THE EMOTIONAL EXPRESSION IN ADULTS: CROSS-CULTURAL VALIDATION AND PSYCHOMETRIC PROPERTIES

Noura Alhammadi*[1], Intan HM Hashim[1], Shahla Ostovar[2] and Zaireeni Azmi[2]

[1]School of Social Sciences, Universiti Sains Malaysia, 11800 Penang, Malaysia; [2]Centre for Research on Women and Gender (KANITA), Universiti Sains Malaysia, Penang, Malaysia

Abstract

The extent to which individuals openly exhibit their emotions, known as emotional expressiveness, has been linked to multiple indicators of overall wellness. The objective of this study was to assess the psychometric properties of the Emotional Expression Scale (EES) among a sample of Emirates adults. A total of 704 Emirates (44.35% male, 55.28% female; age: 18 to 69 years) samples and their contacts were recruited for the study. The exploratory factor analysis (EFA) and confirmatory factor analyses (CFA); tests of measurement invariance, tests of reliability, and convergent were conducted. The results showed that two factors were extracted, and the CFA replicated the original unidimensional structure RMSEA=0.05, SRMR= 0.07 CFI=0.94, NFI=0.93, and TLI=0.93. The internal consistency coefficients for EES were acceptable (.80). It can be concluded that the EES is a valid measure for investigating the use of emotional expression among married Emirati.

Keywords: Emotional expression, Cross-cultural, Confirmatory factor analyses, Validity, reliability

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*Corresponding Author: Noura Alhammadi, School of Social Sciences, Universiti Sains Malaysia, 11800 Penang

Correo-e: nouraalhammadi000@gmail.com

Introduction

Emotional expressiveness (EE) refers to an individual's capacity to convey their emotional states through verbal and nonverbal movements and gestures, including those made by the face [1, 2]. The EE construct has been a topic of interest for natural scientists since Charles Darwin's time and has also captured the attention of psychologists, dating back to at least William James. For centuries, scholars have struggled to capture the essence and significance of human emotions, as well as our means of expressing them to others [3, 4]. Emotional expressivity, on the other hand, pertains to an individual's inclination to externalize their emotional reactions through observable behaviors.

It is a well-known fact that people are captivated by the emotional expressions of others [5]. News agencies, for instance, always include images of politicians' reactions to winning or losing elections. Reports of court cases also routinely mention the defendant's emotional expressions during the reading of the verdict, while photographs taken in locker rooms after winning or losing attempt to capture sports figure's reactions. People likely find emotional expressions intriguing because they convey something that words often cannot. Emotional expressions are believed to communicate something unique and fascinating, which words may not always be able to express. As Fritz Perls (1969), the founder of Gestalt therapy famously remarked, words can often be dishonest or meaningless, but the voice, gesture, posture, and facial expression convey a more profound truth.

In Western culture, the ability and inclination to verbally express one's emotions to others is considered a symbol of well-being and resilience [6]. This belief has roots dating back to the late 19th century when Sigmund Freud emphasized the significance of emotional catharsis in easing mental suffering and physical symptoms [7]. Many contemporary forms of psychotherapy, such as psychodynamic, interpersonal, cognitive-behavioral, and dialectical behavior therapy [8, 9, 10, 11], aim to aid individuals in comprehending, recognizing, and constructively conveying their emotions to others. The core objective of these therapies is to facilitate emotional expression as a tool for achieving greater self-awareness, enhancing relationships, and reducing psychological distress and potential for disorders.

This behavioral manifestation can be categorized into two types: Positive Expressivity and Negative Expressivity [12, 13]. Researchers have empirically established that Positive and Negative Expressivity are distinct constructs [14, 15, 16]. Furthermore, the correlation between the two types of expressivities and the Big Five dimensions of personality varies significantly [17]. Positive expressivity is strongly associated with Extraversion, whereas negative expressivity is more strongly associated with Neuroticism [18, 15, 19]. For instance, individuals with high levels of Positive Expressivity are more likely to express joy, enthusiasm, and other pleasant emotions. Conversely, individuals with high levels of negative expressivity are more likely to express sadness, anger, and other unpleasant emotions.

