Received: 23.07.2026 | Accepted: 23.08.2026 | Issue: 11, Volume: 3 | pp: 303-313 | Doi: https://doi.org/10.5281/zenodo.23160335

DEVELOPMENT OF THE HEALTH BELIEF SCALE FOR MASK WEARING DURING COVID-19

COVID-19 SÜRECİNDE MASKE KULLANIMINA YÖNELİK SAĞLIK İNANÇ ÖLÇEĞİNİN GELİŞTİRİLMESİ

Cemile SAVCI[1], Ayşe Çil AKINCI[2], Neriman ZENGİN[3], Emel Emine KAYIKÇI[1]
[1]Istanbul Medeniyet University, Faculty of Health Sciences, Department of Nursing, İstanbul, Türkiye
[2]Tampa General Hospital, Florida, USA
[3]Halic University, Faculty of Health Sciences, Department of Nursing, İstanbul, Türkiye titute of Graduate Studies Istanbul University-Cerrahpaşa, Istanbul, Türkiye

ABSTRACT

Objective: During the pandemic, mask wearing was a worldwide public health priority. However, people's health beliefs may affect their mask-wearing behaviors. This study aims to develop the 'Health Belief Scale for Mask Wearing during COVID-19' (HBSMW-COVID-19)' and to examine the scale's validity and reliability.

Methods: This cross-sectional and methodological study included 645 volunteer participants aged 18 or older, residing in rural and urban areas of Türkiye between November 2020 and January 2021. Data were analyzed using SPSS 22.0 and LISREL 8.50. Content validity, construct validity, criterion validity, split-half reliability, Cronbach's α coefficient, and item-total correlation analyses were performed.

Results: The draft version of the scale demonstrated a Content Validity Index of 0.98. Results of the exploratory factor analysis identified a six-factor solution explaining 70.87% of the overall variance. The results of confirmatory factor analysis indicated that the model demonstrated an acceptable level of fit ($\chi^2/df = 2.77$, GFI = 0.92, AGFI = 0.90, CFI = 0.95, NFI = 0.93, RMSEA = 0.05, and SRMR = 0.045). The Spearman–Brown and Cronbach's α coefficients were 0.827 and 0.856, respectively.

Conclusion: It was determined that the HBSMW-COVID-19 can be used to assess individuals' health beliefs about mask wearing, and that the scale is a valid and reliable measurement instrument. The scale may guide healthcare professionals and policymakers in developing interventions to promote preventive behaviors during similar pandemics.

Keywords: COVID-19, Health Belief Model, Mask-Wearing, Scale Development.

ÖZET

Amaç: Pandemi sürecinde, maske kullanımı dünya genelinde öncelikli bir halk sağlığı uygulaması olmuştur. Ancak bireylerin sağlık inançları, maske kullanma davranışlarını etkileyebilir. Bu çalışmanın amacı, 'COVID-19 sürecinde Maske Kullanımına Yönelik Sağlık İnanç Ölçeği'ni (MKSİÖ-COVID-19)' geliştirmek ve ölçeğin geçerlik ve güvenirliğini incelemektir.

Gereç ve Yöntem: Bu kesitsel ve metodolojik çalışma, Kasım 2020 ve Ocak 2021 tarihleri arasında, Türkiye'nin kırsal ve kentsel bölgelerinde ikamet eden 18 yaş ve üzerinde olan 645 gönüllü katılımcıyla gerçekleştirildi. Veriler, SPSS 22.0 ve LISREL 8.50 kullanılarak analiz edildi. Kapsam geçerliği, yapı geçerliği, ölçüt geçerliği, yarıya bölünmüş güvenirlik, Cronbach's α katsayısı ve madde-toplam korelasyon analizleri gerçekleştirildi.

