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# Adaptation of the "Fear House" child fear scale to the Turkish population: A validity and reliability study

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**Abstract**

This study aims to adapt the "Fear House" scale developed by Zaharova and Panfilova (1999) for determining children's fear to the Turkish culture. Scholars and experts usually prefer to make children draw things to detect their fears. This technique can be used as an alternative for children who do not like to draw. The study group comprises 358 children who study in the central district of Ağrı province during the 2016-2017 academic year. As this is a scale adaptation study, the adaptation to the Turkish language was completed by two coders with good command of Russian language for the language validity. Afterwards, two researchers translated it back into Russian. As the language validity was achieved, the validity and reliability analysis of the scale was performed. Explanatory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were applied to determine scale validity. The results revealed that it has a 6-factor structure comprising 31 items. The scale reliability was achieved through internal consistency and semi-reliability analyzes regarding the scale total and subscales. It can be argued that "Fear House", adapted to Turkish culture, is a reliable and valid measurement tool to determine the fear of children aged 4-6 according to the EFA, CFA and reliability test results.



***Keywords:***Fear, scale adaptation, child, reliability, validity

## 1. Introduction

### *1.1. Introduce the problem*

Fear is an emotional arousal that is sensed at the moment of imminent danger or threat that creates a strong impulse to escape or fight in the individual (Filipova, 2009). Moreover, it is a natural emotion such as love, anger, joy or sadness, and an instinctual reaction to danger (Erol, Şahin, &Özcebe, 1990). Öztürk (1998) argued that all individuals experience this feeling at least once in certain periods of their lives since fear

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is an emotional impulse triggered by the idea of danger. As each human being, children also experience fear at different ages with various degrees (Zaharov, 2000).

Children's fear varies by their developmental stages. They are scared of the loss of physical support in infancy and the presence of an unexpected stranger, imaginary creatures in childhood, being alone or in the dark, exclusion from the group in adolescence, peer mocking or dislike (Karakaş, 2010). Excessive fear, which is a very strong emotion, affects the mental health of the child negatively (Shcherbatykh, 2000). However, the sense of fear effects behavior control in children and certain behaviors in children may change depending on these effects (Zaharov, 2000).

Fear can develop in children in various ways (Gençöz, 1998). One of these is conditioning. Conditioning fear requires pairing a neutral stimulus (NS) with a natural or unconditional fear stimulus (US). An important aspect of fear conditioning is its quickness (Karakaş, 2010). Children can also get exposed to fears by modelling their parents. Parents' fear of a situation or an object reflects to the child to be scared of the same object. Furthermore, children can learn to fear symbolically from the tales and stories they listen to. Another factor in fear development is the child's developing world perception. As children learn to distinguish their parents' face from other individuals around them, they tend to be scared of unfamiliar faces (Karakaş, 2010). Rachman (1997) suggested that children's fears develop in three ways. These are *directconditioning*, the fear a child feels after being attacked by a dog *modelling*, the boy mimicking his brother's night fears, and the last one *misinformation*, as describing the earthquake as God's punishment. The ten most common fears indicate that the most common reasons are modelling or misinformation. However, these mechanisms do not explain all types of fear.

Shcherbatykh (2000) categorized fear into three main groups. First, biological fear is the one that threatens the biological existence of the individual. These can be exemplified as annihilation, disappearing, extinction, being attacked, war, disease, depth, height and fear of animals. These feelings are rooted in fear of death. Second, it is the fear of being deprived of society which threatens interpersonal relationships. Fear of darkness, loneliness, punishment, open space or closed space are examples from this group. The feeling of loneliness lies at the core of this fear group. The social fears that threaten the social and psychological status are the third fear group. Fears of being late, disappointing, bad grades, answering questions incorrectly, exam anxiety, and disappointing parents are also considered in this group.