Psychologists have long been intrigued by the extent to which people display their emotions, as it presents unique and captivating challenges [20]. Emotional expressiveness has been a focal point of interest for researchers in various fields, including nonverbal communication, psychopathology, personality, social psychology, and health psychology. Although the belief that expressing emotions is advantageous has been widely held, there is a paucity of empirical research investigating this assumption, and only a few measures are available to evaluate emotional expression. This study aimed to establish the psychometric properties of EES that evaluate the expression of both positive and negative emotions. The measure we validated and assessed for reliability quantifies the degree to which individuals engage in disclosing and expressing emotions to others.

Materials And Methods

This research had two primary objectives: (i) to translate and culturally adapt the EES instrument from English to Arabic, and (ii) to evaluate the psychometric properties of the resulting Arabic version, EES-A. The permission of the authors was obtained before commencing the process of translating and culturally adapting the instrument. To ensure accuracy and fidelity to the original instrument, the translation and cross-cultural adaptation process adhered to the guidelines established by the World Health Organization (WHO) for instrument translation and adaptation (WHO, 2013).

Study Design, Participants, and Procedure

This investigation employed a cross-sectional design to recruit a diverse cohort of UAE nationals residing in the Emirate. The sample was comprised of 704 married individuals. Participants were invited to take part by completing an online survey administered through Google Forms. The survey link was disseminated to potential participants via email. To ensure a sufficient sample size, we implemented a comprehensive recruitment approach that involved a combination of online advertisements, social media platforms, and email invitations. The determination of the sample size was based on statistical calculations conducted using Gpower software, considering the desired effect size and statistical power. Online platforms are chosen to facilitate a broad and convenient method of obtaining a large and varied sample. The participants' ages ranged from 18 to 69, with a mean of 31.77 years and a standard deviation of 9.79. The non-probabilistic sampling method used resulted in a sample comprising 479 women (68.1%) and 225 men (31.9%) (refer to table 1). Most of the participants (69%) had 1-2 children, and approximately 70% had been married for five years or less (Table 1).

Translation and cultural adaptation

The translation and cultural adaptation procedure lasted for approximately four months. We adhered to the recommended protocol by WHO for the translation and customization of tools. The application of this technique encompassed the ensuing stages:

I. guidelines suggest that health professionals are the preferred option for translators. By this, psychologists who possess experience in utilizing rating scales in clinical and research contexts were chosen., were chosen to translate the EES tool from English to Arabic and back to English. These translators were born in the UAE, proficient in the English language, and had a clear understanding of the purpose of the EES.

Table 1. Sociodemographic Characteristics of Participants.

Characteristic	n	%
Gender		
Male	225	32
Female	479	68
Highest Education Level		
High School Diploma	135	19.1
Bachelor's Degree	511	72.5
Master's Degree	39	5.5
Doctorate Degree	15	2.1
Other	4	0.56
Relationship Status		
Married	683	97
Divorce	3	0.42
Other	18	2.55
Relationship Length		
¡1 year	113	16.05
A year or longer	591	83.9
Cities		
Abu Dhabi	397	56.3
Dubai	121	17.1
Sharjah	46	6.53
Ajman	34	4.8
Ras Al Khaimah	21	3
Fujairah	20	2.8
Umm Al Quwain	39	5.53
Other	26	3.7

II. A committee comprising four psychologists and one psychometrician was appointed to evaluate the translation and identify any inadequate expressions or concepts. The panel thoroughly.

reviewed the entire translation and highlighted any difficulties they faced while using the scale. All the suggestions put forward by the committee were discussed and incorporated into the final version of the EES (Table 2).

I. A bilingual psychologist who did not have access to the original English version conducted the back-translation of the final Arabic-language version. The expert panel re-evaluated this version to compare it with the original version.

II. To ensure the scale was user-friendly and systematic, a psychologist administered the instrument. The psychologist then conducted a pre-test with 20 samples to evaluate the clarity of the instructions, comprehensibility of the content, and assessment of each item in the scale. During the administration of the instrument, participants took approximately 5 to 10 minutes to complete the questionnaire. While conducting this step, participants were asked to provide feedback on the instrument and each of its items. The participants unanimously agreed that the questionnaire was easy to comprehend.