Bulgular: Ölçeğin taslak versiyonu için Kapsam Geçerlik İndeksi 0,98 olarak belirlendi. Açımlayıcı faktör analizi sonuçları, toplam varyansın %70,87'sini açıklayan altı faktörlü bir yapıyı ortaya koydu. Doğrulayıcı faktör analizi sonucunda modelin kabul edilebilir düzeyde uyum gösterdiği belirlendi ($\chi^2/df = 2,77$, GFI = 0,92, AGFI = 0,90, CFI = 0,95, NFI = 0,93, RMSEA = 0,05 ve SRMR = 0,045). Spearman–Brown ve Cronbach's α güvenirlik katsayıları sırasıyla 0,827 ve 0,856 idi.

Sonuç: MKSİÖ-COVID-19'un, bireylerin maske kullanımına ilişkin sağlık inançlarını değerlendirmede kullanılabileceği, ölçeğin geçerli ve güvenilir bir ölçme aracı olduğu belirlendi. Ölçek, benzer pandemilerde koruyucu davranışları desteklemeye yönelik müdahalelerin geliştirilmesinde sağlık profesyonelleri ve politika yapıcılara rehberlik edebilir.

Anahtar Kelimeler: COVID-19, Sağlık İnanç Modeli, Maske Kullanma, Ölçek Geliştirme.

Corresponding Author: Cemile SAVCI. Istanbul Medeniyet University, Faculty of Health Sciences, Department of Nursing, İstanbul, Türkiye. ***E-mail:*** cemile.savci@medeniyet.edu.tr

Cite this article: SAVCI, C., AKINCI, A.C., ZENGİN, N., KAYIKCI, N.N. (2026). Development Of The Health Belıef Scale For Mask Wearıng Durıng COVID-19. Gevher Nesibe Journal of Medical & Health Science. 11(3), 303-313. DOI: https://doi.org/10.5281/zenodo.23160335

INTRODUCTION

Coronavirus disease 2019 (COVID-19) first emerged in Wuhan, China, and was swiftly declared a global pandemic by the World Health Organization (WHO, 2020a). Preventative measures such as 'wearing masks, practising good hand hygiene, maintaining physical distance and getting vaccinated' played a central role in controlling the spread of the disease (Chu et al., 2020; WHO, 2020b). Of these measures, mask-wearing was critical in reducing viral transmission and was therefore mandated in public and crowded areas in many countries (CDC, 2020; Wong et al., 2020). Despite sustained recommendations from health authorities, compliance with mask use differed between countries. According to the studies, mask-wearing rates in public areas were reported as 48% in India (Nazli et al., 2020), 55.7% in Ethiopia (Tadesse et al., 2020), 92.7% in Turkey (Savci & Akinci, 2022), 96.4% in China (Tong et al., 2020), and 84.6% in the United States (Rader et al., 2021).

Studies suggest that mask-wearing and other preventive behaviors are influenced by a variety of individual and psychosocial factors. These include sociodemographic factors such as gender, education, and income status, as well as fatalistic attitudes, perceived susceptibility and severity, perceived benefits and barriers, cues to action, and self-efficacy (Barakat & Kasemy, 2020; Shahnazi et al., 2020; Tadesse et al., 2020; Zagury-Orly, 2020). Identifying these factors is essential for promoting mask use at a population level. Various theoretical frameworks have accordingly been developed to explain health-related beliefs and behaviors, with the Health Belief Model (HBM) being one of the most widely used (Shahnazi et al., 2020).

The HBM has been widely used in previous studies to predict COVID-19 preventive behaviors (Guidry et al., 2021; Limbu et al., 2022; Zewdie et al., 2022). The HBM consists of six components: 'perceived susceptibility (the belief that one is prone to disease), perceived severity (the belief that the disease will have at least moderately negative effects on one's life), perceived benefit (the belief that certain behaviors are effective in reducing vulnerability), perceived barrier (the perceived obstacles that hinder protective behaviors), cue-to-action (the intention and motivation to adopt health-promoting behaviors), and self-efficacy (the individual's confidence in carrying out a health behavior)' (Costa, 2020; Jose et al., 2021; Tong et al., 2020). During the pandemic, health beliefs and attitudes toward mask-wearing among the Turkish population were not sufficiently explored, and psychometrically evaluated instruments specifically assessing mask-wearing beliefs across all dimensions of the Health Belief Model were limited. This study was conducted based on the HBM structure to develop a culturally relevant, valid and reliable scale to explain mask-wearing behaviors among Turkish population during the pandemic.

