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VALIDITY AND RELIABILITY STUDIES OF RECOGNIZING AND COMPREHENDING EMOTIONS TEST

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ABSTRACT

The main purpose of this study is to reveal the results of validity and reliability tests of Recognizing and Comprehending Emotions Test designed to make assessment on the 6-year-old (60 to 72 months) children in the Turkish Republic of Northern Cyprus. In the study, samples comprise of a total of 108 children, of which, 49 are girls and 59 are boys. Recognizing and Comprehending Emotions Test is a test consisting of two part; the "Recognizing Emotions" part and the "Comprehending Emotions" part. In order to assess the construct validity of these tests, a "Principal Component Analysis" using the varimax rotation was preferred during exploratory factor analysis. As a result of factor analysis of "Recognizing Emotions" and "Comprehending Emotions" tests, five-factor structures were obtained. These structures were confirmed by confirmatory factor analysis. Recognizing Emotions test included ten photographs consisting of facial expressions of anger, fear, bewilderment, shame, and disgust; and in Comprehending Emotions test, ten items pertaining to everyday emotional states children may encounter, such as happiness, sadness, anger, bewilderment and shame were present. For reliability, KR-20 internal consistency coefficients are calculated. Data from the analysis provided evidence to the fact that Recognizing and Comprehending Emotions Test is a valid and reliable test.

Keywords: Emotional Skill, Recognizing Emotions, Comprehending Emotions.

INTRODUCTION

The age of 0-6 years referred to as the early childhood years is a phase during which children grow fast and are affected the most by their environment. Children encounter many emotions during this period. The very initial experiencing of emotions occurs between the mother and the infant. At the month, while children respond positively to familiar faces, unfamiliar faces bring about the response of crying. The infant responds especially in accordance with the mother's expressions of happiness and unhappiness. Between the ninth and the thirteenth months, babies respond to the emotions of anger and crying. Babies manage to respond accordingly with the emotional expressions (joy, fear or anger) of the mother (Pehlivantürk, 2004). Starting at age two, children start mimicking adults and discovering many new situations and experiencing diverse emotional responses. Children experiencing emotional processes such as feeling oppositional defiance, anger, shame start developing socially appropriate responses to such feelings. Around three years of age, children get a chance to experience and recognize many emotions through social game playing (Durualp and Aral, 2011). Fogel and Melson (1988) state that at the age of three, children start experiencing basic emotions such as pleasure, interest, excitement, fear, sadness, shame and rage. Around the ages of four to six, such emotions turn into more conscious responses. During this phase, children experience positive and negative emotions naturally (Özgören, 2011). In addition, children observe adults in controlling their emotions and they learn to manage their own emotions during these years (Berk, 2013).

By considering factors supporting emotional skills during preschool years, it is observed that certain factors take prominence over others. It is emphasized that activities designed to improve the understanding and organization of emotional skills by using active educational methods applied by teachers improve emotional comprehension of children by supporting the development of emotional skills (Durlak, Weissberg, Dymnicki,

Taylor & Schellinger, 2011; Min-Ju-Tsai, 2008; Payton, Weissberg, Durlak, Dymnick, Taylor, Schellinger & Pachan, 2008; Quinn, Kavale, Mathur, Rutherford & Forness, 1999; Rispoli, 2011). Furthermore, it is possible to state that children receiving preschool education are at an advantageous position in managing emotions in comparison to those who do not receive preschool education; in other words, emotional development, school maturity supports (Yazıcı, 2002). Studies have been carried out that imply the importance of interplay between the child and their teacher, parents, siblings and peers in the development of emotional skills (Denham, 2006, as cited in Morris, 2010; Milonnet, 2008). At the same time, in the studies that assess the influence of the teacher on the issue, it has been emphasized that the positive attributes of a qualified teacher are reflected on the lifelong management of a child of emotional skills (Ahn, 2005; Morris, 2010).

In the studies on the effects of intelligence, genetic disposition and social environment, along with personal traits and close environmental influences, it has been emphasized that socio-emotional and cognitive support are positive influences on children's perception of self, self-assurance, their level of readiness and socio-emotional conformity (Çataloluk, 1994; Davaslıgil, 1985; Oktay, 1983; Turaşlı, 2006). Within this context, it is possible to claim that, during the preschool phase which are the most important years of life, behavioral patterns acquired by the child play a big role in shaping the rest of the life of the individual.