The article could benefit from a more in-depth discussion of the results, including the implica- tions and limitations of the findings.

Instrument

Emotional Expressivity Scale (EES) The Emotional Expressivity Scale (EES) is a 17-item self-report questionnaire developed by [21, 22]. This measure assesses an individual's perceived expression of emotions, including both verbal and nonverbal communication through body language and facial expressions. The EES has been shown to have strong psychometric properties [23], including high internal consistency reliability and stability over time (one week). The scale also demonstrated significant correlations with conceptually related constructs and no correlation with measures assessing unrelated constructs. Interestingly, the EES scores were not found to be correlated with depression or well-being measures. The EES items are rated on a 7-point Likert scale, and some items are reverse-scored (such as Items 2, 3, 4, 7, 9, 10, 11, 12 15, 16, and 17). The mean score is used to calculate EES scores, with higher scores indicating greater emotional expressivity. The scale offers data on how emotions are expressed in both interpersonal and non-interpersonal contexts. The EES has been shown to have good internal consistency (Cronbach's alpha =.80).

Ethical Considerations

The participants were provided with a consent form before accessing the questionnaire, which confirmed the study's scientific intent and voluntary participation. The form included information regarding the average completion time of the questionnaire, emphasized the anonymity of the survey, and assured that all collected personal data would be kept confidential and not disclosed, shared, or communicated to any third party.

Statistical Analysis

The study analysed the dimensionality of the Arabic version of the EES. No missing data were found in demographic variables. To assess normality, we examined skewness and kurtosis indices. Items with univariate skewness above 3 and kurtosis above 10 were recommended for removal [24]. One of the subsets was used for exploratory factor analysis (EFA). We conducted a Kaiser-Meyer- Olkin test (KMO) to verify if the data was suitable for EFA, with a value closer to 1 indicating better suitability [25].

A principal component factor (PCF) analysis was conducted based on Kaiser's criterion of eigenvalue equal to or greater than 1.0 to extract factors [26, 27]. Varimax-rotation and Promax- rotation were performed to explore factor loadings, with a minimum item-factor loading of 0.35 on a main factor [28]. However, to avoid retaining too many factors, we conducted a minimum average partial correlations (MAP) test to confirm the number of factors to be retained. We selected the number of components at which the average squared partial correlations were minimum, as suggested by [29].

The data fit was examined using CFA with maximum likelihood and bootstrapping based on 5000 random replications. The study tested the unidimensional theory-based model, which was supported by previous research on the EES factor structure. To evaluate the data fit, the study used several indices, including Comparative Fit Index (CFI), Goodness of Fit Index (GFI), Tucker-Lewis Index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). The acceptable fit was achieved when CFI and TLI values exceeded 0.90 and RMSEA and SRMR values were less than 0.08. The study also used multigroup CFA to assess the invariance of the EES structure across groups of gender and age. The sample size was considered, as it may impact the chi-square (X2) index values, which can fail to qualify the fitting models that demonstrate minor modifications. The study used a two-tailed test and considered a P-value ¡ 0.05 as significant.

Results

Regarding the participants, 68% were women 32% were men, and all were married. Other characteristics of the participants are shown in Table 1. The cultural differences were not significant within the occupational milieu. As described in Table 2, all items achieved satisfactory I-CVI scores and excellent k* values. Moreover, the EES displayed a highly satisfactory content validity, with an average S-CVI of .96. A Normality assessment was conducted to determine the suitability of the variables for subsequent analyses. While the univariate normality of the variables was met, as evidenced by skewness values less than 3 and kurtosis values less than 10, slight non-normality was observed, with all–skewness-values below 1.25 and all kurtosis values below 3.75 [30, 31] (Table 2).