Freud explained that fear is a product of the child's biological and psychological helplessness. The reason for the development of fear is the loss of an object. As the loss of the objects on which the child is dependent (mother, caregiver, etc.) causes fear in the baby, the castration complex arises as the child begins to become independent. The castration complex turns into a social fear gradually. The worst fear children experience is the fear of death, and this affects their entire life (Sergienko, 2006). Zaharov (1974)

argued that the basis of fear in the child is the discomfort experienced by the mother during pregnancy. Emotional events experienced by the mother during pregnancy affect the baby. Zaharov (1994) classified the fears felt by children by age. Children aged 1-3 is scared of being alone, strangers, injection, doctor, animals and sudden sounds. These types of fears are considered normal at these ages. Children start to realize that life will end one day at the ages of 5-7, and they become scared of death. Fear of death can turn into fear of death towards parents. Social fears start when children start school. For example, fears of making mistakes, failing to satisfy expectations, to answer questions on the board, and failure are among the most common fears in children during this period. Zaharov and Panfilova (1999) examined the list of the most common fears in children considered normal to have 6 to 15 of the 31 fears listed in the list according to their age. They suggested that children with 15 fears and above should be evaluated psychologically.

Zaharova and Panfilova (1999) determined the fears observed in children by age as follows:

*3-5 years:* Fear of fairy-tale characters, injections, pain and ache, blood, sudden loud sounds, heights, loneliness, darkness, and closed spaces.

5-7 years: Fears of dying, the death of their parents, animals, fairy tale characters, depth, scary dreams, fire, blaze, being attacked, and war.

7-11 years old: Fear of being late for school, being criticized, condemned, making mistakes, getting in trouble or bad luck.

12-15 years: Fear of losing parents and war.

The scholarship provided no scale to determine the fears of children aged between 4-6. This scale can enable scholars and experts in identifying the deep and superficial fears of young children who cannot or do not like to draw. Moreover, it is thought that the validity and reliability study of the scale by adapting it to Turkish culture shall contribute to the field.

## 2. Method

### *2.1. Participants*

This study is an attempt to adapt the “Fear House” Child Fear Determination Scale to Turkish culture conducted in the 2016-2017 academic year. The research sample comprises 358 children aged between 4-6 who are enrolled at preschool education in the central district of Ağrı. As 56.7% (n=203) of the participants were males, 43.3% (n=155) were females. The 4 years old children were 14.5% (n=52), 5 years old 39.7% (n=142) and 6 years old 45.8% (n=164) of the total.

### *2.2. Fear House" Child Fear Determination Scale*

This is a technique developed by Zaharova and Panfilova (1999) to determine the fears of young children (see final Turkish version in Appendix A). Children's fears must be determined exactly why (what) children are scared of to help them overcome these issues. This technique aims to identify fears such as darkness, loneliness, death, and medical intervention, which are observed in children aged 3 and above. This technique can be applied especially in cases where other techniques are inapplicable. For example, it can be applied to young children who cannot draw or do not like drawing.

### *2.3. Application method*

After the child is placed in a suitable environment, a short pre-interview should be conducted to reduce the child's anxiety. By chatting with the child, it should be ensured that they get used to the environment and the expert who applies the scale. The expert should sit next to the child, not the opposite. Two house pictures are then drawn by the expert, one in red and the other in black. Houses can be drawn parallel on a single page, or they can be drawn on different pages and placed side by side. After drawing the pictures, the expert reads the fears in the fear list one by one and the child is asked to place these fears in the houses. It will be more effective to list the fears by heart rather than by looking at the list each time.

The directives and applications of the scale were as follow: The expert tells the children that scary things happen in the black house and things that are not scary or less scary in the red house. Then the expert says; now I want you to help me put the things that are scary and not scary in proper homes. The expert tells the child, "*I want you to tell me in which house I should place the fears I read about*." Then s/he reads the fears on the list one by one. For example, the expert asks the child *"Are you scared of being alone at home?"*. If the child says, *"No, I am not scared"*, the expert proceeds to the next question. If the child replies, *"Yes, I'm scared,"* then the expert asks, *"Should the being scared of being alone at home settle in the black house where the scary things live or the red house where the less scary things live?"*.