In Davis (2004), it is stated that the inability to recognize and differentiate between emotions affects all the other skills. In this sense, the work that is put forward in recognizing and comprehending emotions carries a high importance within the context of developing emotional skills.

When preschool programs that are about to start to be recently developed are considered as prerequisites of formal school programs (Gormley, Phillips, Newmark & Perper, 2009), the dire need for tests and scales that will be used in developing children's emotional skills can easily be seen. Within this framework, tests that are developed and applicable are available within Turkish culture. These tests include Marmara Development Inventory (Güven Metin, 1999); The Emotional Intelligence Scale for Children (by Sullivan) (Ulutaş, 2005); The preschool version of the Social Skills Rating System (Elibol Gültekin, 2008); Test of Emotional Facial Expression Identification"(Balcı Akpınar, 2010); happy, sad, angry and suprised facial expressions developed by Cüceloğlu (Çelik, Tuğrul & Yalçın, 2002), The Social Competence and Behavior Evaluation Scale-30 (SCBE-30) (Çorapçı, Aksan, Arslan-Yalçın & Yağmurlu, 2010), Social Skills Scale Developed by Acun Kapıkıran et al, (Durualp & Aral, 2011), and validity-reliability of Vineland Social-Emotional Early Childhood Scale (VSEECS) (Ceylan, 2009).

Another example of these tests is the Assessment of 6-year-olds' Emotional Skills Test, is developed by Shultz and Izard (1998) and is adapted and tested for validity and reliability by Saltalı et al. As a result of the validity and reliability tests conducted in the Turkish Republic of Northern Cyprus (TRNC) (Ünal Bozcan & Kömleksiz, 2014), the test designed to scale the four basic emotions (happy, sad, angry and scared) had insufficient psychometric properties. There upon, the researchers, Fogel and Melson (1988), Dökmen (2002), Min-Ju Tsai, (2008), Schultz, Izzard, Stapleton, Buckingham and Bear (2009) emphasized the basic seven emotions that helped to develop the scale for "Recognizing and Comprehending Emotions Test" (DUTAT) and thus, the validity and reliability tests were conducted in TRNC. Recognizing and Comprehending Emotions Test (DUTAT) was planned as a two-dimensional test including "Recognizing Emotions" and "Comprehending Emotions" components. Recognizing and Comprehending Emotions Test aims to scale the emotional development of 6-year-old (60-70 months) children.

METHODOLOGY

Data Source and Sample

The main purpose of this study is to conduct validity and reliability tests for Recognizing and Comprehending Emotions Test byusing TRNC samples. In this respect, the study utilizes a descriptive survey method. Samples were gathered from the preschools over seen by the Ministry of National Education (MONE) of the TRNC, 7 of which are located in the province of Nicosia and 1 in Famagusta, 2 were from a course and some examples were gathered among 6 years old from playgrounds where children of various ages were present. 72 (25 girls and 47 boys) were from 8 preschools; 17 (11 girls and 6 boys) were from 2 different courses and 19 were from

playgrounds (13 girls and 6 boys). In total, 108 children (49 girls and 59 boys) took part in this study. All necessary permissions were taken from the families and from the MONE of the TRNC in order to carry out this study.

Instruments

It is planned that the measuring tool will comprise of two separate tests; "Recognizing Emotions" and "Comprehending Emotions". The developmental phases of these tests are described below.

Recognizing Emotions Test: The first step of development of this test, similar to what Schultz and Izard (1998) had decided in their study, was to take photographs of faces of the children with emotional expressions. In order to accomplish this, researchers put the children on a 12-week program of "Drama Supported Emotional Skill Development Activities"that consisted of 36 activities of one of the preschool class to take part in these activities. It is assumed that the children in this trial application group had awareness of how their emotions are reflected as facial expressions.

An informative letter was sent to parents and permissions were taken to photograph the facial expressions of the children. A permission document with the same request was acquired from the MONE of the TRNC. 18 out of the 22 parents agreed to allow photographing of their children. 9 girls and 9 boys were photographed for the study.