Exploratory factor analysis

Before performing exploratory factor analysis (EFA) on each item of the Emotion Regulation Questionnaire (ERQ) scale, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of spheric- ity were used to assess the suitability of the items for factor analysis. The results indicated that the data met the assumptions for EFA, as reflected by a KMO value of 0.84 and a Bartlett spherical test value of X2/df=4633.35/45=136, p¡0.000. Both the Kaiser eigenvalues method test was utilized to determine the optimal number of factors to retain. The Kaiser eigenvalues method yielded a single factor.

Confirmatory factor analysis

After adopting the single-factor model based on the results of EFA, we conducted a confirmatory factor analysis (CFA) using the MLM method for the Emirati married sample. The results of confirmatory factor analysis showed one model with a single factor. Initially, the result showed an acceptable fit according to the RMSEA (0.07) and SRMR (0.08) indices. However, the CFI (0.85), NFI (0.81), and TLI (0.83) values did not meet the criteria for an acceptable fit. Based on modification indices [32] and theoretical justifications, four error covariances were set as free parameters. The modified measurement model then got a goodness-of-fit statistics (x2 = 215.60, df=119, p ¡ .001, x2 /df=2.17 CFI=.93, TLI=.91, RMSEA=.06 (90% confidence interval=0.04- 0.09), SRMR=.07) (see Table 3). Figure 1 and 2 shows all standardized factor loadings. In addition, a chi-square of 16.18 (df=10, P=0.001) showed good fitness. The GFI in the current study was 0.92, which showed the good fitting of the uni-dimensional model of the EES construct. Further indices tested in this model were RMSEA=0.05, SRMR=0.07 CFI=0.93, NFI=0.92, and TLI=0.91. All the tested

Table 2. Content Validity Index (CVI), Means, SD, Corrected Item Total Correlation for the Emotional Expressivity Scale in Arabic.

Item	I-CVI	K*	Mean	SD	Skewness	Kurtosis	Item-Total Correlation	Cronbach's Alpha
EE1	1	1	2.09	0.763	0.968	2.781	0.64	0.8
EE2	1	1	2.71	1.09	0.048	-0.967	0.58	0.79
EE3	1	1	2.9	1.21	1.066	2.06	0.73	0.78
EE4	1	1	2.67	1.13	0.352	0.036	0.65	0.76
EE5	1	1	2.46	1.02	1.132	0.664	0.31	0.79
EE6	1	1	3.41	1.46	1.063	0.654	0.52	0.78
EE7	0.9	0.95	2.75	1.03	1.145	-0.78	0.7	0.8
EE8	1	1	2.95	1.31	1.082	1.487	0.61	0.8
EE9	1	1	2.48	0.952	0.881	0.866	0.62	0.77
EE10	1	1	2.98	1.23	0.587	0.626	0.51	0.77
EE11	1	1	2.93	1.16	0.913	0.17	0.59	0.78
EE12	0.9	0.95	2.28	1.27	0.804	2.083	0.69	0.79
EE13	1	1	2.67	1.07	0.242	1.197	0.64	0.81
EE14	1	1	3.02	0.949	0.243	0.513	0.74	0.78
EE15	1	1	2.91	0.923	0.678	1.231	0.5	0.78
EE16	1	1	2.15	1.2	0.735	-0.3	0.51	0.77
EE17	1	1	2.79	0.882	0.632	1.611	0.55	0.81

