

INTERNATIONAL CONFERENCE ON NEW HORIZONS IN EDUCATION  
INTE2012

Turkish Version of Shortened Family Resiliency Scale  
(FRAS): The Study of Validity and Reliability

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**Abstract**

Walsh (1998) conceptualized family resiliency as strength-oriented family paradigms and proposed three overarching constructs (family belief systems, organization patterns, and communication processes) with nine sub-constructs. According to the Walsh (1998) model, Sixbey (2005) developed shortened Family Resiliency Scale (FRAS) with total 54 items, including 4 reverse items, formed by 4 Likert type. FRAS which consists of six factors, has  $\alpha = 0.96$ . total reliability and has good concurrent criterion validity with three well known scales. The aim of this research is to adapt to FRAS into Turkish and to examine its psychometric properties. The study was conducted on 433 students from Sakarya University Educational Departments. The participants were 304 (70 %) female and 129 (30 %) male, the mean age of the participants was 22 years. Firstly the language equivalency of the scale was found equivalent. Then total reliability was found  $\alpha$  is .92 And to confirm the original scale's structure in Turkish culture the confirmatory factor analysis (CFA) was executed and found that the model was well fit and Chi-Square value ( $\chi^2/\text{degree of freedom} = 2.18, N=433$ ) which was found to be significant for the adaptation of the model. The goodness of fit index values of the model were RMSEA=.058, CFI=.93, IFI=.92, GFI=.92, AGFI=.93, SRMR=.066). According to these values it can be said that the structural model of Family Resiliency was well fit to the Turkish culture.

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*Keywords: Family Resiliency, Validity and Reliability*

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**1. Introduction**

Family therapy researchers have recently examined normal family functioning and family strengths and competences instead of family pathology (Walsh, 1996). Based on this premise family resiliency that describes the healthy family functioning in adverse situations has gained importance in mental health

research (Sing & Yu, 2010; Walsh, 2003). Although many researchers (Hawley & DeHann, 1996; McCubbin & McCubbin, 1996; Patterson, 2002; Walsh, 1998) have defined different features of family resiliency all of them based their definition on systematic, ecological and developmental views. In consistent with systematic view, the family is seen as a system not only based on dyadic relations but also broader social relations. According to ecological view, family one of the system has mutual interactions with other systems (e.g., school, job settings, peers) and has been impacted by them on its capabilities in problems solving, risks etc. As said by developmental views a family within its life cycle faces many different stressors and uses many different coping and adaptation strategies over extended times (Rutter, 1987; Wash 1996; 1998; 2002).

Based on these premises, McCubbin and McCubbin (1996) offered the Resiliency Model of Family Adjustment and Adaptation and defined family resiliency as the family's capability to use their behavioral and functional resources during the crises. His resiliency model was much more based on ecological view consists of adjustments and adaptation phases. In adjustment phases a family passes through five appraisal process (5: family schema, 4: family coherence, 3: family paradigms, 2: situational appraisals, 1: Stressor appraisal). In adaptation phases a family utilize problem solving strategies and coping mechanisms. In consistent with his model McCubbin and McCubbin developed many valid and reliable scales ( e.g., the Family Inventory for Life Events and Changes : McCubbin, Patterson, & Wilson, 1983; Family Hardiness Index : McCubbin, McCubbin, & Thompson, 1986 , etc.) In consistent with McCubbin and McCubbin (1996), Hawley ve DeHann (1996) indicated that family resiliency includes adaptation of family to stressors in a positive way and growth of family depending on risk and protective factors and contexts. And also Patterson (2002) explained that a resilient family's adaptation to crises and maintaining its functions, which are related to its competence and coping style (e.g., meaning of significant risk exposure, distinctions between family system competence and protective factors).

Walsh pointed that a resilient family has an ability to recover from adversity in stronger and more resourceful way proposed three over-arching constructs (family belief systems, organization patterns, and communication processes) with nine sub-constructs (Walsh, 1996, 2003). The family belief system construct including making meaning of adversity, positive outlook, and transcendence and spirituality sub constructs has an valuable power to normalize adversity, to make sense of the experience and to mitigate the negative reactions of family members and to build and increase the confidence of family during the crises. The organization patterns construct consisting of flexibility, connectedness, and social and economic resources has a crucial role to prepare a family for many transitions (e.g., divorce, death, remarriage, etc.) and to guide in tumultuous changes and rearrange family structure. The communication processes comprised of clarity, open emotional expression, and collaborative problem solving especially has an essential resource in adversity for family to delineate ambiguous situations, to induce open emotional expression and empathic behaviors, and to increase cooperative problem solving (Walsh, 1996; 2002; 2003).

