



The Journal of Genetic Psychology

Research and Theory on Human Development

ISSN: 0022-1325 (Print) 1940-0896 (Online) Journal homepage: <https://www.tandfonline.com/loi/vgnt20>

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Begüm Serim-Yıldız & Özgür Erdur-Baker

To cite this article: Begüm Serim-Yıldız & Özgür Erdur-Baker (2013) Examining the Cultural Validity of Fear Survey Schedule for Children: The Contemporary Fears of Turkish Children and Adolescents, *The Journal of Genetic Psychology*, 174:4, 345-365, DOI: 10.1080/00221325.2012.678420

To link to this article: <https://doi.org/10.1080/00221325.2012.678420>



Accepted author version posted online: 05 Feb 2013.
Published online: 31 May 2013.



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ARTICLES

Examining the Cultural Validity of Fear Survey Schedule for Children: The Contemporary Fears of Turkish Children and Adolescents

BEGÜM SERİM-YILDIZ

ÖZGÜR ERDUR-BAKER

Middle East Technical University

ABSTRACT. The authors examined the cultural validity of Fear Survey Schedule for Children (FSSC-AM) developed by J. J. Burnham (2005) with Turkish children. The relationships between demographic variables and the level of fear were also tested. Three independent data sets were used. The first data set comprised 676 participants (321 women and 355 men) and was used for examining factor structure and internal reliability of FSSC. The second data set comprised 639 participants (321 women and 318 men) and was used for testing internal reliability and to confirm the factor structure of FSSC. The third data set comprised 355 participants (173 women and 182 men) and used for analyses of test–retest reliability, inter-item reliability, and convergent validity for the scores of FSSC. The sum of the first and second samples (1,315 participants; 642 women and 673 men) was used for testing the relationships between demographic variables and the level of fear. Results indicated that FSSC is a valid and reliable instrument to examine Turkish children’s and adolescents’ fears between the ages of 8 and 18 years. The younger, female, children of low-income parents reported a higher level of fear. The findings are discussed in light of the existing literature.

Keywords: Fear Survey Schedule for Children, FSSC, reliability, validity

Since the first published research on fear (Hall, 1897), fear has been defined as a normal human condition, which is necessary to motivate learning and to protect the self from real or imagined threats (Gullone & King, 1992, 1993; King,

Address correspondence to Begüm Serim-Yıldız, Middle East Technical University Faculty of Education, Department of Educational Science, Psychological Counseling and Guidance ODTÜ/Ankara, 06531 Turkey; e133282@metu.edu.tr (e-mail).

Hamilton, & Ollendick, 1988). Fear as a normal and integral part of development and a normal response to danger with a survival value, warns against danger and motivates a person to escape or avoid it (Gullone, 1999, 2000; Shore & Rapport, 1998). However, fears of youngsters need to be monitored and controlled regularly for several reasons. First, fear may have a limiting effect on perceptions, problem-solving abilities, learning, and memory by reducing the capacity of the brain to store and process information (Bodenhasen, 1993; Hamilton & Mackie, 1993; Lazarus, 1991). Second, fear may damage social interactions and the sense of self (Garber & Dodge, 1991). Moreover, fear is reported to be closely related with anxiety, phobia, and worry (i.e., Gilbert-Macleod, 2000; Laing, Fernyhough, Turner, & Freeston, 2009). In particular, the relationship of fear to anxiety is emphasized by many studies (i.e., King, Gullone, & Ollendick, 1992; Muris & Ollendick, 2002). For example, Last, Francis, and Strauss (1989) reported that children and adolescents with separation anxiety disorder experience have the fear of getting lost (47.7%), while children with an over anxiety disorder have the fear of being criticized (45.5%), being teased (36.4%), and making mistakes (33.3%), and children with school phobia have a fear of school (47.1%).

Fears appear to vary with age, gender, and culture. The intensity and frequency of fears decrease with age and the scores of the youngest age group is the highest for overall fear scores as well as for scores of different fear types. The fear frequency of imaginary themes, including fears of ghosts and monsters, bedtime fears, and frightening dreams, decreases with age, while realistic fears including fears of bodily injuries and physical danger increases with age (Bauer, 1976; Burnham, 2005; Gullone & King, 1993; Lane & Gullone, 1999). Fear of the dark, noise, imaginary and supernatural entities and events, and specific types of people are more common among younger children whereas fear of illness and enclosed places is more common among older children (Burnham, 2005). Nearly all of the research studies suggest that female children and adolescents are more fearful than men with respect to the overall fear scores for groups of the same age (Burnham, 2005; Lane & Gullone, 1999).

The most common types of fears seem to vary between men and women as well. Female children and adolescents report fear of animals, such as rats and snakes, the unknown, such as creepy houses (Gullone & King, 1992), and losing significant others (Meltzer et al., 2008). Male children and adolescents report fears related to violence, such as robbers, killers, guns, switchblades, dope peddlers, and whippings; fear of parents; and fears related to car accidents, storms, being hurt, getting killed, and disasters (Gullone & King, 1992).

Furthermore, despite the universal nature of fears, the most troubling types of fears may vary among the youngsters of different nations. For example, in response to the question of what they fear most, Australian children reported dangerous drugs, sharks, and germs/getting a serious illness (Gullone & King, 1992); American children reported murderers, falling from a high place, looking foolish, and getting lost in a strange place (Burnham & Gullone, 1997); Chinese

children reported getting an electric shock, bears, and ghosts or spooky things; Nigerian children reported snakes, guns, and deep water/ocean (Ollendick, Yang, King, Dong, & Akande, 1996); Swedish children reported bombing attacks and fire (Svesson & Öst, 1999); and Belgian children reported being raped and drowning (Muris & Ollendick, 2002).

