ve ark., 2020; Ahmad Dar ve ark., 2020; Asadi-Aliabadi, Tehrani-Banihashemi ve Moradi-Lakeh, 2020; Banerjee ve Rai, 2020; Cassiani-Miranda ve ark., 2020). Elde edilen madde havuzu araştırmacılar tarafından tekrar incelenerek aynı içeriğe sahip olduğu düşünülen 12 madde havuzdan çıkarılarak 56 maddelik ölçek biri sosyal psikolog, biri halk sağlığı uzmanı ve biri ise psikiyatri uzmanı olmak üzere üç kişiye gönderilerek maddelerin anlaşılır olması ve boyutları ne ölçüde kapsadığına ilişkin görüş alınmıştır. Uzmanların görüşleri çerçevesinde 40 maddelik bir ölçek oluşturularak 40 kişiden oluşan bir gruba ön uygulama yapılmış ve ölçek maddelerinin anlaşılması test edilmiştir. Ön çalışma sonrasında 6 maddenin anlaşılmasında sorun olduğu düşünüldükçe araştırmacılar tarafından ölçekten çıkarılmış ve geçerlilik güvenilirlik çalışmasına 34 maddelik ölçekle gidilmiştir. Ölçek maddeleri tamamen katılıyorumdan tamamen katılmıyorum kadar değişen beşli liker şeklinde puanlanmıştır. Araştırmanın katılımcılarını Türkiye'nin her ilinden rastgele seçilen toplam 700 kişi (375 kadın ve 325 erkek) oluşturmaktadır. Katılımcılar, araştırmacıların ders verdiği Kastamonu Üniversitesi'nin farklı bölümlerinde öğrenim gören öğrencilerin yakın çevrelerinden belirlendi. COVID-19 durumunu öz bildirime dayanarak doğruladık. Bu çalışma, Kastamonu Üniversitesi Sosyal ve Beşeri Bilimler, Bilimsel Araştırma ve Yayın Etik Kurulu tarafından 25.12.2020/65 sayılı kararla onaylanmıştır ve çalışmaya girişte tüm araştırma katılımcılarından bilgilendirilmiş onam alınmıştır. COVID-19 Stigma Ölçeğinin yapı geçerliliğini ölçmek için katılımcıları rastgele iki gruba ayırdığımız ikiye bölünmüş bir doğrulama yöntemi kullandık. İlk olarak, COVID-19 Stigma Ölçeğinin altında yatan faktör yapısını belirlemek için EFA'yı uygulamak için gruplardan birini (n = 400) kullandık. İkinci olarak, EFA ile çıkarılan faktörlerin uyum iyiliğini test etmek için DFA'yı çalıştırmak için diğer grubu (n = 300) kullandık. Üçüncü olarak, COVID-19 Stigma Ölçeği ile teorik olarak ilişkili diğer ölçümler arasındaki ilişkiyi incelemek için ölçütlerle ilgili geçerliliği test ettik. Son olarak,

tüm örneklerde ($n = 700$) Cronbach alfa'yı hesaplayarak toplam maddelerin ve alt ölçeklerin iç tutarlılığını inceledik. Faktör analizi sonuçları, toplam 13 maddeden oluşan üç boyutlu bir faktör yapısını desteklemiştir. Birinci faktör uzlaşması "içselleştirici damgalama", hayatta kalanların COVID-19 enfeksiyonundan sonra kendileri hakkındaki olumsuz düşüncelerine ve inançlarına dayanmaktadır. İkinci faktör, COVID-19 olan bir kişinin yaşadığı ayrımcı davranışlarla ilgili "yasallaştırılmış damga". Son olarak, "beklenen damgalanma" olarak adlandırılan üçüncü faktör, enfekte kişilerin olası ayrımcılık beklentisiyle ilgiliydi. Her üç faktör ve toplam maddeler, .77 ile .89 arasında değişen yeterli iç tutarlılık göstermiştir. Aynı zamanda ölçütlerle ilgili geçerlilik için de kanıt vardı, ancak ilişkinin büyüklüğü küçüktü.

