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A Scale Proposal for COVID-19-related Social Stigmatization: The Psychometric Properties of the COVID-19 Stigmatization Scale

COVID-19 İle İlgili Sosyal Damgalama İçin Bir Ölçek Önerisi: COVID-19 Damgalama Ölçeğinin Psikometrik Özellikleri

Ayşegül YETKİN TEKİN [1] (ID), Yaşar YAVUZ [2] (ID), Yaşar KAPICI [3] (ID), Aslı EGELİ [4] (ID)
Atilla TEKİN [5] (ID), Oğuz KARAMUSTAFALIOĞLU [6] (ID)

[1]Guidance and Psychological Counseling, Private Guide and Psychological Counselor, Adıyaman, TURKEY
[2]Dokuz Eylül University, Faculty of Education, Educational Sciences Department, İzmir, TURKEY
[3]Kahta State Hospital, Psychiatry Department, Adıyaman, TURKEY
[4]Besni State Hospital, Psychiatry Department, Adıyaman, TURKEY
[5]Adıyaman University, Faculty of Medicine, Psychiatry Department, Adıyaman, TURKEY
[6]İstanbul University-Cerrahpaşa, Institute of Forensic Medicine and Forensic Sciences, İstanbul, TURKEY

Abstract

Background: Social stigma is the discrediting or unfair treatment of a person or group for any of their characteristics. Social stigmatization is one of the most important results of the COVID-19 pandemic. The aim of the present study is to develop a measurement tool for assessing COVID-19-related stigma.

Materials and Methods: The sample of the study consisted of 324 participants who were formerly diagnosed with COVID-19. Measurement regarding the validity of the COVID-19 Stigmatization Scale was evaluated with exploratory analysis.

Results: Females accounted for 50.3% (n = 163) of the participants, and the mean age of the participants was 35.35 ± 11.23 . The internal consistency coefficient of the scale was 0.95. The internal consistency coefficients of the subscales were .92 for "anticipatory anxiety", .90 for "external stigmatization", .89 for "negative self-image", .84 for "contagion anxiety", .90 for "disclosure anxiety", and .87 for "internal stigmatization." The total variance explained by the scale was 61.96%.

Conclusions: The findings indicated that the COVID-19 Stigmatization Scale, consisting of 44 items in six subscales, is a valid measurement tool for COVID-19 related social stigma.

Key Words: COVID-19, Pandemic, Stigma, Scale development

ÖZ.

Amaç: Sosyal damgalanma, bir kişi veya grubun herhangi bir özelliğinden dolayı itibarsızlaştırılması veya haksız muameleye maruz kalmasıdır. COVID-19 pandemisinin önemli sonuçlarından biri sosyal damgalanmadır. Bu çalışmanın amacı, COVID-19 ile ilişkili damgalanmayı değerlendirmek için bir ölçüm aracı geliştirmektir.

Materyal ve Metod: Araştırmanın örneklemini, daha önce COVID-19 tanısı almış 324 katılımcı oluşturdu. COVID-19 Damgalama Ölçeği'nin geçerliliğine ilişkin ölçümler, açımlayıcı faktör analizi ile değerlendirildi.

Bulgular: Katılımcıların %50.3'ünü (n=163) kadınlar oluşturdu ve katılımcıların yaş ortalaması 35.35±11.23 idi. Ölçeğin iç tutarlılık katsayısı 0.95 idi. Alt ölçeklerin iç tutarlılık katsayıları "beklenti kaygısı" için .92, "dışsal damgalanma" için .90, "olumsuz benlik imajı" için .89, "bulaş kaygısı" için .84, "ortaya çıkma kaygısı" için .90 ve "içsel damgalama" için .87 saptandı. Ölçeğin açıkladığı toplam varyans %61.96 idi.

Sonuç: Bulgularımız, altı alt ölçekli 44 maddeden oluşan COVID-19 Damgalama Ölçeği'nin COVID-19 ile ilgili sosyal damgalanmayı değerlendirmek için geçerli bir ölçüm aracı olduğunu göstermiştir.

