February 2021

VALIDATION OF THE FACTOR STRUCTURE OF THE PARENT-ADOLESCENT RELATIONSHIP SCALE IN THE INDIAN CONTEXT

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Abstract

Parent-Adolescent Relationship (PAR) gets transformed during adolescence, and there is a significant relationship between the adolescent's adjustment and quality of this relationship. A loving and caring relationship full of acceptance with parents offers a health-oriented atmosphere for the growth of the child's abilities in multiple ways. The research findings indicated that the quality of Parent-Adolescent Relationship (PAR) associates with a broader range of positive outcomes, including emotional and mental Well-being, adjustment with the environment, and social competence. The present study was designed to adopt a Parent-Adolescent Scale, which examines the parent-adolescent relation among adolescents of India. In the present study, 13 items from the Parent-Adolescent Scale 21, developed by Husseini et al. (2016), were translated in the Hindi language and adopted in the Indian context. A total 1000 adolescent students from different Hindi speaking states of India responded to the PARS13. An Exploratory Factor Analysis and a Confirmatory Factor Analysis were performed to test the factorial structure of the PARS13, and the internal consistency of the scale was studied. The results supported scale multidimensionality. The obtained Cronbach's alpha revealed satisfactory internal consistency with a value of 0.82. Based on the psychometric properties obtained, it is concluded that PARS13 is a reliable measure to assess adolescents' parent-adolescent relationship in India.

Keywords

1. INTRODUCTION

The term adolescence is derived from the Latin word 'adolesco,' meaning "to grow" or "to grow to maturity" term adolescence has a broader meaning; it includes mental, emotional, and social maturity. The term adolescence meaning "to emerge" or achieve identity. Adolescence is a critical developmental period that requires parents and youth to renegotiate their relationships (Laursenand Collins,2009). Adolescence is still recognized as a developmental period characterized by profound psychological change and increasing levels of autonomy (Lerner et al.,1996). Adolescence is also a time when the parent-child relationship is restructured even while stable features of the relationship established in childhood endure (Collins & Repinski, 1994).

The healthy development of adolescents depends on several complex factors via social-economic circumstances, the environment in which they live and grow, the quality of relationships with their families, communities, peer groups, and education and employment opportunities.

In general, there are two main dimensions of a parent-child relationship that underlie various typologies of interfamily interactions: control vs. autonomy and parental emotional acceptance vs. rejection. In terms of a child's social adaptation and the formation of his or her sense of self-worth paired with a positive attitude, the most favorable relationship combines the emotional acceptance and respectful recognition of autonomy with a set of moderate and consistent demands on the part of parents. In the first place, a pathogenic and deviant relationship is, characterized by the prevalence of emotional rejection, permissiveness, overprotection, and an excessively demanding position (Baumrind, 1991). According to E. Erikson, the negative effect of this relationship also lies in the fact that by frustrating a child's basic needs, it prevents the successful passage of age crises at every stage of the child's development. E. Sokolova (2015) points out that emotional rejection and symbiosis strongly and significantly contribute to the frustration of the child's wants by blocking the need for connection and separation.

According to A. Prikhozhan (1997), the specifics of the adolescent crisis are defined by a teenager's ambivalent position in society due to a deficient psychological and social maturity. On the one hand, an adolescent tries to defend his or her freedom and achieve equal rights, seeking to broaden the scope of what is permitted while, on the other hand, adults still remain a significant source of help, support, and protection. Therefore, being a teenager's parent needs extra empathy, sensitivity, and prudence in order to determine the balance between permitted autonomy and demands. The false choice of an interaction style may become one of the factors increasing the probability of a crisis of independence transforming into the so-called crisis of dependence.

Developmental changes in parent-child relationships have been attributed to adolescents' biological or cognitive maturation. Hormonal and physical changes related to puberty are thought to lead adolescents to strive for autonomy and individuation from parents (Blos, 1979) and result in conflicts with parents that permit adolescents to form mature and egalitarian relationships. Cognitive models imply that developments in adolescents' abstract reasoning foster an increasingly reciprocal and egalitarian view of parent-child relationships (Smetana,1989). Cognitive advances may also prompt adolescents to perceive issues that were considered to be under parental jurisdiction as personal decisions. This biological and cognitive development facilitates the reorganization of the parent-adolescent relationship from a vertical relationship. This development process in which parents have more knowledge and social power than their children and are expected to provide personal security and warmth toward a more horizontal relationship, characterized by equal, symmetrical, and reciprocal interactions (Hartup,1989; Russell,1998).