INTRODUCTION

The World Health Organization declared the new coronavirus disease (COVID-19) as the sixth “Public Health Emergency of International Concern” on 30th January 2020 and following this, the COVID-19 outbreak was identified as a pandemic on 11th March 2020. The direct person-to-person transmission of the virus, having relatively long incubation periods after infecting, asymptomatic COVID-19 case presentations and different variations making the virus more contagious have triggered public fear of highly contagious, deadly and uncontrollable disease (Lin & Tsang, 2020; Tian et al., 2020; Wu & McGoogan, 2020). According to Jones (2020), health-related stigma and discrimination start after fear in societies that are triggered by pathogens. In light of this, the results of the research conducted during the previous pandemics have shown that the frequency of fatality due to the disease, the possibility of an individual carrying the virus or being in contact with a person who carries the virus leded stigma in the societies where a pandemic started (Chang & Cataldo, 2014; Karamouzian & Hategekimana, 2014; Lee, Chan, Chau, Kwok, & Kleinman, 2005; Opala & Boillot, 1996; Overholt et al., 2018). Studying stigma during the COVID-19 pandemics is important to identify its psychosocial effects and to promote psychological well-being. In order to identify the possible effect of the stigma during pandemics, there need to be new measures that have good psychometric properties.

Despite stigma has been conceptualized as exploitation and domination (Phelan, Link, & Dovidio, 2008), the responses to stigma in infectious diseases had innate and adaptive functions which are essential for protecting human beings from the spread of infectious and potentially fatal diseases (Kouznetsova, Stevenson, Oaten, & Case, 2012; Major & O’Brien, 2005; Stuber, Meyer, & Link, 2008). So, stigma has an evolutionary feature and it is vital for the species’ survival. Although research on stigma has a long history, the first definition of stigma was introduced in 1963 by Goffman (1963) “Stigma: Notes on the Management of a Spoiled Identity”. According to Goffman (1963) “stigma is a social label that bans subjects from the full acceptance of society in which they live (p. 3)”, and it was defined as “an attribute that links a person to an undesirable stereotype, leading other people to reduce the bearer from a whole and usual person to a tainted, discounted one (p. 11)”. Therefore, the stigma that occurs with an evolutionary protection motive can have harmful consequences for psychological health during pandemics. Moreover, continuous discrimination and xenophobia in certain groups may contribute to poor outcomes such as unemployment, isolation from society, a decline in self-esteem, delay in seeking treatment, treatment-resistant symptoms, a prolonged course of the disease and hospitalizations in individuals, thus creating an obstacle to control a pandemic (Baldassarre et al., 2020; Fischer, Mansergh, Lynch, & Santibanez, 2019; Jarlais, Galea, Tracy, Tross, & Vlahov, 2006; Lee et al., 2005; Link & Phelan, 2006; Mutz et al., 2010; Padilla et al., 2008; Perlick et al., 2001; Villa et al., 2020)

Following Goffman (1963), the scientists have stressed that stigma is a product of social interactions and relations, and referred to stigma as a quality or feature that carries a social identity whose values is decreased in a social context (Gilbert, Fiske, & Lindzey, 1998; Hebl & Dovidio, 2005; Major & O’Brien, 2005). In light of this, according to Earnshaw and Chaudoir (2009), “people infected with an infectious disease know that their situation is highly devalued socially and this knowledge is experienced by at least three important stigmatization mechanisms: enacted stigma, anticipated stigma, and internalized stigma (p. 1163)”. The enacted stigma refers to the discriminatory behaviours experienced by a person in his/her daily life during or after having a disease (Markowitz, 1998). The anticipated stigma refers to the degree of anticipation of an infected person about experiencing prejudice and discrimination from others (Markowitz, 1998). The internalized stigma was used to refer to an infected person’s negative beliefs and feelings about themselves associated with a disease (Link, 1987; Scheff Thomas, 1966).