The concept of the family resiliency has been studied in different problems and adversities [ a family living with chronic illness or disabilities (e.g., Rolland, 1994; Rolland, 2005; Rolland & Walsh, 2005, divorced family (e.g., Hetherington & Hagan, 1999; Kelly & Emery, 2003; Whiteside, 1998) ; a family encountering with trauma (e.g., Agani, Landau & Agani, 2010; Landau, Mittal & Wieling 2008; Landau & Saul, 2004; Walsh, 2007); a family member suffering with substance addictions (e.g., Launda & Garret, 2008) ] . In parallel with these studies, many preventive and developmental family resiliency programs have been developed, especially Chicago Center for Family Health developed and applied many family resiliency programs for serious and chronic, illness, disability, and loss; divorce, lesbian and

gay couples, war related trauma, job loss, transition and etc. The family resiliency programs consist of psycho-education, workshops, conferences, periodic consultation with family, intense family therapy. In psycho education, workshop and conferences families get information about crises management, coping with stressful events in a concrete and practical ways. In intense family therapy; families are assessed within their socio-cultural context, the families' problems are defined, families' strengths and hopes are revealed collaboratively, effective coping mechanism against problems are taught (Rolland & Walsh 2005; Walsh, 2002; 2003).

All of these mentioned family resiliency studies have used qualitative methods in their studies (Sixbey; 2005). Therefore Sixbey (2005) has developed Family Resiliency Scale (FRAS) to examine family resiliency with quantitative methods. The original version of FRAS based on Walsh's family resiliency model and nine sub-constructs of his model consists of 66 items, including six reversed items, formed by 4 Likert type (*from (1) strongly disagree to (4) strongly agree*). The total score of the FRAS can range from 66 to 204. The factor analysis of the original version of FRAS did not confirm Walsh's nine sub-constructs and the original version of FRAS was reanalyzed by decreasing items and high level of the internal consistency and reliability was obtained. The shortened version of FRAS has 54 items, including 4 reverse items, formed by 4 Likert type. The total score of the FRAS can range from 54 to 188. And the shortened version of FRAS comprises of six factors (*family communication and problem solving, utilizing social and economic resources, maintaining a positive outlook, family connectedness, family spirituality, ability to make meaning of adversity*). The shortened version of FRAS sub-constructs' factor loading is .45-.77 for family communication and problem solving, .54-.78 for utilizing social and economic resources, .53-.63 for maintaining a positive outlook, .00-.20 for family connectedness, -.01-.14 for family spirituality, .49-.71 for ability to make meaning of adversity. The shortened version of FRAS has  $\alpha = 0.96$ . total reliability (.96 for family communication and problem solving, .85 for utilizing social and economic resources, .86 for maintaining a positive outlook, .70 for family connectedness, .88 for family spirituality, .74 for ability to make meaning of adversity) and a good concurrent criterion validity with three well known scales [.91 for Family Assessment Device 1 (FAD 1; Epstein, Baldwin, & Bishop, 1983), .85 for Family Assessment Device 2 (FAD 2; Epstein, Baldwin, & Bishop, 1983), .85 Personal Meaning Index (Reker & Fry, 2003; Reker, 2005)].

However it was seen that the two factors [the family connectedness (.00- .20) and the family spirituality (.01 - .14)] have low individual item factor loading and family connectedness Cronbach alpha level are not quite high comparing with the other factors of the scale, the total reliability and the total internal consistency of shortened version of FRAS was very high level for using in research area and clinical settings. Furthermore, there are many studies (Buchanan, 2008; Plumb, 2011) utilized FRAS for their studies. Thus the aim of this research is to adapt to FRAS into Turkish and to examine its psychometric properties.

## 2. Methods

### 2.1. Participants

Adaptation of shortened version of FRAS was executed on two samples. The first group was 30 English language specialist (23 (83%,3) were female, 5 (16,7 % male) ) and the mean age of them was 28.8 (sd= 2.3) . Language was executed on this group. The second group was 433 university students ( 304 (70 %) were female and 129 (30 %) were male) from Sakarya University Educational Departments in Turkey. The mean age of the participants was 21.83 (sd=2,11) In this study, construct validity, and

internal consistency reliability coefficients were calculated according to data obtained from the second group.

