Black Sea Journal of Health Science

ADAPTATION AND PSYCHOMETRIC PROPERTIES TESTING OF THE TURKISH PERCEPTION OF LONELINESS IN ISOLATION SCALE IN COVID-19 PATIENTS

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Abstract: The study was aimed to adapt the Perception of Loneliness in Isolation Scale (ISOLA) into Turkish and to examine the psychometric properties of the scale. The sample of the methodological and cross-sectional study consisted of 154 patients who were in isolation due to COVID-19. The psychometric characteristics of the scale were analyzed by using language equivalence, content validity, confirmatory factor analysis, criterion-related validity, internal consistency, and test-retest methods. The UCLA Loneliness Scale was used for criterion-related validity. As a result of the confirmatory factor analysis of the scale, the three-dimensional structure of 14 items was confirmed and the fit index values (χ^2=90.874; χ^2/sd=1.317; RMSEA=0.046; AGFI=0.88; CFI=0.97; GFI=0.92; NFI=0.90) were interpreted as "good fit" or "acceptable fit". It can be said that the Turkish version of ISOLA, which is thought to contribute to understanding the loneliness of patients in isolation and solving their problems, is a valid and reliable measurement tool.

Keywords: COVID-19, Isolation, Nursing, Loneliness, Psychometric properties, Validation

1. Introduction

Some isolation measures may be applied to patients based on clinical reasons. Protective isolation measures are applied to protect both patients and/or their relatives and healthcare team members, especially in cases of stem cell transplantation, bone marrow depression, cancer, infectious diseases and similar conditions (Biagioli et al., 2019a). One of the infectious diseases that marked the last century is the new coronavirus infection (SARS-CoV-2-COVID-19), which the isolation measures are extremely important. A new type of coronavirus that first appeared in Wuhan, China in December 2019 and structurally related to the virus which caused to the Severe Acute Respiratory Syndrome (SARS) epidemic was named "COVID-19". The COVID-19 epidemic, affecting the whole world, was declared as a cause of pandemic by the World Health Organization (WHO) as of March 11, 2020 (WHO, 2020). The spread of the virus occurs through droplets associated with coughing, sneezing or talking around individuals in close contact (Murthy et al., 2020). Therefore, isolation measures are applied to individuals diagnosed or suspected of COVID-19 to prevent the risk

of infection of the virus (CDC, 2020). In order to control the pandemic, some security measures (quarantine, restrictions on intercity and international travel, social isolation, etc.) have been implemented with a stricter approach to the protection of public health. Such measures have been implemented in all countries where the virus has spread and the number of morbidity and mortality has increased critically (Wang et al., 2020). Isolation, which is seen as one of the most important determinants of the effects of epidemics on mental health, is divided into two as physical and social. Physical distancing measures are being taken to prevent the spread of the epidemic. Physical isolation can be defined as physical contact prevention, personal protective equipment, living in physically separate spaces with various barriers. Social isolation includes emotional isolation and can be counted as situations such as separation from a loved one, inability to read facial expressions because of masked faces, not being with loved ones even though in a need to them, being alone during the treatment process, not being able to attend funerals in case of loss during the illness (Banerjee and Ra, 2020; Hwang et al., 2020; Rubin and Wessely, 2020).

Although social isolation is effective as a public health measure to control viral spread, it can lead to psychological fear, uncertainty, hopelessness and similar problems (Brooks et al., 2020; Both et al., 2021). Within the scope of situations that require isolation measures, sick individuals can be kept in a separate room and even their relatives can be prohibited from visiting them. Some negative psychosocial conditions may occur in these patients who have long-term loneliness experiences with long-term treatment processes (Brooks et al., 2020).

