

The Development of a Family Cohesion Scale: A Preliminary Validation

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Family is said to be an important agent for the socio-emotional development and growth of an individual. The existing research finds out the manifestation and expression of family cohesion among adolescents in the Pakistani cultural context. In phase I, a phenomenological approach was used to elicit the key characteristics of family cohesion from 30 adolescents followed by phase II, the establishment of content validity index, and phase III of pilot testing on 20 participants to check comprehension of the scale. In the last phase, 785 adolescents (Girls = 49%; Boys = 51%) were selected to determine the psychometric properties of the Family Cohesion Scale (FCS). Factor analysis yielded four factors of family cohesion namely *mutual support*, *sharing*, *parental involvement*, and *emotional bonding*. Furthermore, results also depicted high internal consistency, test-retest reliability, split-half reliability, and construct validity. The factors of family cohesion are discussed by considering the collectivistic cultural context of Pakistan .

Keywords: family cohesion, reliability, validity, gender, parental involvement, adolescents.

Family is known as the most fundamental institute that greatly influences the emotional and psychosocial well-being of children (Mason et al., 2012). Family greatly influences the psycho-social and emotional growth and development of children (Saleem et al., 2015). Family has been studied as a risk and protective factor in mental health problems of children (Saleem et al., 2017; Yeung & Chan, 2016). Children living in a supportive and cohesive family environment likely to have emotional, social, academic, and psychological competence (Jhang, 2017; Lang, 2018; Lin & Yi, 2017). On the other hand, children who perceive their family environment as controlling and rejecting tend to have less emotional, social, and academic competence and more mental health problems (Cruz-Ramos et al., 2017).

Throughout the history of psychology, the role of the family has been studied from different perspectives like attachment (Bowlby, 1973), parenting (Rohner, 2004), and parenting styles (Baumrind, 1966), that ultimately increased our understanding about the long-lasting influence of

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family on psychological, social, and emotional growth and development (Sampaio & Gameiro, 2005). Yet all these various theoretical perspectives have only emphasized the parent-child relationship. Olson et al., (1979) have presented their groundbreaking work on *family cohesion* and presented a systematic model known as the Circumplex Model of Marital and Family Systems (Rivero et al., 2010).

The Circumplex Model includes three key dimensions of family known as *family flexibility*, *family cohesion*, and *family communication* (Olson, 2011) and describes family cohesion as “an emotional bond among family members”. Based on his phenomenal work he developed the Family Adaptability and Cohesion Evaluation Scale (FACES IV) which includes family flexibility, cohesion, communication, and satisfaction (Olson, 2011). This model describes that both higher and lower levels of *family flexibility* and *family cohesion* are considered as dysfunctional and unbalanced. However, balanced levels of *family flexibility* and *family cohesion* are considered as productive and functional (Olson, 2011; Olson et al., 2006) which contradicts the findings of the empirical literature on family cohesion. Researches demonstrated that a cohesive family is characterized by having support and connectedness among family members (Cruz-Ramos et al., 2017) which has an enduring influence on the psycho-social development and growth of children and adolescents (Anto & Jayan, 2013; White et al., 2014). If a child perceives a higher level of cohesion in family, results in positive outcomes e.g., low emotional-behavioral problems, positive emotion regulation, adjustment, coping, optimism, self-worth, social ability, social skills, social cohesion, educational engagement, and performance (Cruz-Ramos et al., 2017; Jhang, 2017; Lang, 2018). Whereas, lack of cohesion with family is found to be associated with poor social skills, negative emotion regulation, low self-esteem, interpersonal difficulties, risky behavior, academic problems, and higher mental health problems (Cho et al., 2018; Moreira & Telzer, 2015).

Culture is known to have a significant role in shaping human behavior (Delgado et al., 2011). Culture set and defines the values, norms, customs, belief systems, expectations, and ways of communication and interaction with family and others (Matsumoto, 2000; Wu & Keysar, 2007). Cultural orientation (individualism/collectivism) greatly influence human behavior (Matsumoto, 2000). Individualistic cultures emphasize self-actualization, independence, autonomy, individual growth, and individual preferences and decisions (Phinney et al., 2000). However, collectivistic cultures emphasize interdependence, group conformity, obedience, and group cohesion (Tamis-LeMonda et al., 2007; Triandis, 2001). In these kinds of societies, the family units are large and family members are more interdependent and interconnected (Dwairy, 2010). These cultural differences determine the familial and social relationships (Wu & Keysar, 2007). These variations in collectivistic and individualistic cultures in relating with family members conjointly reflect profound tendencies to develop different emotional bonding among family members.

