

## ADAPTATION OF THE TOOL TO MEASURE PARENTING SELF-EFFICACY (TOPSE) IN BANGLADESH

NAFIZA FERDOWSHI\*, MOSTAK AHAMED IMRAN AND TASMIM ALAM TRISHNA

*Department of Educational and Counselling Psychology, University of Dhaka,  
Dhaka-1000, Bangladesh*

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### Abstract

Measuring parental self-efficacy has influenced the children and their environment for reaching optimal development. The current study aimed to adapt the Tool to Measure Parenting Self-Efficacy (TOPSE) scale and to determine its psychometric properties for using in the context of Bangladesh. A total of 180 mothers of children aged 0 to 6 years were conveniently selected for this study. The TOPSE and Rosenberg's Self-Esteem scale were used as measuring instruments. Collected data were analyzed to determine psychometric properties by using Cronbach's alpha, Pearson product moment correlation coefficient, item analysis, and factor analysis. TOPSE had acceptable internal consistency (Coefficient alpha=0.89) and test-retest reliability ( $r=0.96$ ). The convergent validity of TOPSE showed a highly positive correlation ( $r=0.91$ ) with the Bangla Rosenberg's Self-Esteem scale. The factor analysis resulted in 4 factors with Eigenvalues  $> 1$ , explaining 87% of the variances and the four factors showed Cronbach's coefficient values ranging from 0.50 to 0.99. TOPSE has reasonably good psychometric properties. Further research may wish to require to see the implication of TOPSE in evaluating parenting programs in Bangladesh.

### Introduction

Self-efficacy is defined as people's views about their capabilities to produce designated performance levels that exercise influence over events that affect their lives. Parental self-efficacy (PSE) is defined as "a parent's belief and confidence in their ability to influence and raise their child and the environment in ways that would foster the child's development and success"<sup>(1)</sup>. Individuals high in parenting self-efficacy exhibit positive attitudes, outlooks, and beliefs to their children. The research proposes that high PSE levels are connected with a higher quality parent-child relationship, increased parental warmth, parental involvement, and adolescent's monitoring<sup>(2)</sup>. PSE is a significant determinant of competent parenting behaviour and is linked closely to healthy child development<sup>(3)</sup>. Generally, parents having higher PSE are more likely to

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\*Author for correspondence: <nf.bidhu@gmail.com>.

welcome the challenges associated with child-raising, and they experience a positive sense of accomplishment, viewing the entire experiences as meaningful and worthwhile<sup>(4)</sup>. The research explained that higher PSE is correlated with less child-rearing anxiety in Japanese and Vietnamese mothers<sup>(5)</sup> and more positive family functioning for both mothers and fathers<sup>(3)</sup>. Another research found that PSE is predictive of the ability to access adequate parenting resources<sup>(6)</sup>. In contrast, individuals with low parental self-efficacy may struggle to meet domestic demands and are at risk of stress and depression<sup>(7,8)</sup>.

The literature review revealed that the Tool to Measure Parenting Self-efficacy (TOPSE) is one of the most commonly used research tools for measuring parenting self-efficacy and evaluating parenting programs in several parts of the United Kingdom, Canada, Japan, and so on. TOPSE was developed by Kendall and Bloomfield in 2005<sup>(2)</sup> and they continued to work on this tool with diverse group of parents<sup>(9-12)</sup>. At the period of development, this scale consisted of 82 items with nine sub-scales: Affection/emotion, Play, Empathy/understanding, Routines/goals, Control, Boundaries, Pressures, Acceptance, and Learning/knowledge. The internal consistencies of nine sub-scales ranged from 0.81 to 0.93<sup>(2)</sup> and from 0.65 to 0.89<sup>(9)</sup>. In 2007, Linda and Bloomfield conducted a before and after intervention program in the UK by using TOPSE as a measuring instrument and found that parental self-efficacy increased after attending evaluation program<sup>(9)</sup>. TOPSE has also been adapted for the parents with learning disabilities in 2010. The researchers have revised this scale that comprises of 48-item with eight sub-scales, containing 6 items in each sub-scale<sup>(10)</sup>. Bloomfield and Kendall further studied with 48-item TOPSE scale which internal consistencies were ranged from 0.78 to 0.90 for the eight sub-scales and  $\alpha=0.91$  for the total scale<sup>(11)</sup>. In 2013, many investigators adapted this TOPSE for the cultural context of Japan<sup>(12)</sup> and Canada<sup>(13)</sup>. Both studies found acceptable coefficient alpha values for the TOPSE version of eight sub-scales with 48 items measure. The researchers performed an intervention program based on TOPSE and found that intervention parents reported increased parental self-efficacy in terms of their child development knowledge and needs<sup>(14)</sup>.