Answers were sought to the following research questions:

- Is the Health Belief Scale for Mask Wearing during COVID-19 a valid instrument for assessing health beliefs about mask-wearing?
- Is the Health Belief Scale for Mask Wearing during COVID-19 a reliable instrument for assessing health beliefs about mask-wearing?

MATERIALS AND METHODS

Study Design and Participants

This is a cross-sectional methodological study. The study included volunteers aged 18 or over who were able to read and understand Turkish and who lived in rural or urban areas of Turkey. Participants were recruited between November 2020 and January 2021 through purposive snowball sampling using email and social media platforms. This was a period during which the second wave of the pandemic was underway and associated restrictions were in place. Data were collected via an online survey. To reduce the likelihood of automated or invalid responses, the survey link was distributed through academic and professional networks. Although CAPTCHA (Completely Automated Public Turing Test to Tell Computers and Humans Apart) was not implemented, the dataset was manually reviewed to detect and exclude duplicate entries based on IP (Internet Protocol) address and timestamp consistency. Minimal missing data were addressed using listwise deletion to maintain data integrity.

According to established recommendations, a sample size of at least 5–10 participants per item is generally sufficient for factor analysis (Williams et al., 2010), and 300–500 cases are considered robust for structural validity. Considering the 25-item structure of the scale, a minimum of 250 participants was deemed adequate. In this study, a total of 645 individuals completed the survey. Additionally, each of the six factors in the scale was represented by at least three items with strong factor loadings. The quality of

factor solutions is influenced not only by sample size but also by communalities, factor loadings, and overdetermination–referring to the extent to which each construct is measured by multiple items (Gaskin & Happell, 2014). These conditions were met, supporting the appropriateness of the sample size and the reliability of the factor structure.

Generation of Scale Items

The scale development process began with the creation of potential items. Based on the conceptual foundation of the HBM and following a comprehensive review of the relevant literature (Costa, 2020; Janz & Becker, 1984; Tong et al., 2020), an initial set of 25 items was formulated. Each item was crafted to represent one of the six constructs of the HBM. A five-point Likert-type response format was used for the evaluation of each item.

Data Collection Tools

Participant Information Form: This form was used to record the sociodemographic characteristics of the participants. It contained a total of seven questions covering age, marital status, level of education, income, occupation and history of chronic disease.

The Fear of Covid-19 Scale (FCV-19S): The scale was developed by Ahorsu et al. (2020). It was used to assess participants' fear related to the COVID-19 pandemic. The instrument consists of seven items rated on a five-point Likert scale, yielding total scores between 7 and 35, with higher scores indicating greater fear of COVID-19. The Turkish adaptation and psychometric evaluation of the scale were carried out by Ladikli et al. (2020). Previous studies reported Cronbach's α coefficients of 0.82 for the original version and 0.80 for the Turkish version (Ahorsu et al., 2020; Ladikli et al., 2020). In this study, the FCV-19S also demonstrated strong internal consistency ($\alpha = 0.915$).

Validity Analyses

The content validity of the scale was evaluated using the Davis method (Almanasreh et al., 2019). Twenty-five items were reviewed by ten nursing experts specialising in internal medicine nursing, fundamentals of nursing, and public health nursing. The experts rated the relevance of each item to mask-wearing behaviors based on the HBM, using a four-point scale (1 = acceptable; 4 = unacceptable). The item-level content validity index (CVI) was calculated as the proportion of ratings of 1 or 2, with values ≥ 0.80 considered acceptable (Almanasreh et al., 2019; Polit & Beck, 2006).