As a result of the work done with these children, photographs of the seven emotions were taken. In an attempt to evoke the target emotion and create the expression on the faces of children, they were given a set of questions and cues. In order to accomplish this, children in the application were reminded of particular exercises. With the guidance of two professors of Fine Arts and Graphics Design and two professional theater actors, it was decided to dress children in grey and photograph them against a white backdrop so as to attract attention only on the facial expressions.

Afterwards, photographs were studied one by one and photos were designated to be forwarded to experts. As a result, 91 photos depicting 7 emotions were assessed by a total of 8 experts; 2 in the field of Fine Arts and Graphics Design, and 6 in the field of preschool education; and their feedback were received. Experts were asked to rate photos from 1 to 5, 1 representing the meaning of very bad and 5 representing the meaning of very good. As a result of these assessments, it has been decided that the expression of girls depicting "disgust" were not sufficient. A 6-year-old child whose mother is a professor suggested to do a session with her daughter where the researchers were able to choose 2 out of 32 photos with well-depicted expressions of disgust on the face of the girl. Finally, a total of 20 photos were selected to be included in the study and the structure of the test was finalized. However, on the first day of the test, it was observed that the children were having a hard time recognizing "fear" on the photos. 4 more photos depicting "fear" from the set that were sent to the experts were added to the test and a trial form consisting of 24 photos was prepared again.

Comprehending Emotions Test: Literature was scanned and tests pertaining to the study were examined for the test. A preliminary form consisting of 7 emotions with 32 items was drafted. As a result of the assessment and feedback from 6 preschool experts, the number of items was reduced to 21. In the assessments, the experts were asked to comment on the appropriateness of each item for 6-year-old preschoolers. Nevertheless, on the very first day of study, it was observed that the majority of children were having difficulty in comprehending items pertaining to "fear" and "anger". As a result of this, short interviews were held with the children where they were asked questions. The questions included the following examples: what angers you the most? Who do you get angry at? How do you behave when you get angry? What are you afraid of? What do you do when you are afraid? The answers of the children were written down and necessary adjustments were made on the form. Additionally, a new item pertaining to "anger" was edited and added to the form. The final version of the test included 22 items.

Data Collection

Applications were completed in 6 weeks at the preschools, the courses and the playgrounds. Application took place at a quiet place where the researcher and each child were alone and worked together for 15-20 minutes. Preschools and courses provided an appropriate space for the researcher to work in. At playgrounds, researcher sought a suitable spot within the park or in a quiet corner nearby. When it was observed that the child no longer seemed to be engaged, the researcher took a break and chit chatted with the child on other topics. During the application, the researcher kept his attitude and voice neutral. The researcher made sure to exhibit neutrality in eye contact, emphasis and tonality.

Data Analysis

Correct answers were attributed a value of "1" and incorrect or blank answers were attributed a value of "0" in Recognizing and Comprehending Emotions Test. Data were processed with SPSS 16.0 program.

Exploratory and confirmatory factor analysis has been made to construct validity. The exploratory factor analysis has been made with Principal Component Analysis (PCA) because confirmatory factor analysis, which is the most conservative method of testing factor and item fit indices is used to test validity of the measurement model and Principal Axis Factoring (PAF) was not necessary. On the other hand as the measuring model Principal Axis Factoring (PAF) of which the factors consists of maximum 2 items is sensitive to material variances its results would be misleading (Ho, 2006). Varimax rotation is used in exploratory factor analysis. By assessing the factor loading of a factor an item is in and by observing other factor loadings of other factors, it was made sure that at least a difference of .20 exists between factor loadings.

Within the context of subtest item, item-test correlations, item mean and standard deviations are calculated. For reliability, KR-20 reliability coefficients are computed.

FINDINGS

Findings of this study can be found below under the subheadings "Recognizing Emotions Test" and "Comprehending Emotions Test".

Recognizing Emotions Test

A factor analysis, Principal Component Analysis (PAC) method using varimax rotation, was applied to the items of "Recognizing Emotions Test" (24 items). As a result of this analysis regarding the "Recognizing Emotions Test",five factors with Eigen values of 2.07, 1.65, 1.40, 1.29, 1.11 and portions of variance explained of 20.74, 16.57, 14.08, 12.98, 11.13 were obtained (Table 1). These five factors explain 75.52% of the total variance. These factors are labeled as "bewilderment, anger, disgust, shame, fear" sequentially as they relate to emotions. Items regarding the recognition of the emotions of happiness and sadness did not come together during factor analysis.

