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PSYCHOMETRIC PROPERTIES OF THE TURKISH VERSION OF THE EMOTIONAL COMMUNICATION SCALE FOR HEALTHCARE PROFESSIONALS

SAĞLIK PROFESYONELERİ İÇİN DUYGUSAL İLETİŞİM ÖLÇEĞİ TÜRKÇE FORMUNUN PSİKOMETRİK ÖZELLİKLERİ

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ABSTRACT
This study aimed to adapt the Emotional Communication Scale, which assesses emotional communication in healthcare professionals in Türkiye, into Turkish and investigate its psychometric properties. This study has a methodological design for the psychometric testing and validation of the Emotional Communication Scale. The mean age of participants was 31.31 years (SD = 9.94), with ages ranging from 19 to 60; of the 197 participants, 46 (23.4%) were males and 151 (76.6%) were females. In the first stage of the study, language equivalence was ensured. Confirmatory factor analysis (CFA) was conducted with the IBM AMOS 24.0 package program for construct validity. According to the CFA results, the Turkish version of the scale has 14 items and 3-dimensional structure, as in the English version. The model fit indices of the scale were acceptable ($\chi 2/df=1.92$, CFI=0.94, TLI=0.92, IFI=0.94, GFI=0.91, RMSEA=0.07, and SRMR=0.03). The item-total correlation coefficients of the scale ranged between 0.510 and 0.643. The Cronbach's alpha coefficient was 0.885 for the whole scale, 0.838 for the communicative proactivity, 0.770 for the openness authenticity, and 0.680 for the listening.

The Turkish version of the Emotional Communication Scale is a measurement tool with high content validity and internal consistency that can be used to assess the emotional communication attitudes of healthcare professionals. The scale can help healthcare professionals determine their attitudes toward emotional communication. Therefore, this tool will aid in developing training programs for communication, design, and evaluation of training processes aimed at helping professionals working in the healthcare field.
Keywords: Emotional Communication, Communication, Healthcare Professionals, Validity, Reliability.

ÖZET

Bu çalışmanın amacı, Türkiye'deki sağlık çalışanlarında duygusal iletişimi değerlendiren Duygusal İletişim Ölçeği'ni Türkçe'ye uyarlamak ve psikometrik özelliklerini incelemektir. Bu çalışma, Duygusal İletişim Ölçeği psikometrik testi ve doğrulanması için metodolojik bir tasarıma sahiptir. Katılımcıların yaş ortalaması 31.31 (SS = 9,94) olup yaşları 19 ile 60 arasında değişmektedir; 197 katılımcının 46'sı (%23.4) erkek, 151'i (%76,6) kadındır. Çalışmanın ilk aşamasında dil eşdeğerliği sağlanmıştır. Yapı geçerliliği için IBM AMOS 24.0 paket programı ile doğrulayıcı faktör analizi (DFA) yapılmıştır. DFA sonuçlarına göre ölçeğin Türkçe versiyonu İngilizce versiyonunda olduğu gibi 14 madde ve 3 faktörlü bir yapıya sahiptir. Ölçeğin model uyum indeksleri kabul edilebilir düzeydedir ($\chi 2/df=1.92$, CFI=0.94, TLI=0.92, IFI=0.94, GFI=0.91, RMSEA=0.07 ve SRMR=0.03). Ölçeğin madde-toplam korelasyon katsayıları 0,510 ile 0,643 arasında değişmektedir. Cronbach's alfa katsayısı ölçeğin tamamı için 0.885, iletişimsel proaktiflik için 0.838, açıklık-gerçeklik için 0.770 ve dinleme için 0.680'dir. Duygusal İletişim Ölçeği Türkçe versiyonu, sağlık çalışanlarının duygusal iletişim tutumlarını değerlendirmek amacı ile kullanılabilecek, yüksek kapsam geçerliliği ve iç tutarlılığı olan bir ölçme aracıdır. Ölçek sağlık çalışanlarının duygusal iletişimle ilgili tutumlarını belirlemelerine yardımcı olabilir. Dolayısıyla bu araç, sağlık alanında çalışan profesyonellere yardımcı olmayı amaçlayan iletişime yönelik eğitim programlarının geliştirilmesi, eğitim süreçlerinin tasarlanması ve değerlendirilmesinde yardımcı olabilir.
Anahtar Kelimeler: Duygusal İletişim, İletişim, Sağlık Çalışanları, Geçerlilik, Güvenilirlik.