In order to monitor the fears of children and adolescents, up to date, valid, and reliable assessment across cultures is imperative. Children's fears have been examined utilizing several methodologies. For example, structured or unstructured observations (e.g., Carpenter, 1990), adult reports, such as that from parents (mostly mothers) and teachers (e.g., Meltzer et al., 2008), interviews with children, fear lists, and fear surveys (e.g., Slee & Cross, 1989) were used in many research studies. Among these assessment methods, the fear survey schedule (Gullone, 2000) is the most common due to its ease of administration, convenience and low cost. Researchers can gather information about the content, intensity and frequency of children's fears in a relatively short time and the responses can be scored objectively (Gullone, 1999). In the literature, four main fear surveys are often reported: (a) the Louisville Fear Survey Schedule for Children (Miller, Barrett, Hampe, & Noble, 1971); (b) the Children's Fear Survey Schedule (Ryall & Dietiker, 1979); (c) the Fear Experiences Questionnaire (Gullone, King, & Ollendick, 2000); and (d) the Fear Survey Schedule for Children (Scherer & Nakamura, 1968).

The Fear Survey Schedule for Children (FSSC-AM) has been used as the main instrument in nearly all fear studies examining the content, frequency and intensity of children's and adolescents' fears. The FSSC was developed by Scherer and Nakamura (1968) based on the adult Fear Survey Schedule of Wolpe and Lange (1964). The original form included 80 items with a 5-point Likert-type response scale ranging from 1 (*none*) to 5 (*very much*), which later was changed to a 3-point Likert-type response scale ranging from 1 (*none*) to 3 (*a lot*) (Ollendick, 1983). Since then, the FSSC has been revised many times (Burnham, 1995; Gullone & King, 1992; Muris & Ollendick, 2002; Shore & Rapport, 1998; Yule, Udwin, & Murdock, 1990) due to the changing nature of children's fears over time; hence, each time, researchers added new items or deleted outdated items. The newest version of the FSSC-AM includes the original 78 items from the FSSC-II and 20 contemporary fear items added by Burnham (1995).

A factor analytic approach is widely used to examine the structural validity of the FSSC. This approach is also utilized to identify, classify, and summarize the fears of children in terms of their nature, frequency, and severity. One-, five-, six-, and seven- factor solutions are reported (Burnham, 2005; Burnham & Giesen, 2005; Muris & Ollendick, 2002; Ollendick, 1983; Shore & Rapport, 1998). Generally, the results of exploratory and confirmatory factor analyses suggest a five-factor structure (Burnham, 2005; Muris & Ollendick, 2002; Ollendick, 1983). Although suggested factors vary, the fear of death and danger, fear of failure and criticism, fear of the unknown, and fear of animals are the same for nearly

all studies. As a fifth factor, Muris and Ollendick (2002) suggested medical and situational fears, while Burnham suggested school and social stress fears.

The FSSC is used for different purposes, such as providing information about the fears of children (e.g., Muris, Merckelbach, & Collaris, 1997); discriminating normal fear from clinical fear (anxiety, phobia; e.g., Muris & Ollendick, 2002); evaluating treatments for disorders related to fear (e.g., Gullone, King, Tonge, Heyne, & Ollendick, 2000); comparing fears of children at different mental and physical skill levels (e.g., King, Gullone, & Stafford, 1990); evaluating the impacts of events, such as that of natural disasters on the fear development of children (Burnham, 2005); and comparing fears of children in different countries (e.g., Burnham & Gullone, 1997). Two of the salient findings from such studies are that children's fears are affected by current events such as terrorism (Burnham & Hooper, 2008; Muris, Mayer, van Eijk, & Donger, 2008), and by the social and cultural structures of their society.

In Turkey, only a few studies on fears of children and adolescents were conducted. For the Turkish version, new items related to religious fears, attachment, and traffic accidents were added by Erol, Şahin, and Özcebe (1990). Erol and Şahin (1995) adapted an earlier version of the FSSC by Yule et al. (1990) into Turkish. Results indicated that the scores resulting from the FSSC were valid and reliable for children aged 8–13 years. A six-factor structure was suggested as follows: (a) nonspecific general fear factor; (b) death, natural disasters, and religious fears with items such as death of parents, earthquakes, and violating a religious rule; (c) fear of the unknown, with items such as ghosts and being alone in a dark room; (d) social fears, with items such as taking examinations and talking to a stranger; (e) failure and criticism, with items such as failing in an examination and making a mistake; and (f) medical fears and illness, with items such as hospital and going to the dentist. The results also indicated that Turkish female children and children from a low socioeconomic status reported higher levels of fears than their counterparts (Erol et al., 1990). Since then, many important events that may affect fear happened in Turkey, including large-scale earthquakes, a major financial crisis, and continuing terrorist attacks. Therefore, examining the factor structure of the FSSC should provide information about the current nature of Turkish youngsters' fears.

In sum, although fear is a normal phenomenon in the development of children and adolescents, it needs to be monitored and controlled due to its close relationships with psychological issues such as anxiety, worry, and phobia (e.g., Gilmore & Campbell, 2008). Uncontrolled fear may also transform into trait-like characteristics (Sylvers, Lilienfeld, & LaPrairie, 2010). Additionally, types of fears vary with age, gender, and culture. Therefore, measuring fears with instruments providing valid and reliable scores that allow researchers to compare fears of children and adolescences across cultures is important. The FSSC is one of the most widely used surveys by international researchers. Therefore, this study aims to examine the contemporary fears of Turkish youngsters with the items recently added by

Burnham (1995). To this purpose, the new version of the FSSC was adapted into Turkish and the scores obtained from the scale were examined for reliability and validity evidence. Additionally, the relationships between some demographic variables (age, gender, family income, parents' education, and the number of siblings) and the overall level of fear were examined.