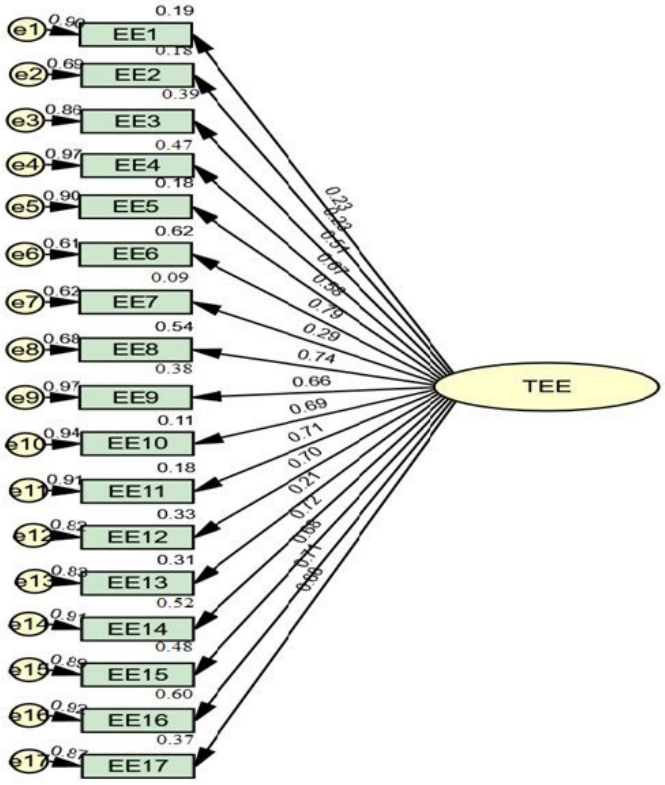

Figure 1. Initial factor structure of EES.

indices demonstrated that the extracted model was a good fitting (Figure 1).

Discussion

The Emotional Expressiveness Scale (EES) is an innovative self-report measure that aims to capture a broad construct of emotional expressiveness. The EES was designed to have a single-factor structure and has been supported by previous studies that utilized both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) methods. Despite the promising findings, it is important to validate the EES in different cultural and linguistic contexts. This study focuses on the translation and validation of the EES in Arabic. The results of language equivalency analysis revealed high correlations between the Arabic and English forms of the EES, indicating that both versions could be considered equivalent. These findings are noteworthy, as they demonstrate that the EES can be used effectively in cross-cultural research and that it is a versatile tool for capturing emotional expressiveness across different languages and cultures [33, 34].

It is important to highlight that validating the Emotional Expressiveness Scale (EES) in Arabic is a significant milestone in expanding the use of this tool in Middle Eastern countries. Cultural and linguistic differences play a crucial role in determining how individuals express and interpret emotions, and the successful translation and validation of the EES in Arabic indicates the relevance of considering these factors during the validation process. This study utilized various techniques to evaluate the psychometric properties of the EES. The content validity of the scale was assessed through several measures, such as I-CVI scores (greater than 0.94), the average S-CVI (0.96), and the item k* value (greater than 0.97), which demonstrated strong content validity. The internal consistency reliability of the EES was also examined, and the results indicated good reliability (Cronbach's alpha = 0.80).

Furthermore, the construct validity of the EES was analyzed using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The results from both EFA and CFA showed that the EES is a unidimensional scale, with a single factor accounting for 68.3% of the total variance. These findings suggest that the EES is a reliable and valid tool for measuring emotional expressiveness in Arabic-speaking populations. The use of self-report measures in cross-cultural research is becoming increasingly common, and the successful translation and validation of the EES in Arabic provides further support for this approach. By validating the EES in different languages and cultures, researchers can gain a deeper understanding of how emotional expressiveness varies across populations and explore the potential impact of cultural and linguistic factors on emotional expression.

we developed a model with a single latent factor that included all 17 items. The factor loadings were all significant and standardized. However, one item had a relatively low standardized factor loading, which could be attributed to its poor quality. The fit statistics suggested that the model was a good fit to the data, according to the CFI, although the SRMR and RMSEA were only marginally acceptable (Table 3). As a result, we proceeded cautiously, taking care to ensure that the EES items were consistent with the assumption of one-dimensionality.

Our results indicate that the 14-item EES is a valid and reliable assessment tool with satisfactory content validity and acceptable internal consistency (Figure 2). This tool can be used to measure emotional expression among the Emirates population. These findings contrast with the original version of EES and other validation studies, such as [35, 36, 23, 21]. It is worth noting that an experimental study conducted among children found that emotional reactivity measured via physiological assessments was not correlated with outward emotional expression [37]. This finding underscores the importance of using a reliable and valid tool to measure emotional expression in individuals, particularly when physiological assessments may not necessarily capture the full range of emotional expression.

