Original Article

Translation and Psychometric properties of Children Behaviour Questionnaire

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Author's Contribution

[1,2] Conception of study
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[1] Analysis/Interpretation/Discussion
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Abstract

Objectives: 1- To translate the Children's Behavior Questionnaire-very short (CBQ) form into Urdu language and to establish its psychometric properties. 2- To study gender differences in three dimensions of temperament namely, effortful control, negative affect, and surgency.

Materials and Methods: The study was conducted with 279 mothers (working and non-working) and their children (3-7 years; boys = 138, girls = 141) in Rawalpindi, Pakistan. CBQ-very short form was translated into the Urdu language as per the standard procedure.[2] Translated scale was given to mothers and available fathers to rate their children on temperament. To establish cross-language validation 13 mothers were given both original English CBQ-very short form and translated version with a gap of two months, and then translated version again after two months. To study gender differences in three dimensions of temperament between boys and girls (boys = 138, girls = 141) one way ANOVA was run.

Results: Results indicated high Cronbach's alpha reliability $\alpha = .80$ (total) and .61to .81 for its subscales, high to satisfactory cross language validation (test-retest reliability) $r = .64^*$ to $.86^{**}$ ($p < .05$ & .01), and high inter-rater reliability between fathers and mothers $r = .38^*$ to $.82^{**}$ ($p < .05$ & .01). The item-total correlations of subscales were also satisfactory. Findings showed that the Urdu version of CBQ is highly reliable and valid to be used with Pakistani Children (3-8 years). In addition, we found significant gender differences in effortful control, with girls being high on effortful control as compared to boys.

Conclusion: The study revealed CBQ-very short form- Urdu version as a reliable and consistent measure of children's temperament (3-7years) in Pakistani culture. Findings also support earlier evidence that girls show a higher score on effortful control as compared to their counterparts.

Keywords: CBQ, Temperament, gender differences, Urdu version.

Introduction

In recent years the concept of temperament has become a powerful framework to study individual differences among children. Temperament is defined as the "how" of the behavior and refers to the constitutional variations in the way that individuals respond to their environments. It refers to the set of personality traits that are observable and biologically oriented. These are present at the time of birth and are influenced over time by life experiences. These traits also determine the individual differences and behavior of the children.[7,19,22]

Thomas and Chess[23] being the pioneer to study children's early emerging behavioral styles have explained nine temperamental traits that are associated with children's behavior. Based on these temperamental traits they have categorized children into three temperamental categories; 1) Easy or flexible children; 2) Difficult children, and 3) Slow to warm-up children.

Rothbart[19,20] has given the most influential contemporary definition of temperament and has identified three broad dimensions along which temperament can be aligned namely; (a) Effortful control (b) Surgency/Extraversion, and (c) Negative affectivity. Effortful control is an important dimension of the temperament which develops late during the first years of life, providing additional means of regulating reactive tendencies. It refers to the ability to focus attention, show satisfaction during low-intensity activities, and among older children the ability to exercise inhibitory control. Extraversion/Surgency includes sub-factors such as high activity, joyfulness and smiling, impulsivity, and constructive anticipation. The third is labeled Negative Affectivity includes apprehension, anger, rage, depression, distress, and a lack of soothability.

Research has shown temperament as an important aspect of children's development.[4] Findings indicate a direct and indirect association between children's temperament and their academic performance, externalizing behavior, and emotional stability.[1,7,18] Children who are not well regulated are likely to elicit negative reactions from their peers and adults. They may also show problems with attention and hyperactivity, addiction, and sexual risk-taking.[18,22]

Temperament remains stable and consistent over time however, it may vary according to their cultural context. What is appropriate and healthy in one context may not be in the other.. Cross-cultural differences5 in temperament have been reported among infants, children, and adults. Variations in children's temperament ratings across cultures could be interpreted in three ways; genetic and environmental factors, parental beliefs and expectations, and lastly the differences in parents' ethnotheories. According to Super and Harkness[21] child's environment is shaped by culture and they have coined the term 'developmental niche' to explain the fact. It contains three components; the child's physical and social setting, culturally driven child-rearing practices, and the psychology of caretakers. These three components interact with one another and also with the child and lead to individual differences.