1. INTRODUCTION

Communication skills are for healthcare professionals. Effective communication is essential for understanding the needs of the patient and providing personalized care (Taghizadeh et al., 2007). Health professionals must understand feelings, thoughts, and experiences, assess real needs, and act accordingly to provide personalized services. To achieve this goal, it is necessary to develop empathy and communication skills (Kahriman et al., 2016). It is vital for health professionals to understand people's feelings, thoughts, and experiences, assess their real needs and act accordingly, and provide personalized services. Achieving this goal requires developing empathic skills (Moudatsou et al., 2020). At the psychosocial level, empathic engagement forms the basis of a trusting relationship. When a trusting relationship is established, restrictions in communication will decrease. In the assurance of a trusting relationship, the patient begins to tell the story of their illness without hiding it. This leads to a more accurate diagnosis and compliance and better-quality care (Hojat et al., 2013).

When we look at the literature, we see how important the effective communication between patients and healthcare professionals is for quality healthcare delivery (Epstein & Street, 2011). Researchers investigating the communication between the physician and the patient drew attention to the effect of the relationship between the service provider and the patient-on-patient satisfaction. This affects health outcomes such as patient satisfaction, adherence to treatment, and general well-being (Joosten et al., 2008). Patient satisfaction has become an issue that researchers often try to achieve without considering patient priorities.

Studies in the literature show that although meeting the medical needs of patients is essential, meeting their emotional needs is vital for ensuring healthcare satisfaction (Levinson, Gorawara-Bhat & Lamb, 2000).

With the advancement of medical science, new technologies in diagnosis and treatment methods are being used more frequently in the healthcare sector. New technology poses the risk of neglecting the emotional needs of patients. Joan Kelly and Chrissy Daniels have suggested that hospitals and health systems should create a digital delivery system and a patient portal where test results and all communications can be completed or received online (Joan & Chrissy, 2023). This reduces communication between healthcare professionals and patients and makes it difficult to establish empathy. Effective physician-patient communication is vital, associated with positive health outcomes such as increased patient satisfaction, compliance, and overall health status (Tiwary et al., 2019). In healthcare, the emotional communication of doctors and nurses with patients has been studied in many different pathologies ranging from diabetes to cancer. When we look at the results of a meta-analysis conducted by Zolnierek and Dimatteo (2009), we see that a healthcare professional's good communication skills increase patient satisfaction, increase the participation of patients in treatment recommendations, and improve clinical outcomes in various aspects of health (Zolnierek & Dimatteo, 2009). In a study by Park et al., they found that clinicians treating patients with Human Immunodeficiency Virus (HIV) focused more on patients when patients openly expressed their emotions and associated them with medical problems such as disease symptoms (Park et al., 2019). In addition, another study estimates that communication errors cause 27% of medical practice errors. We see that better communication provides an opportunity to reduce medical errors, and poor communication leads to various negative consequences such as reduced adherence to treatment, patient dissatisfaction, and inefficient use of resources (Tiwary et al., 2019). Lack of communication between patients and healthcare professionals can lead to lack of access to meaningful information, misinterpretations in managing side effects, and lack of trust in the patient-caregiver relationship. Understanding the communication process between patients and healthcare professionals will lead to shared decision making and positive changes in patient outcomes. Communication is essential for achieving good results both in the treatment process and on the outcomes of patients (Stewart, 1995).

Recognizing that communication plays a central role in quality patient care and that effective communication improves health outcomes has led to a better understanding of patient-provider interactions. Communication between patients and providers is vital in all aspects of the patient experience. But it is much more important, especially during treatment. During this phase, patients take an active role, including monitoring and providing feedback on treatment responses. The meaningful exchange of information during this time makes it easier for patients to understand treatment protocols. It provides the support patients and their families need to manage and cope with the side effects of treatment, lifestyle adjustments. For this reason, healthcare professionals need to improve their communication with patients. Emotional communication should be attempted, knowing that communication is essential in order to understand the patient's feelings and to empathize with them. Patients living with serious illnesses suffer physically and psychologically. Although this condition is dependent on many factors, including the characteristics of the disease, quality of care, social determinants, and system issues, there is broad consensus that poor communication by healthcare professionals with patients plays a central role. The inability to communicate with patients exacerbates their physical and psychological pain (Tulsky et al., 2017).

Healthcare professionals are essential to establish emotional communication with patients. In addition, there are very few studies in Türkiye that examine the communication between healthcare professionals and patients. In a study conducted by Başol (2018), it was reported that there were significant problems in the communication process between patients and healthcare professionals. Healthcare professionals do not attach enough importance to patient communication, and patients are expected to trust healthcare professionals to do what is necessary.