It has been pointed out that the three stigmatization mechanisms may lead to different results. For example, people who experience higher levels of enacted stigma may experience greater psychological distress and poor psychological well-being (Parker & Aggleton, 2003). Increased anticipated stigma may lead to fear of social rejection and subsequently, individuals who have an infectious disease tend to hide the fact that they have a disease (Derlega, Winstead, Greene, Serovich, & Elwood, 2004). On the other hand, people with higher levels of internalising stigma may experience embarrassment, guilt, depression or lower self-esteem and fear of being a victim of stigma (Baugher et al., 2017; Deacon, 2006; Earnshaw & Chaudoir, 2009; Major & O'Brien, 2005; Mak, Poon, Pun, & Cheung, 2007; Wu & McGoogan, 2020).

As previous research showed the devastating impact of stigma on individuals, it is important to understand the nature of stigma in the scope of the COVID-19 pandemic which deeply affects societies and has an unpredictable course (e.g., variations). There have been research attempts to understand the effects of stigma during the COVID-19 pandemic and this research was generally used as an adaptation of measures that were developed for other diseases in previous pandemics (Abuhammad, Alzoubi, & Khabour, 2021; Asadi-Aliabadi, Tehrani-Banihashemi, & Moradi-Lakeh, 2020; Banerjee & Rai, 2020; Cassiani-Miranda et al., 2020; Dar et al., 2020; Duan, Bu, & Chen, 2020; Imran et al., 2020; Ransing et al., 2020; Shokri et al., 2021; Tehrani, 2020; Villa et al., 2020). Link, Yang, Phelan, and Collins (2004) suggested that scientific comprehension of the nature of stigma depends on our ability to observe and measure it. In light of this, to understand the effect of stigma as a result of the COVID-19 disease on people, there need to be psychometrically strong measurement tools.

To current knowledge, there has been no research that was conducted to develop culture-specific stigma during the COVID-19 pandemic. The aim of the current research was, therefore (1) to develop COVID-19 Stigma Scale to measure COVID-19 related stigma; (2) to extract an improved model to identify the underlying structure of the scale by running an exploratory factor analysis (EFA) and to test it through confirmatory factor analysis (CFA); (3) to examine the criterion-related validity to test whether hypothetically related other constructs were associates with the COVID-19 Stigma Scale; (4) to test the reliability of the COVID-19 Stigma Scale. So that, this research may meet the needs of a psychometrically solid instrument that culture-specific stigma associates with COVID-19.

2. Method

2.1. Construction of the Scale

Several steps have been taken to develop the COVID-19 Stigma Scale. First, studies on stigma were examined and the concept of stigmatization and the dimensions that need to be addressed were determined (e.g., Earnshaw & Chaudoir, 2009; Link & Phelan, 2001; Van Brakel, 2006). Second, instruments on the stigma that were developed during the previous pandemics were examined (e.g., Karamouzian & Hategekimana, 2014; Lee et al., 2005; Opala & Boillot, 1996; Overholt et al., 2018; Person et al., 2004). Third, we narrowed down our approach and studies on COVID-19 related stigma were evaluated; the results of these studies and measurement methods were evaluated (Abuhammad et al., 2021; Banerjee & Rai, 2020; Cassiani-Miranda et al., 2020; Dar et al., 2020; Duan et al., 2020; Imran et al., 2020; Ransing et al., 2020; Shokri et al., 2021; Tehrani, 2020; Villa et al., 2020). It has been observed that the measurement tools used in past pandemics and during the COVID-19 have been developed using measurement tools that generally address HIV related stigma and mental health-related stigma and we adopted these approaches as well. After this step, a pool of 68 items was generated by coding the scale items created based on the instruments that measure the perception of stigmatization of the individual, which was considered in the studies by Van Brakel (2006) and Earnshaw and Chaudoir (2009), to represent three dimensions. The obtained item pool