As far as Pakistan is concerned, a dearth of empirical research on family cohesion which is a complex phenomenon that has an enduring influence on the psychosocial, and emotional development of an individual that climaxes the significance of the existing study. As mentioned earlier that culture determines and shapes the familial relationships (Matsumoto, 2000; Tamis-LeMonda et al., 2007), therefore, it might be important to study family cohesion among adolescents within the Pakistani cultural context where conformity, compliance, interdependence, and obedience are the most preferred traits (Chao, 1994). Considering the

cultural impact on the expression and manifestation of behaviors, it is a calamitous need to develop a psychometrically sound scale for family cohesion which is a relatively less studied construct for adolescents. Existing measures of family cohesion were developed in the West (Olson, 2008) and the East may differ on the nature and manifestation of family cohesion. Furthermore, Family Adaptability and Cohesion Evaluation Scale (FACES-IV: Olson, 2008) is the most commonly used scale for family cohesion has several drawbacks. First, the items of FACES-IV were developed by adapting items from already developed tools of family cohesion. There was no phenomenology exploration of family cohesion. Furthermore, this scale also has limited cross-cultural validation evidence (Everri et al., 2020; Martinez-Pampliega et al., 2017). Therefore, the existing research aimed to identify the expression of family cohesion considering the family as a unit and develop a psychometrically sound measure by using the phenomenological approach.

Method

Phase 1: Item Generation

In this phase, the manifestation and expression of family cohesion were explored.

Participants and procedure

A sample of 30 adolescents (girls = 15; boys = 15), having the ages between 12 to 19 years ($M = 14.52$; $SD = 1.09$), from 4 mainstream government schools of Lahore were selected through a multistage sampling strategy to explore the phenomenology of family cohesion in adolescents. In the first stage, strata were made in terms of gender (Girls and Boys). At the second stage, sub-strata were made based on academic grades (8th, 9th, and 10th). For the current study family cohesion was operationally defined as the “*degree to which family members live together having emotional bonding*”. Individual interviews were conducted with all participants using the phenomenological approach. The average time to complete an interview was 20 to 25 minutes approximately.

After the accomplishment of the interviews, these interviews were recorded and transcribed by the researcher, and sentences of the participants were converted into phrases. After close examination, all overlapping and dubious items were excluded and 63 items were selected given the name of the Family Cohesion Scale (FCS).

Phase II: Content Validity Index

Content validity of FCS was established in this phase.

Participants and procedure

To establish the content validity of FCS ten clinical psychologists having a minimum of one year of experience were recruited and asked to rate items of FCS on a 4-point rating scale ranging from 1 (*not relevant*) to 4 (*highly relevant*). During this phase, the Content Validity Index for Items (I-CVIs) and Scale (S-CVI) were determined. The number of experts specified the item's rating of 3 or 4 were divided by the total number of experts to determine the I-CVIs. Five items having, I-CVIs less than .78 were omitted (Lynn, 1986) from the scale, and 58 items were retained for further psychometric properties. Furthermore, S-CVI was determined by using the averaging approach and found .95 for the existing study demonstrating good content validity of FCS (Lynn, 1986; Waltz et al., 2005). To end, the scale was converted into a 4-point rating scale 0 (*never*) to 3 (*very much*).

Phase III: Translation of Family Communication and Family Satisfaction Scale

In this phase, English versions of the Family Communication Scale (Olson & Barnes, 2004) and Family Satisfaction Scale (Olson & Wilson, 1982) were translated into Urdu. Family Communication Scale (FCS) consisted of 10 items having a 5-point rating scale of 1 (*strongly disagree*) to 5 (*strongly agree*). Family Satisfaction Scale (FSS) comprised of 10 items having a 5-point rating scale of 1 (*very dissatisfied*) to 5 (*extremely satisfied*). A standardized procedure to translate the scales was used by keeping the lingual and cultural appropriateness into consideration. In the first stage, 5 linguistic experts proficient in the English language having at least 16 years of education were asked to translate the scales by considering the semantic meaning and the original connotation. Items that gained 80% agreement of the experts were retained for the final scales.