One of the most critical problems is that all health professionals, especially physicians, think informing patients wastes time (Başol, 2018). Another study emphasized the relationship between communication and medical errors and complications. It was said that an apparent lack of communication could lead to serious health complications that can cause misdiagnosis, medical errors, and even death of patients. In other words, lack of communication in health services has significant effects not only on the quality of health care services provided but also on the patient's clinical outcomes (Tekin, 2022). Societies' perceptions of disease and health, their views on disease, and their treatment methods reflect the cultural characteristics of the community. Cultural differences cause communication problems between patients and health professionals. Using the same language in communication is very important in the process of diagnosis and treatment of diseases. Problems experienced due to language deficiencies also negatively affect the diagnosis and treatment process of diseases (İlhan & Utaş Akhan, 2019). Therefore, it is essential to have a scale suitable for Turkish language construct and cultural characteristics to measure communication between patients and health professionals in Türkiye.

As far as we know, Türkiye has no validity and reliability measurement tool that measures healthcare professionals' emotional communication levels. Therefore, this study aimed to adapt the Emotional Communication Scale, which assesses emotional communication in healthcare professionals in Türkiye, into Turkish and analyze its psychometric properties.

2. MATERIALS AND METHODS

This is a methodological study to examine the psychometric properties of a Turkish version of the Emotional Communication Scale for healthcare professionals. This section describes the study group, data collection tools, data collection procedures, and data analysis strategy.

2.1. Study Sample

The study group of research consists of healthcare professionals in Bulancak State Hospital affiliated with the Ministry of Health located in the Giresun province of Türkiye. Healthcare professionals (doctors, nurses, midwives, health technicians/technicians, etc.) who were not interns at the relevant public hospital and agreed to participate in the study were included in the sample. Occupational groups such as cleaning staff, security staff, etc., and employees who did not consent to participate in the study were excluded from the scope of the study. In the literature, very different approaches are put forward in determining the sample size. While some researchers argue that it should be ten times the number of items (Nunnally, 1978), it should be at least five times the number of items (Child, 2006; Tavşancıl, 2019). The general approach for validation studies is to collect 5 to 10 subjects for each question in the scale (Bryant & Yarnold, 1995). Tabachnick and Fidel (1996), and DeVellis (2014) described 200 as average, 300 as good, 500 as very good, and 1000 and above as excellent (Tabachnick & Fidell, 1996; DeVellis, 2014). Considering that the number of items in the study should be ten times the number of items, considering that a 14-item scale form will be applied to the study group, at least 140 healthcare professionals constitute our study sample. In the study, missing 20% was assumed due to incomplete, incorrect filling, etc., and it was envisaged that at least 168 healthcare professionals would be included. Until this number was reached, all healthcare professionals who met the criteria were included in the study. 201 health professionals responded to the survey. Four questionnaires that did not meet the inclusion criteria were excluded from the study. As a result, 197 healthcare professionals were included in the study.

2.2. Data Tools

The data collection form used in this study consisted of two parts. The first part, the "Personal Information Form," collected descriptive information from the participants. In the second part, the "Emotional Communication Questionnaire for Education and Healthcare Professionals Scale" developed by Hernández-Jorge et al.

Personal information form: This form collected information about the participants' characteristics (gender, age, marital status, profession, years of employment, shift type, etc.).

*Emotional communication scale (ECS)**:*** This scale was developed by Hernández-Jorge et al. (2022) to measure healthcare professionals' perceptions of emotional communication. The ECS includes 14 items on a five-point Likert type scale, with response options ranging from 1 (Never) to 5 (Always). The scale consists of three factors: six items, "communicative proactivity" (items 1–6); five items, "openness authenticity" (items 7–11); and three items, "listening" (items 12–14). The minimum score is 14, and the maximum score is 70. Increasing scores indicate the level of emotional communication of healthcare professionals. The Cronbach's alpha coefficients of the original scale's "communicative proactivity," "openness authenticity," and "listening" factors were 0.819, 0.751, and 0.658 (Hernández-Jorge et al., 2022).

2.3. Data Collection

The research was conducted between December 2022 and March 2022. The study data were obtained through face-to-face interviews and questionnaires. On the first page of the personal information form and scale form, the participants were informed about the purpose of the study, contact information about the researcher was provided, and then informed consent was obtained. Before responding to any questions, participants were assured that their responses would remain anonymous. Participants who consented to participate in the study answered the questionnaire form. The average response time for the personal information form and the scale form was 10 minutes. A total of 201 healthcare professionals completed the face-to-face questionnaires; after excluding incorrect or incomplete questionnaires, a total of 197 respondents were included in the study sample.

