

**Original article****Pictorial Experiences Scale for Children and Adolescents: A Pilot Study**

Snigdhasree Bhattacharyya, Uma Hirisave, N. Janardhana, K. S. Meena, Sripathacharya,  
Rajeev. V

**Address for correspondence:** Department of Clinical Psychology, NIMHANS.

Email id:snigdhab1@yahoo.com

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**Abstract**

**Background:** Use of pictures in psychological assessment with children and adolescents can be useful. Pictures are useful in understanding the internal world of the child, cognitive abilities, and psychopathology. Pictures used in assessments are primarily in the form of projective testing and to assess cognitive abilities. The present study aimed at developed a pictorial self-report tool to assess significant experiences in children and adolescents in the Indian setting.

**Method:** Pictorial Experiences Scale (PES) is the alternate form version of My Experiences Scale, developed by the first author. PES is a 50-item scale that assesses significant positive and negative experiences in a child and adolescent's life. PES was individually administered on 80 participants, aged between 8 -16 years. The participants were school-going children and adolescents, and there was equal representation of age, gender, and socio-economic background.

**Results:** Alternate form reliability correlation of PES was computed using paired 't' test. It found to have excellent alternate form reliability correlation coefficient of 0.99 and 0.98, respectively. The current study explores the process of developing a pictorial measure, the

experience of participants on whom it was administered, and the scope for further research with PES.

**Keywords:** Pictorial experiences scale, Pictorial measures, Alternate form reliability

## **Introduction**

Various creative techniques for assessment with children include storytelling, play, drama, social mapping, Story stem cards, and use of drawings or pictures. These methods draw on inventive and imaginative processes. They can serve as constructivist tools to assist research participants in describing and analysing their experiences and giving meaning to them [1].

Pictures have been used in psychological assessment with children for over half a century now. Pictures are verbally less loaded and not threatening as it is in the third person, yet relatable. Apart from this it is particularly useful with younger children, children who have been through any form of abuse, children who may either have difficulties or may not know how to read and write and children with problems like expressive speech delay, pervasive developmental disorders, communication disorders or disorders impacting intellect and learning in a child. It is useful in these populations as the testing would have a lesser emphasis on the abilities of articulation or reading and would involve basic pointing [2].

The use of pictures in assessment was initially started with the assessment of intellectual functions. Majority of the tests that assess intellectual functioning use pictures in few of the subtests. However, Peabody Picture Vocabulary Test (Currently PPVT-4) was one of the early tests to rely on pictures for assessment completely [3-6]. Subsequently, use of pictures increased with projective testing. Use of pictures in objective measures like rating scales gained popularity and momentum with the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children [7]. The test was developed by Susan Harter and Pike in 1984 in the University of Denver and is mainly for children from 4 to 7 years of age. The

test remains popular till date and continues to be used in clinical and research settings successfully.

In the Indian Setting, An Indian adaptation of the PPVT was carried out by Dr. Verma in the year 1993. The Picture Vocabulary Test (PVT) [8]. Subsequently, use of pictures in projective testing was observed in the Indian setting. Few picture-based tests were adapted to the Indian setting. This was initiated by Dr. Udai Pareek, who developed an Indian adaptation of Rosenzweig Picture Frustration Test for Children [9] in collaboration with Saul Rosenzweig in the year 1958. Further adaptations of the Thematic Apperception Test (1960) and the Children's Apperception Test (1985) was carried by Dr. Uma Chowdhury [10, 11]. This was done according to the procedure laid down by McClelland by using TAT cards of Murray. However, there are no published objective measures that have been either adapted or developed in the Indian setting.

A recent review of published pictorial objective highlighted that the use of pictures in self-report measures of psychological assessment with children and adolescents was found to have strong advantages like better comprehension, more objectivity with younger children, better ease during assessment especially for emotional problems which children often have difficulties in articulating. Of these pictorial self-report measures that were reviewed Pictorial Instrument for Children and Adolescents –PICA III R [12] has been used in the Indian setting for research and clinical work [13, 14].