The Kaiser-Meyer-Olkin "Measure of Sampling Adequacy" shows compatibility with a rate (.45) below average with regard to the Recognizing Emotions Test. The chi-square ($\chi 2$=.217.448, p=0.0001) value obtained with the Bartlett test was found to be meaningful. As seen in Table 1, the communality value of items was over .60. The factor loading of the items varied between .78 and .92. When subtest item correlation coefficients were observed, correlation coefficients varied between .75 and .92; item-test correlation coefficient varied between .20 and .58. The KR-20reliability coefficient for factors were .83 for (bewilderment), .73 for (anger),.62 for (disgust), .56 for (shame), and .45 for (fear).

The results of fix index values obtained in confirmatory factor analysis of Recognizing Emotions Test are shown on Table 3. Path diagram with 5 factors of Recognizing Emotions Test is shown on Table 2.

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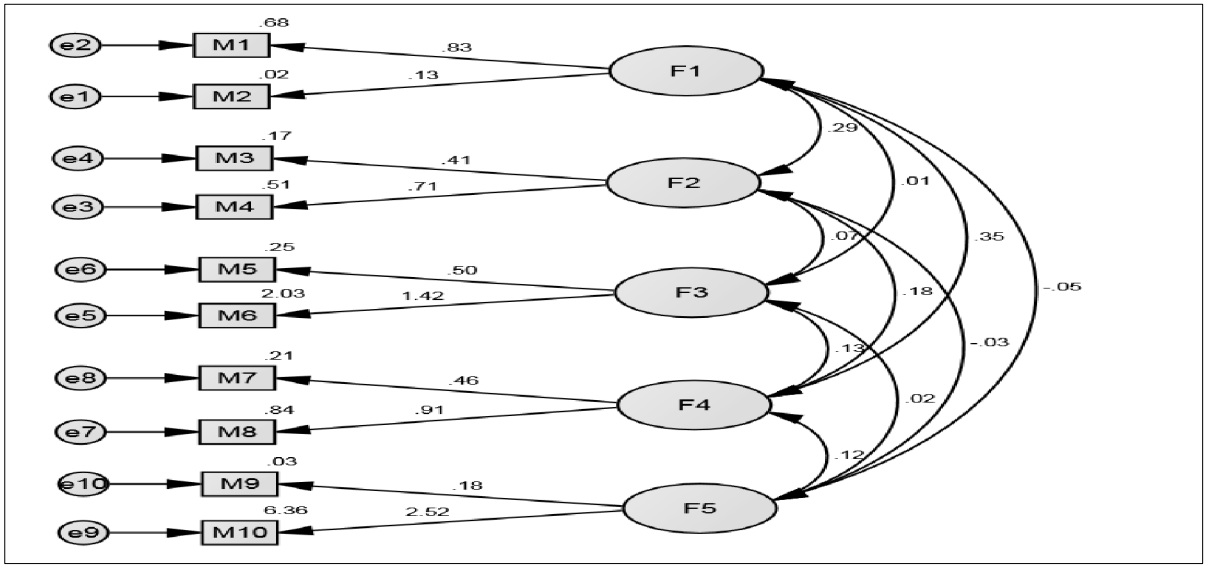
Table 1: Item Factor Loadings of Recognizing Emotions Test, Eigenvalues, Proportion of Variance Explained, Item Subtest, Item-Test Correlations, Mean and Standard Deviation Values

Subtests and Items	Commu-nalities	Factor Loadings					Subtest Item r	Item Test r	*M*	*SD*
1. Bewilderment (KR-20 = .82)										
M5	.87	**.92**					.91	.32	91	27
M6	.86	**.90**		.10	.16		.92	.48	90	28
2. Anger (KR-20 = .73)										
M1	.80		**.89**				.88	.17	95	21
M2	.87		**.87**				.88	.28	95	21
3. Disgust (KR-20 = .62)										
M9	.78		.12	**.85**	.17		.83	.51	67	46
M10	.72		.16	**.83**			.85	.56	47	49
4. Shame (KR-20 = .56)										
M7	.73			.18	**.83**		.78	.49	87	32
M8	.67				**.81**		.87	.45	76	42
5. Fear (KR-20 = .45)										
M3	.67					**.81**	.81	.42	61	48
M4	.63					**.78**	.78	.37	71	45
Eigenvalue		2.07	1.65	1.40	1.29	1.11				
Proportion of Variance Explained		0.74	6.57	4.08	12.98	11.13				