The fears that the child considers are very scary and placed in the black house should be noted. The child's answer should be awaited without guidance and rush. Children can answer as *"Yes"* or *"No","I'm scared"* or *"I'm not scared"*. The child should be asked from time to time whether s/he is scared of the items on the list. If the child gives the same answers (such as no or yes) to all questions, the child is then asked to give clear answers like "I'm not scared of the dark", "I'm not scared of being alone".

After all the fears on the list have been placed in the houses, the child is asked to close the door of the black house with a key. A lock picture should be drawn on the door of the house for this purpose. If the child cannot draw, it can be drawn by the expert. After the

child has locked the door, s/he should be asked to throw the key away or throw it wherever s/he wants. With this technique, the child's fears can be reduced or controlled.

At the end of the activity, the fears placed in the black house by the child should be compared with the fears specific to the child's age period. With this technique, it is determined if the child's fears overlap with her/his age. It is also possible to make some interpretations about the mental health of the child by looking at the intensity of different fears.

*2.4. Translation of "fear house" scale into Turkish*

Zaharova and Panfilova were contacted by e-mail in the adaptation study according to the guideline of the original scale and necessary permission has been obtained to adapt the scale to Turkish for preschool children. The scale, whose original language is Russian, was translated from Russian to Turkish by independent translators whose native language is Turkish to be used by children whose native language is Turkish. The Turkish version of the scale was translated into Russian by two lecturers at Russian Language and Literature department. The scale items were translated from Russian to Turkish and from Turkish to Russian and then compared. After comparisons, to test the intelligibility of the scale items, the scale was applied to 60 preschool children between the ages of 4-6. The scale items were rearranged and edited for the scale validity and reliability study.

*2.5. Data analysis: Validity and reliability study of "fear house" child fears determination scale.*

To perform the validity and reliability study of the scale, the scale was applied to 358 children attending preschool education in the 2016-2017 academic year. The construct and content validity were examined through a validity analysis. Item analysis was performed first and the item-total correlation values of the scale were calculated to examine the factor structure of the scale in Turkish culture. The findings showed that the item-total correlation values of the scale, which consists of 31 items, are ranked between .37 and .81. Considering the *dictum* suggesting that the item-total correlation values should be .30 and above, each item from the 31-item of the scale was interpreted as having sufficient level of fit with the overall scale, and explanatory and confirmatory factor analysis was applied for the construct validity of the scale.

One of the ways to test the content validity is to seek expert opinion (Büyüköztürk, Kılıç-Çakmak, Demirel, Karadeniz, &Akgün, 2010). Two faculty members who are experienced in preschool education and child fears were asked whether the items of the scale measure children's fear and their suitability for the children's level for the content validity of the scale. The internal consistency coefficients of the whole scale and its sub-dimensions were checked, and split-half reliability analysis was examined for the reliability of the scale

## 3. Results

The adaptation process of fear house scale and the findings regarding the process are detailed below.

### *3.1. Validity*

Item analysis was performed first and the item-total correlation values of the scale were calculated to examine the factor structure of the scale in Turkish culture. The findings showed that the item-total correlation values of the form, which consists of 31 items, vary between .37 and .81. Considering the dictum suggesting that the item-total correlation values should be .30 and above, each item of the 31-item form of the scale was designated with sufficient fit with the overall scale, and explanatory factor analysis was applied for the construct validity of the scale.

In the explanatory factor analysis, KMO and Barlett tests were performed to determine the suitability of the data set for factor analysis and KMO was found as .87 and Barlett value as 3053,786, $p < .05$. Since the KMO value was calculated within the range of .70 and above and the Barlett value was found to be significant, the data set was considered sufficient for factor analysis (Field, 2005, Pallant, 2005). In the second stage, the implicit structure of the scale was tried to be determined by conducting explanatory factor analysis. The findings of the explanatory factor analysis are presented in Table 1.