Greenfield & Suzuki (1998) Parent-Adolescent Relationship (PAR) as an important constituent of the process of socialization of children represented a bond between parent and adolescent and smoothened the process to transfer of intergenerational value and preparation of the adolescent to enter into the social world. Parent-Adolescent Relationship (PAR) transforms during adolescence, and there is a significant positive relationship between the adolescent's adjustment and quality of this relationship. A loving and caring relationship full of acceptance with parents provides a health-oriented atmosphere for the growth of the child's abilities in diverse ways. The research findings indicated that quality of Parent-Adolescent Relationship (PAR) associates to a wide range of positive and healthy outcomes, including emotional and mental Well-being, adjustment with environment, and social competence. Quality and maturity of this relationship correlate to reduction of behavioral problems in adolescence such as Substance abuse, delinquency, and unconventional sexual behaviors and deviations (Borkowski et al. 2002; Hair et al. 2003).

However, nature of attachment during adolescence differs from attachment at childhood, adolescents require trust in parents' commitment to them. Further, Adolescents require their parents as safe shelters so as to explore the world by their advocacy (Baltes & Silverberg, 1994).

Positive relationships with parents, characterized by low conflict, high levels of support, and open communication, are especially important for teens as they navigate the physical and emotional changes of adolescence. Increasingly, research indicates that the role of the family context in adolescent well-being goes beyond the importance of the direct relationship between a parent and a child. Other factors, such as family members' levels of engagement with each other, how much hostility or how many negative interactions are part of family interactions, and satisfaction with relationships between parents all play a role. For example, parents with high levels of marital satisfaction are more likely to demonstrate good parenting practices, such as warmth, responsiveness, and affection, which in turn can positively affect adolescent well-being. With positive parenting practices like support and good communication, teens are less likely to engage in risk-taking, substance use, including alcohol and marijuana, and criminal behavior.

Firstly Husseini et al. administered Parent-Adolescent Relationship Scale on adolescents at district six of Tehran at secondary grade, studying during 2014-2015. Among 192 high schools and colleges, 5 boy schools and 5 girl schools were selected. At the initial stage, the theories related to parent-adolescent relationships and attachment were explored, and the features of parent-adolescent relationship were explored. At the second stage, to prepare the initial scale, a collection consisting of 78 questions in the form of multiple items related to "parent-teen relationship" was developed and given to 11 psychologists in this area, asked them to give the response to two questions below about each item:

A. To which extent the proposed item can adjust to the considered item?
B. To which extent this item can measure the parent-teen relationship?

Ultimately, the items which had received a score higher than 80% in all three questions above were omitted. As a result, 27 items were omitted and just 51 items were remained. At the third stage, 51 aforementioned questions were given to 45 students at one of the mentioned schools in form of Likert scale so as to specify the ambiguous questions and omit them. As a result of factor analysis, 13 other items were removed and ultimately, 38 items were prepared to perform the questionnaire. At the fourth stage, the ultimate questionnaire consisting of 38 items together with scales of Depression Anxiety Stress Scales (DASS) was performed among 300 girl and boy students of high schools at district six of Tehran. Finally, 21 items were remained in the scale.

2. OBJECTIVE

The present study aims to explore the factorial structure of PARS20 using an Exploratory Factor Analysis (EFA) and a Confirmatory Factor Analysis (CFA).

3. METHOD

3.1 Participants

Data was collected on a sample of 1000 adolescent students from different colleges of Hindi speaking states of India.

3.2 Instrument

The original scale of PARS was developed by Husseini et al. (2016). It has five subscales i.e. support, confidence, unconditional acceptance, cooperation and common emotion, and having 21 items. Cronbach's alpha coefficient of 0.86 (Husseini et al.), which presented the high internal consistency of the scale.