Table 2: The Path Diagram of 5 Factor Model of Recognizing Emotions Test



*F1: Anger; F2: Fear; F3: Bewilderment; F4: Shame; F5: Disgust

However, Çokluk, Şekercioğlu and Büyüköztürk (2010, 377) indicate that this ratio must be below 3.In accordance with this, it can be said that the compatibility is perfect. The root mean square error of approximation (RMSEA)< .06 = good fit. According to this, it can be claimed that harmony is perfect. Moreover,GFI (.97) and AGFI (.92) are seen to have a good compatibility. The standardized root mean square residual (SRMR < .06 = good fit; and comparative fit index (CFI ≥ .90 = adequate fit. According to these values (SRMR=0.55 and CFI=1.00) are said to have a good compatibility. In accordance with these data, it can be said that the constructed mode has been verified.

Table 3: Recognizing Emotions Test Model Fit Index

χ^2	Df	χ^2/df	GFI	AGFI	CFI	RMSEA	SRMR
19.995	25	0.800	.97	.92	1.00	.000	.055

Comprehending Emotions Test

Factor analysis has been carried out for the items pertaining to "Comprehending Emotions Test" (22 items) by using Principal Component Analysis method and a varimax rotation. As results of such analysis, five factors with Eigen values for "Comprehending Emotions Test" of 2.02, 1.67, 1.60, 1.29, 1.09 and portions of explained variance of %20.20, %16.76, %16.04, %12.96, %10.91, were obtained (Table 4). The five factors explain 76.89% of the total variance. These factors are labeled as "happiness, sadness, anger, bewilderment and shame" sequentially as they relate to emotions. Items regarding there cognition of the emotions of disgust and fear did not come together during factor analysis.

Table 4: Item Factor Loadings of Comprehending Emotions Test, Eigenvalues, Proportion of Variation Explained, Item Subtest, Item-Test, Mean and Standard Deviation Values

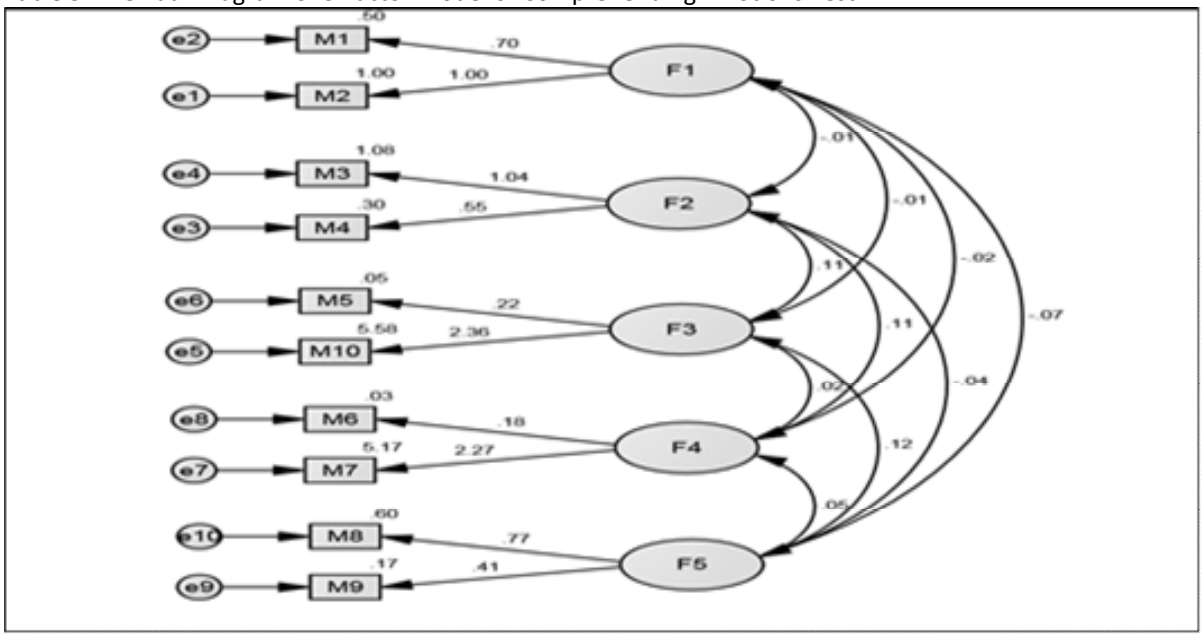
Subtests and Items	Commu-nialities	Factor Loadings					Item Subtest	Item Test		
							r	r	*M*	*SD*
1. Happiness (KR-20 = .79)										
M1	,85	**,92**					.88	.08	.99	.09
M2	,85	**,92**					.94	.06	.98	.13
2. Sadness (KR-20 = .66)										
M3	,79		**,88**				.81	.24	.99	.09
M4	,76		**,86**				.93	.14	.97	.16
3. Anger (KR-20 = .68)										
M5	,82		-,14	**,89**			.89	.54	.75	.42
M10	,78		,19	**,83**	,11	,21	.84	.69	.84	.36
4. Bewilderment (KR-20 = .58)										
M6	,76		-,14		**,85**		.84	.48	.84	.36
M7	,73		,21	,14	**,81**		.82	.57	.86	.34
5. Shame (KR-20 = .48)										
M8	,65					**,80**	.78	.42	.91	.27
M9	,66			,13		**,79**	.83	.47	.88	.31
Eigenvalue		2.02	1.67	1.60	1.29	1.09				
Proportion of Variance Explained		20.20	16.76	16.04	12.96	10.91				