## 2.2. Measure

*Family Resiliency Scale:* Family resiliency was measured using the Family Resiliency (Sixbey, 2005). Adaptation of Turkish version of this scale was done by Kaya and Arıcı (2012). This scale is a 54-item self-report inventory (e. g. Our family is flexible to deal with the unexpected) and each item was rated on a 4-point scale (1=strongly disagree to 4=strongly agree). Items 33, 37, 45, 50 are reversed scored and the total scores ranged from 66 to 204, with higher scores indicating higher family resiliency. The internal consistency reliability coefficient was .96. And three well known scale scales [ .91 for Family Assessment Device 1 (FAD 1; Epstein, Baldwin, & Bishop, 1983), .85 for Family Assessment Device 2 (FAD 2; Epstein, Baldwin, & Bishop, 1983), .85 Personal Meaning Index (Reker, 2003; 2005) ] have a good concurrent criterion validity with FRAS (Sixbey, 2005).

## 2.3. Procedures

Translation of the shortened version of FRAS into Turkish was based on the recommendations of Sixbey (2005). Primarily three specialists who were a native Turkish speaker and have fluent English translated English version into Turkish. Discrepancies between original version and initial translations were addressed, controversial items were determined and necessary modifications were done with the assistance of three independent translators. Then the completed Turkish version and original version of FRAS was executed by thirty English language specialists who were blinded to the original scale and the objective of the study. In parallel with this, language equivalency of the scale and the correlations between Turkish and English forms were attained with a high correlation. These results confirm that Turkish and English forms of the shortened FRAS might be regarded equivalent. In addition to this the validity and reliability were examined with the assistance of the second group participants of the study. The permission of second group participations was attained from chief of departments. All participants were voluntary in the research and were informed about purposes of the study. Self-report questionnaires were administered in a quiet classroom setting and participants' confidentiality and anonymity were assured. In this study confirmatory factor analysis (CFA) was executed to confirm the original scale's structure in Turkish culture. Also internal consistency reliabilities, and item analysis of the shortened Turkish version of FRAS were examined. Data were analyzed using LISREL 8.54 and SPSS 13.0 package program

## 3. Results

### 3.1. Language equivalence

Language equivalence study demonstrated that correlations between Turkish and English forms of shortened version of FRAS were high (.99 for entire scale, .99 for family communication and problem solving, .98 for utilizing social and economic resources, .98 for maintaining a positive outlook, .96 for family connectedness, .97 for family spirituality, .93 for ability to make meaning of adversity).

### 3. 2. Reliability

For reliability studies of the Turkish version of shortened FRAS Cronbach's Alpha internal consistency coefficient were used. The Cronbach's Alpha internal consistency coefficient for the entire scale was .92.

### 3.3. Construct Validity

Confirmatory factor analysis demonstrated that the model was well fit. Also, Chi-Square value ( $\chi^2/\text{degree of freedom} = 2.18, N=433$ ) which was found to be significant for the adaptation of the model. The goodness of fit index values of the model were RMSEA=.058, CFI=.93, IFI=.92, GFI=.92, AGFI=.93, SRMR=.066). In the factor analysis 4 factors was found as the original shortened version of FRAS. And two factors (*the family connectedness and the family spirituality*) have low individual item factor loading as the original shortened version of FRAS. The factor loadings for entire scale ranged from .17 to .74 (for family communication and problem solving ranged from .17 to .67 for utilizing social and economic resources ranged from .20 to .59, for maintaining a positive outlook ranged from .45 to .62, for ability to make meaning of adversity ranged from .30 to .74). Factor loads of items belonging Turkish version of shortened FRAS are presented in Figure 1.