Face validity was first evaluated by administering the expert-reviewed draft scale to a pilot group of 10–30 individuals representative of the target population, and unclear items were revised accordingly (Younas & Porr, 2024). Construct validity was then evaluated through both exploratory and confirmatory factor analyses (EFA and CFA). Consistent with scale development guidelines, EFA was conducted first to assess alignment with the theoretical framework. It was hypothesized that the HBSMW-COVID-19 would exhibit a six-factor structure consistent with the Health Belief Model, with each item loading on a single factor and factor loadings ≥ 0.30 (Williams et al., 2010; Yaşlıoğlu, 2017).

The suitability of the dataset for factor analysis was assessed using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity. Following the recommendation of Williams et al. (2010), a KMO value above 0.50 and a statistically significant Bartlett's test indicate that factor analysis is appropriate. The factor structure identified through EFA was then evaluated using CFA. Construct validity was evaluated by examining overall model fit using several goodness-of-fit indices, including 'the chi-square to degrees of freedom ratio (χ^2/df), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), normed fit index (NFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR).' Thresholds for a perfect fit are '$\chi^2/df = 0–3$, GFI > 0.95, AGFI > 0.90, CFI > 0.97, NFI > 0.95, RMSEA < 0.05, SRMR < 0.05', while slightly lower values represent an acceptable fit (Schermelleh-Engel et al., 2003). In the present study, the model was anticipated to achieve an acceptable level of fit.

Criterion validity was evaluated by examining correlations with a theoretically related, validated instrument. The FCV-19S (Ahorsu et al., 2020; Ladikli et al., 2020) was used as the criterion measure due to its conceptual relevance to key HBM dimensions, particularly perceived susceptibility and perceived severity. Correlation coefficients between related constructs were interpreted as moderate at

0.50–0.70 and strong at > 0.70 (Ahorsu et al., 2020). Accordingly, moderate and statistically significant correlations were expected between the FCV-19S and both the total score and the perceived susceptibility and severity subscales of the HBSMW-COVID-19.

Reliability Analyses

The reliability of the draft scale was evaluated through split-half and internal consistency methods (Büyüköztürk, 2018; Souza et al., 2017; Şencan, 2005; Warrens, 2015). For the split-half analysis, the items were divided into two groups according to odd and even numbers, and the relationship between the total scores of the two halves was examined. A strong correlation was anticipated, assuming all items reflected the same underlying construct. Reliability was quantified using the Spearman–Brown coefficient, with values above 0.60 considered satisfactory (Özdamar, 2004).

Cronbach's α is a widely used statistical method for assessing the degree of homogeneity among items designed to measure the same construct. According to Özdamar (2004), values above 0.80 indicate high reliability, while values between 0.61 and 0.80 reflect moderate reliability. Therefore, a Cronbach's α greater than 0.60 was expected in this study. Corrected item–total correlations were also examined to evaluate the contribution of individual items to measuring the intended construct and to the scale's overall conceptual framework (Souza et al., 2017; Şencan, 2005). According to the literature, the coefficients are expected to be non-negative and at least 0.20 (Streiner et al., 2015; Williams, 2010). In this study, therefore, values of 0.20 or higher were considered acceptable.

Ethical Considerations

The study was carried out in line with the ethical standards of the Declaration of Helsinki. Ethics committee approval was received for this study from the XXX before data collection began (approval date/number: 27.10.2020/38). Informed consent was obtained from all participants.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics for Windows, version 22.0 (IBM Corp., Armonk, NY, USA) and LISREL version 8.50 (Scientific Software International, Inc., Lincolnwood, IL, USA). Descriptive statistics included ‘numbers, percentages, means, standard deviations and range values’. Content validity was assessed using the Davis method, with the CVI derived from expert evaluations. Construct validity was evaluated using EFA with principal component extraction and varimax rotation, after confirming the adequacy of the data via the KMO measure and Bartlett’s test. The resulting factor structure was then verified using CFA with LISREL 8.50. Criterion-related validity was examined through Pearson's correlations between the HBSMW-COVID-19 scale and the FCV-19S scale. Reliability was determined using internal consistency and the split-half method.