Parenting programs globally provide an environment for parents to develop their self-efficacy by learning and achieving positive behaviour. There has been increasing interest in parenting programs from parents in Bangladesh, but tools are limited that only measure parents' self-efficacy<sup>(15,16)</sup>. This study attempts to overcome such shortcoming. The current study aims to adapt a tool to measure parenting self-efficacy (TOPSE) in the context of Bangladesh and to determine the psychometric properties of TOPSE.

## Materials and Methods

Cross-sectional survey design was used for this study. A sum of 180 mothers having children aged 0 to 6 years old were conveniently chosen as participants. They were recruited from two pre-schools (n=100), two daycares (n=30), and neighbors (n=50) from the North and the South Dhaka City Corporation. Socio-economic status of the participants was: Upper (n=90), middle (n=20) and lower (n=70). The distribution of participants is presented in Table 1 in accordance with various institutions from where participants were selected and their respective socio-economic status.

**Table 1. Distribution of Participants.**

Institutions	Socio-Economic Status		
	Upper	Middle	Lower
Pre-schools	60	20	20
Daycares	27	-	03
Neighbor	03	-	47

The following measuring instruments were used along with collecting demographic information of the participants:

*Tool to Measure Parenting Self-Efficacy Scale:* TOPSE was developed to evaluate parenting programs from a different range of backgrounds by measuring parenting self-efficacy (2, 9-13). TOPSE is an 11-point Likert scale with 48 items ranging from 0 (completely disagree) to 10 (completely agree). It has eight subscales: emotion/affection, play/enjoyment, empathy/understanding, control, discipline/setting-boundary, pressures, self-acceptance, and learning/knowledge. The values of Cronbach's alphas ranged from 0.78 to 0.90 for the eight subscales and Cronbach's alpha for the total scale is 0.91<sup>(11)</sup>. Higher score indicates higher self-efficacy of the parents.

*Bangla Version of Rosenberg's Self-Esteem Scale:* The scale was originally developed by Rosenberg in 1965. It comprises of 10 items with 4-point Likert type scoring option that ranges from "strongly disagree" to "strongly agree". The high score indicates the higher self-esteem. Bangla version of Rosenberg's self-esteem scale was translated by Iliyas in 2003 which internal consistency was highly accepted, that is,  $\alpha = 0.87$ <sup>(17)</sup>.

The process of adaptation of TOPSE considered the several steps and the guidelines proposed by Sousa and Rojjanasrirat in 2011<sup>(18)</sup>.

Firstly, two translators translated the English TOPSE in Bangla. The research team, including two independent researchers and the supervisor of this study, checked the language structure and content and modified some words and sentences. After that, two different university students were selected for back-translation of the scale. One

professor from the relevant field of University of Dhaka involved in the research team and formed an expert panel for assessing the equivalence of the back-translated versions of this scale. Afterwards, a pilot-testing was administered to 25 mothers having birth to six years child. In the pilot phase, internal consistency was measured, which value was  $\alpha = 0.84$ . The corrected item-total correlation coefficient of TOPSE is above 0.50 and values of Cronbach's alpha (if item deleted) were above 0.80. The test-retest reliability (two-week interval) was  $r = 0.51$  for the total scale. Eight subscales' test-retest reliabilities of two-week interval were 0.75, 0.87, 0.70, 0.88, 0.92, 0.85, 0.95 and 0.87, respectively.

Moreover, the expert panel checked the content validity during the inter-judge agreement process of the scale. Besides, construct validity was measured by correlating Bangla Rosenberg's Self-Esteem (RSE) scale <sup>(17)</sup> with Bangla TOPSE scale, which found a significant correlation,  $r=0.81$ ,  $p < 0.01$ . The positive and significant correlation between TOPSE and RSE displayed confirming the construct validity of the TOPSE.