Temperament has gained attention not only as an important personality factor in children's development but also as an important predictor of later adjustment, however to our knowledge very little has been explored with Pakistani children.[14,15] Durrani, Mehmood, & Saleem[9] have successfully developed a temperament scale but it is for university students. The lack of research studying behavioral styles among preschool and pre-adolescents limit the scope of research. One major reason could be the absence of any reliable measure or lack of attention towards temperament and its importance in children's course of development. The present research aimed to translate CBQ-very short form into Urdu, originally developed by Rothbart[19,] and establish its psychometric properties. To achieve this objective the sample was selected from a normal population of children, studying in schools having no reported behavioral problems. It was also intended to find out gender differences in different dimensions of temperament with translated scale. While keeping the possible cultural influences on temperament traits we did not develop a specific hypothesis about gender differences.

Materials and Methods

Sample: The sample consisted of 279 young children (boys = 138, girls = 141, 3-7 years) and their mothers (working and non-working). A convenience sampling technique was used. The sample was selected according to sampling criteria (no case of divorce or separation, both parents being alive). The mean age of children and mothers was 5.2 (1.25) and 33.1 (5.41) respectively. Mother's education ranged from matric to MA. The sample consisted of different socioeconomic groups i.e. lower class (60%), middle class (30%), and upper class (10%).

Instrument: Children's Behavior Questionnaire- Very Short Form17 was used to assess children's temperament. It is a 36-item informant report questionnaire to assess the temperament of children (ages 3 – 8). It is designed to measure three broad dimensions; surgency, negative affectivity, and effortful control. Responses are given on a 7-point scale ranging from 1 to 7. Alpha coefficients for the original short-form scales for three different samples have been reported from α = 0.62 to 0.78.

Translation procedure: The objective of the present study was to translate the CBQ-very short form into the Urdu language. To achieve this objective the experts in Developmental Psychology were contacted to take their opinion. After their judgment and recommendation, CBQ-Very short form was translated into the Urdu language according to the standard procedure.[2]

1. The scale was first translated into the Urdu language by a committee of 3 bilinguals.
2. After getting Urdu translation in the first step, the scale was then back-translated into English by 3 bilingual experts different from the earlier committee.
3. The researcher then compared the back-translated items to the original scale items and it was found adequate. The final version of the translated scale was again given to the Experts for their opinion. After their recommendations, the scale was tested for psychometric properties.
4. To find the psychometric properties of the translated version alpha reliability, item-total correlation and cross-language validation analysis were done.

Procedure: To collect data mothers of the children were contacted directly either at their workplace or at home to fill out the demographic information form and rate their children on translated CBQ-very short form. To get inter-rater reliability 37 fathers were willing and contacted at their workplace to rate their children on a translated version of CBQ-very short form.

To establish content validity 30 mothers from the same sample were also given both original English CBQ-short form and translated scale with a gap of two months.

Results

Alpha reliability and item-total correlation of each subscale were calculated for the CBQ (very short form-Urdu version). Descriptive analysis was also done.

Table 1: Alpha reliability, correlation matrix, and descriptive analysis on CBQ Very Short Form-Urdu Version (N= 279)

S. No.		*1*	*2*	*3*	*4*	*5*	*6*	*a*
1	Mother's age							
2	Children's age							
3	CBQ-U							.80
4	Surgency				1	.39**	-.53	.81
5	Negative effect					1	.12	.72
6	Effortful control						1	.61
	Mean	33.1	5.21		60.39	65.07	66.94	
	SD	5.41	1.25		11.61	8.82	7.32	
	Skewness				-.69(.15)	-.68(.15)	-.45(.15)	
	Kurtosis				1.30(.29)	.07(.29)	1.0(.29)	

**p<.05 **p <.01;* No. of item = 12 on each scale

Results indicate the CBQ-VSF-Urdu version is an internally consistent and highly reliable tool to measure temperament among children. The alpha reliabilities of the three subscales Surgency α = 0.81; Negative affect α = 72; Effortful control α = 0.61 are satisfactory and in the range as reported in earlier studies[16]. De Vellis[8] has considered .60 as a threshold of acceptable internal consistency and we had all the reliabilities in this range. These results suggest the CBQ-very short form –Urdu version as a highly consistent and reliable measure of temperament for children 3-8 years.