Table 1. Findings Related to Explanatory Factor Analysis

| Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 |
|---|---|---|---|---|---|---|
| M3 | .51 | | | | | |
| M25 | .45 | | | | | |
| M27 | .37 | | | | | |
| M2 | | .44 | | | | |
| M16 | | .61 | | | | |
| M17 | | .45 | | | | |
| M21 | | .48 | | | | |
| M 22 | | .36 | | | | |
| M 23 | | .33 | | | | |
| M 26 | | .41 | | | | |
| M 28 | | .48 | | | | |
| M 4 | | | .37 | | | |
| M 5 | | | .51 | | | |
| M 15 | | | .54 | | | |
| M 12 | | | | .55 | | |
| M 13 | | | | .50 | | |
| M 14 | | | | .48 | | |
| M 1 | | | | | .57 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| M 6 | | | | | .48 | |
| M 7 | | | | | .47 | |
| M 8 | | | | | .56 | |
| M 9 | | | | | .62 | |
| M 10 | | | | | .32 | |
| M 11 | | | | | .45 | |
| M 30 | | | | | .52 | |
| M 31 | | | | | .50 | |
| M 18 | | | | | | .45 |
| M 19 | | | | | | .47 |
| M 20 | | | | | | .52 |
| M 24 | | | | | | .50 |
| M 29 | | | | | | .45 |
| Explained Variance | % 9 | % 13 | % 8 | % 7 | % 12 | % 10 |
| Total Variance | TotalExplainedVariance 59% | | | | | |

Table 1 indicates that fear house scale has an implicit structure consisting of six factors and 31 items. Dimensions in the scale are named as fear of hospital, fear of physical injury, fear of death and animals, fear of dark and bad dreams, social fears and spatial fears, respectively. Table 1 also indicates that the item factor load values of the items in the scale vary between .32 and 62. Considering the criterion that each item in the scale should have a value of at least .30 and above, it can be said that each item in the scale has a sufficient level of factor load value (Hair, Black, Babin, Anderson and Tatham, 2006). Moreover, it was found that the 31-item and six-factor structure of the scale explained 59% variance. Although there are different suggestions for scale development and adaptation processes, it is usually suggested that the explained variance value should be 50% and above. Therefore, it can be said that the explained variance value of the scale is within the specified criteria (Tabachnick&Fidell, 2001).

Confirmatory Factor Analysis (CFA) was also performed to secure the construct validity proof of "fear house" child fears scale, which was adapted to Turkish. Besides CFA results, the chi-square (x2) fit, Goodness of Fit Index GFI, Adjusted Goodness of Fit Index AGFI, Incremental Fit Index IFI, Root Mean Square Error of Approximation RMSEA, Comparative Fit Index CFI, and Normed Fit Index, NFI were examined. The fit indices, factor load values and error variance values obtained as a result of the confirmatory factor analysis are provided in Table 2. Also, the measurement model regarding the six-factor structure is demonstrated in Figure 1.

Table 2. Confirmatory Factor Analysis Results

| $\chi^2$ (sd) | $\chi^2$/sd | CFI | NFI | GFI | AGFI | IFI | RMSEA | Factor Load | Error Variances |
|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Lowest | Highest | Lowest | Highest |
| 938.03 (419) | 2.24 | 0.95 | 0.91 | 0.86 | 0.83 | 0.95 | 0.059 | 0.25 | 0.70 | 0.51 | 0.94 |

Table 2 shows that the $\chi^2$/sd ratio is less than 3 and this shows that the model-data fit is quite successful. Moreover, the RMSEA value of less than 0.08 is another proof that the data validates the six-factor model. For data model fit, CFI, NFI and IFI values of 0.90 and above are sufficient and, Table 2 confirms these values. Moreover, CFI, NFI and IFI indices indicate that the model fits the data. GFI and AGFI values are usually required to be 0.90 and above. The results were found to be very close to 0.90. The fit index evaluation revealed that the six-factor model fits the data. It is also important that the factor load values are higher than 0.30, and the error variance values lower than 0.90 for the model-data fit. Table 2 shows that factor load values vary between 0.25 and 0.70, as error variance values vary between 0.51 and 0.94. The factor load value was found to be 0.25 for only one item, as this was considered acceptable when evaluated together with fit indices. The results of the confirmatory factor analysis revealed that the six-factor structure of the "Fear House" scale was confirmed by the data collected in this study.