RESULTS

Characteristics of the Participants

The mean age of the participants was 30.35 ± 10.98 years. Of the participants, 73% were female, 45% had graduated from high school, 54.4% were single, and 53.2% were employed. In addition, 74.1% reported that their income was equal to their expenditure, and 84.7% had no chronic disease (Table 1).

Table 1. Characteristics of the Participants (N=645)

Variables	**Min.-Max.**	**Mean±SD**
Age (years)	18-78	30.35±10.98
Variables	**n**	**%**
Gender		
Male	174	27.0
Female	471	73.0
Marital status		
Married	294	45.6
Single (never married, widowed, or divorced)	351	54.4
Level of education		
Primary school and less	26	4.0
Secondary school	31	4.8
High school	290	45.0
Associate's degree	46	7.1
Bachelor's degree	165	25.6
Postgraduate degree	87	13.5
Income		
Income more than expenditure	111	17.2
Income equal to expenditure	478	74.1
Income less than expenditure	56	8.7
Occupation		
Officer	159	24.7
Worker	136	21.1
Freelancer	35	5.4
Farmer	3	0.5
Retired	10	1.6
Not working	267	41.4
Housewife	35	5.4
History of chronic disease		
Yes	99	15.3
No	546	84.7

Validity

The CVI yielding a value of 0.98 based on the assessments of 10 experts. The 25-item draft scale was pilot-tested with 30 individuals to assess item readability, clarity, terminology, sentence length, and clarity of meaning. The scale was then reviewed and revised according to the feedback provided by this group. Each item in the final scale was assessed using a five-point Likert-type scaling method. The finalized 25-item scale was incorporated into the data collection form.

The dataset was deemed suitable for factor analysis, as indicated by a KMO value of 0.856 and a statistically significant Bartlett's test of sphericity ($\chi^2 = 351$, $p < 0.01$). EFA yielded a six-factor solution with eigenvalues exceeding 1, accounting for 70.87% of the overall variance. Item loadings ranged from 0.67 to 0.91. The extracted dimensions reflected 'self-efficacy (6 items), perceived severity (7 items), perceived barriers (3 items), cue-to-action (3 items), perceived susceptibility (3 items), and perceived benefits (3 items)', as detailed in Table 2.

Table 2. Exploratory Factor Analysis of the Health Belief Scale for Mask Wearing during COVID-19

Items	F1	F2	F3	F4	F5	F6
1. I am very likely to get COVID-19 in the near future.	0.724					
2. I am very likely to get COVID-19 due to my health condition.	0.777					
3. I am more likely to get COVID-19 than other people.	0.710					
4. The thought of getting COVID-19 scares me.		0.753				
5. If I get COVID-19, I will be afraid of being hospitalized in the intensive care unit and being intubated.		0.764				
6. If I get COVID-19, my recovery period may extend.		0.738				
7. If I get COVID-19, I may not be as healthy as I used to be.		0.689				
8. If I get COVID-19, I may lose my life.		0.771				
9. If I get COVID-19, I may not be able to meet my own needs.		0.744				
10. Being quarantined due to COVID-19 makes me anxious.		0.673				
11. I feel safe when I use a mask.			0.723			
12. Using a mask makes it easier for me to maintain my daily life as it used to be.			0.758			
13. Using a mask reduces my aesthetic needs such as make-up and shaving.			0.695			
14. I have difficulty in breathing with a mask.				0.866		
15. I feel tired when I use a mask for a long time.				0.894		
16. I feel uncomfortable due to the mask.				0.874		
17. It is important for me to protect and maintain my health.					0.891	
18. It is important for me to be able to maintain my social life.					0.842	
19. It is important for me to protect the health of my family and beloved ones.					0.886	
20. I can choose the right mask.						0.794
21. I can wear my mask properly.						0.913
22. I can remove my mask properly.						0.893
23. I can throw the mask I use into the appropriate waste bin properly.						0.882
24. I change my mask when it becomes dirty and wet.						0.894
25. I feel confident in maintaining my mask-wearing behavior.						0.834
Eigenvalue	6.140	4.687	2.633	1.984	1.267	1.008
Variance Explained	24.560	18.747	10.531	7.936	5.069	4.032
Total Variance	70.874					