was re-examined by the researchers, and 12 items thought to have the same content were removed from the pool, and a 56-item scale was sent to three professionals (a social psychologist, a public health specialist, and a psychiatrist) and opinions were obtained regarding the comprehensibility of the items and to what extent they cover the dimensions. Within the framework of the opinions of the experts, a 40-item scale was created, a pre-application was made to a group of 40 people and the understanding of the scale items was tested. After the preliminary study, considering that there was a problem in understanding the 6 items, it was removed from the scale by the researchers, and the validity-reliability study was carried out with a 34-item scale. The correlation between the Increased stigma scores from the COVID-19 Stigma scale, which was developed as a five-point Likert scale that ranges from completely disagree (1) to completely agree (5) and the HADS scale indicates that the increased stigma perception is related with the increased anxieties.

2.2. Participants

We employed a convenient sampling method and reached up to possible participants by word of mouth. The students of Kastamonu University (department of psychology and psychological counselling) also took part in reaching up to relevant participants. The inclusion criteria for the current study was to (1) being diagnosed with COVID-19 disease and recovered at least one month ago or above, (2) being older than 20 years old, (3) not receiving treatment for a mental illness at the time of the data collection, (4) being able to read and write in Turkish language, and (5). A total of 700 people (375 women and 325 men) who were randomly selected manner to every province of Turkey comprises the participants of the current study. The participants were determined from the close circles of the students studying in different departments of Kastamonu University, where the researchers attended their lectures. We verified the COVID-19 status based on self-report. The data collection was carried out with a paper-based research battery. This study has been approved by the Kastamonu University Social and Humanities, Scientific Research and Publication Ethics Committee with the decision of 25.12.2020/65 and informed consent obtained from all research participants at the study entry.

2.3. Measures

The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983): In order to test the criterion validity of the COVID-19 Stigma Scale, we used the HADS which measures the level of anxiety and depression in the patient. The HADS is a four-point Likert-type scale and it has a total of 14 questions. The odd numbers measure anxiety (Worrying thoughts run through my mind.), and the even numbers measure depression (I lost interest in my appearance). The Turkish adaptation of the HADS was carried out by Aydemir, Guvenir, Kuey, and Kultur (1997), and the results showed that the scale was sufficient enough for screening the symptoms of depression and anxiety in patients with physical illnesses. We used the total scores of both the anxiety and the depression subscales of the HADS. The cut-off score for the anxiety subscale was 10/11 and for the depression subscale 7/8. Accordingly, those who score above these points are considered at risk. Scoring of each item in the scale is different. Items 1, 3, 5, 6, 8, 10, 11 and 13 show decreasing severity and scoring is 3, 2, 1, 0. On the other hand, items 2, 4, 7, 9, 12 and 14 are scored as 0, 1, 2, 3. While the scores of the 1st, 3rd, 5th, 7th, 9th, 11th and 13th items were collected for the anxiety subscale; For the depression subscale, scores of items 2, 4, 6, 8, 10, 12 and 14 are added together.

2.4. Analytic Plan

In order to measure the construct validity of the COVID-19 Stigma Scale, we employed a split-half validation method in which we randomly split the participants into two groups. Firstly, we used one of the groups (n = 400) to apply EFA to identify the underlying factor structure of the COVID-19 Stigma