The alpha reliabilities are in the range of .61 to .81.

The item-total correlations of all subscales are also satisfactory and significant. For Surgency it is from .25** to .71**, for items of negative affect are it is from .12* to 68** and for effortful control the range is from .21** to .52** ($p < .05$, $p < .01$).

Regarding inter-scale correlation, results showed a significant negative correlation between scores of surgency and negative affect, a non-significant negative correlation between surgency and effortful control, and a non-significant positive correlation between negative affect and effortful control (Table 1).

To establish cross-language validity 30 mothers from the same sample were given both Original CBQ-VSF and after two months the translated version of CBQ. In the next step, they were given Urdu version again after two months. Only 13 mothers completed the forms of both versions. The inter-correlation between the scores of subscales of Urdu- Urdu and Urdu-English versions was calculated and found to be significant (see Table 2). The sample is small however it indicates an acceptable content validity of the translated version.

Table 2: Correlation between scores of original English CBQ-VSF and the translated version of CBQ-VSF and between CBQ-VSF Urdu with Urdu (retest reliability) with a gap of two months (N = 13)

Scale	*Surgency Urdu*	*Negative Affect Urdu*	*Effortful Control Urdu*	*Surgency Eng*	*Negative Affect Eng*	*Effortful control Eng*
CBQ-VSF-Urdu	Urdu translation of CBQ			Original English Scale		
Surgency	.70*	-	-	.84**	-	-
Negative Affect	-	.70*	-	-	.60*	-
Effortful Control	-	-	.60*	-	-	.64*

**p<.05 **p <.01*

To have inter-rater reliability between fathers and mothers CBQ-very short form Urdu version the scale was also given to fathers (see Table 3). The results show significant inter-rater reliability.

Table 3: Inter-rater reliability between scores reported by fathers (N =37) and scores by mothers (N = 37) on subscales of a translated version of CBQ-VSF-Urdu

Scale	*Surgency Father*	*Negative Father*	*Effortful Father*
1. Surgency Mother	.38*		
2. Negative Mother	-	.52**	
3. Effortful control Mother	-	-	.82**

**p<.05 **p <.01*

To study gender differences among children on dimensions of temperament one-way ANOVA was run (see table 4).

Table 4: Mean differences between Boys and Girls on subscales of CBQ-VSF-Urdu (N = 279)

Subscales	*Boys (n = 138)*		*Girls (n = 141)*			
	M	*SD*	*M*	*SD*	F	*P*
Surgency	60.86	12.29	59.93	10.92	.45	.50
Negative affect	65.36	8.83	64.79	8.83	.29	.59
Effortful control	65.64	7.75	68.21	8.81	8.81	.003

df= (1, 277,) p <.01

Results indicate a significant mean difference between boys and girls in Effortful control. Girls outperformed (M = 68.21, SD = 8.81) boys (M = 65.64, SD = 7.75) on Effortful control F (1,277) = 8.81, $p < .01$ □ = 0.18. However, we found non-significant gender differences in Surgency and Negative affect.

Discussion

Temperament is defined based on various approaches, including behavioral style approach to criterial, psychobiological, and biotypological approach. However, the present study is based on the psychobiological approach proposed by Rothbart that suggests that temperament is constitutionally based on individual differences in reactivity and self-regulation.[19] Children Behavior Questionnaire was developed to measure the construct of temperament and had 195 statements with 7 point rating scale. It is widely used and multiple studies have been reported for its validation.[20] Short forms and very short forms have also been developed for the researchers having time and space limitations.[18] These forms have been developed by extracting the items from the original scale. Though authors have reported satisfactory reliability however some of the scales in short and very short forms show low internal consistency.