F1: Perceived Susceptibility, F2: Perceived Severity, F3: Perceived Benefit, F4: Perceived Barrier, F5: Cue-to-action, F6: Self-Efficacy

The results of the CFA supported the six-factor structure, with standardised factor loadings ranging from 0.45 to 0.91 (Figure 1). The model demonstrated an acceptable fit to the data ($\chi^2/df = 2.77$, GFI = 0.92, AGFI = 0.90, CFI = 0.95, NFI = 0.93, RMSEA = 0.05, and SRMR = 0.045) (Table 3).

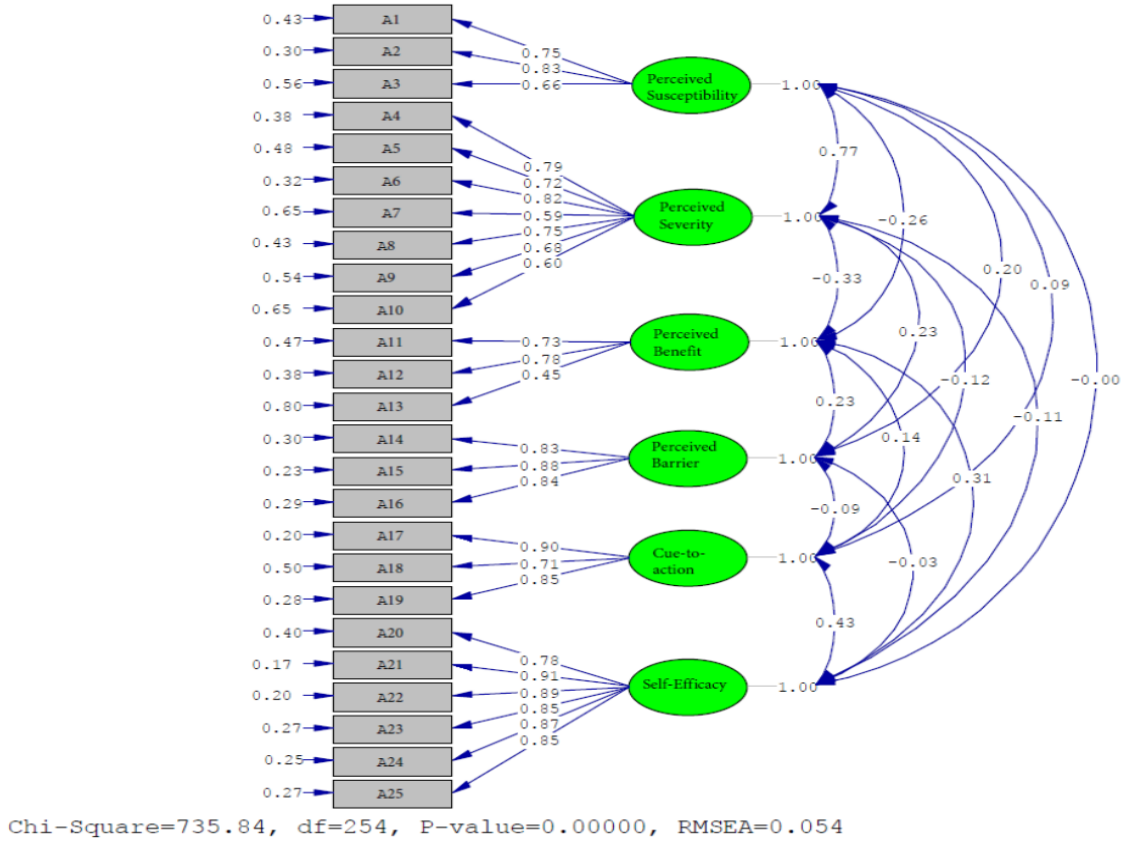

Figure 1. Factor Structure of the Health Belief Scale for Mask Wearing during COVID-19