Loneliness is not the same as social isolation. People may be isolated (alone), but they do not feel alone. People may be surrounded by other people but still feel lonely. Loneliness is a subjective feeling about the gap between a person's desired levels of social contact and actual levels of social contact. It refers to the perceived quality of one's relationships. Loneliness is never desired and these feelings can take a long time to subside. Social isolation is an objective measure of the number of contacts people have. It's about the quantity of relationships, not the quality. People may choose to make few contacts. When they feel socially isolated, this can be overcome relatively quickly by increasing the number of people they come in contact with. Loneliness and social isolation are different but related concepts. Social isolation can lead to loneliness, and loneliness can also lead to social isolation. Both can occur at the same time. People may experience different levels of social isolation and loneliness throughout their lives, and may move closer to or further away from these situations as their personal circumstances change. Loneliness and social isolation can negatively affect physical, sensory and mental health (Yanguas et al., 2018; Pietrabissa and Simpson, 2020).

There are studies reporting that the incidence of depression is doubled in patients who are isolated due to the treatment method of certain diseases, compared to other patients (Tecchio et al., 2013; El-Jawahri et al., 2015). It has been reported that patients experience deterioration in human relations, social isolation and loneliness as a result of the time they spend alone, as well as feeling abandoned and forgotten in a hospital room without the presence of supportive family members (Biagioli et al., 2017; Biagioli et al., 2019a). The perception of loneliness is seen as an important factor in predicting the course and frequency of diseases and the mortality rate (Clair et al., 2021). It is stated that the perception of loneliness causes personality disorders, neurological disorders, disruption in the functioning of cognitive mechanisms such as cognition and perception, an increase in the risk of Alzheimer's disease, and the formation of anxiety and especially depressive symptoms. In addition, the perception of loneliness is associated with mental disorders and is reported to have a strong correlation with social anxiety disorder and depression (Lim et al., 2016; Martoncik and Loksa, 2016). Because isolation is an important step in critical treatment, it can create a feeling of safety for patients,

both physically and psychosocially. Therefore, isolation should be considered as a situation that requires further investigation of patients' well-being needs. A valid and reliable measurement tool can help identify patients who experience more negative psychosocial effects of isolation than positive ones. In addition, this measurement tool can contribute to the regulation of interpersonal relationships and the planning of care initiatives aimed at reducing or preventing the severity of loneliness. When the literature was examined, it was determined that Biagioli et al. (2019a) developed a measurement tool that measures the perception of loneliness in patients undergoing protective isolation. By the Turkish validity and reliability study of this scale, it is thought that it can contribute to the development of institutional policies for determining and eliminating psychosocial problems, depression, delirium and similar problems that may develop due to the perception of loneliness by measuring the loneliness perception experienced by the patients in isolation. As a result, in this study, it was aimed to adapt the ISOLA Scale to Turkish.

2. Materials and Methods

2.1. Aim and Design

This study was carried out in a methodological manner in order to adapt the ISOLA scale developed by Biagioli et al. (2019a) to Turkish to measure the perception of loneliness in patients in protective isolation and to examine the psychometric properties of the scale. In the study, STROBE was followed.

2.2. Sample of the Study

It is known that there are different opinions about the number of samples in methodological studies. Sample size is seen as an important factor for the estimation method used in confirmatory factor analysis to give accurate results in scale adaptation (Çapık, 2014). It is stated that the sample size should be 10 times the number of items (Kline, 2015). In line with this information, the research was completed by using purposive sampling method, which is one of the improbable sampling methods, in the hospitals with a total of 154 COVID-19 patients who comply the criteria for inclusion in the study (over the age of 18 and 18, had no communication problems and was in isolation), mainly due to the fact that the patients diagnosed with COVID-19 were under treatment and in isolation during the pandemic process. Considering the number of items in the scale used in the research (14 items in total), it can be said that the study sample is large enough.

2.3. Data Collection Tools

Data were collected using the following forms:

2.3.1. Patient information form

With this form, which was developed by using the literature (Biagioli et al., 2017; Biagioli et al., 2019a; Biagioli et al., 2019b; Campagne, 2019), datas about age, gender, marital status, number and status of having children, educational status, length of staying in hospital,

knowing the reason for being kept in isolation room, missing the relatives, status and form of meeting with relatives were obtained.