Anahtar kelimeler: COVID-19, Pandemi, Damgalanma, Ölçek geliştirme

Introduction

Erving Goffman defined *stigma* as "an attribute which is deeply discrediting that reduces a person from a whole and usual person to a tainted, discounted one" (1). People all over the world are exposed to stigmatization due to their gender, race, language, and cultural differences (2). On the other hand, some people are stigmatized because of their medical problems. Many studies have reported that people with contagious diseases have been exposed to social discrimination and stigma (3,4). It has been reported that the SARS and MERS pandemics have consequences associated with social stigmatization (5,6). HIV/AIDS-related stigma has been indicated in the results of many studies as well. These studies reported consequences of such stigmas are feelings of shame, guilt, anger, worthlessness, and hopelessness, and the avoidance of social interactions (7,8).

After the first coronavirus disease-19 (COVID-19) case was reported in Wuhan, China, in December 2019, COVID-19 rapidly spread across the world. By October 20, 2021, the number of confirmed COVID-19 cases worldwide reached 241,411,380 (9). On the same date, 7,387,537 total COVID-19 cases were reported in Turkey (10). The rapid spread of the pandemic and mandatory restrictions caused some social problems.

The COVID-19 pandemic has seemingly caused concerns related to social stigmatization, especially for infected individuals and healthcare workers. For instance, healthcare professionals have reportedly been rejected by their relatives and neighbors, with whom the professionals often share common living spaces (11-14). Healthcare workers have even been denied access to public transport and shared elevators in some countries (12). COVID-19 survivors have been exposed to social discrimination by their neighbors, which leaves survivors feeling more anxious and lonelier (15). Meanwhile, it has been reported that individuals from Far Eastern countries experience social problems, including exposure to physical violence, all over the world (16). Misused definitions and the spread of incorrect information about COVID-19 have caused such stigmas. It has been stated that the "myths" about transmission of the disease, the prevention suggestions, and the treatments all stigmatize COVID-19 survivors and healthcare workers. The World Health Organization has reported that the use of some inappropriate expressions to define the COVID-19 pandemic—such as "COVID-19 victims," "COVID-19 patients," and "families with COVID-19"—can facilitate social stigmatization as well (17). The COVID-19 pandemic has also been identified as a "Chinese virus" by some politicians and magazines (18).

Due to the aforementioned reports and results, it can be said that COVID-19-related stigma is an important social issue all over the world. It is clear that along with individuals diagnosed with COVID-19, the elderly and healthcare workers are more exposed to stigma throughout the pandemic. We think that a measurement tool is needed to evaluate social stigma, which is one of the important social problems of the COVID-19 pandemic. To our knowledge, two different self-report scales have been developed so far in Thailand and Egypt to assess the stigma associated with COVID-19 (19,20). Although COVID-19-related stigma has been reported in many scientific articles, there is no developed measurement tool to investigate this stigma in Turkish population. Therefore, this study aims to develop a self-report scale for assessing COVID-19-related stigma in Turkish population.

Materials and Methods

Sample

The sample of the study consisted of 324 participants who were formerly diagnosed with COVID-19 at Adıyaman Education and Research Hospital. The diagnosis of COVID-19 was confirmed by PCR for all participants. The inclusion criteria for participation were i.) being over the age of 18, ii.) having no severe mental or neurological illness (Those diagnosed with schizophrenia, mental retardation, alcohol and substance use disorder, and dementia were excluded), iii.) being at least a primary school graduate, and iv.) having completed the quarantine period (minimum 14 days) after recovery. The research protocol was registered in the clinical trials registry of the Turkey Ministry of Health and with the non-invasive clinical research ethics committee of Adıyaman University (2020/8-15). All procedures performed in this study were conducted with the informed consent of the participants.

Process

The following steps were considered in order to develop the COVID-19 Stigmatization Scale:

i.) Information on stigma associated with COVID-19 and other contagious diseases was obtained through a literature review.

ii.) Semi-structured interviews were conducted with the individuals selected from the sample and healthcare workers, and their common complaints related to stigma were determined.

iii.) The opinions about the content of the scale were obtained from the authors in the field.

iv.) Possible items that could be included in the raw draft of the scale were determined, and a raw scale with 69 items was created by three researchers. While the authors determined 69 items related to stigma, both the reports and scientific articles related to COVID-19 and the findings published in previous pandemics such as SARS and MERS were taken into consideration.

Materials

A sociodemographic form that included age, gender, marital status, education level, number of family members, working status, medical problems, psychiatric disease or psychotropic drug use, tools of transport used, and economic status was completed by all participants.

The COVID-19 Stigmatization Scale (raw form) was also completed by each participant. The COVID-19 Stigmatization Scale was designed by the authors as a five-point Likert type scale. The response of each item is rated as 1 (never), 2 (rarely), 3 (sometimes), 4 (often), and 5 (always) points.