Pilot Study

In this step, the comprehension of layout and scales was determined.

Participants and procedure

The final scales of Family Cohesion, Family Communication, and Family Satisfaction were piloted on 20 children of 8th class (Girls = 10; Boys = 10) having the ages between 12 to 19 years ($M = 13.96$; $SD = 1.11$). After successful completion of the pilot study, items whose wording was not clear to children were revised and made their language understandable.

Phase IV: Main Study

In this phase factor structure, validity, and reliability of FCS were established.

Participants

To establish the psychometric properties of FCS, 785 adolescents (boys = 51%; girls = 49%) from grade 8th (38%), 9th (32%), and 10th (31%) having the ages between 12 to 19 years ($M = 14.64$; $SD = 1.35$) were selected from 5 mainstreams government schools of Lahore. Participants were recruited through the multistage sampling technique. Being the only child and those having single parents were not included in the current research.

Measures

Family Cohesion Scale (FCS)

Family Cohesion Scale (FCS) refined in the pilot study was used to measure family cohesion. It consisted of 58 items with a 4-point rating scale "0 (*never*), 1(*rarely*), 2(*to some extent*), and 3(*very much*)". The Sum of each item's scores yielded the total scores of family cohesion with a scoring range of 0 to 174 and a high score depicting greater family cohesion.

Family Communication Scale (FCS)

Construct validity of FCS was determined by using the Family Communication Scale (Olson & Barnes, 2004) comprised of 10 items having a 5-point rating scale "1 (*strongly disagree*) to 5 (*strongly agree*). Scores with a range of 10 to 50 were gained by adding the scores of each item and higher scores demonstrating the increased level of family communication. Cronbach alpha of the Family Communication Scale (FCS) for existing stud was .74 indicating satisfactory internal consistency.

Family Satisfaction Scale (FSS)

Family Satisfaction Scale (Olson & Wilson, 1982) was also used to establish construct validity of the FCS. This scale is comprised of 10 items having a 5-point rating scale “1 (*very dissatisfied*) to 5 (*extremely satisfied*)”. Scores of family satisfaction were also obtained by adding the scores of items of the scale ranging from 10 to 50 and higher scores representing a greater level of family satisfaction. Cronbach alpha of the Family Satisfaction Scale (FSS) for this stud was .79 suggesting good internal consistency.

Procedure

After gaining approval from the Institutional Review Board (IRB), 6 schools were visited by the researcher. Among them, 5 schools gave their consent to be a part of the current study. The main aims of the existing research were also briefed to the school authorities. They were also assured that all the information taken from the participants will be merely used for research purposes. After the permission was gained, data from 8th, 9th, and 10th-grade students were collected in groups with an average of 30 participants in each group.

After getting the verbal consent, the booklet of questionnaires was given only to those students who were willing to complete the protocol. Participants were also given assurance that data taken from them will be kept confidential. Participants were taking about 20 minutes to complete the protocol. Lastly, some time was given to the participants for any questions, comments, and debriefing. Furthermore, 12% ($n= 95$) participants were tested again after a one-week interval to determine the test-retest reliability of the FCS.

Results

Factor Analysis of Family Cohesion Scale (FCS)

Exploratory Factor Analysis (EFA) with Varimax rotation was conducted to find out the key factors of FCS. The criterion given by Tabachnick and Fidell (2007) was used to select the number of participants which states that 5 participants needed to recruit against each item of the newly developed scale. Initial Cronbach alpha for FCS was .94, Kaiser- Myer-Olkin Measure of Sample Adequacy (KMO) was .94, and Bartlett test of sphericity was significant ($p < .001$) suggesting that current data is appropriate to run factor analysis (Field, 2013).