Method

Procedure and Participants

Before conducting the research, the required permissions from the ethical boards of the university and the Ministry of National Education were obtained. Subsequently, the selected schools were contacted and their participation was requested. Schools agreeing to participate were visited by Begüm Serim-Yıldız. The questionnaires were distributed to the classes that the school administration suggested based on availability. Questionnaires were administered to the participants in one class hour (50 min) and a break (10 min). Therefore, the participants of the study were enrolled through a sampling of convenience procedure. Based on the same data collection procedures, three different samples were enrolled for the study.

The first sample included 321 women (47.5%) and 355 men (52.5%) with a total 676 participants from different elementary and high schools in Ankara with a mean age of 13.30 years ($SD = 3.23$ years), ranging from 8 to 18 years. The factor structure of the data obtained from this sample was examined using exploratory factor analysis (EFA) and internal reliability evidence for the Fear Survey Schedule for Children scores was obtained.

The second sample included 321 women (50.2%) and 318 men (49.8%) with a total of 639 participants from different elementary and high schools in Ankara with a mean age of 13.03 ($SD = 3.12$ years) ranging from 8 to 18 years. The data obtained from this sample were used to examine evidence for internal reliability and to confirm the factor structures of the FSSC revealed from the EFA of the first data set through confirmatory factor analysis (CFA). The demographic form and the FSSC were administered to this first and second sample.

The third sample consists of 173 women (48.7%) and 182 men (51.3%) with a total of 355 participants from different elementary and high schools in Ankara with a mean age of 12.66 ($SD = 3.05$ years) ranging from 8 to 18 years. The demographic questionnaire, the FSSC, and the Fear Experiences Questionnaires (FEQ) by Gullone et al. (2000) were administered to this third sample. For the test-retest reliability analyses, the FSSC and a demographic form were administered twice within a three-week interval. The data gathered from this sample were used to conduct analyses of test-retest and interitem reliability, and convergent validity for the scores of the FSSC.

Instruments

Fear Survey Schedule for Children. In this study, the FSSC-AM (Burnham, 1995) was used with 25 additional new items. These new items were added by Burnham, but its current factor structure had not been tested yet (J. J. Burnham, personal communication, September 30, 2009). The total number of items was 123. Children were asked to rate their fears using 3-point Likert-type items ranging from 1 (*not scared*) to 3 (*very scared*). There were two different versions of the survey. The first version was administered to Grades 2–6 and included 118 items. The second version was administered to Grades 7–12 and included 123 items. Five items (items 57, 61, 98, 120, and 121) were excluded from the survey given to Grades 2–6 due to the fact that they were not developmentally appropriate for the ages 8–13 years. These items involved cults/satanic worship/voodoo, my getting pregnant or my girlfriend getting pregnant, being raped, sex, and sexually transmitted diseases. The possible score range was 98–294 for the survey applied to children between the ages of 8 and 13 years, and 123–369 for the survey applied to adolescents between the ages of 14 and 18 years. High scores on the FSSC reflect a high level of fear.

First, the questionnaire was translated by three counselors advanced in English. Second, an English teacher studying psychological counseling back-translated the items. The translations were compared and we chose the most consistent translations for each item. Third, the Turkish and original English version of items were rated for their equivalence by two doctorate students majoring in psychological counseling. A Turkish version of the FSSC was formed based on these translations. As a fourth step, two Turkish literature teachers reviewed the Turkish version of the questionnaire and suggested some changes in wording and punctuation. Finally, the pilot study was conducted to check the clarity of the items in the scale. No changes were suggested.

Fear Experiences Questionnaire. The FEQ was developed by Gullone et al. (2000). The FEQ consists of 21 items and 4 subscales, namely social evaluation and psychic stress (SEPS), physiological experiences (PE), death and danger (DD), and animal fears (AF). The questionnaire is a 5-point Likert-type scale ranging from 1 (*very often*) to 5 (*never*) that measures participants' fears in terms of how often they are scared and how their metabolism responds to fear. High scores on the FEQ reflect low levels of fear. The validity and reliability of the scores obtained from the Turkish version of the survey was investigated by Atılgan, Saçkes, Yurdugül, and Çırak (2007). To obtain construct validity evidence, EFA and CFA were conducted with a sample of 1,087 adolescents aged between 12 and 17 years. In this study, the relationship between the total scores of FEQ and FSSC was examined for the purpose of testing the convergent validity of the scores obtained from FEQ and FSSC.

Demographic form. This form requested information on the age and gender of the participant and the education, occupation, and income of the participants' parents.

Results

Face Validity

In terms of face validity, the Turkish form of the questionnaire was evaluated by two independent psychological counseling experts and two independent child psychology experts. Some words and terms were changed to suit the subjects' developmental levels.

Convergent Validity

The FEQ was used to examine the convergent validity of the scores from the FSSC. The Pearson correlation coefficient between the FSSC and FEQ was found to be $r = -.64$ ($p < .01$) for the first application and $r = -.67$ ($p < .01$) for the second application, which indicates a satisfactory correlation (Green, Salkind, & Akey, 2000).

Construct Validity

Exploratory factor analysis. In previous studies, the factor structure of the FSSC-AM was determined for the 98 items, but the factor structures of the new version with its 123 items has not been examined yet. Therefore, EFA were conducted using PRELIS 2.3 (SSI - Scientific Software International, Inc., Skokie) to evaluate the factor structures of the instrument. The first data set consisting of 676 participants was utilized to conduct the EFA. The results of the Promax rotation revealed five factors. The factor loadings of the items ranged from .13 to .85 (see Table 1). Fourteen items had factor loadings lower than .30 (items 119, 5, 3, 105, 2, 99, 34, 75, 69, 49, 66, 30, 20, 109). Items 90 (dogs) and 104 (cats) were found to have approximately the same factor loadings for the factor medical and situational fears and fear of animals. Fear of cats and dogs should be loaded under fear of animals, but the factor loadings of the items of 90 (dogs) was .24 and of 104 (cats) was .21 under fear of animals, so the items of cats and dogs were excluded. The items administered only to children between the ages of 14 and 18 years (cults/satanic worship/voodoo, my getting pregnant or my girlfriend getting pregnant, rape, sex, sexually transmitted diseases) were excluded from the factor analysis.