Scale. For this, we run a principal component analysis (PCA) with varimax rotation using SPSS-23. The assumptions for the PCA was also examined by Kaiser-Meyer-Olkin (KMO) and Barlett tests to check whether the data is appropriate for the factor analysis. We also check the item-total correlations to identify poor items that have .40 or below values. These items were removed from the scale and we rerun the EFA. The Kaiser criterion method was used to identify the factor solution. Items that had a loading less than .40 and had loadings on multiple factors were not included. Secondly, we used the other group (n = 300) to run CFA to test the goodness of fit for the extracted factors with the EFA. We run this analysis with the final number of items that were yielded from EFA using AMOS 26. The overall model fit for the CFA was assessed by the Root Means Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Standardised Root Mean Square Residual (SRMR) and χ^2/df ratio. An acceptable fit was indicated by the following ranges: RMSEA of 0.05-0.08, the CFI of 0.90-0.95, the SRMR of .05-.08 and χ^2/df ratio between 3 and 5. A good fit was indicated by the RMSEA of 0.01-0.05, the CFI of 1-0.95, the SRMR of < 0.05 and χ^2/df ratio between 2 and 3 (Hu & Bentler, 1999; Kline, 2016). Thirdly, we tested the criterion-related validity to examine the association between the COVID-19 Stigma Scale and other theoretically associated measures. Finally, we examined the internal consistency of the total items and subscales by calculating the Cronbach alpha across all samples (n = 700).

3. Results

3.1. Sample Characteristics

In total 700 (375 females [53.6 %], 325 males [46.4 %]) individuals whose mean age were 33.85 (SD = 13.99) participated in the current study. Of those, 512 (73.1 %) received their COVID-19 treatment 1 or 2 months before the study commenced, 137 (19.6 %) received their treatment 3 or 4 months before the study and finally, 51 (7.3 %) received their treatment 5 months or more than study commenced. Of those, 188 (26.8 %) had less than high school education, 211 (30 %) had high school, 287 (41 %) graduate, 14 (2 %) had postgraduate-level education. 338 (48.3 %) respondents stated that they were single, 339 (48.4 %) stated they were married and 23 (3.3 %) stated that they were divorced or widowed at the time of the data collection. Table 1 shows demographics by EFA and CFA groups.

Table 1: Demographics by EFA and CFA groups

	EFA (n=400)	CFA (n=300)
Age M (SD)	34.11 (14.13)	33.51 (13.82)
Sex N (%)		
Female	226 (56.5%)	149 (49.7%)
Male	174 (43.5%)	151 (50.3%)
COVID-19 Treatment N (%)		
1-2 months before	296 (74%)	216 (72%)
3-4 months before	75 (18.8%)	62 (20.7%)
5+ months before	29 (7.2%)	22 (7.3%)
Education N (%)		
Less than High school	111 (28.1%)	76 (25.4%)
High school	119 (29.8%)	92 (30.7%)
Graduate	160 (40%)	127 (42.3%)
Postgraduate	9 (2.3%)	5 (1.7%)
Marital Status N (%)		
Married	196 (49%)	143 (47.7%)
Single	191 (47.8%)	147 (49%)
Divorced	13 (3.3%)	10 (3.3 %)

3.2. Exploratory Factor Analyses

The result of the KMO test showed a statistic of .86 which indicates acceptable sample size for the EFA. Bartlett’s test for sphericity indicated significant results $\chi^2 = 2130.68$, $p < 0.05$, suggesting that correlation between the items of the scale were suitable for detection of the factor structure. We also test the communality (or item-total correlations) to exclude items that had a value of .40 or below before running the EFA. 21 items had a value less than .40 and these items were removed and EFA was run with 13 items (Table 2).