For the Indian requirement, 13 items were chosen from the original scale and adopted in Hindi. Items are rated on 5-point response scale. The total score ranges between 13 and 65. The adopted PARS indicated good psychometric properties with respect to internal validity and content validity. A Cronbach's alfa of 0.82 was found, and item-total correlations ranged between .42 and .54. It is composed of a five factorial structure that includes items referring to aspects related to supportive family ambience; caring family, confession and acceptance; parent-child cohesion and cooperative indulgence.

3.3 Methodological Procedure

Data collection was conducted from different colleges of Hindi speaking states of India. Questionnaire was delivered to the students. Before starting the administration, the following description could be read: " Please carefully read each of the following statements and answer them about you, the way you think, feel and act". Individuals should respond according to the degree to which they considered the items to better describe them.

3.4   Statistical Procedure

A sample of 1000 adolescents was used to carry out the Exploratory Factor Analysis (EFA); with respect to descriptive analysis, the minimum and maximum values, as well as means and standard deviations, were yield for the total sample.

In the analysis of dimensionality of the 13 items of the Parent-Adolescent Relationship Scale (PARS13), an exploratory factor analysis (EFA) was conducted, using the computer program SPSS (Statistical Package for the Social Sciences –version 16.0 for Windows)

The PARS13 was studied using a principal components analysis, followed by a varimax rotation. The selection of the number of factors to be rotated was based on the Kaiser criteria of five factors. Items were kept based on the values of factorial weights, commonalities, item-total correlations, and alfa values if the item was to be deleted. To ensure the adequacy of the data, the Kaiser-Meyer-Olkin (KMO) test was used, which ranges between 0 and 1, being .60 the minimum value to consider the analysis good (Tabachnick & Fidell, 2011). Pestana & Gageiro (2005) reported that values below .50 are unacceptable, between .50 and .60 are considered bad, from .60 to .70 acceptable, between .70 and .80 medium, from .80 to .90 good and values above .90 are considered very good. Bartlett's Test of Sphericity was also used to test the adequacy of the data to perform factor analysis.

The internal consistency of the scale was calculated using Cronbach's alpha (value 0.82 is considered reliable, according to Pestana and Gageiro, 2003). Concerning item-total correlations, values below 0.30 suggest that it may be more suitable to eliminate the item (Osborne & Castello, 2005).

For confirmatory factor analysis (CFA), the computer software SPSS AMOS, version 18 for Windows was used.

Firstly, the assumptions underlying this analysis were verified, considering the absolute values of skewness (sk) and kurtosis (ku). Sk values > |3| and ku values > |10| indicate violations of principles of normality (Kline, 2005). Mahalanobis distance (MD^2) was analyzed to identify possible outliers. The quality of adjustment of the model was evaluated based on a number of measures: the Chi-square (χ^2/df), Goodness-of-Fit Index (GFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Parsimony comparative fit index (PCFI), Parsimony Goodness-of-Fit Index (PGFI) and Root Mean Square of Approximation (RMSEA). In order to evaluate the adjustment of the model, the following values were considered: χ^2/df inferior to 2 was considered good, TLI and CFI were considered good when superior to .90(Kline, 2005; Maroco, 2010). GFI varies between 0 and 1, considering that the closer to 1, the better the adjustment of the model (Maroco, 2010). PNFI was considered good if superior to .60 and very good if higher than .80. For the PGFI and PCFI, the indexes are considered good when between .60 and .80, and very good if over .80 (Maroco, 2010). When it comes to RMSEA, values between .05 and .10 were considered good, and values lower than .05 were considered very good (Maroco, 2010; Meyers, Gamst, & Guarino,2013).

After the CFA was conducted, the adjustment indices, the factorial weights ($\lambda \geq .50$), and individual reliabilities ($R^2 \geq 0.25$) were analyzed (Maroco, 2010).

4. RESULTS
4.1 Exploratory factor analysis (EFA)

The exploratory factor analysis (EFA) aimed to test the factorial structure proposed by the original authors, Husseini et al. (2016), and consequently validate it for adolescents of the Hindi speaking states of India. For this purpose, we used a sample of 1000 adolescents.

In the first principal component analysis, the viability of EFA was guaranteed using the KMO test (.849), considered acceptable, and Bartlett's Sphericity Test [$\chi^2(1000)=3.360$;

p<.001], which proved to be significant. According to Kline (2005), all individual items presented values do not overly differ from the values considered appropriate, allowing to affirm that there was no violation of normality principles.