Kaiser-Meyer-Olkin "Measure of Sampling Adequacy" shows compatibility with a mean of .51with regard to the Comprehending Emotions Test. The chi-square (χ2= 211.881, p=0.0001) value obtained by the Bartlett test was found to be meaningful. As seen on Table 4, the communality value of items is over .60. When factor loadings of the factors are observed, factor loadings range between .79 and .92. When item-subtest correlation coefficients are observed, it is seen that correlation coefficients vary between .58 and 1.00 and the

item-test correlation coefficients vary between .11 and .59. The KR-20 reliability coefficient for factors are sequentially listed as follows .79 (happiness), .66 (sadness), .68 (anger), .58 (bewilderment), and .48 (shame).

The values of fit index observed as a result of confirmatory factor analysis of the Comprehending Emotions Test are shown on Table 6. The path diagram of 5 factors of the Comprehending Emotions Test is shown on Table 5.

Table 5: The Path Diagram of 5 Factor Model of Comprehending Emotions Test*



*F1: Happiness; F2: Sadness; F3: Anger; F4: Bewilderment; F5: Shame

When the results of Table 6 are examined, it is found that χ^2 =8.587, df=25. When referring to Table 4, it is seen that χ^2/df rate is 0.343. It can be said that the fit is perfect because the rate is below 3. The root mean square error of approximation (RMSEA) is 0.000. It can be said that the fit is perfect because the rate is below .05. Furthermore, GFI (.98) and AGFI (.97) are seen to have good compatibility. The standardized root mean square residual (SRMR) < .06 = good fit; and comparative fit index (CFI) ≥ .90 = adequate fit. According to these values, (SRMR=0.44 and CFI=1.00) are said to have good compatibility. In accordance with these data, it can be said that the constructed model has been verified.

Table 6: Comprehending Emotions Test Model Fit Index

χ^2	Df	χ^2/fd	GFI	AGFI	CFI	RMSEA	SRMR
8.587	25	0.343	.98	.97	1	.000	.044

DISCUSSION

In this study, researchers conducted the Recognizing and Comprehending Emotions Test to assess the validity and reliability of the TRNC samples. As a result of exploratory factor analysis, five-factor structures were formed from Recognizing Emotions Test and Comprehending Emotions Test. Results of the confirmatory factor analysis, which has been set for both tests with 5-factored model show that they are verified.