2.3.2. UCLA loneliness scale (UCLA-LS)

The criterion-dependent validity method was used to test the validity of the Perception of Loneliness in Isolation Scale developed by Biagioli et al. (2019a), and the UCLA Loneliness Scale was utilized for this purpose. Scoring of 10 items (1, 5, 6, 8, 9, 10, 15, 16, 19, 20) in the 20-item scale is done by reversing; the remaining 10 items (2, 3, 4, 7, 11, 12, 13, 14, 17, 18) are scored straight. The lowest score that can be obtained from UCLA-LS is 20, and the highest score is 80. In the scale were made Turkish validity and reliability by Kaya et al. (2012); a high score indicates a high level of loneliness, and a low score indicates a low level of loneliness (Kaya et al., 2012).

2.3.3. Perception of loneliness in isolation scale (ISOLA)

The scale, originally called "Questionnaire about the perception of protective isolation – ISOLA scale", is a self-assessment questionnaire developed by Biagioli et al. (2019a) to evaluate the isolation perceptions of patients who experienced hematopoietic stem cell transplantation, also had hematological malignancies. The five-point Likert type (1-not at all, 2-a little, 3-quite a bit, 4-very much, 5-completely) scale consists of 14 items and three sub-dimensions. Its sub-dimensions are "isolation-related suffering (F1)", "problems in the relationship with others (F2)" and "difficulties in the relationship with oneself (F3)". F1 is calculated as the average of items 1, 2, 3 (reverse), 4, 6, 8, 9, 11, 14. F2 is calculated as the average of items 5, 13. F3 is calculated as the average of items 7 (reverse), 10 (reverse), 12 (reverse). Higher scores in each of the three dimensions indicate a more negative experience (Biagioli et al., 2019a).

2.4. Research Process

Before starting the study, written permission was obtained online from Valentina Biagioli, who developed the scale. The research was conducted between July 2020 and March 2021 at a university and a teaching and research hospital in Istanbul. Since almost all clinics were converted to COVID-19 clinics due to the pandemic in the hospitals where the research was carried out, and COVID-19 patients were predominantly treated, only patients diagnosed with COVID-19 and isolated were included in the study. Of these patients, those who accepted to participate in the study were asked to fill in data collection tools by the clinical nurse in the research team. It took 10-15 minutes for each participant to complete the data collection tool.

The adaptation studies of the "Perception of Loneliness in Isolation Scale" into Turkish were carried out in the following stages.

2.4.1. Re-translation

The scale was first translated from English to Turkish by two different language experts living abroad, both Turkish and English native speakers. Afterwards, the scale items, for which necessary corrections were made by taking different expert opinions, were translated back into English and shared with Valentina Biagioli, who developed the scale, for approval regarding its suitability.

2.4.2. Content validity

In the literature, it is suggested that 5-40 experts should be consulted in order to determine the content validity of the scale with language equivalence (Yeşilyurt and Cross, 2018). In this study, the scale was sent to 13 people (clinical and academic nurses, psychologists, physicians, etc.) who are experts in their fields. The Content Validity of ISOLA was calculated using the Lawshe technique.

2.4.3. Pre-application phase

The pre-application of the study was carried out with 20 patients in isolation in order to determine the clarity of the scale questions as a result of the corrections made after receiving expert opinions. Participants were asked to rate the intelligibility of the items in the scale.

2.4.4. Construct validity (Confirmatory Factor Analysis) and internal consistency analysis phase

The construct validity and internal consistency analysis of the scale were analyzed with data obtained from a total of 154 patients.

2.4.5. Criterion-dependent validity phase

"UCLA Loneliness Scale" was used as the synchronous criterion-dependent validity scale of the study.

2.5. Analysis and Evaluation of Data

Language equivalence of the scale was provided by re-translation method and Lawshe technique was used for content validity. Descriptive statistics were presented as mean, number, and percentage. Within the scope of examining the psychometric properties of the scale; Construct Validity (Factor Analysis) was tested by Confirmatory Factor Analysis; Internal Consistency Analysis was tested by Cronbach's Alpha and Item-Total Score Correlation methods. In addition, the criterion-dependent validity analysis of the scale was performed. Pearson Product-Moment Correlation Analysis was used for all correlations.