The set of 13 items from the PARS was subjected to principal component factor analysis, using a varimax rotation and structure of five factors that explained 66.41% of the total variance was found.

Table 1: Factorial Weights and Commonalities (h^2)

Item No.	Items	Dimensions	Factor	h^2
1	When something goes wrong, I remember my family. जब कुछ गलत होता है तो मैं अपने परिवार को याद करता / करती हूँ।	Caring family	.843	.710
2	My parents help me to know myself better. मेरे माता-पिता स्वयं को बेहतर समझने में मेरी सहायता करते हैं।	Caring family	.587	.344
3	I am equally indebted to my parents. मैं अपने माता-पिता के प्रति समान रूप से ऋणी हूँ।	Caring family	.692	.478
5	I talk with my parents about my affairs. मैं अपने सम्बन्धों के बारे में, अपने माता-पिता से बात करता /करती हूँ।	Parent child cohesion	.713	.508
6	When something makes me angry, my father tries to find out the cause of my discomfort. जब किसी बात पर मुझे क्रोध आता है तो मेरे माता-पिता मेरी असहजता का कारण जानने का प्रयास करते हैं।	Supportive family ambience	.729	.531
7	Sometimes we go for a walk with my father. कभी-कभी हम लोग पिताजी के साथ टहलने जाते हैं।	Supportive family ambience	.590	.348
8	My parents respect my views. मेरे माता-पिता मेरे विचारों का सम्मान करते हैं।	Supportive family ambience	.748	.559
11	I wish that my mother once embrace. मेरी इच्छा है कि मेरी मां एक बार मुझे गले लगाती।	Confession and acceptance	.880	.774
12	I wish that my father once embrace. मेरी इच्छा है कि मेरे पिता एक बार मुझे गले लगाते।	Confession and acceptance	.878	.770
15	When my father wants to clean his car, I am happy to help him. जब मेरे पिता अपनी कार साफ करना चाहते हैं तो उनकी सहायता करने में मुझे प्रसन्नता होती है।	Cooperative indulgence	.571	.326
16	If I do something wrong which annoys the parent, they will still love me. यदि मैं कुछ ऐसा करता / करती हूँ जिससे मेरे माता-पिता नाराज होते हैं, तब भी वे मुझे प्यार करेगें।	Cooperative indulgence	.754	.568
18	My mother and I cook food together. मेरी मां और मैं क साथ खाना बनाता / बनाती हूँ।	Parent child cohesion	.704	.495
19	I help my mother in cleaning the house. मैं घर की सफाई करने में अपनी मां की मदद करता / करती हूँ।	Parent child cohesion	.482	.232

The above table shows that the factors loading on preservence dimension is 5; supportive family ambience is 3; caring family are 3; confession and acceptance are 2; parent-child cohesion is 3, and cooperative indulgence is 2 (if you have strong theoretical and practical reasons, a factor contain two items, for example, Gosling, Rentfrow & Swann Jr. (2003) big five scale).

The properties of the items and internal consistency were studied through the analysis of the means and standard deviation of the item, the item-total correlations, and Cronbach's alpha value if the item was to be deleted (Table-2).

Table-2: Properties of the items and internal consistency of the final factorial scale