By incorporating the feedback, the Bangla version of TOPSE was finalized and attached into the Appendix. The researchers obtained ethical approval from the Ethics Committee of the respective department of the University of Dhaka. Standard data collection procedures were followed for this study. The time-length of the data collection was six months, including the pilot testing and field application.

## Results and Discussion

The main objective of this study was to adapt TOPSE scale in the context of Bangladesh. This study used reliability, validity, item analysis and factor analysis to adapt the TOPSE in Bangladesh.

The reliability of Bangla TOPSE was calculated by measuring coefficient alpha and test-retest methods. The internal consistency of Bangla total scale TOPSE was  $\alpha = 0.89$ . The coefficient values of TOPSE sub-scales were ranged from 0.81 to 0.91 that showed in Table 2.

**Table 2. Cronbach's coefficient alphas of TOPSE sub-scales.**

TOPSE Sub-scales	Coefficient values ( $\alpha$ ) N = 180
Emotion and Love	0.81
Play and Enjoyment	0.82
Empathy and Understanding	0.82
Control	0.82
Discipline and Setting Boundary	0.81
Pressure	0.83
Self-acceptance	0.82
Learning and Knowledge	0.91

These findings of internal consistencies were supported by earlier adaptation study that conducted in 2012<sup>(11)</sup>. However, previous study that used nine sub-scales of TOPSE with 82 items did not show similarities with this study findings<sup>(9)</sup>. The test-retest reliability coefficient with a gap of 15 days was [ $r_{(48)} = 0.96$  ( $p < 0.01$ )] significant, providing satisfactory level of temporal stability of the Bangla TOPSE.

The validity of Bangla TOPSE was measured by content validity and convergent validity. Convergent validity of Bangla TOPSE was assessed by correlating with Bangla Rosenberg's Self Esteem Scale. The correlation showed a positive correlation ( $r = 0.91$ ,  $p < 0.01$ ) between the Bangla Rosenberg's Self-Esteem scale.

Item analysis was done by calculating the correlation between individual item's score with the total scale score. For Bangla TOPSE, all 48 items were analyzed, and corrected item-total correlation were determined which were showed in Table 3. Among the 48 items, 45 items have accepted corrected item-total correlation above .20<sup>(19)</sup>. The three items of "Pressures" sub-scale did not fulfill the acceptance level of corrected item-total correlation.

**Table 3. Value of corrected item-total correlation and Cronbach's alpha if item deleted.**

Sub-scales	Items	Corrected Item-Total Correlation ( <i>r</i> )	Cronbach's Alpha if Item Deleted
Emotion & Affection	1. I am able to show affection towards my child.	0.947	0.884
	2. I can recognize when my child is happy or sad.	0.990	0.884
	3. I am confident my child can come to me if they're unhappy.	0.995	0.883
	4. When my child is sad, I understand why.	0.982	0.884
	5. I have a good relationship with my child.	0.892	0.885
	6. I find it hard to cuddle my child.	0.433	0.886
Play & Enjoyment	1. I am able to have fun with my child.	0.882	0.885
	2. I am able to enjoy each stage of my child's development.	0.983	0.885
	3. I am able to have nice days with my child.	0.974	0.885
	4. I can plan activities that my child will enjoy.	0.933	0.884
	5. Playing with my child comes easily to me.	0.977	0.884
	6. I am able to help my child reach their full potential.	0.968	0.884
Empathy & Understanding	1. I am able to explain things patiently to my child.	0.974	0.884
	2. I can get my child to listen to me.	0.983	0.884
	3. I am able to comfort my child.	0.993	0.884
	4. I am able listen to my child.	0.989	0.883
	5. I am able to put myself in my child's shoes.	0.984	0.884
	6. I understand my child's need.	0.960	0.884