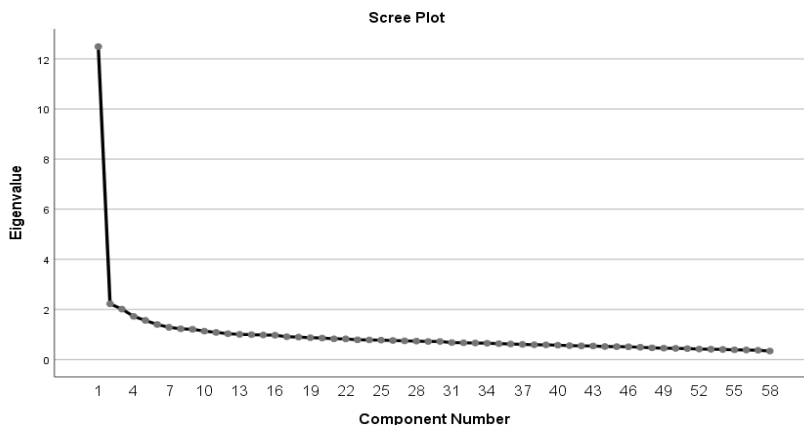


Figure 1. Scree Plot Showing the Factors of Family Cohesion Scale (FCS)

Criteria used to explore the number of factors in FCS was Eigenvalue > 1 and factor loading \geq .30 on that particular factor (Kaiser, 1974; Kline, 1994; Tabachnik & Fidell, 2013). After that, factor analysis was directed with five, four, three, and two-factor structures. But, the four-factor structure was considered best as it has the most interpretable factor structure with minimum dubious items. Seven items were excluded from the scale as these items were having factor loadings lower than .30. Table 1 depicts the factor loadings of 51 items of FCS.

Table 1

Factor Loadings of 51 Items of Family Cohesion Scale (FCS) (N=785)

Items	F1	F2	F3	F4	Items	F1	F2	F3	F4
12	.81	-.30	.18	.13	33	.27	.21	.62	.17
27	.74	-.13	.26	.17	52	.16	.18	.62	.04
26	.59	.10	.22	.25	34	.15	.16	.59	.20
5	.57	.07	.20	.06	41	.17	.15	.54	.22
20	.59	.06	.22	.15	28	.22	.20	.52	-.04
19	.60	-.07	.24	.10	22	.27	.25	.52	-.11
43	.61	-.04	.23	.19	53	.17	.22	.52	.08
13	.53	.11	.20	.07	57	.19	.25	.51	-.03
7	.47	.20	.16	.13	55	.18	.25	.46	.08
44	.49	.14	.25	.03	48	.20	.25	.39	.12
24	.49	-.04	.22	.07	21	.04	.04	.37	.07
42	.48	.16	.24	.14	56	.11	.21	.36	.22
8	.38	.16	.23	.02	51	.19	.19	.34	.21
46	.42	.20	.20	.16	15	.03	.03	-.11	.64
25	.38	.20	.19	.01	39	-.28	-.18	.01	.63
2	-.40	.88	.07	.28	14	.14	.20	.18	.44
3	.06	.63	.17	-.12	10	.15	.21	.15	.41
40	.05	.57	.17	.16	45	.19	.20	.21	.38
4	.03	.57	.10	.07	35	.17	.22	.21	.37
16	.08	.49	.14	.19	17	.13	.22	.09	.37
1	.02	.52	.06	.10	58	-.10	-.14	.19	.36
37	.13	.31	.10	.01	47	.20	.19	.08	.35
9	.12	.40	.18	.22	49	.08	.08	.21	.32
32	.10	.34	.19	.18	6	.12	.21	.13	.31
23	.21	.34	.20	.01	11	.17	.14	.04	.30
					Eigen values	7.00	5.12	3.89	2.45
54	.18	.18	.66	.12					
% of variance	12.08	8.81	6.70	4.22	Cumulative %	12.08	20.88	27.58	31.82

Note. Boldface items belonging to the factor.

Table 1 depicts that 51 items of FCS could be merged into four key factors labeled as *mutual support*, *sharing*, *parental involvement*, and *emotional bonding* by the researcher. Labels to factors were given by bearing in mind the harmony of items in the factors.