Confirmatory factor analysis. In the present study, CFA was conducted with the technique of parceling items. The latent factors are allowed to be correlated. The second data set including 639 participants was used to perform correlated-factors CFA with item parceling technique. The technique of parceling items was utilized in CFA process to decrease the number of indicators of lengthy scales, to obtain more continuous and normally distributed data and to improve the fit of the CFA model as suggested by Bandalos and Finney (2001). According to the item parceling technique used in the present study, Factor 1 consisted of three item parcels, Factor 2 consisted of nine item parcels, Factor 3 consisted of four

TABLE 1. The Factor Loadings of FSSC

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1					
Medical and situational fears					
19 Going to the dentist	0.559	0.028	0.025	-0.175	0.033
11 Going to the doctor	0.527	0.011	-0.045	-0.204	0.044
71 Getting a shot from a nurse or doctor	0.492	-0.008	0.007	0.043	-0.016
95 Having to go to the hospital	0.465	-0.081	0.074	0.077	-0.037
15 Darkness	0.418	0.139	-0.071	0.174	0.026
73 Taking a test	0.378	-0.081	0.243	-0.024	0.036
93 Flying in a plane	0.367	0.028	0.035	0.193	0.030
111 Heights	0.358	0.168	-0.016	0.158	0.014
77 Thunder	0.350	-0.036	-0.030	0.188	-0.211
10 Being in closed places	0.311	0.215	-0.015	0.154	-0.013
43 Ghosts or spooky things	0.302	0.243	-0.049	0.228	-0.027
104 Cats	0.329	-0.155	-0.044	-0.047	-0.218
90 Dogs	0.300	0.006	-0.038	0.001	-0.246
119 Swimming in deep water	0.282	0.274	-0.029	0.086	-0.010
3 Being a lone	0.244	0.094	0.093	0.156	0.039
5 Riding in a car or bus	0.225	-0.067	0.023	0.084	-0.027
105 Clowns	0.176	-0.227	0.028	0.165	-0.092
Factor 2					
Fear of danger and death					
41 Shootings	0.008	0.853	-0.103	0.055	0.072
40 Being hit by a car or truck	0.089	0.705	-0.011	0.021	0.047
44 Being threatened with a gun	0.000	0.705	-0.064	0.187	0.004
82 Drive-by shootings	0.023	0.698	-0.057	0.047	-0.080
53 Terrorist attacks	-0.045	0.691	0.046	0.065	-0.076
24 Murderers	-0.076	0.690	-0.014	0.203	-0.052
39 Myself dying	0.058	0.686	-0.117	0.130	0.151
28 Being kidnapped	-0.013	0.674	0.025	0.190	0.037
46 Gangs	-0.017	0.629	-0.111	0.270	-0.073
86 Drowning	0.140	0.627	0.015	-0.056	-0.006
64 A burglar breaking into our house	-0.032	0.618	-0.001	0.289	-0.006
117 Snipers at school	-0.159	0.600	0.094	0.221	-0.033
70 Earthquakes	0.164	0.599	0.018	-0.004	0.005
38 Tornados/hurricanes	0.019	0.586	0.053	0.166	0.005

TABLE 1. The Factor Loadings of FSSC (Continued)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
18 Taking dangerous/bad drugs	0.019	0.575	0.077	0.100	0.065
17 Nuclear war	0.106	0.569	0.043	-0.051	0.032
32 Fire	0.170	0.566	0.033	0.008	-0.027
4 Car wreck/car accident	0.109	0.551	0.095	-0.064	0.059
84 Dead people	0.077	0.544	-0.069	0.198	-0.064
78 Going to jail	-0.057	0.523	0.267	0.064	-0.035
29 Getting a serious illness	0.139	0.517	0.176	-0.043	0.106
89 People carrying guns, knives and weapons	-0.064	0.511	-0.043	0.349	-0.126
85 Getting lost in a strange place	0.053	0.511	0.041	0.261	-0.035
47 Not being able to breathe	0.120	0.510	0.165	-0.056	0.050
80 AIDS	0.030	0.488	0.159	-0.199	-0.116
14 Our country being invaded by enemies	0.003	0.481	0.111	-0.069	-0.013
96 Falling from high places	0.212	0.466	0.113	-0.005	-0.007
103 Breaking a bone	0.031	0.464	0.089	0.080	-0.140
76 Robberies	-0.029	0.463	0.170	0.124	-0.069
8 Having to fight in a war	0.128	0.462	-0.159	0.120	-0.093
113 Going to juvenile system	-0.100	0.462	0.256	-0.009	-0.167
33 Having an operation	0.374	0.457	0.003	-0.057	0.085
55 Getting an electric shock	0.063	0.451	0.079	0.127	-0.127
74 Being bullied	-0.059	0.424	0.140	0.300	-0.119
26 Crime	-0.138	0.399	0.367	0.096	0.027
51 Drunk people	0.013	0.399	0.016	0.381	-0.140
54 My parents separating or getting divorced	-0.147	0.395	0.353	0.106	0.110
35 Someone in my family dying	-0.036	0.388	0.284	-0.219	0.001
87 Thunderstorms	-0.008	0.383	-0.025	0.204	-0.175
97 Sharks	0.026	0.380	0.092	0.008	-0.297
27 Being in a fight	0.023	0.360	0.106	0.256	0.023
88 Cemeteries/grave yards	0.108	0.357	-0.057	0.286	-0.010