Statistical analysis

The SPSS 24.0 package program (SPSS Inc., Chicago, IL,USA) was used for the statistical analyzes of the datas. Normality tests and exploratory factor analysis (EFA) were applied to determine the suitability of the collected data for statistical analysis. The factor structure of the scale was determined by examining the factor loads for the factors in which the items were included. An internal consistency analysis was conducted to test the reliability of the measurements obtained from the sample.

Results

Females accounted for 50.3% (n = 163) of the participants, and the mean age of the participants was 35.35 $\pm$ 11.23 (range = 18–80). Healthcare workers (doctors and nurses) accounted for 43.2% (n = 140) of the participants. University graduates accounted for 66.1% (n = 214) of the participants.

Exploratory Factor Analysis and Construct Validity

EFA was performed to determine the distribution of the 69 scale items to sub-dimensions and the factor structure of the scale. As the first step, the Keiser-Meyer Olkin (KMO) sample competence value was 0.91, and the Bartlett's test of sphericity value was χ^2 = 10578.69 (df = 990 and p = 0.001) (Table-1).

Table 1. Exploratory Factor Analyzes of COVID-19 Stigmatization Scale

Kaiser-Meyer-Olkin Measure (KMO)	0,906
Bartlett's Test of Sphericity (Approx. Chi-Square)	10578,691
Degree of freedom	990,00
Significance (P)	0,001
Reliability (Alpha) (α)	0,952
Explained Total Variance	61,963

The correlation matrix of the variables was examined, and it was found that the correlations between variables were over .30 in many cases. To determine the construct validity of the scale, the vertical rotation (varimax) technique was used, and the data was found to meet the necessary criteria, according to the principal components method. To determine the number of factors, the Kaiser criterion ($\geq$ 1 of eigenvalue), line graph, common factor variance, and explained variance ratio were taken into account. Our findings showed that, in the first analysis of the scale, there were eight factors with an eigenvalue above 1. After we examined the items in the factors and related measurements, the scale was expected to comprise six factors (Figure-1).
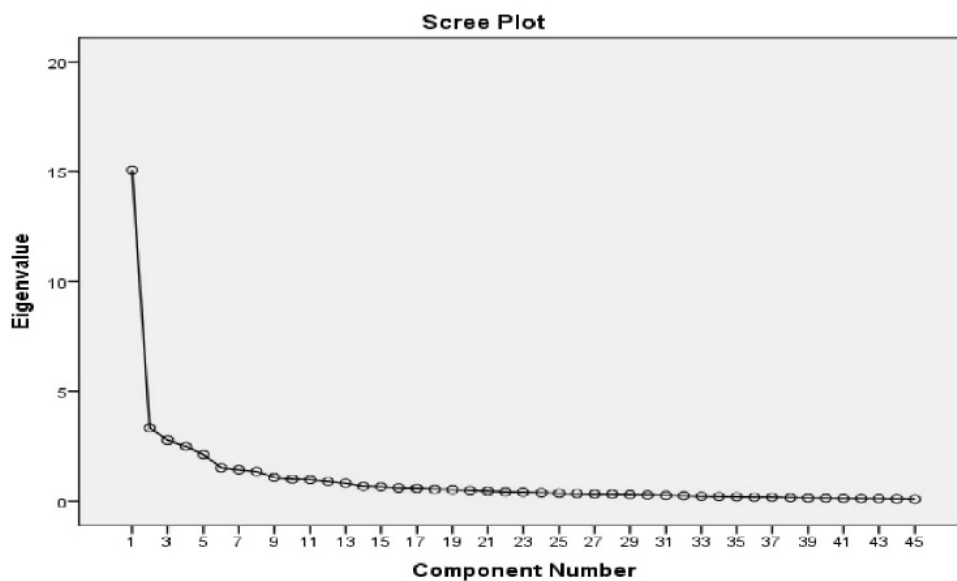

Figure 1. line Chart for Exploratory Factor Analyses (EFA) of COVID-19 Stigmatization Scale

For the factor analysis, the factor eigenvalues, explained variance rates, factor loads, and scree plot were examined, and the analysis was repeated by removing the items with insufficient values. Item reliability measures for the scale items ranged between r = 0.390–0.850, common variance measures between r = 0.354–0.813, and factor-1 load values between 0.430–0.680 (Table-2). Twenty-five items of the raw scale were removed because their factor loadings were below 0.40. According to the breaks in the line graph, the scale showed six more breaks after a vertical break. Accordingly, the items in the scale were collected in six factors: "health anxiety," "external stigmatization," "negative self-image," "contagion anxiety," "disclosure anxiety," and "internal stigmatization." The vertical rotation (varimax) technique was used in factorization. The determined factors are named according to the content of the relevant items. The eigenvalues, variances, and alpha values of each

factor are sufficient, as seen in Table-2. The total variance explained by the scale was 61.96%.