Item No.	Items	M	SD	R	A
1	When something goes wrong, I remember my family. जब कुछ गलत होता है तो मैं अपने परिवार को याद करता / करती हूँ।	4.008	1.175	.420	.819
2	My parents help me to know myself better. मेरे माता-पिता स्वयं को बेहतर समझने में मेरी सहायता करते हैं।	4.072	1.068	.514	.812
3	I am equally indebted to my parents. मैं अपने माता-पिता के प्रति समान रूप से ऋणि हूँ।	4.208	.983	.435	.818
5	I talk with my parents about my affairs. मैं अपने सम्बन्धों के बारे में, अपने माता-पिता से बात करता /करती हूँ।	3.612	1.313	.481	.815
6	When something makes me angry, my father tries to find out the cause of my discomfort. जब किसी बात पर मुझे क्रोध आता है तो मेरे माता-पिता मेरी असहजता का कारण जानने का प्रयास करते हैं।	3.801	1.140	.585	.807
7	Sometimes we go for a walk with my father. कभी-कभी हम लोग पिताजी के साथ टहलने जाते हैं।	3.821	1.160	.526	.811
8	My parents respect my views. मेरे माता-पिता मेरे विचारों का सम्मान करते हैं।	3.872	1.056	.537	.811
11	I wish that my mother once embrace. मेरी इच्छा है कि मेरी मां एक बार मुझे गले लगाती।	3.805	1.131	.412	.820
12	I wish that my father once embrace. मेरी इच्छा है कि मेरे पिता एक बार मुझे गले लगाते।	3.772	1.176	.426	.819
15	When my father wants to clean his car, I am happy to help him. जब मेरे पिता अपनी कार साफ करना चाहते हैं तो उनकी सहायता करने में मुझे प्रसन्नता होती है।	3.809	1.245	.516	.812
16	If I do something wrong which annoys the parent, they will still love me. यदि मैं कुछ ऐसा करता / करती हूँ जिससे मेरे माता-पिता नाराज होते हैं, तब भी वे मुझे प्यार करेगें।	3.506	1.288	.398	.821
18	My mother and I cook food together. मेरी मां और मैं क साथ खाना बनाता / बनाती हूँ।	3.521	1.267	.341	.826
19	I help my mother in cleaning the house. मैं घर की सफाई करने में अपनी मां की मदद करता / करती हूँ।	3.928	1.148	.547	.810

4.2 Confirmatory Factor Analysis (CFA)

We performed CFA based on the variance – covariance matrix using the AMOS 18 statistical package for testing the five -factor model. Parameters were estimated for the Confirmatory Factor Analysis model based on the maximum likelihood procedure (sometimes called path analysis) involving fitting the variance and covariance among observed scores. Therefore, AMOS created a covariance matrix, including the variances and covariances among observed scores.

It was estimated to identify the five factor model in order to estimate the model parameters. For this purpose Factor loadings and the variances and covariances among the errors were used to identify the five- factor model.

Following the identification of the five-factor model, we examined the assessment of universal fit related to the quality of the model in AMOS in order to ascertain its appropriateness for the population been examined. Further, the next step was to illustrate the observed (items) and unobserved (factors) in the hypothesized model (Figure 1). In the diagram, the observed variables are represented as rectangles; ellipses represent the unobserved variables, and the circles represent measurement error. The measurement model consists of five interrelated constructs, including supportive family ambience, caring family, confession & acceptance, parent-child cohesion, and cooperative indulgence. The arrow between the unobserved variable

and the observed variable represents a regression path in the diagram, and its number represents the standardized regression weight. In the figure, the double-headed arrows represent the correlation between two unobserved variables (factor covariance) of the model.
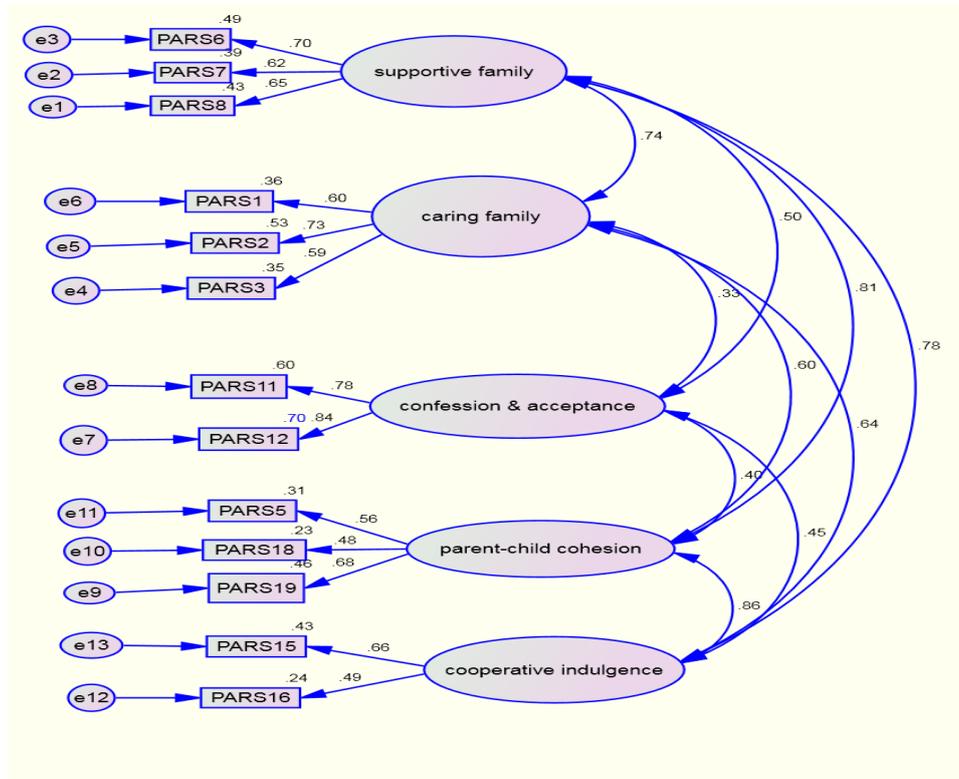