Table 3. Goodness-of-fit indices of the Health Belief Scale for Mask Wearing during COVID-19

χ^2/df	2.77
GFI	0.92
AGFI	0.90
CFI	0.95
NFI	0.93
RMSEA	0.05
SRMR	0.045

df, degree of freedom; GFI, Goodness-of-Fit-Index; AGFI, Adjusted Goodness-of-Fit-Index; CFI, Comparative Fit Index; NFI, Normed Fit Index; RMSEA, Root Mean Square Error of Approximation, SRMR, Standardized Root Mean Square Residual.

Regarding criterion validity, the FCV-19S mean score showed a statistically significant moderate positive correlation with the total HBSMW-COVID-19 score (r = 0.598), as well as with the perceived susceptibility subscale (r = 0.506) and the perceived severity subscale (r = 0.740). Correlations with the other subscales are presented in Table 4.

Table 4. Correlation between the HBSMW-COVID-19 and FCV-19S

		Perceived Susceptibility	Perceived Severity	Perceived Benefit	Perceived Barrier	Cue-to-action	Self-Efficacy	HBSMW-COVID-19
HBSMW-COVID-19	r	0.618**	0.793**	0.589**	0.127**	0.342**	0.510**	1
FCV-19S	r	0.506**	0.740**	0.270**	-0.160**	0.052	0.079*	0.598**

Pearson correlation analysis, *p<0.05, **p<0.01, FCV-19S: Fear of Covid-19 Scale, HBSMW-COVID-19: Health Belief Scale for Mask Wearing during COVID-19

Reliability

In this study, the Spearman–Brown coefficient for split-half reliability was found to be 0.827. Within the scope of internal consistency, the result was that the corrected item-total correlation coefficient of the scale ranged from 0.218 to 0.628, and Cronbach's α of the whole scale was 0.856. Cronbach's α coefficients were 0.777 for Perceived Susceptibility, 0.881 for Perceived Severity, 0.639 for Perceived Benefit, 0.880 for Perceived Barrier, 0.871 for Cue-to-action, and 0.939 for Self-Efficacy. The item–total correlations for the subscales are presented in Table 5.

Table 5. Reliability of the HBSMW-COVID-19

Items	Corrected Item-Total Correlation	Perceived Susceptibility	Perceived Severity	Perceived Benefit	Perceived Barrier	Cue-to-action	Self-Efficacy
1	0.524	0.616					
2	0.505	0.703					
3	0.438	0.534					
4	0.628		0.721				
5	0.594		0.683				
6	0.625		0.725				
7	0.520		0.589				
8	0.628		0.723				
9	0.593		0.658				
10	0.513		0.586				
11	0.311			0.506			
12	0.243			0.517			
13	0.278			0.358			
14	0.218				0.755		
15	0.321				0.793		
16	0.251				0.757		
17	0.290					0.794	
18	0.237					0.683	
19	0.251					0.796	
20	0.301						0.730
21	0.382						0.885
22	0.380						0.857
23	0.342						0.825
24	0.369						0.846
25	0.400						0.782
Cronbach's α	0.856	0.777	0.881	0.639	0.880	0.871	0.939
Spearman–Brown	0 .827						

HBSMW-COVID-19: Health Belief Scale for Mask Wearing during COVID-19

DISCUSSION

Validity

Content validity was examined through expert evaluation to determine whether the items appropriately represented the construct being measured. Agreement among experts indicated that the scale adequately captured the intended concept (Almanasreh et al., 2019; Souza et al., 2017). It was found that the CVI of the draft scale was 0.98. The conclusion was that the items on the HBSMW-COVID-19were related to mask-wearing behavior based on the HBM during the pandemic, and they represented the desired subject to be measured.