(Continued on next page)

TABLE 1. The Factor Loadings of FSSC (Continued)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
110 Going to Hell	-0.064	0.324	0.217	-0.228	-0.102
45 Forest fires	0.019	0.301	0.210	0.139	-0.100
99 Abuse	-0.037	0.299	0.228	-0.008	-0.222
2 Rides like the Scream Machine	0.205	0.249	-0.077	0.048	0.027
Factor 3					
School and social stress fears					
50 Failing a test	-0.001	-0.018	0.631	0.119	-0.031
13 Getting bad grades at school	-0.024	0.024	0.616	0.135	-0.028
12 Being a failure/not successful	0.042	-0.063	0.601	-0.018	-0.059
92 Looking foolish	0.031	-0.019	0.585	0.088	0.010
108 Being embarrassed	0.072	-0.100	0.570	0.088	-0.079
6 Being put down or criticized by others	0.229	-0.214	0.560	-0.050	-0.001
23 My parents losing their jobs	-0.113	0.191	0.524	-0.032	0.018
123 Failing school	-0.079	0.140	0.496	0.008	-0.108
122 Being talked about	0.066	-0.092	0.495	0.222	-0.069
25 My parents putting me down	-0.020	0.013	0.490	0.174	0.017
59 Having no friends	0.022	0.018	0.475	0.127	0.035
1 Being teased	0.250	-0.142	0.457	-0.098	0.102
36 Making mistakes	0.082	0.010	0.443	0.197	0.028
60 Someone in my family getting sick	0.067	0.199	0.425	-0.107	-0.007
37 My parents arguing	-0.048	0.214	0.424	0.297	0.098
56 Someone in my family having an accident	-0.008	0.373	0.385	-0.103	0.024
31 Being poor	0.069	0.181	0.356	0.048	0.135
9 Losing my friends	0.032	0.067	0.353	-0.019	-0.025
106 Death of a close person (grandparents, best friend)	-0.070	0.332	0.348	-0.221	-0.069
102 Breaking up with a boyfriend or girlfriend	0.079	-0.078	0.337	0.131	-0.063
116 Smoking	-0.173	0.105	0.332	0.299	-0.082
16 Not having enough money	0.202	-0.058	0.328	-0.074	0.051
75 Getting my report card	0.254	-0.245	0.280	0.044	0.035
34 Having to go to school	0.132	-0.151	0.238	0.125	0.046

TABLE 1. The Factor Loadings of FSSC (Continued)

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
<i>69 Going to a new school</i>	<i>0.148</i>	<i>0.018</i>	0.237	<i>0.052</i>	<i>-0.096</i>
<i>109 God</i>	<i>-0.082</i>	<i>-0.054</i>	0.135	<i>-0.190</i>	<i>-0.175</i>
Factor 4					
Fear of unknown					
63 Getting punished by mom	-0.107	0.002	0.365	0.628	0.092
48 Getting punished by dad	-0.106	0.011	0.396	0.541	0.062
65 Violence near my home	-0.065	0.462	0.038	0.494	-0.009
94 Strangers	0.035	0.271	0.001	0.493	-0.034
67 Being alone at home	0.263	0.045	-0.049	0.466	0.015
58 Getting lost in crowd	0.106	0.405	-0.061	0.433	0.022
21 Violence on TV	0.113	0.168	-0.044	0.433	-0.046
42 Being sent to principal	-0.118	0.197	0.329	0.413	0.089
91 The sight of blood	0.126	0.072	0.085	0.367	-0.167
118 Teachers	0.015	-0.046	0.086	0.365	0.047
81 Haunted houses	0.142	0.256	0.021	0.361	-0.024
62 Strange looking people	0.018	0.318	-0.033	0.352	-0.105
115 Scary movies	0.113	0.161	-0.027	0.328	-0.121
107 Driving	0.276	-0.139	-0.007	0.313	-0.140
<i>49 Riots</i>	<i>-0.019</i>	<i>0.246</i>	<i>0.133</i>	0.282	<i>-0.095</i>
<i>66 Having bad dreams</i>	<i>0.225</i>	<i>0.231</i>	<i>0.117</i>	0.269	<i>0.028</i>
<i>30 Meeting someone for the first time</i>	<i>0.119</i>	<i>0.008</i>	<i>0.051</i>	0.263	<i>0.039</i>
<i>20 Having to talk in front of my class</i>	<i>0.165</i>	<i>-0.118</i>	<i>0.153</i>	0.176	<i>0.028</i>
Factor 5					
Fear of animals					
79 Lizards	0.091	-0.021	-0.017	0.068	-0.684
114 Insects	0.111	0.033	0.064	-0.046	-0.599
100 Bats	-0.062	0.157	0.044	0.094	-0.591
112 Reptiles	0.111	0.176	-0.003	-0.029	-0.552
22 Spiders	0.096	0.071	0.054	-0.038	-0.536
101 Bears	-0.047	0.268	0.033	0.083	-0.509
68 Rats	0.058	0.171	-0.068	0.147	-0.452
52 Snakes	0.123	0.282	0.017	-0.001	-0.438
7 Mice	0.149	0.239	-0.047	-0.095	-0.433
83 Tigers	-0.001	0.333	0.034	-0.064	-0.412
72 Bees	0.313	-0.066	-0.008	0.061	-0.402

Note. Bolded values indicate the factor loadings of the items for the factor they are located to. The italic text indicates the items that are not included in the mentioned factor.

item parcels, and Factors 4 and 5 consisted of three item parcels. Each item parcel includes three or four items that were selected based on their skewness and kurtosis values. The skewness and kurtosis values of the item parcels ranged from $-.238$ to $.826$, indicating that skewness and kurtosis were not substantial.