It is crucial to recognize the limitations of this cross-sectional study. One of the main limitations is the small sample size, which may affect the generalizability of the findings to the broader population. To address this limitation, future research should consider recruiting a larger and more diverse sample to enhance the external validity of the study. Moreover, this study was conducted exclusively in the Emirates and predominantly among women. As a result,

Table 3. Summary of model fit indices of the EES from CFA (n =704).

Model	X2	df	NFI	TLI	CFI	SRMR	RMSEA (90% CI)
Model 1 263.12*	156	0.81	0.83	0.85	0.08	0.07	Note. CFA:
Model 2 215.60*	119	0.93	0.93	0.94	0.07	0.05	

confirmatory factor analysis; CFI: comparative fit index; RMSEA (90% CI): root mean square error of approximation with 90% confidence interval; SRMR: standardized root mean square residual; TLI: Tucker-Lewis index. *p < .001.

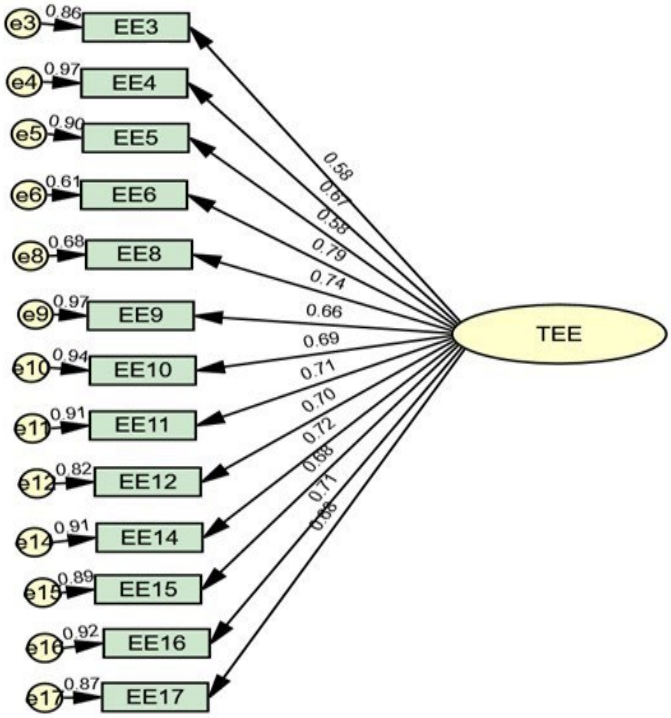

Figure 2. Final factor structure of EES.

caution must be taken when generalizing the findings to other populations and cultures. To better understand the gender, cultural, and geographical differences in emotional expression, future studies should include participants from various locations and cultures, as well as both men and women. Furthermore, while the present study focused on establishing the validity and reliability of the 14-item EES, it did not examine other psychometric properties such as convergent and discriminate validity. These additional evaluations are essential to further validate the tool and ensure that it is suitable for use in various contexts and populations. Therefore, future research should examine these aspects of the EES to enhance the robustness of the instrument.

It is important to recognize that the present study provides only preliminary validation of the Arabic version of EES. Further research is necessary to cross-validate the unidimensional model in a larger and more diverse sample, including both healthy individuals and clinical patients. The latest discoveries could potentially create new opportunities for exploring affective sciences in different cultural contexts. This may lead to a deeper understanding of the impact of culture on emotions, as well as shed light on potential similarities and differences across various societies. With this new avenue of research, we may gain insights into the universal aspects of human emotion, as well as the unique expressions of emotions that are specific to different cultures. It is possible that these studies could uncover new ways of managing and regulating emotions that could benefit individuals from diverse backgrounds.

Conclusions

The results of this study indicate that the EES is a valid screening tool for evaluating both positive and negative emotional expressions. The rigorous methods used to construct the tool and the satisfactory reliability and validity measures obtained suggest that the EES can be recommended for use in the Emirate, particularly among female populations. This tool can be used to identify individuals who may be struggling with emotional regulation and to develop appropriate interventions that can enhance their well-being. Additionally, the successful implementation of the EES in this study highlights the importance of culturally sensitive and appropriate measures, for assessing emotional expressions.

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