2.4. Procedures

There has yet to be a universal agreement on how to adapt an instrument for use in a different cultural setting (Gjersing, Caplehorn & Clausen, 2010). A different number of similar steps have been suggested for scale adaptation studies in terms of context. This study used the steps suggested by Gjersing et al. (2010) for cross-cultural adaptation studies (Figure 1).

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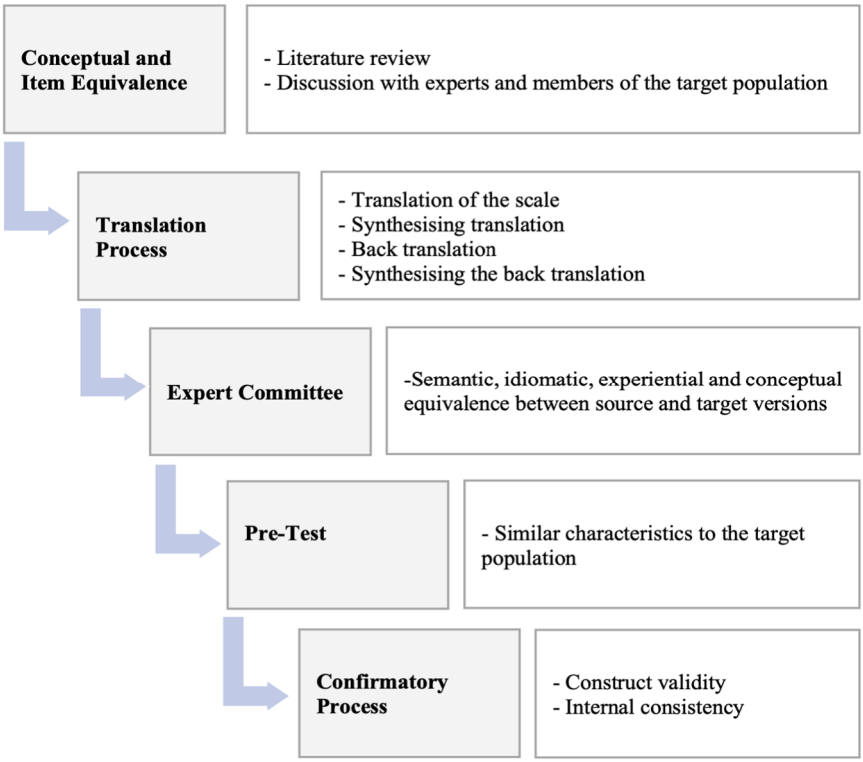

Figure 1. Cross-Cultural Adaptation Process

2.5. Investigation of Conceptual and Item Equivalence

This stage is to assess if there is the same relationship between the questionnaire and underlying concept in both the original and target setting. Both conceptual and item equivalence was assessed through a literature review by researchers. It was then discussed with four experts. This has the aim of exploring whether the various domains covered by the original instrument in defining the concepts of interest would be relevant and pertinent to the new context for which it is being adapted (Reichenheim & Moraes, 2007).

2.6. Translation Process

This stage is based on the method proposed by Brislin et al. (1973) for adapting instruments developed in a language other than the target language (Brislin, Lonner & Thorndike, 1973). This method includes initial translation into the target language, evaluation of the initial translation, back translation into the source language, re-evaluation of the back translation, and consultation with experts.

Phase I-Initial Translation: First, a total of three people, two native speakers of Turkish and fluent in English, two faculty members, and a native speaker from the field of English linguistics translated the scale items from the source language English into the target language, Turkish.

Phase II-Synthesis of Translations: In the second stage, similar and different translations of the other three translations were combined into a single form. This form, which included similar and different Turkish translations, was sent to three faculty members who had experience in scale adaptation and were fluent in English, and they were asked to select the Turkish translations that best represented the English original. The translations were reviewed for consistency, clarity, word and sentence construct, and cultural appropriateness. After some modifications were made due to the initial evaluation, a consensus was reached.