AMOS version 16.0 software (Arbuckle, 2007) was used to perform CFA with item parceling technique. Maximum likelihood was used as the estimation method and covariance matrices were analyzed to test the five-factor emerged from the EFA with the first sample. The fit of the model was evaluated using the multiple goodness-of-fit indexes: the Tucker-Lewis index (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR). The following criteria were used to indicate goodness of fit: TLI and CFI $.90$ and higher and RMSEA and SRMR $.08$ or lower (Browne & Cudeck, 1993; Schumacker & Lomax, 1996). The CFA results revealed an adequate model fit for the five-factor structure of the FSSC, $\chi^2(199, N = 639) = 684.45, p = .00; \chi^2/df$ ratio = 3.43 ; TLI = $.95$, CFI = $.96$, RMSEA = $.062$, SRMR = $.037$. Therefore, the goodness-of-fit indexes (TLI, CFI, RMSEA, and SRMR) suggested that the model fit was adequate and the findings confirmed the five-factorial nature of the instrument, providing evidence for the construct validity.

Correlation Among Five Factors

The correlation analysis was performed on Factor 1 (medical and situational fears), Factor 2 (fear of death and danger), Factor 3 (school and social stress fears), Factor 4 (fear of the unknown), and Factor 5 (animal fears). The results indicated that all five factors are positively correlated to each other. It can be concluded that any change (increase or decrease) in fear intensity scores of children and adolescents related to one of the five fear factors will result in a change in other fear factors in the same direction. Table 2 presents the estimated correlation coefficient associated with each pair of factors.

Divergent Validity: Age and Gender Differences

Two-way analyses of variance (ANOVA) was conducted to explore the age and gender differences with respect to total fear scores of children and adolescents, as measured by the FSSC. For this analysis the sum of the two samples was used (642 women and 673 men; $N = 1,315$ children and adolescents). Results indicated that there was no significant interaction between age and gender, $F(10, 1293) = 1.10, p = .35$, partial $\eta^2 = .00$, but significant main effect was observed for age, $F(10, 1293) = 40.29, p = .00$, partial $\eta^2 = .24$, which is a medium effect and for gender, $F(1, 1293) = 278.43, p = .00$, partial $\eta^2 = .18$, which is a medium effect (Cohen, 1988) (see Figure 1).

TABLE 2. The Estimated Correlations Among Latent Factor Scores

Factor	Factor 2	Factor 3	Factor 4	Factor 5	Female (<i>n</i> = 321)		Male (<i>n</i> = 355)	
					<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Factor 1	.69	.53	.80	.77	116.60	22.12	98.28	23.80
Factor 2	—	.74	.84	.76	23.76	6.20	21.11	5.73
Factor 3		—	.70	.49	43.90	8.40	39.80	8.63
Factor 4			—	.68	24.70	6.34	18.83	5.07
Factor 5				—	13.41	6.34	11.89	3.09
					222.39	38.79	189.94	40.19

For all age groups, women reported higher level of fear ($M = 206.68$, $SD = 37.56$) than their male counterparts ($M = 176.65$, $SD = 36.90$). Children at age 8 years, the youngest age group, reported the highest level of fear among girls ($M = 241.70$, $SD = 21.17$) and boys ($M = 211.28$, $SD = 33.04$) while adolescents

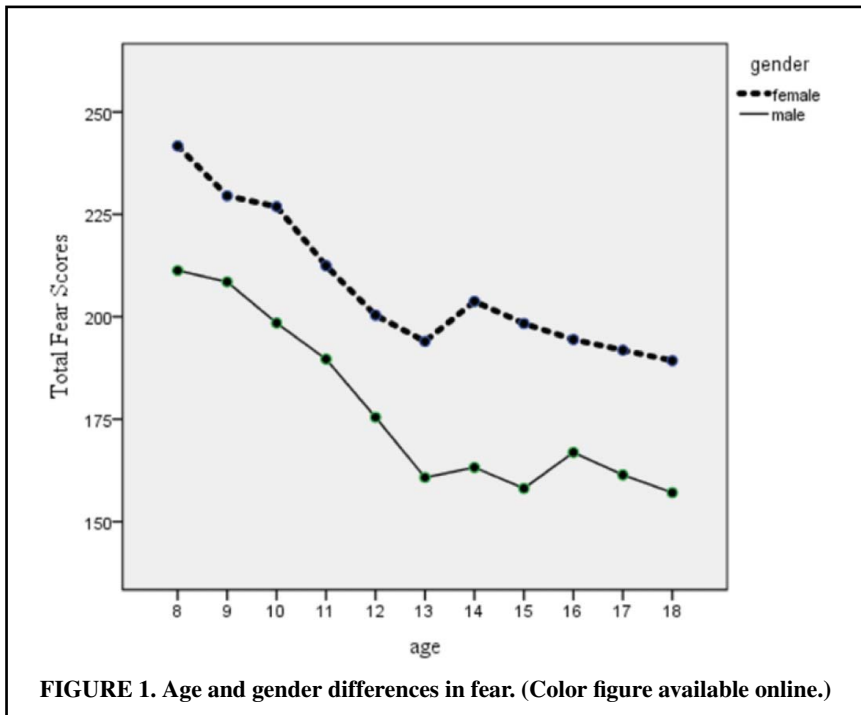


TABLE 3. Means and Standard Deviations for Total Fear Scores

Age (years)	Female(<i>n</i> = 642)		Male(<i>n</i> = 673)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
8	241.70	21.17	211.28	33.04
9	229.52	31.62	208.51	30.27
10	226.89	33.82	198.47	32.44
11	212.46	47.28	189.66	39.03
12	200.40	32.72	175.47	29.71
13	193.98	34.83	160.77	31.28
14	203.75	37.60	163.21	32.43
15	198.36	30.82	158.10	27.89
16	194.44	29.21	166.87	36.94
17	191.84	35.22	161.39	25.60
18	189.29	31.97	157.06	26.02

at age 18 years, the oldest age group, reported the lowest level of fear among women ($M = 189.29$, $SD = 31.97$) and men ($M = 157.06$, $SD = 26.02$). Means and standard deviations were presented in Table 3.