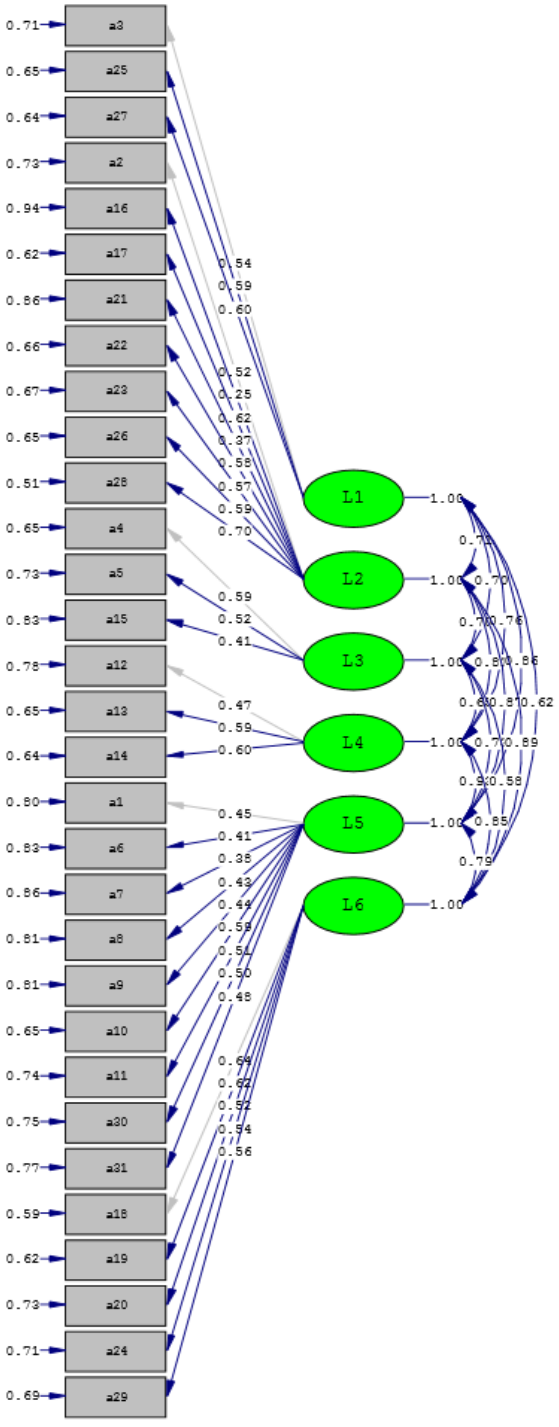


Figure 1. Factor loadings of the model

### *3.2. Reliability*

Internal consistency and split half-test reliability analysis were applied to examine the reliability values of the fear house scale and the findings are provided in Table 3.

Table 3. Reliability Analysis Results

| Dimensions | Internal consistency | Split-Half Reliability |
|---|---|---|
| Fear of hospital | .73 | .70 |
| Fear of physical injury | .74 | .72 |
| Fear of death and animals | .81 | .78 |
| Dark and bad dream | .79 | .74 |
| Social fears | .82 | .79 |
| Spatial fears | .80 | .78 |
| Scale total | .78 | .75 |

The reliability values of the scale are illustrated in Table 3. The internal consistency values of the scale for sub-dimensions vary between.73 and .82, as it is.78 for the total of the scale. The split-half reliability for the sub-dimensions varies between .70 and .79, while the reliability values are required to be over .70 in the scale development and their adaptation processes. (Landis and Koch, 1977). As it can be asserted that both the internal consistency and the split-half reliability values of the scale are between the specified intervals and have sufficient reliability.