Stage III-Back Translation: In this stage, all the items agreed upon in the previous step were sent for back-translation from Turkish to English by two different foreign language experts whose native languages were Turkish. Neither retranslator was familiar with the concepts under investigation, nor had a medical background. This increases the likelihood of avoiding information bias and revealing different meanings of items in the translated scale (Guillemin, Bombardier & Beaton, 1993). This process aimed to validate the instrument's content and identify inconsistencies or conceptual errors.
Stage IV-Synthesis of Back Translations: In this stage of the translation process, two experts who were native Turkish speakers, fluent in English, and experienced in instrument adaptation examined all items from the first three stages in detail. These two experts identified the Turkish translations that best expressed the items in the original language, discussed all items until consensus was reached, and finalized the scale items. As a result of this process, it was decided to use the final version of the scale in the current study.
Stage V-Committee of Experts: At this stage, it was decided to what extent the items in each dimension measured what they were intended to measure. The Expert Committee is very important for ensuring the cross-cultural equivalence of the translated instrument. The Expert Committee consisted of two academics with psychometric experience, two health professionals, an academic with a background in emotional communication, and an English language expert, all of whom had doctoral degrees. The Expert Committee reviewed the source and back-translation questionnaires for equivalence and agreed on all items.

2.7. Pre-Test

At this stage to test the comprehensibility of the language and content validity of the scale items. In this context, the scale was administered as a pre-test to 20 healthcare professionals with similar characteristics to the sample group but met the selection criteria outside the sample group. In the pre-test, the participants were asked to explain each item, and the researchers took notes on whether the participants understood the relevant item or not. Asking participants to rephrase each item is a technique that can determine whether an item is understood or not (Reichenheim & Moraes, 2007). In the preliminary study, the researchers made final semantic edits to the compiled version based on the responses. Then, the Turkish scale was finalized after interviews with three health professionals (one nurse, one midwife, and one radiology technician) about emotional communication in health professionals.

2.8. Confirmatory Process

2.8.1. Construct validity

In scale adaptation studies from the literature, it is often stated that it is more appropriate to conduct Confirmatory Factor Analysis (CFA) instead of Exploratory Factor Analysis (EFA) to test the suitability of the factor structures in the original scale study to the adapted culture (Çokluk, Şekercioğlu & Büyüköztürk, 2014). Factor analysis is the most widely used method to test a scale's construct validity. Factor analysis is a concept related to what a scale accurately measures (Öner, 2008). In this study, the appropriateness of the factor constructs in the original research of the ECS for Turkish culture was examined by CFA.

2.8.2. Internal consistency

Cronbach's alpha and item-total correlation analysis were applied to assess internal consistency. A value higher than 0.70 for Cronbach's alpha indicates a good internal consistency of the items in the scale (Gliem & Gliem, 2003). There is no specific standard for the item total correlation coefficient. Although it is stated that item-total correlation coefficient values of 0.50 and/or above are significant, it is generally recommended that correlations should be above 0.20 and should not be negative (Uysal & Ozcan, 2011).

2.9. Data Analysis

Expert opinions were taken for content validity. The construct validity of the ECS was tested with CFA. For the reliability analysis of the scale, internal consistency measurement (Cronbach's alpha coefficient) and item-total correlation measurement were performed. Item-total test correlations were calculated to provide evidence for the validity of the items in the ECS. Items with a factor loading of 0.30 and above were included in the evaluation (Tabachnick & Fidell, 1996). This study used IBM's SPSS (SPSS Inc., Chicago, IL, USA) version 24.0 package program and AMOS version 24.0. package program for data analysis.

3. RESULTS

3.1. Characteristics of Participants

The mean age of participants was 31.31 years (SD = 9.94), with ages ranging from 19 to 60; of the 197 participants, 46 (23.4%) were males and 151 (76.6%) were females. The mean professional experience of participants was 19.1 years (SD = 9.64), ranging from 1 month to 45 years; The mean working experience in the hospital of participants was 11.9 years (SD = 9.22), ranging from 1 month to 30 years. In terms of educational status, 139 (70.6%) graduated from high school, 41 (20.8%) with a bachelor's, and 22 (11.2%) with a master's. In terms of units worked, emergency service 22 (11.2%), operating room 14 (7.1%), intensive care unit 23 (11.7%), internal clinics 48 (24.4%), outpatient clinics 17 (8.6%) and other units 73 (37.1%). The participants' 86 (43.7%) work on the day shift, and 111 (56.3%) work in rotating shifts (morning and night). The weekly working hours of 131 (66.5%) of the participants did not exceed 40 hours, 50 (25.4%) from 40 to 60 hours, 7 (3.6%) from 61 to 80 hours, and 5 (2.5%) from 81 to 100 hours. The participants' 180 (91.4%) reported that they received communication training, while 17 (8.6%) reported that they did not receive communication training. While 157 (87.2%) of those who received communication training found the training they received sufficient, 23 (12.8%) reported that they found the training insufficient.

3.2. Construct Validity

The final version of the scale adapted into Turkish was tested on a main sample of 197 participants. Expert opinions were obtained to adapt the ECS to Turkish culture and to ensure that Turkish healthcare professionals could easily understand it. No changes were made to the items in line with the expert opinions.