Test–Retest Reliability

To examine test–retest reliability evidence, the scale was administered twice to the third sample consisting of 355 participants (173 women and 182 men) within a three-week interval. For the total score, the Pearson correlation coefficient was $r = .97$ ($p < .01$) between the first ($M = 1.81$, $SD = 0.33$) and second ($M = 1.82$, $SD = 0.32$) administrations of the scale. For the individual factors, the Pearson correlation coefficients between the first and second administrations of the scale are the following: for Factor 1 (medical and situational fears), $r = .95$ ($p < .01$) between the first ($M = 1.42$, $SD = 0.35$) and second ($M = 1.48$, $SD = 0.36$) administrations; for Factor 2 (fear of death and danger), $r = .97$ ($p < .01$), between the first ($M = 2.09$, $SD = 0.44$) and second ($M = 2.10$, $SD = 0.42$) administrations; for Factor 3 (school and social stress fears), $r = .96$ ($p < .01$) between the first ($M = 1.92$, $SD = 0.36$) and second ($M = 1.94$, $SD = 0.35$) administrations; for Factor 4 (fear of the unknown), $r = .96$ ($p < .01$) between the first ($M = 1.58$, $SD = 0.44$) and second ($M = 1.61$, $SD = 0.44$) administrations; and for Factor 5 (fear of animals), $r = .97$ ($p < .01$) between the first ($M = 1.76$, $SD = 0.53$) and second ($M = 1.77$, $SD = 0.53$) administrations.

TABLE 4. Internal Consistency (Cronbach's α) Coefficients and Test–Retest Correlations

	α (sample 1, $n = 676$)	α (sample 2, $n = 639$)	α (sample 3, $n = 355$)	α (sample 3, $n = 355$) retest	r test–retest ($n = 355$)
Factor 1	.78	.78	.80	.78	.95
Factor 2	.96	.96	.95	.94	.97
Factor 3	.89	.88	.86	.85	.96
Factor 4	.87	.87	.87	.86	.96
Factor 5	.89	.90	.88	.88	.97
Total score	.97	.98	.96	.96	.97

Internal Consistency Reliability

The internal consistency of scale/subscales was assessed using Cronbach's coefficient alpha for three samples. The third sample was administered the scale twice, therefore four sets of internal consistency estimates were obtained (see Table 4). With sample one consisting of 676 participants, an alpha coefficient of .97 was obtained for the total scale. The internal consistency of the factors was .78 for Factor 1 (medical and situational fears), .96 for Factor 2 (fear of death and danger), .89 for Factor 3 (school and social stress fears), .87 for Factor 4 (fear of the unknown), and .89 for Factor 5 (animal fears).

Similar internal consistency coefficients were observed for sample two which consisted of 639 participants. An alpha coefficient of .98 was obtained for the total scale. The internal consistency of the factors was .78 for Factor 1 (medical and situational fears), .96 for Factor 2 (fear of death and danger), .88 for Factor 3 (school and social stress fears), .87 for Factor 4 (fear of the unknown), and .90 for Factor 5 (animal fears).

The third sample of 355 participants was given the scale twice. Both times alpha coefficients of .96 were obtained for the total scale. The internal consistency of the factors for the first and second time was .80 and .78 for Factor 1 (medical and situational fears), .95 and .94 for Factor 2 (fear of death and danger), .86 and .85 for Factor 3 (school and social stress fears), .87 and .86 for Factor 4 (fear of the unknown), and .88 and .88 for Factor 5 (animal fears).

Additional Analysis: The Relationships Between the Level of Fear and the Number of Siblings, Parents' Education Level, and the Family Income

A simultaneous multiple regression analysis was utilized to assess how well number of siblings, education level of mother, education level of father, and family

income of the children and adolescents were related to the total fear scores. The results indicated that the multiple regression coefficient was significant ($r = .11$, $p < .00$) for the model. In other words, the linear combination of number of siblings, education level of mother, education level of father, and family income was significantly related to the total fear scores of children and adolescents, $F(4, 1310) = 4.12$, $p < .00$.

Combination of the variables explained 9% of the variance in total fear scores ($R^2 = .01$; adjusted $R^2 = .009$). Furthermore, the results of the standardized coefficients indicated that education level of father positively ($\beta = .07$), $t(4, 1310) = 2.20$, $p < .05$, and family income negatively ($\beta = -2.53$), $t(4, 1310) = -3.55$, $p < .05$, were related to the total fear scores. Hence, as the fathers' education level of children and adolescents increased, their total fear score also increase and as the family income of the participants increased, the total fear scores decrease, significantly. On the other hand, results revealed that number of siblings and education level of mothers were not significantly correlated to the total fear scores of children and adolescents (see Table 5).

Discussion

This study examined the validity and reliability evidences of the FSSC-AM scores for Turkish children and adolescents within the age range of 8–18 years. The motivation of the study came from the fact that the fears of children and adolescents should be monitored regularly with valid and reliable scores from a measure as the nature and severity of their fears may differ based on not only on developmental stages but also contemporary local and global events and conditions. Therefore, the instruments measuring fear should be revised accordingly.