3. Results

In the study, 53.9% (n=83) of the patients were male and the mean age was 58.26 (SD=16.72; Min=18-Max=96) years. In addition, the majority of the patients were married (83.8%), had children (90.3%), and graduated from primary school (58.4%).

It was determined that 75% (n=48.7) of the patients who included to the study had a duration about staying at hospital between 1-2 weeks, 90.3% (n=139) knew the reason for being kept in the isolation room, all of them missed their relatives, and 90.3% (n=139) were able to communicate with their relatives via telephone.

3.1. Content Validity of the Perception of Loneliness Scale in Isolation

In the first stage of Content Validity, content validity rates and content validity index were used to evaluate expert opinions. Experts were asked to evaluate the intelligibility of each item in the 14-item scale and its

compatibleness in terms of reflecting the thoughts about loneliness of patients in isolation, ranging from 1-3 points (1 point: Not compatible; 2 points: Must be corrected; 3 points: Compatible). In the study, the analyzes were started by accepting that the critical value of CVR (content validity ratio) was 0.538 for 13 experts at the $\alpha=0.05$ significance level. The content validity ratios of each item were calculated based on the opinions of 13 experts on the items. Accordingly, it is determined that the CVR of the items 1,2,4,5,8,9,11,12 and 14 was 1, and the items 1,3,6,7,10 and 13 was 0.85. The content validity index value of the scale was found to be 0.945.

3.2. Construct Validity of the Perception of Loneliness Scale in Isolation

3.2.1. Confirmatory factor analysis (CFA)
The analytical equations and conceptual model diagram of the model were created by using the AMOS program, and the final version of the model is shown in Figure 1. The results obtained according to the fit criteria of the measurement model are given in Table 1.

3.2.2. Criterion-related validity
In the study, a positive linear and statistically significant correlation was found between the scores of the "Perception of Loneliness in Isolation Scale-ISOLA" and the "UCLA Loneliness Scale" administered simultaneously to the patients (r=0.171, P=0.034). In addition, positive and statistically significant correlations were observed between the ISOLA total and its sub-dimensions (Table 2).

3.3. Internal Consistency
In order to determine whether all sub-dimensions of the scale measure the same feature, the internal consistency of the scale was checked. In the study, Cronbach's Alpha Coefficient was used to determine the internal consistency. When the internal consistency reliability coefficient of the manuscript scale was calculated over all items, it was found to be 0.80. When this calculation was made according to the sub-dimensions, the Cronbach's Alpha value was found to be 0.79 in the Suffering Due to Isolation Sub-Dimension, 0.75 in the Relationship with Others Sub-Dimension, and 0.69 in the Relationship with Oneself Sub-Dimension (Table 3).

In the study, the correlation of the items with the total was calculated using the Pearson Correlation Coefficient. In Table 3, the item-total correlations for all items of the draft scale were found to be positive except for the 10th item, and it was found to be above 0.30 except for the 3rd, 7th, and 10th items. When this calculation was made according to the sub-dimensions, it was determined that all items except the 3rd item in the Suffering Related to Isolation Sub-Dimension were positive and above 0.30, the value was found to be 0.61 in the Problems in Relationships with Others Sub-Dimension which consists two items and for the Difficulties in Relationship with Oneself Sub-Dimension, all correlations were positive and above 0.25 (Table 3).

Table 1. Measurement model fit criteria

Fit Measurements	Good Fit	Acceptable Fit	Measurement Value	Fit Type
χ^2	$0 \leq \chi^2 \leq 2df$	$2df \leq \chi^2 \leq 3df$	df = 69; χ^2=90.874	Acceptable Fit
p	$0.05 \leq P \leq 1.00$	$0.01 \leq P \leq 0.05$	0.04	Acceptable Fit
χ^2 /df; CMIN/DF	$0 \leq \chi^2 /df \leq 2$	$2 \leq \chi^2 /df \leq 3$	90.874/69=1.317	Good Fit
CFI	$0.97 \leq CFI \leq 1.00$	$0.95 \leq NNFI \leq 0.97$	0.97	Good Fit
NFI	$0.95 \leq NFI \leq 1.00$	$0.90 \leq NFI \leq 0.95$	0.90	Acceptable Fit
GFI	$0.95 \leq GFI \leq 1.00$	$0.90 \leq GFI \leq 0.95$	0.92	Acceptable Fit
RMSEA	$0 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0$	0.046	Good Fit
AGFI	$0.90 \leq AGFI \leq 1.00$	$0.85 \leq AGFI \leq 0.90$	0.88	Acceptable Fit