Emotions within the framework of relating to factors in Recognizing Emotions Test were given labels such as “bewilderment, anger, disgust, shame, fear”. Items regarding the recognition of emotions of happiness and sadness did not come together. One of the probable reasons for this may be that happiness and sadness are the fundamental emotions rendering it very probable for children to identify. As defined by Izard in his 1993 study titled “Differential Emotions Theory (DET)”, emotions of interest, joy or happiness, rage, sadness, fear

and disgust start developing within the first years of life (Schultz et al., 2009). Studies on reflecting and perceiving emotions show that even babies identify emotions from facial expressions (Russel & Bullock, 1986). According to the results of another study, 3 to 4 days old babies are able to identify the persons they have seen two minutes earlier (Pascalis & de Schonen, 1994). Furthermore, 2 days old babies can identify faces and facial mimicry expressing happiness, sadness and bewilderment (Field, Woodson, Greenberg & Cohen, 1982, as cited in, De Haan, Belsky, Reid, Volein & Johnson, 2004).Fogel and Melson (1988) state that children start experiencing fundamental emotions such as happiness, anger, sadness and fear around the age of 3. Four fundamental emotions which are happiness, anger, sadness and fear attract the attention of researchers and all of these emotions are observed in babies during the first year after birth (Berk, 2013).

Factors of Comprehending Emotions Test attributed the labels "happiness, sadness, anger, bewilderment and shame" as they relate to emotions. Items pertaining to the recognition of the emotions of disgust and fear did not come together during factor analysis. It is possible that the probable reason for this is that the hypothetical situations in the test were not adapted well to the level of 6-year-olds. When the assessment is done from a different perspective, it is known that the skills of children of accurate verbal labeling of emotional expressions keep developing until their early teens. Although the children aged 3 and 4 know and use labels defining emotions of fear, bewilderment, and disgust, they use labels defining the expression of emotions of happiness, sadness and anger more often. The use of the word defining the emotion of "disgust" extends to the 9th year (Gros & Ballif, 1991; Vicari et al., 2000; Widen & Russell, 2003; Widen & Russell, 2010, as cited in, Rosenqvist, Lahti-Nuuttila, Laasonen, & Korkman, 2014). In this sense, expressing the emotions of fear and disgust as part of the natural progression of development of the children may be delayed.

In a study conducted by Widen and Russell (2003), 80 (40 boys and 40 girls) children between the ages of 4 and 6 were given stories in order to evoke certain emotions in them. It was observed that out of the five emotions (happiness, sadness, anger, fear, disgust), the smallest margin of error was in recognizing the emotions of "happiness" and "anger" and the largest margin of error was in recognizing the emotions of "fear" and "disgust". In light of these findings, it is possible to declare that recognizing the emotions of fear and disgust in different situations is a natural part of the development of children.

Furthermore, it is possible to pose that the social and emotional milieu of the TRNC affects the test results. As per the observations, the over protectiveness of parents in the TRNC and the way they keep their children away from challenging situations and environments requires attention. It is meaningful that mothers get support from their own mothers and that grandmothers to have a strong say in raising and educating their children. Leaving the initiative of decision-making raising and educating their children to their own mothers, the traditional sentiment of grandmothers who want to give their grandchildren what they could not provide for their own children is generally reflected in their approach towards the decisions pertaining to their grandchildren. It is possible to deduce from this that because children are given everything they ask for and because they are isolated, kept away from challenging social environments, children are unable to experience the emotions of fear and disgust. It is acknowledged that this understanding is passed on from one generation to the other. Thus, first emotions are experienced between child and mother (Pehlivantürk, 2004). The emotional reactions of the mother are especially of utmost importance and meaning to the child (Elksnin & Elksnin, 2003). In this sense, in the TRNC, the way adults, especially parents, experience their emotions and reflect them may hold great importance in the emotional and social development of children.

Also, as TRNC does not have an active and cosmopolitan social life, and because it lacks the neighborhood/street culture (playing with friends on the street may enrich social and emotional life) may mean children lack the opportunity of experiencing different lifestyles.

For "Recognizing Emotions" and "Comprehending Emotions" tests, the Kaiser-Meyer-Olkin "Measure of Sampling Adequacy" value is observed to be slightly lower than the average at .45 for "Recognizing Emotions", and .51 for "Comprehending Emotions" test, which is a level of average compatibility. It can be said that, in order to increase the value of the measures of sampling adequacy in future studies, there seems to be a need for preliminary research to enable such adequacy. At the same time, the results of the Bartlett "Sphericity"

test for both tests appear to be at a sufficient level of .0001. Within the framework of this, it can be said that the "test size" seems to be sufficient.