TABLE 5. Summary of Regression Analysis for Variables Predicting Total Fear Scores

Criterion variable	Predictors	<i>B</i>	<i>SE B</i>	β	<i>t</i>	R^2
Total fear scores		192.62	5.49		35.78	.012
<i>n</i> siblings		-0.28	1.09	-.008	-0.26	
Education level of mother		-1.42	1.24	-.038	-1.14	
Education level of father		2.66	1.21	.071	2.20	
Family income		-2.53	0.71	-.103	-3.55	

$p < .05$; *df*'s = (4, 1310) for every *t*.

Due to the 25 recently added items to the scale, EFA was carried out to explore the appropriate factor structure, followed by CFA. Five factors emerged from the exploratory factor analyses and these factors were confirmed via confirmatory factor analyses without any modification. Based on the common theme of the items, the factors were named medical and situational fears, fear of death and danger, school and social stress fears, fear of the unknown, and fear of animals. Findings for all the factors with exception of medical and situational fears were the same with those of Burnham (2005) and the findings obtained for the factor medical and situational fears were the same with the findings of Shore and Rapport (1998). Items such as going to the doctor and heights were included in medical and situational fears; terrorist attacks and earthquakes were included in the fear of danger and death factor; failing a test and looking foolish were included in school and social stress fears; haunted houses and strange looking people were included in fear of the unknown; and lizards and spiders were included in fear of animals. Interestingly, the item sharks was not loaded in the fifth factor (fear of animals), but in the second factor, fear of death and danger. As mentioned in other studies, in many locations around the world children and adolescents do not have the chance to encounter a real shark and they may see a shark killing people only in movies (Burnham, 2005). This also applies to Turkey. Therefore, children and adolescents may perceive sharks as a fatal danger.

Fourteen of the 118 items seemed to be related to some of the factors: specifically, swimming in deep water, being alone, riding in a car or bus, or clowns (medical and situational fears); abuse or rides like a scream machine (fear of death and danger); getting a report card, having to go to school, going to a new school, or God (school and social stress fears); and riots, having bad dreams, meeting someone for the first time, or having to talk in front of the class (fear of unknown). However, these were excluded from the Turkish version of the FSCC because their factor loadings were not high enough to be a part of the mentioned factors or they loaded to more than one factor. Unfortunately, the nature of the data did not suggest why these items needed to be excluded other than based on the characteristics of their item loadings, but the item of God is worth speculating on. The fear of God was the most widely endorsed item and was not loaded in any of the factors. Religious beliefs are of great importance for many people in Turkey. Parents raise children by instilling the power of God and their gratitude to God (Rankin & Aytac, 2006). Islamic teachings sanction parents to raise their children with the love of God who is very forgiving but at the same time they define God as a punisher and describe hell as a horrific place where sinful people are punished. Furthermore, fear of God has other connotations in Turkish culture that has very little to do with a specific religion. People with the fear of God are used in daily life to refer to nice people. According to common beliefs, regardless of how religious a person is, a person who has the fear of God is a decent person that would not do anything harmful or illegal to others. Perhaps, such cultural

contexts as well as thoughts on religion require this particular item to be evaluated differently from other fear items.

Additionally, the calculation of the internal consistency coefficients (Cronbach's α) revealed strong internal consistency estimates for the total score as well as for all five factors. Likewise, the test–retest reliability coefficient indicated strong stability of the scores over time. Moreover, convergent validity was established through correlational inquiry. Pearson correlation coefficients between the participants' scores on the FSSC-AM and the FEQ were observed to be significantly correlated, providing evidence for convergent validity. It should be noted that the internal consistency coefficients for the total scores were found to be somewhat higher than for individual subscale scores, indicating that the total scores can reliably be used to measure overall level of fear. However, for the aim of examining different types of fears, subscales provide valuable information as well.

Finally, examination of the gender and age differences for the overall level of fear provided further evidence for the validity of the scale scores as the results are consistent with the literature (e.g., Bauer, 1976; Burnham, 2005; Gullone & King, 1993; Lane & Gullone, 1999). Women and younger participants reported to be more fearful. In addition to providing further validity support for the scale, such results also confirm that despite their universal nature, fears appear to vary with age, gender, and culture. The intensity and frequency of fears decrease with age and the scores of the youngest age group is the highest for overall fear scores. Among the other demographic variables, the fathers' education level and family income seem to be related to the overall fear level. Interestingly, the education level of mothers was not found to be correlated to overall fear level considering that mothers may spend more time with their children than fathers. Finally, children and adolescents from lower income families are more likely to report higher levels of fears. Thus, women, children with younger age, lower income, and lower fathers' education seem to be at more risk to develop fears which may transform into anxiety, phobia, or worry. Therefore, prevention and treatment efforts should target these groups.

Therefore, the results of this study imply that the five subscales of the FSSC provide valid and reliable scores to measure the fears of Turkish children and adolescents between the ages 8 and 18 years. However, the results of the study should be read with caution due to the limitations of the study. The most important limitations are the cross-sectional nature of the study and the convenient sampling procedure, which constrains the generalizability of the findings. Further studies utilizing different samples and methodologies need to be conducted to cross-validate the results of the study.

AUTHOR NOTES

Begüm Serim-Yıldız is a doctoral student majoring in psychological counseling and guidance at Middle East Technical University, Ankara, Turkey, and has

worked as a preschool teacher since 2002. The article presented here was produced by utilizing part of her theses data, which was supervised by Özgür Erdur-Baker. **Özgür Erdur-Baker** is an associate professor of psychological counseling and guidance at Middle East Technical University, Ankara. She earned her doctoral degree from the University of Texas at Austin. Her research interests are emotion and emotion regulation, trauma psychology, and peer bullying.

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Original manuscript received October 16, 2011

Final version accepted March 4, 2012