The internal consistency coefficient (α) of the scale was 0.95. The two-half reliability values of the scale were 0.93 for the first half and 0.91 for the second half. The Spearman–Brown coefficient was 0.863. The internal consistency coefficients (α) of the subscales were .92 for "anticipatory anxiety," .90 for "external stigmatization," .89 for "negative self-image," .84 for "contagion anxiety," .90 for "disclosure anxiety," and .87 for "internal stigmatization."

Table 2. Exploratory Factor Analyzes for COVID-19 Stigmatization Scale

	Items	Item Reliability	Common Variance	Factor-1 Value	
Anticipatory Anxiety	1. COVID-19 infected me because I did not say no for kindness to every wish of the people.	0,51	0,53	0,60	Eigenvalue: 6,76 Variance: 15,37
	2. Since I had COVID-19, my confidence in myself has decreased considerably in my future life.	0,62	0,52	0,60	
	3. I will never be physically the same as before.	0,67	0,49	0,49	
	4. If I get COVID-19 once again, I may not be able to regain my health.	0,49	0,35	0,43	
	5. Since I had COVID-19, I will be alone from now on.	0,53	0,41	0,48	
	6. Since I had COVID-19, I will never be able to socialize with the people I care about.	0,58	0,55	0,60	
	7. Since I had COVID-19, my self-confidence will gradually decrease in my future life.	0,72	0,71	0,66	
	8. Even if I get rid of COVID-19, I think it will always affect me negatively from now on.	0,67	0,56	0,59	
	9. Since I had COVID-19, my future plans will behindered.	0,69	0,59	0,61	
	10. Since I had COVID-19, I am afraid that I will not be able to do some of my activities.	0,75	0,64	0,58	
	11. Out of fear of COVID-19, I will no longer be able as sociable (enterprising) as I was in the past.	0,71	0,64	0,64	
	12. Since I had COVID-19, I will not have relationships with my friends as before.	0,68	0,60	0,59	
	13. Since I had COVID-19, I will not be able to engage in any activity with the people around me.	0,70	0,60	0,52	
External Stigmatization	1. When I got COVID-19, what people said about me made me feel awful.	0,75	0,67	0,60	Eigenvalue: 5,79 Variance: 13,17
	2. What people said about me when they found out that I was COVID-19 was very upsetting for me.	0,74	0,65	0,60	
	3. The fact that I was COVID-19 made my friends see me as kind of culpable.	0,70	0,65	0,68	
	4. My colleagues blamed me for being COVID-19.	0,66	0,58	0,53	
	5. My social circle thought I was an irresponsible person because I was COVID-19.	0,62	0,49	0,54	
	6. Some people pretend it's my fault that I'm COVID-19.	0,67	0,55	0,58	
	7. Some people around me attribute that I am COVID-19 due to my own faults.	0,80	0,74	0,61	
	8. People who have heard that I have COVID-19 thinks that I am someone to be stayed away from.	0,59	0,58	0,53	
	9. Even if I have survived COVID-19, people are saying that I should stay away from people.	0,51	0,55	0,59	
	10. People who hear that I had COVID-19 think as if I will infect them immediately.	0,51	0,58	0,60	
	11. I felt guilt when I got COVID-19.	0,39	0,35	0,48	
Negative Self-Image	1. Many people think someone with COVID-19 is disgusting.	0,72	0,65	0,47	Eigenvalue: 3,52 Variance:
	2. Many people treat someone who has had COVID-19 as if they were cursed.	0,77	0,73	0,47	
	3. Many people think that someone with COVID-19 is dirty.	0,84	0,80	0,49	
	4. I feel that many people are looking at someone with COVID-19 as if they were contaminated.	0,85	0,81	0,49	
Contagion Anxiety	1. I am constantly worried about infecting other people with COVID-19.	0,78	0,71	0,46	Eigenvalue: 2,96 Variance: 6,72
	2. Even though the doctors say I am no longer at risk of transmitting COVID-19, I cannot get the thought of contagion out of mind.	0,75	0,75	0,61	
	3. Even if I am fully recovered, I do not approach anyone because I think I might infect someone with COVID-19.	0,79	0,81	0,61	
	4. Even though I am fully recovered, I cannot do what I should have done because I think I might infect someone with COVID-19.	0,62	0,63	0,59	
Disclosure Anxiety	1. When I got COVID-19, I found it very risky to tell someone.	0,68	0,63	0,62	Eigenvalue: 4,81 Variance: 10,93
	2. When I got COVID-19, I could only say this to people I trust around me.	0,76	0,68	0,57	
	3. When I got COVID-19, I was careful to whom I could tell this.	0,77	0,69	051	
	4. When I got COVID-19, I avoided to tell about this situation with some people.	0,85	0,78	0,53	
	5. I was worried that people who found out I had COVID-19 would tell others about it.	0,74	0,71	0,57	
	6. I told people to keep it a secret that I was COVID-19.	0,70	0,60	0,46	
	7. I was afraid to tell people that I am COVID-19.	0,80	0,72	0,54	
Internal Stigmatization	1. Some people around me think I deserve to be COVID-19.	0,42	0,37	0,46	Eigenvalue: 3,42 Variance: 7,77
	2. I am ashamed of myself that I got COVID-19.	0,82	0,78	0,51	
	3. I have the feeling that I am a harmful person because I got COVID-19.	0,70	0,68	0,57	
	4. Being COVID-19 makes me feel like a bad person.	0,77	0,78	0,60	
	5. When I got COVID-19, I felt like I was not as nice as other people.	0,40	0,38	0,52	