χ^2= Ki-kare, χ^2/df-CMIN/DF= ratio of Chi-square to degrees of freedom, CFI= comparative fit index, NFI= normed fit index, GFI= goodness of fit index, RMSEA= root mean square error of approximation, AGFI= adjusted goodness of fit index.

Table 2. Correlation of perceptions of loneliness in isolation scale-ISOLA with ISOLA sub-dimension and UCLA loneliness scale scores (n=154)

		Problems in Relationships with Others Sub-Dimension	Difficulties in Relationship with Oneself Sub-Dimension	ISOLA	UCLA Loneliness Scale
Isolation-Related Suffering Sub-Dimension	r	0.729**	0.000	0.938**	0.154
	P	0.000	0.997	0.000	0.057
Problems in Relationships with Others Sub-Dimension	r	-	0.020	0.805**	0.056
	P	-	0.805	0.000	0.486
Difficulties in Relationship with Oneself Sub-Dimension	r		-	0.304**	0.136
	P		-	0.000	0.093
ISOLA	r			-	0.171*
	P			-	0.034

*P< 0.05 in level of significance, **P< 0.01 in level of significance.

Table 3. Item-total score correlation and Cronbach alpha confidence coefficient values of the perception of loneliness in isolation scale-ISOLA (n=154)

Items of the Scale		In All Items of the Scale		In Sub-dimensions of the Scale	
		Item-Total Score Correlation	Cronbach Alpha	Item-Total Score Correlation	Cronbach Alpha
Suffering Related to Isolation	1. I get bored because time passes slowly.	0.55	0.78	0.54	0.76
	2. I miss communicating with the outside world.	0.34	0.80	0.37	0.79
	3. I can stand calmly in the isolation room.	0.14	0.81	0.13	0.81
	4. It is very difficult to be closed in a room.	0.62	0.77	0.66	0.74
	6. I have no room to move.	0.48	0.78	0.47	0.78
	8. I need someone around me to talk to.	0.34	0.80	0.38	0.79
	9. I feel like I'm far from the outside world.	0.60	0.77	0.61	0.75
	11. I feel imprisoned.	0.69	0.76	0.67	0.74
	14. I want to leave the room.	0.41	0.79	0.45	0.78
	Isolation-Related Suffering Sub-Dimension				0.79
Problems in Relationships with Others	5. Not being close to the people who I love is a problem for me.	0.59	0.78	0.61	-
	13. I feel cut off from the people who I love.	0.69	0.76	0.61	-
	Problems in Relationships with Others Sub-Dimension				0.75
Difficulties in Relationship with Oneself	7. Being in isolation helps me look at my life from a new perspective.	0.12	0.81	0.69	0.31
	10. Being here alone. I can think more about myself.	-0.03	0.82	0.68	0.33
	12. Being in isolation makes me feel safe.	0.31	0.80	0.25	0.86
	Difficulties in Relationship with Oneself Sub-Dimension				0.69
ISOLA		0.80			

3.4. ISOLA Scale's Sub-Dimensions and Total Score Average

In our study, it was determined that the individuals included in the study on the "ISOLA Scale" scored an average of 24.97±7.71 (Min.=10, Max.=42) for the Suffering Related to Isolation sub-dimension, average of 6.36±2.50 (Min=2, Max=10) for Problems in Relationship with Others sub-dimension, average of 7.01±3.04 (Min=3, Max=14) for Problems in Relationship with Oneself sub-dimension, average of 38.34±10.16 (Min=18, Max=60) points from the total of the scale.

4. Discussion

Loneliness is recognized as a clinically relevant cognitive condition with proven adverse effects on physical and mental health. The causes and characteristics of suffering or enjoying from loneliness have been increasingly linked to health and well-being. It has been suggested that the isolation associated with loneliness has a more negative impact on health than obesity and creates a worldwide concern affecting all groups, from adolescents to particularly the elderly (Campagne, 2019; Clair et al., 2021).