Before CFA, item analysis was performed to examine the item-total score correlations of the items in the Turkish version of the scale (Table 1). Item analysis revealed that the item-total score correlations of all items ranged from 0.510 (Item 1) to 0.643 (Item 6). Since there were no items with item-total score correlations below 0.20, the CFA phase was started with the AMOS (Version 24.0) package program without removing any item (Alpar, 201).

Table 1. Item Analysis of The ECS (N = 197)

Factor Names and Items	Factor Loading	Corrected Item-Total Correlation
Communicative Proactivity		
Item 1	0.573	0.510
Item 2	0.671	0.567
Item 3	0.701	0.612
Item 4	0.702	0.616
Item 5	0.629	0.543
Item 6	0.688	0.643
Openness Authenticity		
Item 7	0.522	0.542
Item 8	0.601	0.567
Item 9	0.671	0.546
Item 10	0.673	0.552
Item 11	0.731	0.551
Listening		
Item 12	0.780	0.582
Item 13	0.680	0.540
Item 14	0.637	0.514

Within the scope of structural equation modeling (SEM), there are certain criteria that characterize the fit indices in CFA. Accordingly, the fit index to be at an acceptable level, the ratio of the chi-square value to chi-square/degrees of freedom ($\chi 2/df$) should be less than 3 (Kline, 1994), comparative fit index (CFI), goodness of fit index (GFI), incremental fit index (IFI), and tucker-lewis index (TLI) values should be equal to or above 0.90 (Marsh et al., 2006), root mean square error of approximation (RMSEA) should be equal to or less than 0.080, and the data fit the model well when the standardized root mean square residuel (SRMR) is maximum 0.10 (Browne & Cudeck, 1993; Büyüköztürk, 2002).

In the CFA, the goodness of fit of the 3-factor construct "communicative proactivity," (six items), "openness and accuracy" (5 items), and "listening" (3 items) in the original study was examined with the AMOS 24.0 package program. As a result of the analysis, after the necessary modifications were made between items 1 and 3, 4 and 5, 7 and 8, and 12 and 14, acceptable fit values were obtained as CFI=0.94, TLI=0.92, IFI=0.94, GFI=0.91, RMSEA=0.07, and good fit values $\chi 2/df$=1.92 and SRMR=0.03.

3.3. Internal Consistency Analysis

Another method showing the internal consistency of a scale is the item-total correlation coefficient. Item-total correlation coefficients for all items of the ECS ranged between 0.510 and 0.643 (Table 1). The results of the item-total score correlation coefficients indicate that there are 14 items on the scale. To the extent that item-total correlations are high, the items of the scale measure the same characteristics. The study accepted item-total correlation coefficients as at least 0.25 (Alpar, 2016). The ECS factors correlation coefficients was between 0.566 and 0.610 ($p<0.01$).

Table 2. Descriptive Statistics of The Factors, Cronbach's Alpha Internal Consistency Coefficients and Correlation between Factors

	Number of items	Mean	SD	Cronbach's alpha	Factor 1	Factor 2	Factor 3
Factor 1	6	4.24	0.53	0.838	1		
Factor 2	5	4.08	0.59	0.770	0.577**	1	
Factor 3	3	4.16	0.56	0.680	0.566**	0.610**	1

***p<0.01, SD: Standard Deviation*

Cronbach's alpha reliability coefficients were calculated to evaluate the total internal consistency of the scale and sub-factors obtained as a result of factor analysis. The Cronbach's alpha coefficients were calculated as 0.885 for the whole scale, 0.838 for the communicative proactivity, 0.770 for the openness authenticity, and 0.680 for the listening (Table 2).

4. DISCUSSION

Communication is a complex and dynamic multidimensional process (O'Hagan et al., 2014). Effective communication is an essential component of healthcare interactions and serves multiple functions, including information exchange and relationship building. Effective communication is an essential component of healthcare interactions and serves multiple functions, including information exchange and relationship building. Effective communication skills allow for a better assessment of patients' needs and greater attention to them (Bolster & Manias, 2010). Therefore, poor communication between healthcare professionals and patients has a direct impact on many factors related to the patient's condition (Hemsley, Balandin & Worrall, 2012), such as adverse events (Tay, Ang & Hegney, 2012). Effective communication is a crucial element in defining the quality of patient care (Arnold & Boggs, 2019; Fleischer et al., 2019). In addition, how communication is provided and especially the interpersonal skills and attitudes of healthcare professionals (Taylor & Benger, 2004) are closely related to patient satisfaction (Saunders, 2005).