Table 2*Sample Items of Four Factors of FCS*

<i>Factor 1: Mutual Support (15 items)</i>	
5	Encouraging each other
8	Guiding each other for good or bad
12	Advising each other
19	Being sensitive to each other
20	Being sympathetic to each other
<i>Factor 2: Sharing (10 items)</i>	
1	Helping each other in difficulty
2	Living together
9	Eating together
16	Studying together
32	Giving importance to each other
<i>Factor 3: Parental Involvement (14 items)</i>	
28	Parents taking interest in educational matters
34	Parents showing emotional warmth
41	Concerning attitude of parents
53	Parents developing confidence
54	Parents maintaining equality in children
<i>Factor 4: Emotional Bonding (12 items)</i>	
14	Preferring outing together
17	Expressing feelings to each other
35	Feeling close to each other
39	Cracking jokes with each other
47	Maintaining relationship after fight

Validity of Family Cohesion Scale (FCS)

Construct validity of the FCS was determined by using Urdu versions of Family Communication Scale (Olson & Wilson, 1982) and Family Satisfaction Scale (Olson & Barnes, 2004). Results suggested significant positive association of family cohesion with family communication ($r = .64, p < .001$) and family satisfaction ($r = .50, p < .001$) confirming the construct validity of FCS.

Table 3*Summary of Inter Correlations, Mean, Standard Deviations and Cronbach Alpha (N = 785)*

Factors	F1	F2	F3	F4	FC Total	FCS	FSS
F1. Mutual Support	-	.73***	.65***	.59***	.90***	.54***	.44***
F2. Sharing	-	-	.57***	.52***	.84***	.49***	.43***
F3. Parental Involvement	-	-	-	.52***	.81***	.59***	.40***
F4. Emotional Bonding	-	-	-	-	.77***	.53***	.38***
FC Total	-	-	-	-	-	.64***	.50***
FCS	-	-	-	-	-	-	.56***
FSS	-	-	-	-	-	-	-
<i>M</i>	33.22	23.64	37.51	27.24	139.40	39.52	34.10
<i>SD</i>	6.47	4.41	4.81	4.82	19.89	6.16	7.20

α	.86	.78	.82	.70	.92	.74	.79
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Note. FC = Family Cohesion, FCS = Family Communication Scale, FSS = Family Satisfaction Scale. *** $p < .001$.

Item-Total Correlations of Family Cohesion Scale (FCS)

The correlation of 51 items of FCS and total family cohesion score was also calculated. The total score of family cohesion was acquired by calculating the sum of all the 51 items. The range of item-total correlation was .13 to .59 ($p < .001$).

Reliability of Family Cohesion Scale (FCS)

12% ($n = 95$) of participants were retested after a one-week interval to establish the test-retest reliability of FCS. Findings indicated significant test-retest reliability ($r = .76, p < .001$) of FCS. Furthermore, split-half reliability of the FCS was also determined by using Even-Odd method. The findings also confirmed the split half reliability ($r = .87, p < .001$) of FCS.

Discussion

Family is known to have a fundamental and key role in the psycho-social development of adolescents and broadly accredited as a foundation for acquiring moral values, adjustment, social competence, academic engagement, social cohesion, and emotion regulation (Cruz-Ramos et al., 2017; Jhang, 2017; Lang, 2018; Merkas & Brajsa-Zganec, 2011). Depending on the quality of the attachment and cohesion in the family child can explore the environment and find comfort and relaxation during stressful situations (Lang, 2018). Whereas, the lack of cohesion with family is found to be associated with poor, social skills, negative emotion regulation, risky behavior, and mental health problems (White et al., 2014).

The most significant and central factor that forms family cohesion is culture (Kagitcibasi, 2007). The concept of family cohesion is universal but its expression is greatly determined by culture (Kim, 2005). Individualistic cultures emphasize autonomy, independence, and self-assurance (Tamis-LeMonda et al., 2007). However, in collectivistic societies, individuals are more likely to depict conformity to social values than personal preferences and interests. Family units in collectivistic culture are large and family members and interconnected and interdependent. Family change theory given by Kagitcibasi (2007) also posits that living conditions and cultural orientation affect the kind of family structure and these structural variables affect the family system like entailing parents' socialization practices and values as well as the developing self and value orientations of their children. Keeping given the importance of family cohesion, the existing study was aimed to identify the perception of family cohesion in adolescents of a collectivistic culture.