On the other hand, it is known that the isolation measures taken against the COVID-19 pandemic cause psychological effects in terms of stress, anxiety, depression and poor sleep quality (Brooks et al., 2020; Wang et al., 2020). For this reason, it is very important to alleviate the feelings of isolation-related loneliness and to meet the emotional needs of patients in isolation. Based on these facts, the study was carried out with the aim of adapting the ISOLA Scale to Turkish and testing its validity and reliability.

4.1. Validity of ISOLA Scale

In this study, a similar process was applied in the language validity phase of the "ISOLA Scale" and after the necessary corrections were made, the scale was submitted to expert opinion for the evaluation of its content validity.
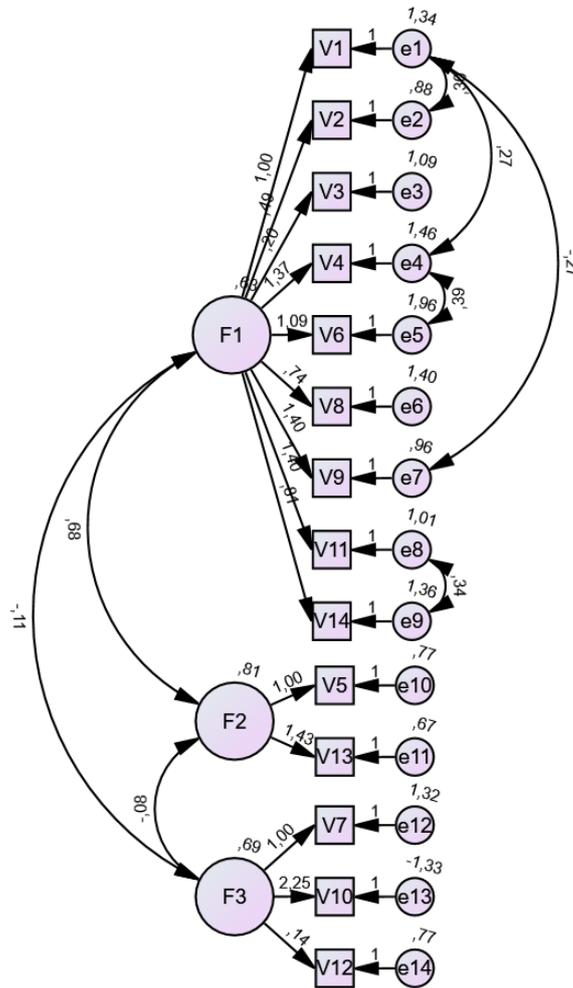
Figure 1. Confirmatory factor analysis model of the perception of loneliness scale in isolation.

Content validity refers to the degree to compability which the overall scale and each item serve the purpose. For content validity, the opinions of the experts on the subject are taken. Many techniques are used regarding the evaluations made by experts (Karakoç and Dönmez, 2014). According to the Lawshe technique, it is stated that the required value for the content validity index varies according to the number of experts. Since the opinions of 13 experts were taken in this study, it should be as content validity scale: 0.538 (Ayre and Scally, 2014). The content validity index of the scale was calculated as 0.945. According to the criterion of CVI>CVS (0.945>0.538) for content validity, it can be said that the content validity of the scale is statistically significant for conducted study.

4.2. Confirmatory factor analysis of the ISOLA Scale
Confirmatory factor analysis was conducted to measure the construct validity of the "ISOLA Scale". Multiple fit indices of "ISOLA scale" were used: Ratio of Chi-square to Degrees of Freedom (χ^2/df-CMIN/df), Comparative Fit Index (CFI), Normized Fit Index (NFI), Goodness of Fit Index (GFI), Root Mean Square of Approximate Errors (RMSEA), Adjusted Goodness of Fit Index (AGFI). These values are respectively $2<\chi^2$/df≤5, 0.90≤CFI, 0.95≤NFI≤1.00, 0.90≤GFI, 0.05<RMSEA≤0.10 and