Fig.1: Hypothesized 13-items model of factorial structure of the PARS

Table-3: Goodness-of-fit indices for the five-factor model of the Resilience Scale (N=1000)

Model	χ^2	df	p	χ^2/df	GFI	CFI	RMSEA
N	244.641	55	.000	4.448	.965	.943	.059

The PARS13 presented a $\chi2$/df=4.448 (According to Robert Ho 2006, in the case of large samples, the power of the statistical test underlying the SEM approach is very high. An approach model can easily fail to fit the data statistically, even though the discrepancy between the sample covariance matrix and that reproduced by the parameter estimates of the proposed model may be insignificant from a practical point of view. With these limitations, the researcher should complement the chi-square measures with other goodness-of-fit-measures.) & p< .000, which are good. Quality adjustment indices were very good, GFI .965 (varies between 0 and 1, considering that the closer to 1, the better the adjustment of the model); CFI .943 (good when superior to .90) and RMSEA .059 (values between .05 and .10 were good and values lower than .05 were considered very good) (Maroco, 2010).

5. DISCUSSION

The present study's main objective was to adopt and explore the psychometric properties of the adopted 13 items of the PARS13 developed by Husseini et al. (2016) on adolescents of Hindi speaking states of India.

The PARS aims to assess the relationship between parent and adolescent. The parent-Adolescent relationship is a valuable part of the development process of socialization of children in family, represented a bond between parent and adolescent, and smoothened the process to transfer intergenerational family value and preparation of the adolescent to enter into the social world.

In the present investigation, a five factorial structure was found, consisting of 13 items, which differs from the original scale by Husseini et al. (2016). This scale is composed of five factors that explain 66.41% of the total variance.

The factorial structure obtained showed appropriate values in relation to item-total correlations and its respective Cronbach's alfa values. Item-total correlations found were greater than .30, and Cronbach's alfa was considered reliable, i.e., 0.82 (Pestana and Gageiro, 2003).

Based on the data, we generated a five-factor model using Varimax rotation. To determine the psychometric properties of PARS13, the specification of the five-factor model; assessment of fit between the model and observed variables (items) were presented through the CFA approach. The measurement model consists of five interrelated constructs, including supportive family ambience, caring family, confession and acceptance, parent-child cohesion, and cooperative indulgence.

The PARS13 presented good quality adjustment indices, i.e., GFI .965; CFI .943, and RMSEA .059 (Maroco, 2010). Consequently, we could conclude that the PARS13 items provide a valid and reliable scale to effectively assess adolescents' ability to deal with change or adversity effectively.

6. LIMITATIONS OF THE STUDY

It is important to consider some limitations of this study. Since this scale is meant for adolescents, it is advisable to reassess this scale's psychometric properties for other populations in the Indian context. It was administered on only Hindi speaking states of India; thus, it is advisable to reassess the psychometric properties of this scale on other states of India. PARS13 items provide a valid and reliable scale to assess adolescents' ability to deal with change or adversity effectively.

7. CONCLUSIONS

This study's results supported the usefulness of the PARS13 as a brief, reliable, and psychometrically sound scale for measuring the parent-adolescent relationship of the adolescents. We recommended that the scale be reassessed to different populations and other states except Hindi speaking states to measure the parent-adolescent relationship.

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