Emotional communication is a form of communication that has been given great importance among communication types. Health professionals should have a basic understanding of how to interact with and address patients effectively. Knowing how to use specific communication behaviors to elicit and respond to patient expressions of distress quickly and appropriately can facilitate these discussions and better meet patients' needs. While there is no clearly defined approach to the best way to respond to patient expressions of emotion (Del Piccolo et al., 2011), negative emotions have also been described as difficult to manage (Sheldon et al., 2009). Expressions of concern from emotionally charged patients and their caregivers require healthcare professionals to craft empathic, accurate responses that meet needs. Despite evidence of the positive health effects of empathy, health professionals often fail to recognize opportunities for responding empathically to patients' expressions of negative emotions. Emotional communication can be directly examined through the analysis of observed (audio and/or videotaped) patient-clinician encounters.

Many studies have shown that clinicians often do not provide emotional space for patients to talk about their problems (Park et al., 2019). Communication between healthcare professionals and patients has not been adequately studied in Türkiye. Existing studies have shown that the general communication between healthcare professionals and patients is inadequate. In addition, no study on emotional communication, which is a particular form of communication, has been found in the Turkish literature. This scale will draw attention to the importance of emotional communication. The psychometric properties of the Turkish version of the ECS confirm that the ECS is a valid and reliable instrument that can be used to assess the attitudes of healthcare professionals in Türkiye towards emotional communication when communicating with other people.

Further research in the healthcare sector with the Turkish version of the ECS will promote better communication and may help healthcare professionals to identify their attitudes toward emotional communication.

In scale development and adaptation studies, content validity is used to assess whether the items of a scale cover the domain to be measured (Öner, 2008). Decisions will need to be made by the expert committee to ensure equivalence between the source and target versions in four areas: semantic, idiomatic, experiential, and conceptual (Guillemin, Bombardier & Beaton, 1993). The expert committee is very important for ensuring the cross-cultural equivalence of the translated instrument. In this context, after six experts examined the source and back-translation questionnaires regarding equivalence, a consensus was reached about all items in the form.

After the expert opinion, a pilot study was conducted by applying the scale to a small sample group. In order to test the comprehensibility of the scale items for which language and content validity was ensured, it was applied as a pre-test to 20 healthcare professionals who had similar characteristics with the sample group but met the selection criteria outside the sample group. There are different opinions about the sample size for the pilot study. Evci and Aylar (2017) recommend pilot testing by reaching approximately 5% of the target population (Evci & Aylar, 2017), while Şeker and Gençdoğan (2014) state that it is sufficient to select between 30 to 50 participants representing the target population (Şeker & Gençdoğan, 2014). In the pre-test, the participants were asked to explain each item, and the researchers noted whether the participants understood the relevant item or not. Asking participants to restate each item is a technique that can determine whether an item is understood or not (Reichenheim & Moraes, 2007).

Item analysis provides information about the reliability of each item in a scale. Therefore, if the items in a scale are equally weighted and independent, the correlation value between each item and the total score should be high. Item-total Pearson correlation coefficients are expected to be at least 0.20 (or 0.25) (Tavşancıl, 2019). The item-total score correlations of the items in the Turkish version of the scale were evaluated within the scope of the item analysis conducted for this study. The item analysis showed that the item total score correlations of all items were between 0.510 and 0.643. Since there were no items with item-total score correlations below 0.25, no item was excluded from the study. The ECS sub-factors correlation coefficients were between 0.566 and 0.610 ($p<0.01$). The correlation coefficient values between the factors should not be 0.85 and above (Kline, 1994). In such a case, it is concluded that two factors measure the same constructs, which means that one of the factors is excluded from the model (Çokluk, Şekercioğlu & Büyüköztürk, 2014).

Factor analysis is a very common method used to test a scale's construct validity. Factor analysis produces factors related to the construct or concept to be measured and relates to what a scale accurately measures. In this study, CFA was conducted to test the construct of the scale. Evaluating the fit of the hypothetical model with the data is a complex and difficult issue (Özdamar, 2013). Different indices have been developed for fit statistics. According to Thompson (2008), the most commonly used fit indices in research are chi-square, NFI, RMSEA, and CFI. Studies agree that instead of reporting a single fit index, one should be reported for each group (Thompson, 2008). According to the results of the first CFA conducted in the current study, the model fit indices $\chi 2/df$ and SRMR were found to be acceptable, while CFI, RMSEA, GFI, IFI and TLI values were not found to be within the acceptable fit. Therefore, necessary modifications were made as a result of the first CFA analysis, and the CFA was repeated. After the required modifications were made between the items that were in the same factor and contributed significantly to the overall fit of the model, it was determined that the adaptation values good fit in terms of $\chi 2/df$ and acceptable fit in terms of CFI, RMSEA, GFI, IFI, and TLI. In the original study, fit index values were found to be RMSEA=0.084, TLI=0.83, GFI=0.90, and CFI, RMSEA, GFI, IFI, and TLI (Hernández-Jorge et al., 2022). The fit index values for healthcare professionals in Türkiye were higher than the original version.