The HBSMW-COVID-19 was considered valid because it had a six-factor structure in line with the HBM as a result of the EFA (Gaskin & Happell, 2014; Şencan, 2005; Younas & Porr, 2024), with each item in the expected subscale, and the factor loadings of the items were greater than 0.30. In addition, '$\chi 2$/df, GFI, AGFI, CFI, NFI, RMSEA, and SRMR goodness-of-fit index values' were acceptable (Schermelleh-Engel, 2003) when the structure resulting from the EFA was examined using CFA.

Within the perceived susceptibility subscale (items 1–3) assesses individuals' beliefs regarding their likelihood of contracting COVID-19 in the near future compared to others, particularly in relation to existing health problems. The perceived severity subscale (items 4–10) focuses on fears and concerns such as contracting COVID-19, being hospitalized, prolonged hospital stays, not being able to regain one's previous state of health, the possibility of death, inability to meet basic needs, and experiencing anxiety due to quarantine. The perceived benefit subscale (items 11–13) that assesses beliefs about the protective role of mask use, including feeling safer, being able to continue daily life routines, and the perception that mask-wearing may reduce certain aesthetic needs (e.g., applying makeup or shaving). The perceived barrier subscale (items 14–16) assesses beliefs that mask-wearing may cause breathing difficulties, fatigue, and discomfort. The cue-to-action subscale (items 17–19) addressing beliefs about the importance of protecting and maintaining one's health, sustaining social life, and safeguarding the health of family members and close contacts. Finally, the self-efficacy subscale (items 20–25) assessing individuals' confidence in their ability to select the correct mask, wear it properly, dispose of it appropriately, replace it when soiled or wet. Higher total HBSMW-COVID-19 scores indicate stronger health beliefs regarding mask-wearing.

Consistent with expectations, the FCV-19S total score showed stronger associations with the total HBSMW-COVID-19 score and with the perceived susceptibility and perceived severity subscales than with other dimensions. These findings indicate that higher perceived susceptibility to and severity of COVID-19 are associated with greater fear of the disease, thereby supporting the criterion-related validity of the scale (Özdamar, 2004).

Reliability

Internal consistency alone is not sufficient to establish the reliability of newly developed scales; therefore, additional reliability analyses are recommended (Souza et al., 2017). Acceptable reliability is indicated by Spearman–Brown and Cronbach's α coefficients greater than 0.60 (Özdamar, 2004). In this study, the Spearman–Brown coefficient was 0.777, and the overall Cronbach's α was 0.881. Subscale Cronbach's α values ranged from 0.639 to 0.939, indicating adequate internal consistency. All corrected item–total correlations exceeded 0.20, confirming that each item contributed meaningfully to the construct (Gözüm & Aksayan, 2003). Collectively, these findings demonstrate that the HBSMW-COVID-19 scale has satisfactory reliability.

Limitations of the Study

The scale was only developed and validated in Turkey, using a sample that was predominantly young adults and women. This limits the generalisability of the results. During the second wave of the COVID-19 pandemic, data were collected online due to the potential risk of virus transmission and the restrictions in place. The use of online surveys may limit representativeness. Furthermore, reliance on self-reported data may have introduced bias. Importantly, an original instrument was developed to assess health beliefs regarding mask-wearing.

CONCLUSION

This scale is a valid and reliable instrument for understanding mask-wearing beliefs and behaviors. It comprises six factors and 25 items. This scale can be used to identify the determinants of individuals' mask-wearing behaviour in future pandemics and plan appropriate interventions to prevent the spread of disease.

Health-related beliefs and attitudes may vary across cultures. To enhance the scale's applicability, future studies should validate it in diverse cultural and demographic contexts. Cross-cultural adaptation would improve the generalizability of findings related to mask-wearing beliefs. In addition, longitudinal research, including test–retest analyses and subgroup comparisons, could further strengthen the scale's reliability and practical utility.

Acknowledgement

We thank the participants for their contribution to this study.

Conflict of Interest

The authors declare that there is no conflict of interest.

Funding

The authors declared that this study has received no financial support.

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