**Table 3 contd.**

Control	1. As a parent I feel I am in control.	0.971	0.884
	2. My child will respond to the boundaries I put in place.	0.987	0.884
	3. I can get my child to behave well without a battle.	0.992	0.885
	4. I can remain calm when facing difficulties.	0.970	0.884
	5. I can't stop my child behaving badly.	0.845	0.885
	6. I am able to stay calm when my child is behaving badly.	0.768	0.885
Discipline & Setting boundaries	1. Setting limits and boundaries is easy for me.	0.782	0.885
	2. I am able to stick to the rules I set for my child.	0.997	0.885
	3. I am able to reason with my child.	0.997	0.885
	4. I can find ways to avoid conflict.	0.878	0.885
	5. I am consistent in the way I use discipline.	0.973	0.884
	6. I am able to discipline my child without feeling guilty.	0.978	0.884
Pressures	1. It is difficult to cope with other people's expectations of me as a parent	0.971	0.883
	2. I am not able to assert myself when other people tell me what to do with my child	0.997	0.883
	3. Listening to other people's advice makes it hard for me to decide what to do.	0.996	0.883
	4. I can say 'no' to other people if I don't agree with them	<b>0.041</b>	0.886
	5. I can ignore pressure from other people to do things their way	<b>0.059</b>	0.886
	6. I do not feel a need to compare myself to other parents	<b>0.042</b>	0.886
Self-acceptance	1. I know I am a good enough parent.	0.960	0.885
	2. I manage the pressures of parenting as well as other parents do.	0.975	0.885
	3. I am not doing that well as a parent.	0.972	0.884
	4. As a parent I can take most things in my stride.	0.996	0.884
	5. I can be strong for my child.	0.967	0.884
	6. My child feels safe around me.	0.834	0.884
Learning & Knowledge	1. I am able to recognize developmental changes in my child.	0.931	0.885
	2. I can share ideas with other parents.	0.945	0.885
	3. I am able to learn and use new ways of dealing with my child.	0.840	0.884
	4. I am able to make the changes needed to improve my child's behavior.	0.674	0.885
	5. I can overcome most problems with a bit of advice.	0.866	.885
	6. Knowing that other people have similar difficulties with their children makes it easier for me.	0.303	0.886

The internal structure of TOPSE was identified by Exploratory Factor Analysis (EFA). In the first stage we calculated adequacy of sample by Kaiser-Meyer-Olkin (KMO) measure, KMO=0.961 and by Bartlett's test of sphericity,  $\chi^2 = 4210.243$ ,  $df = 28$ ,  $p < 0.01$ . The high values of KMO (close to 1.0) and small values (less than 0.05) of significance level of Bartlett's test of sphericity generally indicate that the factor analysis may be useful to the study data<sup>(19,20)</sup>. Therefore, these results showed that the data was suitable for factor analysis.

The result of the initial analysis revealed 4 factors with Eigen values over 1 explaining 87% with a factor loading values above 0.30 of the variances<sup>(21)</sup>. Table 4 presented the factor loading values.

This study has some limitations. At first, the number of participants was small as it was not necessarily represented the whole population. The researchers did not use randomization sampling technique. In future, the number of participants could be increased and selected randomly for representing the population. Secondly, Confirmatory Factor Analysis (CFA) could not perform though the factors were known. If CFA could be performed alongside with EFA, this dual approach would enhance the confirmation of reliability and validity of TOPSE. Thirdly, TOPSE is an 11-point Likert scale with 48- items that could take a long time to complete; participants might become

**Table 4. Extracted factors, corresponding items and factors loading ranges of TOPSE.**

Factors	Factor loading range	Subscale/ Items
Factor 1	0.752-0.991	Emotion and affection (1-6)
Factor 2	0.874-0.980	Play and enjoyment (1-6)
Factor 3	0.776-0.997	Empathy and Understanding (1-6), Control (1-6), Discipline and Setting Boundaries (1-6), Pressures (1-6)
Factor 4	0.503-0.992	Self-acceptance (1-6), Learning and Knowledge (1-6)

bored while filling out the questionnaire, which could affect the result. In addition, this scale has 11-point scoring option that might be difficult for participants to select the right opinions as the participants had diverse socio-economic backgrounds. The researchers could use modified version of TOPSE with 5-point scoring option that indicated by Widgit symbols <sup>(10)</sup>. Moreover, the researchers could modify as per cultural norms or delete the three items of sub-scale "Pressures" that identified to have unaccepted corrected item-total correlations. Further studies need to be carried out in order to consider all these recommended aspects for validating TOPSE in Bangladeshi culture. Overall, it seems that this study's findings may have several important implications for using TOPSE as an assessment tool for psychologists, researchers, and educators to assess parent's self-efficacy.

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