Upon reviewing the item subtest correlations of"Recognizing Emotions" and "Comprehending Emotions" tests, it has become evident that such correlation values are significantly high. As these values are also interpreted as the item validity coefficients, it can be declared that the item is of significance in the subtest and is qualified to measure the emotions in the subtest. Nevertheless, when item-test correlations are reviewed, items in the subtests "Recognizing the Emotion of Anger" and "Comprehending the Emotion of Happiness and Sadness" seem to have low item subtest correlations. However, considering the two tests actually measure different emotions and it can be safely said that acquiring a total point holds little to no meaning within this context.

Upon reviewing the KR-20 reliability coefficients, it has been observed that the values differ between .45 and .82. During the application, it became clear that children experienced difficulty in recognizing the emotion of fear and had a tendency to confuse it with bewilderment. Upon the discovery of such, 4 newly selected photos by experts were added to the test. This may have affected the validity and reliability results of recognizing the emotion of fear subtest.

Implications

In general, given assessments have been conducted with great care and attention and it can be said that the psychometric qualities of Recognizing and Comprehending Emotions Test are sufficient. Performing the Recognizing and Comprehending Emotions Test again with a new set of samples and conducting new studies on the emotions that are not coming together in factor analysis might be important contributors to the previous studies in the field that aim to develop tests/scales.

In addition, these studies may also contribute to the emergence of the intercultural differences in terms of the development of emotions.

For example, items related to the recognition of the feelings of happiness and sadness did not come together as a result of factor analysis. One of the reasons why the factors related to these feelings did not appear can be considered as the incompetence of children under 6 years to recognize these feelings. The extent of the validity of this situation on each culture can be demonstrated by this type of scales to be developed.

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Appendix

Recognizing and Comprehending Emotions Test
Recognizing Emotions Test

Instructions: Emotions are an integral part of our life. We experience many emotions in our everyday life. For example; we feel fear, bewilderment, anger or shame. Sometimes we also experience such things that we feel disgust/loathing. Below are the photographs of some facial expressions. As far as you are concerned, which one shows the emotions offear, bewilderment, anger, shame and disgust?

M1, M2 (ANGER)= 4. and 10. photos; M3, M4 (FEAR)= 1. and 8. photos;
M5, M6 (BEWILDERMENT)= 2. and 6. photos; M7, M8 (SHAME)= 5. and 7. photos;
M9, M10 (DISGUST)= 3. and 9. Photos.

Comprehending Emotions Test

Instructions: Emotions are an integral part of our life. We experience many emotions in everyday life. For example, we feel happiness, sadness, shame and bewilderment. Sometimes, we experience such things that we get very angry. Below are some situations experienced by different individuals. As far as you are concerned, which emotions did these individuals experience based on the situation they were in; happiness, sadness, anger, bewilderment, or shame?

M1. Kudret's teacher said, "Good for you!" when Kudret answered a question right and asked Kudret's classmates to applaud him. In this situation, what do you think Kudret felt? (HAPPINESS)

M3. Emel asked to borrow her friend's bicycle. Her friend did not allow Emel to borrow the bicycle. In this situation, what do you think Emel felt? (SADNESS)

M2. A friend of Ela's gifted her a painting she made for Ela's birthday. Ela loved the painting. What do you think Ela felt in this situation? (HAPPINESS)

M4. Bora broke his favorite toy by accident. Which feeling do you think Bora felt? (SADNESS)

M5. Zehra's friend opened Zehra's bag, took her cookie and ate it. What do you think Zehra felt in this situation? (ANGER)

M7. Upon seeing a magician pulling out a rabbit from his hat at school, which feeling do you think Orhan felt? (BEWILDERMENT)

M9. Efe hid behind his mom when he saw the visitors arriving at their home that wereunfamiliar to him. He did not raise his head to look up or answer any of the questions they asked. Which emotion do you think Efe felt? (SHAME)

M8.The teacher came into the class wearing a big snowman costume. He was such a gigantic snowman that the kids could hardly believe their eyes. Which emotion do you think the children experienced? (BEWILDERMENT)

M10. Kemal started a new school. When he entered into the classroom on the first day of school, he realized he didn't know any of the kids. Therefore, he wanted walk into the classroom with the teacher. The teacher introduced Kemal to the rest of the class. Which emotion do you think Kemal felt? (SHAME)

M6.Şerife's friend tookŞerife'scoloured pencils without permission and did not return them. In this situation, which feeling do you think Şerife felt? (ANGER)