## 4. Discussion, Conclusion and Suggestions

The study aimed to **"**Fear House" translate this child fears scale into Turkish and assess its validity and reliability. The content and construct of the scale were analyzed for validity, and internal consistency and split-half-test analyzes were performed for reliability. Explanatory and confirmatory factor analysis was performed for the construct validity of the scale.The analysis results revealed that the 31-item scale has a six-factor structure. The model data fit values showed that the factors are compatible with the data collected through the Turkish form of the scale. The reliability of the scale was measured by the internal consistency and split-half test reliability tests for the entire scale and its sub-dimensions. The internal consistency coefficient for the entire scale was .78 with split-half test reliability of .77. Moreover, the fear of hospital sub-dimension internal consistency coefficient was 0.73 with split-half reliability of .70, fear of physical injury sub-dimension had an internal consistency coefficient of 0.74 with split-half reliability of .72, fear of death and animal sub-dimension had an internal consistency coefficient of0.81, with split-half reliability of0.78, dark and bad dream sub-dimension had an internal consistency coefficient of0.79, with split-half reliability of0.74, social fears sub-

dimension had an internal consistency coefficient of0.82, with split-half reliability of.79; spatial fears sub-dimension had an internal consistency coefficient of .80, with split-half reliability of.78. Considering that the predicted reliability level for the measurement tools of the internal consistency coefficients is .70, it can be asserted that this measurement tool is reliable (Tezbaşaran, 1996).

The study was conducted on 358 children aged between 4-6 who were enrolled at preschool education. Structure and content validity were examined as the internal consistency coefficients were analyzed for reliability. Thanks to this attempt, it can be concluded that **"**Fear House" children's fear scale, adapted to the Turkish culture, a valid and reliable scale that can be applied to the studies on children's fears aged between 4-6.

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## Appendix A. The list of the fears

Aşağıdakikorkularınhangisisanagöresiyah eve hangisikırmızı eve yerleştirilmelidir?
(Veya "Evdeyalnızkalmaktankorkuyormusun?)
Evdeyalnızkalmakkırmızı eve mi siyah eve mi yerleşsin?
Birileriveyabirşeytarafındansaldırıyauğramakkırmızı eve mi siyah eve mi yerleşsin?
Hastalanmak, hastalığayakalanmakkırmızı eve mi siyah eve mi yerleşsin?
Ölmekhangi eve yerleşsin?
Anne-babanınölmesi?
Herhangibirbaşkaçocuk?
Herhangibirbaşkainsanlar?
Annendenkorkuyormusun?
Babandankorkuyormusun?
Senicezalandırankişiler?
Cadılar, hayaletler, canavarlar, iskelet( tümmasalkahramanları da bugrubagirer)
Uykuyadalmadanöncekikorkular?
Korkunçrüyalar( özelliklehangileri?)
Karanlıktankorkuyormusun?
Hayvanlardankorkuyormusun?
Arabalar, trenler, uçaklar (araçlarıntümü)
Fırtına, deprem, sel, hortum( doğalafetler)
Çokyüksekteolmak (yükseklikkorkusu)
Çokderindeolmak( derinlikkorkusu)
Dar veküçükodada, tuvalette, metroda, aşırıkalabalıkolanortamlardakalmak (kapalıalankorkusu?
Sudan korkuyorusun?
Yangındankorkuyormusun?
Savaştankorkuyormusun?
Genişsokaklar, meydanlardan?
Doktorlar( dişdoktorudışında)
Kangörmektenkorkuyormusun?
İğneolmaktan?
Acıhissetmek, acıçekmektenkorkuyormusun?
Ani sesler, birşeylerinanidendüşmesinden?
Hatayapmak, yanlışyapmak, (kötüşeyleryapmak)?
Okulageçkalmaktankorkuyor