The initial phase of this study was comprised of a phenomenological approach to identify the expression and manifestation of family cohesion in adolescents. Further, this study explored the four underlying dimensions of family cohesion named mutual support, sharing, parental involvement, and emotional bonding. The first factor represents the provision of assistance and social support to family members as needed. Mutual support in the family is manifested as having emotional warmth, emotional strength, sympathy, providing guidance, overcoming grief and sorrows, and solving each other's problems. Mutual support as a component of family cohesion can be seen in other measures as well as measuring the similar concept designated to balanced cohesion in Family Adaptability and Cohesion Evaluation Scale (FACES-IV: Olson, 2008). As discussed earlier that being a collectivistic

culture, in Pakistan all family members are interconnected and interdependent, it might be the reason that the mutual support component dominated the factor analysis and explained maximum variance.

The second factor denotes to sharing and highlights the sense of togetherness, helping behavior, and cooperation in each other's activity. It is a practical component of family cohesion. Pakistani traditional collectivistic culture focus on 'We' than 'I' and one's familial and social identities are more vital as compared to personal identity (Tamis-LeMonda et al., 2007). So, sharing is the hallmark of family cohesion. The third factor represents parental involvement in the family. This factor denotes qualities of positive and functional parenting like fairness, equality, justice, and parental involvement in the activities of children. As mentioned earlier that Pakistan is a traditional collectivist and religious society in which parents have a distinctive and central role in the training, education, socialization, and development of their children (Aytac et al., 2019; Chen et al., 2016; Ruiz et al., 2019; Tazouti & Jarlegan, 2019). Consequently, in Pakistan, it is by some means a value and norm for parents to have the right to hinder and interfere with the activities and decisions of children. Additionally, it is also vital to note that in collectivistic cultures parental control and involvement may reflect as a part of training (Saleem et al., 2015). Parental involvement can be seen in other measures as well as denoted to balanced flexibility, affectionate parenting, and parental emotional warmth (Olson, 2008; Saleem et al., 2015; Saleem et al., 2017). This factor is consistent with the authoritative parenting style by Baumrind (1971) which denotes that having high levels of parental control and involvement are coupled with high levels of emotional bonding and warmth. Moreover, this factor is also consistent with the acceptance dimension of Rohner (2004) describing the experience of warmth and affection from parents.

The fourth factor of FCS is emotional bonding which denotes a sense of togetherness between family members (Olson et al., 1979). Emotional bonding is the most significant and universal component of family cohesion. This factor can also be seen in FACES IV (Olson, 2008) described as balanced cohesion. Family system theory (Bowen, 1966) also describes the family as an emotional unit and organism in which every part is emotionally dependent on other parts and a change in any part of the system will bring variations in all other parts of the system and this system is largely determined by involuntary and reflex-like procedures that establish across generations. It depicts the fact that the functioning of all family members is very much emotionally influenced by each other in the family, and also that our emotional dependency on each other is much more than we understand.

While establishing the construct validity of FCS, the results of this study are supported by previous empirical literature (Cruz-Ramos et al., 2017; Hirsch & Barton, 2011; Padilla-Walker et al., 2018), which suggested that family communication and family satisfaction are positively correlated with family cohesion. In other words, having a higher level of family communication and family satisfaction will be interrelated with a higher level of family cohesion.

Limitations and Suggestions

Despite several strengths of the existing study, there are some drawbacks as well which must be considered for upcoming studies. Data for this study were only collected from urbanized population and rural areas were not taken into account, therefore, the upcoming research should also consider the rural population and make a comparison of urban and rural samples. Furthermore, this research was based on a cross-sectional research design, therefore, it is highly recommended for upcoming research to use a longitudinal design where the construct of family cohesion can be studied for a long time.

Conclusion

This research is an exceptional contribution and a groundbreaking work to the body of literature on family cohesion of adolescents in collectivistic societies as the construct of family cohesion is collective but its expression and manifestation are diverse from culture to culture. Besides, a psychometrically sound tool of family cohesion developed in this research will help in an improved understanding of the multifaceted and complex phenomenon of family cohesion.

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