Various reasons have been suggested including the loss of content breadth as compared to original forms[18], individual differences in interpreting the scale statements, differences in social class and living arrangement, dialectal rules of language, and educational level.[10,11] Experts have also explained the reliability of a scale as a property of sample characteristics and not of the scale itself.[8,24] Therefore it may vary with sample characteristics. In accordance with these research findings, the reliabilities of the subscales of our translated version of CBQ-very short form (36 items) are highly satisfactory: Surgency α = 0.81; Negative affect α = 72; Effortful control α = 0.61. The item-total correlations are also significant for all three subscales; however, on item 35 of the negative effect subscale, we found a significant but low item-total correlation that is 0.12. This is the expected fluctuation due to cultural variations.

Further analysis to test psychometric properties of the translated version included inter-rater reliability between fathers and mothers (surgency, r = .38*, p < .05; negative effect, r = .52**, p < .01; effortful control, r = .82**, p < .01) and cross-language validation. Cross-language validation also showed significant results (see Table 2). For cross-language validation, CBQ-VSF and CBQ-VSF-Urdu were administered to 30 mothers with two months gap. Then after the gap of two months, Urdu translated version was again administered. We received only 13 completed scales. Though the sample was small however the significant results showed satisfactory content validity of CBQ-VSF-Urdu.

The correlation between the three subscales was also calculated. We found a different pattern as compared to the earlier evidence from the west. Results indicated significant positive correlation between surgency and negative affect (r = .39**, p < .01). The relationship between negative affect and effortful control (r = .12, p> .05) is positive and not significant. The association between surgency and effortful control is negative but not significant (r = -.53 p> .05). The positive association between surgency/extraversion and the negative effect is unexpected showing that children high on positive anticipation, joyful, smiling, with high-intensity pleasure and activity level also exhibit high negative affect (sadness, anger, fear, and discomfort). This difference might be attributed to the differences in upbringing and disciplinary rules along with the social/family norms between the two cultures which play an important role not only in the development but also in interpreting the various domains of temperament.[5,10,13,12]

Regarding gender differences, our findings indicate that girls outperformed boys in Effortful Control whereas boys outperformed girls in Activity and High-intensity pleasure dimensions from the Surgency factor. However, we found non-significant mean differences between boys and girls on the other two factors Surgency and Negative affect, and their sub-dimension as activity level and fear. These non-significant mean differences might indicate the cultural differences in the development and acceptance of various character traits of temperament as shown in earlier findings.[6,10] Various differences between US and Pakistani children have been reported.[15] Pakistani children prefer extroverted, practical, and organized styles as compared to their counterparts. In addition, female students were more inclined to prefer the feeling style as compared to males who prefer the thinking style. Similar differences have been reported between the US and Finish children.[13] In Pakistan though women's contribution in various fields has been increasing, unfortunately, we as a culture have failed to address the role of women as a mother. The influx of women into jobs without considering their absence from homes as wives and specifically as mothers has largely affected the family systems and cultural values. The cultural differences evident in our results might be attributed to an overall change in our society from women's interest in children's grooming to financial independence.

Conclusion

CBQ-very short Urdu version is a reliable and internally consistent tool to measure the temperament of Pakistani children (3-7 years). In addition, girls showed high effortful control as compared to boys. However, no differences were found between girls and boys on negative affect and surgency. The present study has contributed to the existing literature by translating the CBQ-very short form into Urdu language and making it available for further research. Secondly, we have highlighted the importance of cultural values and practices that may lead to differences in temperament styles of young children.

Lack of resources and being part of an academic project we were unable to develop an indigenous temperament scale for children. The sample was also small and therefore not adequate to run confirmatory factor analysis. The return rate in the second phase to establish cross-language validation was also low. Only 10 out of 30 mothers were able to return both forms.

Though overall reliability coefficients are in the accepted range however further studies are needed with larger samples to explore the factor structure of the translated version and reasons for lower item-total correlation on item no 35 in the negative affect subscale.

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