The factor loadings of the scale items should not be too low. Factor loadings of 0.30 and above are desirable (Çokluk, Şekercioğlu & Büyüköztürk, 2014). Hair et al. (2013) classify factor loadings between 0.30 to 0.40 as acceptable, factor loadings above 0.50 as meaningful, and factor loadings above 0.70 as indicative of a well-defined construct (Hair et al., 2013). The factor loadings of the 14 items of the scale vary between 0.522 to 0.780. In the study, factor loadings of all scale items were above 0.30. The factor loadings reported in the original scale ranged between 0.586 and 0.830 (Hernández-Jorge et al., 2022).

The results of the present study show that the Turkish version of the ECS has a similar construct with the original version of the scale. The first factor of the emotional communication scale is "Communicative Proactivity," which is characterized by a positive attitude towards initiating and maintaining communication-related to emotional communication and consists of six items related to maintaining closeness with other people, understanding their feelings and situations, creating a warm atmosphere in interpersonal relationships, maintaining an attitude of respect and tolerance, showing interest and concern for the communicator, and being prone to listening actively. The second factor is "Openness Authenticity," understood as presenting oneself without deceiving others, and consists of five items related to providing personal information, expressing needs and feelings, expressing oneself clearly without deception, facial expression, and unity between verbal and nonverbal language. Finally, the third factor is "Listening" for emotional communication, which consists of three items related to using active listening strategies, such as paraphrasing, asking the other person about their situation, and listening skills such as looking, nodding, and not interrupting.

In scale development studies, Cronbach's alpha analysis tests the internal consistency of items using the Likert scale. Cronbach's alpha coefficients were calculated for the ECS sub-factors. The Cronbach's alpha coefficients were 0.885 for the whole scale and 0.838, 0.770, and 0.680 for the sub-factors (communicative proactivity, openness authenticity, listening), respectively. These results show that all factors of the scale have high internal consistency. Coefficients with internal consistency scores between 0.80 and 1 indicate that the relevant scale has high reliability (Tavşancıl, 2019). The Cronbach's alpha coefficients of the original ECS were 0.819, 0.751, and 0.58, respectively. The 14-item three-factor construct of the ECS reveals higher Cronbach's alpha coefficient values than the original version for healthcare professionals in Türkiye.

4.1. Limitations

5. The first limitation of this present study about samples. The research was conducted with healthcare professionals working in a public hospital in Giresun province in Türkiye. Although the study group of the research consists of health professionals, the limitations of generalization to all health professionals should be taken into consideration. The measurement tool was adapted on a sample of healthcare professionals (physicians, nurses, midwives, health technicians/technicians, etc.) and should be kept in mind that may show different constructs in other professionals (cleaning staff, security staff, etc.) and cultural groups. A second limitation of this study is that reliability calculations based on the test-retest technique were not performed in this study. In future studies, the scale's reliability can be re-examined with the test-retest technique.

5. CONCLUSION

The Turkish version of the ECS is a tool with high content validity and internal consistency that can be used to assess the emotional communication attitudes of healthcare professionals. It is also a self-assessment tool that does not contain excessive items, can be answered quickly, and allows respondents to focus easily. The scale can help health professionals to identify their attitudes toward emotional communication. Therefore, this tool can help develop training programs for communication, designing, and evaluating training processes aimed at helping professionals working in the health field.

The results of this study support that the Turkish-adapted ECS is a valid and reliable tool specific to health professionals in Türkiye for assessing health professionals' attitudes toward emotional communication when communicating with other people. The 14-item three-factor construct of the Turkish-adapted ECS reveals similar fit index values to the original version for healthcare professionals in Türkiye.

Ethical statement

Before starting this study, permission to use and translate the scale was obtained by e-mail from the author responsible for communication among the researchers who developed the ECS. The study was approved by the Health Sciences Non-Interventional Research Ethics Committee of Bandirma Onyedi Eylul University on October 18, 2022 (approval number: 2022-146) and was conducted in accordance with the Declaration of Helsinki (1989). Permission was obtained from the institution where the study was conducted.

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