0.90≤AGFI≤1.00 and this situation indicates an acceptable fit (Meydan and Şeşen, 2015; Aksu et al., 2017; Civelek, 2018). In our study, this value was found in a good fit criterion (χ^2/df=1.317) in accordance with the literature, and it was found to be similar to the result in the original study of ISOLA (Biagioli et al., 2019a). Comparative Fit Index (CFI) states that there is no relationship between the variables and aims to reveal the difference of the model created based on this situation from the null (absence) model. Its value varies between 0-1. It states that as the value approaches 1, the degree of goodness of fit increases and at the same time, the model with a high value CFI shows a strong fit (Çapık, 2014; Evci and Aylar, 2017). Although the CFI value (CFI=0.97) in our study prodives good fit, it was found to be similar to the original value (CF=0.929) of ISOLA (Biagioli et al., 2019a). The normed fit index (NFI) was developed as an alternative to CFI. It is positively correlated with the number of samples. This index investigates the compatibility of the assumed model with the basic or null hypothesis and takes values ranging from 0-1. NFI contributes to nested model comparison. A value of 0.95≤NFI≤1.00 indicates good fit, and a value of 0.90≤NFI≤0.95 indicates acceptable fit (Kline, 2015). In this study, the NFI value was found to be 0.90, and it was

concluded that the scale, whose psychometric properties were examined, was acceptably compatible with this value.

The Goodness of Fit Index (GFI) indicates to what extent the Model measures the covariance matrix in the sample (Çokluk et al., 2010; Waltz et al., 2010; Evci and Aylar, 2017). The value of the GFI is affected by the size of the sample. The larger the sample size, the higher the GFI value. In this context, the result is not correct and effective. Although its normal value is between 0 and 1, a GFI between 0.90 and 0.95 indicates an acceptable fit (Waltz et al., 2010; Evci and Aylar, 2017). The GFI value (GFI: 0.92) in our study is between the acceptable fit values.

Root Mean Squared Errors Approximate (RMSEA) is defined as the square root of approximate means and takes a value between 0-1. If the RMSEA value is below 0.05, it shows perfect fit, and below 0.08, it shows acceptable fit. If the values are between 0.08-0.10, they provide moderate harmony, while values above 0.10 are not considered acceptable values (Çapık, 2014; Evci and Aylar, 2017). According to this information, when the RMSEA value in our study (RMSEA: 0.046) is compared with the original value of ISOLA (RMSEA: 0.061), it is seen that it fits perfectly with the original (Biagioli et al., 2019a).

Adjusted Goodness of Fit Index (AGFI) is used to eliminate the insufficiency of GFI that occurs at high sample level. It corrects the GFI value for the degrees of freedom of the model according to the number of observed variables. It is an index used to fulfill for the insufficiency of the GFI test in high sample volume. The degree of freedom is important in the calculation of the AGFI. Its value ranges from 0-1 and must be above 0.90. As the value of AGFI approaches 1, it provides good fit, and values between 0.85 and 0.90 mean an acceptable fit (Çapık, 2014; Evci and Aylar, 2017). It was seen that the AGFI value in our study was within the acceptable fit criterion.

In our study, as a result of the CFA analysis of the ISOLA Scale, which consists of three sub-dimensions and 14 items; fit indices (χ^2:90.874, P:0.04, χ^2/df-CMIN/DF: 90.874/69=1.317, CFI:0.97, NFI:0.90, GFI:0.92, RMSEA:0.046, AGFI:0.88) is suitable and similar to the original version of the scale; even in some indices, it was observed that it showed a perfect fit compared to the original (Biagioli et al., 2019a). It has been determined that the results obtained in this direction are in accordance with the theoretical structure.