Table 2: Final Items of The COVID-19 Stigma Scale For The EFA	
Item 25	Having had COVID-19 makes me feel like a bad person (COVID-19 geçirmiş olmak bana kötü bir insan olduğumu hissettiriyor)
Item 24	Having had COVID-19 makes me feel dirty (COVID-19 geçirmiş olmak beni kirli hissettiriyor)
Item 16	I am shameful when people around me are talking about COVID-19 (Etrafımda ki insanlar COVID-19 hastalığından konuştuklarında utanıyorum)
Item 6	It is a shame to have had COVID-19 (COVID-19 geçirmiş olmak utanç vericidir)
Item 9	People who had COVID-19 deserve social exclusion (COVID-19 geçirenler toplumdaki dışlanmayı hak ediyor)
Item 23	I'm worried that people who know I had COVID-19 may tell others (COVID-19 geçirdiğimi bilen insanların başkalarına söyleyeceğinden endişeleniyorum)
Item 10	I quit socialisation with people due to their reactions to the fact that I had COVID-19 (COVID-19 geçirmeme tepkileri nedeniyle bazı insanlarla sosyalleşmeyi bıraktım)
Item 12	My neighbours have not wanted to meet me after I had COVID-19 (Komşularım COVID-19 geçirdikten sonra benimle görüşmek istemiyor)
Item 11	I have not been invited to friend gatherings after I had COVID-19 (COVID-19 geçirdikten sonra arkadaş toplantılarına çağırılmıyorum)
Item 14	My family members have distanced from me after I had COVID-19 (COVID-19 geçirdikten sonra aile üyelerim benden uzaklaştı)
Item 28	People I know get uncomfortable with someone who had COVID-19 (Tanıdığım insanlar COVID-19 geçiren birinin yanında rahatsız olur)
Item 27	Most people afraid of someone who had COVID-19 (Çoğu insan COVID-19 geçiren birinden korkar)
Item 33	People do not want to work with someone who had COVID-19 (İnsanlar COVID-19 geçirmiş biriyle çalışmak istemez)

As for the dimensions, the Kaiser Criterion Method (eigenvalues more than 1) showed three factors that explained 63.28 % of the total variances. The items clustered on a) the first factor represented internalising stigma with the eigenvalue of 4.77 and accounted for the 36.68 % of the variance; b) the second component represented enacted stigma with the eigenvalue of 2.23 and accounted for the 17.14 % of the variance; c) the third component represented expected stigma with eigenvalue of 1.23 accounted for the 9.46 % of the variance (Table 3).

Table 3: EFA loadings

	Factors		
	Internalizing Stigma	Enacted Stigma	Anticipated Stigma
Item 25	.798		
Item 24	.787		
Item 16	.707		
Item 6	.694		
Item 9	.683		
Item 23	.630		
Item 10		.797	
Item 12		.759	
Item 11		.695	
Item 14		.504	
Item 28			.898
Item 27			.886
Item 33			.864
Eigenvalue	4.77	2.23	1.23
Total Variance explained	36.68 %	17.14 %	9.46 %
Cumulative %	36.68 %	53.82%	63.28 %
Cronbach alpha	.84	.77	.89

3.3. Confirmatory Factor Analysis

The fit indices of the CFA indicated a acceptable fit to the data ($\chi^2 (62) = 155.89, p < .001; CFI = .945, RMSEA = .071, and GFI = .923, \chi^2/df = 2.15$) for 3 factor structure that was yielded in EFA. As it is seen in the Figure 1, the significant factor loadings of each items had value of more than .50.

4. Discussion

Stigma has an important role in the COVID-19 pandemic, not only because the virus leads to deaths in some cases but also its psychosocial influences on individuals, countries and economies. To current knowledge, instruments to measure stigma in Turkish culture were scarce and in the current study, we sought to develop an instrument that can measure the potential stigma COVID-19 survivors experience. The results of the factor analysis supported a three-dimension factor structure with a total of 13 items. The first-factor compromise “internalizing stigma” is based on survivors’ negative thoughts and beliefs about themselves after the COVID-19 infection. The second factor labelled “enacted stigma” related to the experienced discriminatory behaviours of a person who had COVID-19. Finally, the third factor labelled “anticipated stigma” was about infected people’s anticipation of possible discrimination. All three factors and the total items showed adequate internal consistency, ranging from .77 to .89. There was also evidence for criterion-related validity, however, the magnitude of the association was small.