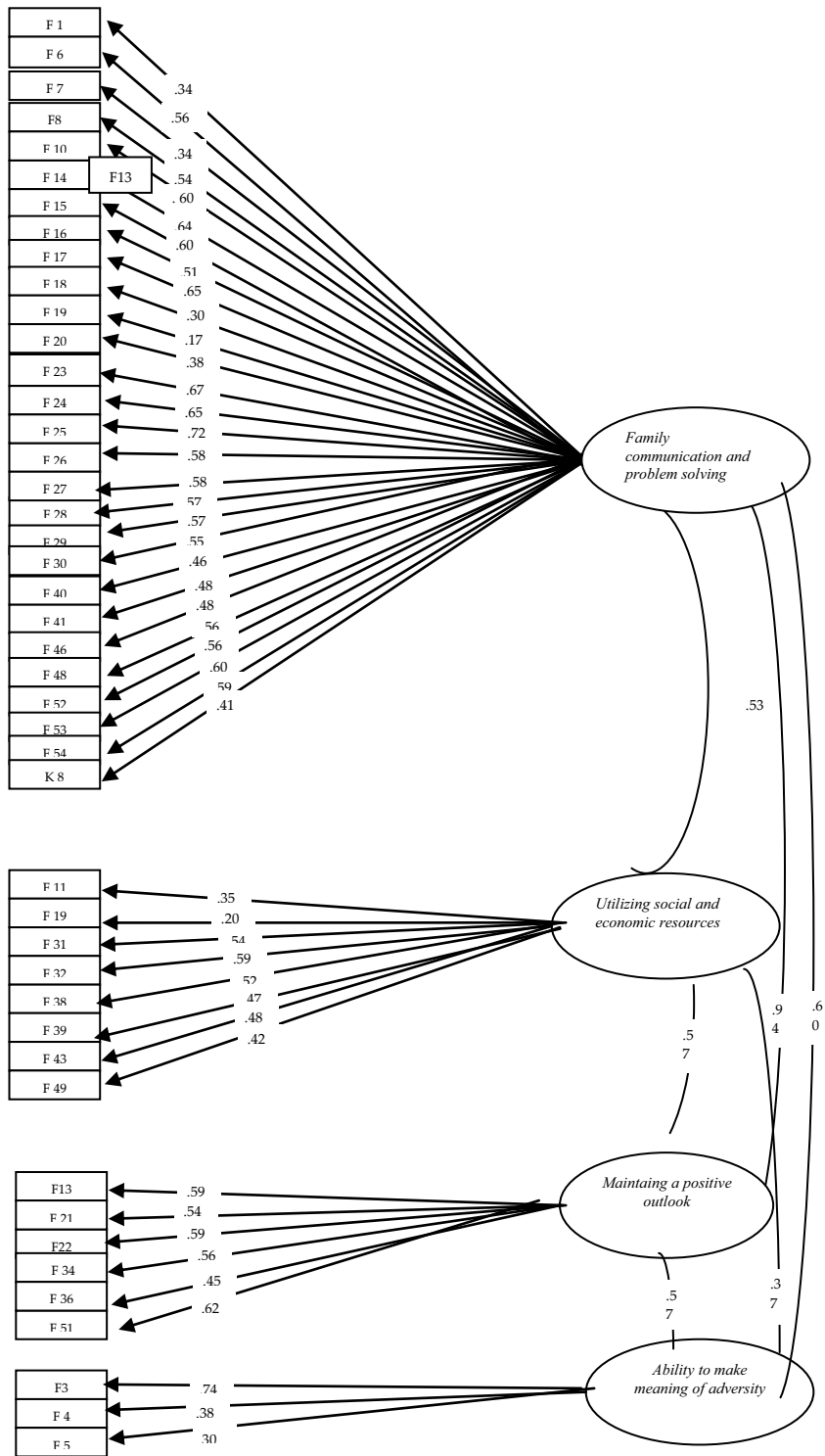


Figure 1. Factor loadings for the shortened version of FRAS

As above it was showed that the 4 factors are fairly correlated with each other. The correlation between family communication and problem solving and utilizing social and economic resources were .53. The correlation between family communication and problem solving and maintaining positive outlook were .94. The correlation between family communication and problem solving and ability to make meaning of adversity were .60. The correlation between utilizing social and economic resources and ability to make meaning of adversity were .37. The correlation between utilizing social and economic resources and maintaining positive outlook were .57. The correlation between maintaining positive outlook and ability to make meaning of adversity was .57

#### 4. Discussion and Conclusion

The aim of this research is to adapt the shortened version of FRAS to Turkish and to examine its psychometric properties. Results of language equivalency showed that the correlations between Turkish and English forms were high. These results confirm that Turkish and English forms of the shortened version of FRAS might be regarded equivalent. In this study, the factor structure of the Turkish version of shortened FRAS was examined via confirmatory factor analyses. The confirmatory factor analysis showed that the factorial model of FRAS that consists of 4 factors were at an acceptable degree of goodness of fit for Turkish sample (Hu & Bentler, 1999). The internal consistency of the factors of Turkish version of shortened FRAS showed acceptable reliability. In consistent with these findings Turkish version of shortened FRAS can be termed as a valid and reliable instrument that could be used in fields of in psychology.

#### 4. Limitation and Implication

The limitation of this study was the reliance on self-report measures. Also, the sample presented here is limited to university students, which makes this study questionable whether the findings can be generalized to different age or student groups. Therefore examination of the factor structure of shortened version of FRAS for targeting other populations should be made..

Another limitation of study was taking total 54 items with six factors although total 44 items with four factors were found valid and reliable . Thus, further studies should use total 44 items of FRAS

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