4.3. Criterion Validity of the ISOLA Scale

For the criterion-related validity of the ISOLA Scale, the UCLA Loneliness Scale together with ISOLA were administered to the participants, and the correlation between the two scales was examined. According to the results of the correlation analysis, a positive linear and statistically significant relationship was found between the total score of the UCLA Loneliness Scale and the total score of the ISOLA (r=0.171, P=0.034). In addition, it was observed that there was a positive statistically significant relationship between the total score of ISOLA and its sub-dimensions. In the original version of ISOLA, the correlation between ISOLA and the Emotional Loneliness Scale was examined, and it was found that there was no relationship between the total scale and its sub-dimensions (Biagioli et al., 2019a). When evaluated psychometrically, it can be thought that the scale items of the Turkish version of ISOLA are meaningful enough to measure the loneliness perception of the participants in isolation.

4.4. Reliability of ISOLA

Validity and reliability are essential qualities sought in a good measurement tool. Internal consistency of measurement instruments is a concept based on a specific purpose which is instrument consists of independent units and the assumption that they have known and have equal weights in the whole. This is why internal consistency is also called instrument homogeneity. It is the reliability that determines that all units of the scale are capable of measuring the variable of interest. Alpha Coefficient (Cronbach Alpha) and Item-Total Score Correlation are methods used to test internal consistency reliability (Evci and Aylar, 2017).

4.5. Internal Consistency of ISOLA

The item-total score correlation coefficient is used to determine the ability of each item to measure what is intended to be measured using the scale. A correlation coefficient of 0.25 or less is very weak; between 0.26-0.49 is weak; between 0.50-0.69 is moderate; between 0.70-0.89 is high; if it is between 0.90-1.0, it defines a very strong relationship (Özdamar, 2013).

In our study, item total score correlation values in all items of the ISOLA scale ranged from 0.31 to 0.69, except for items 3, 7, and 10. The 10th item, whose item-total score correlation value was below 0.31 and had a negative value, was not removed from the scale because its Cronbach Alpha value was high (0.82) throughout the scale. Item-total score correlation values in the ISOLA scale sub-dimensions ranged from 0.25 to 0.69, except for the 3rd item. The item-total score correlation value of the 3rd item, which was below 0.25, was not removed from the scale because the Cronbach Alpha value was high (0.81) both at the sub-dimension level and in the whole scale. Although these findings regarding the item-total score correlation are lower than the original values of the scale (0.51-0.81) (Biagioli et al., 2019a), it can be said that there is no item that should be removed from the scale. As a result, it was determined that the items of the scale were distinctive in terms of the features they measured, and a total of 14 items that created the scale were reliable and aimed at the same purpose. In addition, the internal consistency reliability coefficient (Cronbach's Alpha) of the ISOLA Scale was found to be 0.80 over all items, and it ranged from 0.69 to 0.79 in its sub-dimensions. In the original of the scale, Cronbach's alpha values for the sub-dimensions ranged between 0.66-0.89 (Biagioli et al., 2019a). According to the results

of the reliability studies of the Turkish version of ISOLA, the correlation coefficients obtained by the item-total score correlation coefficients and internal consistency methods are also at an acceptable level. With all these findings, it can be stated that the measurement tool, which was adapted, is at least as reliable as the original measurement tool.

5. Conclusion

When the Turkish validity and reliability results of the scale are examined; It was determined that the language validity analysis of the five-point Likert-type scale was performed, the CVR indicating content validity, item-total correlation indicating reliability and Cronbach Alpha value were high. According to the CFA results, the three-factor structure and 14 items of the scale was found to be acceptable. As a result of analyzes the total Cronbach Alpha value of the scale was found as a=0.80 and it was seen that the scale was a valid and reliable scale.

Implications

The results of the ISOLA Scale include patients with a diagnosis of COVID-19 who are being treated in two hospitals where the Turkish validity and reliability study was conducted. For this reason, it may be recommended to conduct different studies on individuals in different groups who were isolated for the validity and reliability of the scale. Other studies may be made with scale.

Limitations

The most important limitation of the study is that the sample group consisted of only patients with a diagnosis of COVID-19 who were in isolation, since all clinics in the hospitals where the study was conducted were converted into pandemic clinics due to the COVID-19 pandemic. In addition, in this study, test-retest analysis could not be performed within the scope of the validity and reliability study of the ISOLA Scale due to pandemic conditions. For this reason, the invariance with respect to time should be tested in further studies on the ISOLA Scale.

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