These results are in line with proposed structures for previous research that were conducted for other infectious diseases. For example, Earnshaw and Chaudoir (2009) proposed an HIV Stigma Framework with three dimensions: internalised, anticipated and enacted stigma. In line with this, we generated similar constructs for the COVID-19 related stigma. This may reflect that the infectious diseases may have similar underlying mechanisms: perception about self, perception about others and perception about possible discrimination that takes its source from the self.

Several studies have focused on stigma in societies during the COVID-19 outbreak and these studies have addressed different subdimensions of COVID-19 related stigma. For example, Duan et al. (2020) examined perceived courtesy stigma and affiliate stigma in residence of Hubei province who were infected with COVID-19; Dar et al. (2020) examined internalized, perceived stigma and disclosure fear; Abuhammad et al. (2021) discrimination, acceptance and fear in COVID-19 survivors. Despite the difference in addressing these dimensions, our findings were in line with these studies in terms of the content of the generated factors. These pioneering studies aimed to identify the magnitude or the correlates of stigma at the very beginning of the COVID-19 outbreak and due to time constraints, item borrowing techniques were used to focus on specific dimensions (e.g., Dar et al., 2020). The current study expanded these approaches using statistically profound techniques such as EFA and CFA and confirms.

As mentioned above, in terms of validity, we used the HADS to examine whether two theoretically parallel instruments measure similar constructs. As the results indicated, the effect sizes of the associations among the three factors of the COVID-19 scale, and anxiety and depression subscales of the HADS ranged between .04 and .12, which is small in magnitude. This result is rather surprising because stigma and especially anxiety can covariate (Curcio & Corboy, 2020). The first explanation may be that we used total anxiety score in the analyses, there may be specific associations between a certain type of anxiety scores and stigma (e.g., social anxiety and anticipated stigma). The second explanation may be that there can be other possible confounders that interfere with the magnitude of these associations (e.g., socio-demographic variables); future research should focus on these issues to identify these possible variables that may confound the associations between stigma and its subdimensions, anxiety and depression.

As a result stigma always results in blaming, shaming and status loss for the stigmatised person or group, at least in the eyes of the stigmatiser; but it does not always have to result in discrimination to have a negative effect. Negative effects of stigma include status loss, discrimination, internalisation and failure to take advantage of social, economic and healthcare opportunities because of expected

stigma and discrimination. Indirect effects of stigma such as internalisation and fear of stigmatisation are extremely important in reducing People with COVID-19 access to key health services and a better quality of life. Therefore, it is important for scientists to have measurement tools in such pandemics in terms of providing speed response opportunities. In addition, making measurements at different stages during the pandemic process will help policy makers to provide information on guiding the society. Because the change in the perception of stigma in the social context can determine the level of implementation of the measures.

5. Limitations

Some methodological limitations need to be addressed while interpreting the results. Firstly, we employed participants who were willing to participate in the study. This was scientifically ethical but this may lead to a sampling bias because the sample consist of participants who were willing to disclose their COVID-19 infection status. Secondly, the analyses for the criterion-related validity showed that the association between the COVID-19 Stigma Scale and the HADS were small but statistically significant. COVID-19 related stigma may lead to greater anxiety and depression but using these variables may not be efficient for studying validity. In future studies, stigma measures that were developed for other infectious diseases may be used to address this. Lastly, we did not examine divergent validity or test-retest reliability. Future research should consider running these analyses for a more holistic approach.

CONCLUSION

The COVID-19 Stigma Scale showed promising psychometric properties. To our knowledge, it is the first instrument that was developed in Turkish language. The self-administered COVID-19 Stigma Scale can be used in studies to identify internalized, enacted and anticipated stigma in individuals who are 20 years old or above, and subsequently leads to developing strategies to prevent psychosocial burdens in the society.

The contribution of the authors: Corresponding author: %50 Other author: %50 Etik kurul

This study is approved by Kastamonu University Social and Humanities, Scientific Research and Publication Ethics Committee with decision 25.12.2020/65. Consent form was obtained from the participants in the study.Çalışmada potansiyel çıkar çatışması bulunmamaktadır.

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