Discussion

The aim of the present study was to develop a measure-ment tool for assessing COVID-19-related stigma. The findings of the study showed that the COVID-19 Stigmati-zation Scale is a self-report scale consisting of six factors and forty-four items with sufficient statistical reliability and validity.

The rapid spread of misinformations about COVID-19 has caused intense fear among patients with COVID-19. An-ger and hatred has arisen in a part of the society against COVID-19 patients. At the beginning of the COVID-19 pan-demic, xenophobia caused serious social problems for Far Eastern individuals, especially in Europe (12,14). On the other hand, it has been reported that health workers are exposed to discriminatory attitudes in many countries (21). This study revealed the psychometric properties of a self-report scale that can be used to assess the stigma associated with COVID-19.

To our knowledge, there is no scale developed to assess the stigma associated with COVID-19 in our country. In this study, whether the research sample was sufficient or not was interpreted by calculating the KMO value. KMO values above 0.9 are considered "superb" for sampling adequacy (22). Kaiser 1974). The KMO value of the COVID-19 Stigmatization Scale was 0.91 in the initial va-lidity analyses, showing that the sample size was suffi-cient. The results of EFA indicate that item loads of the COVID-19 Stigmatization Scale were between 0.430–0.680. Matsunaga has noted that item loads above 0.40 are within acceptable limits. It can thus be said that the factor loads related to the items are acceptable (23).

Internal consistency was examined for the reliability of the final form of the COVID-19 Stigmatization Scale. The Cronbach-α value of the scale was 0.95. Cronbach-α val-ues above 0.9 are considered to show "excellent" internal consistency (24). Therefore, the Cronbach-α value of the COVID-19 Stigmatization Scale is compatible with a relia-ble internal consistency.

The current study had some limitations. The results re-garding the COVID-19 Stigmatization Scale are limited to the data of a city with a population of approximately three hundred thousand. It can be considered as a limita-tion of the present study. The validity of the scale should therefore be tested in culturally different samples. As an-other limitation of the study, the concurrent validity of the COVID-19 Stigmatization Scale could not be evaluated due to the lack of a similar scale with norm study in Turk-ish population. Additionally, information on the follow-up process of the participants in the intensive care unit (ICU) and non-intensive care unit could not be obtained. There-fore, stigmatization characteristics of those followed in the ICU and non-ICU could not be compared.

Conclusion

To conclude, our results indicate that the COVID-19 Stig-matization Scale has psychometric properties. The COVID-19 Stigmatization Scale with a six-factor structure consisting of 44 items is a self-report measurement tool that clinicians can use to evaluate social stigma associated with COVID-19.

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