There is clearly a lacuna here, where there is a lack of an Indian objective measure, whereas the felt need in the population is high. Therefore, in view of favourable feedback from clinicians and researchers about the usefulness of pictures in psychological assessments, the authors felt that there is clearly scope for developing a pictorial self-report scale in the Indian setting. The present study is a novel effort that aims at addressing this need by developing and conducting a pilot study of the Pictorial Experiences Scale (PES). This is a 50-item tool

that measures significant positive and negative experiences that children and adolescents may go through. It is an alternate form of My Experiences Scale (MES) [15]. The items of My Experiences Scale (MES) has been illustrated into pictures for the Pictorial Experiences Scale (PES).

### **Methods**

The present study is a part of the larger study titled 'Development of a scale to assess experiences in children and adolescents', that was carried out as a part of the doctoral work of the first author under the guidance of second and third authors. The study was carried out across three years (May 2013 to April 2016) in the Department of Clinical Psychology, National Institute of Mental health and Neuro Sciences (NIMHANS), Bengaluru, Karnataka, India. The process of construction of an experiences scale was carried out across five phases and had many steps. The present study is the fifth phase of the main study and addresses the additional objective of developing a pictorial format of the newly developed experiences scale.

### **Sample**

The universe of the study was children and adolescents studying in school (from 3<sup>rd</sup> standard to 10<sup>th</sup> standard) in Bangalore city. The only exclusion criterion was not returning the signed written consent form, which would automatically exclude the participant. Efforts were taken to cover various socio-economic backgrounds by including both government and private schools. A multi stage convenient sampling was used, as data was collected at different stages from different samples.

The sample of the current study comprised of 80 school going participants, who were between 8 to 16 years of age. They were recruited from two schools and there was equal representation of gender and socio-economic background.

School 1 catered to families from privileged backgrounds and the medium of instruction was English. School 2 catered to the families of lesser privileged backgrounds and the medium of instruction was Kannada. Details about socio economic background was taken from the school as they had put forward restrictions in asking sensitive background details from the participants and their parents.

### **Measures**

My Experiences Scale: MES [15]–MES is a 50 item, self-report scale to measure experiences in children and adolescents. It was developed in the course of the main study using robust methodology. It is one of the first scales where the items have been generated solely based on focus group discussions and interviews that were held with children and adolescents across different age ranges, from different socio-economic background. The scale has a question format with a 4-point likert type frequency-based response. *E.g.: Have you experienced being blamed by the teachers for things that you haven't done? – Responses are never, once, few times, many times.* The items are scored 0-1-2-3 for negative experiences and reversed scored for positive experiences. The scale would provide a total experiences score, positive experiences score and a negative experiences score. Higher the total experiences score would indicate that the child/adolescent has been through more negative experiences and less positive experiences. The scale has been extensively administered on 1700 boys and girls in urban Bangalore. Repeated factor analysis revealed that the scale comprises of 16 factors that group various experiences. *E.g. – Factor 1: Experiences of Difficulties in Peer Relationships; Factor 2: Experiences of Loneliness and Sadness; Factor 3: Experiences of Achievement in School – to name a few factors.* MES scale was found to have significant correlations with The Strengths and Difficulties Questionnaire and Global Self Worth Scale, contributing to the concurrent validity of the scale. The scale was also found to have good to excellent

reliability, correlation coefficient alpha was found to be .852, test retest reliability was found to be .994 and Guttman's split half reliability was found to be .815.

### **Procedure**

The study was initiated after obtaining the ethical clearance of the study from NIMHANS ethics committee. Two schools were contacted at this stage and both the schools consented to participate in the study. The PES was administered on a sample of 80 participants after the processing of informed written informed consent and written assent form. Of these 80 participants, 40 participants in the age range of 12 to 16 years had to first respond to the self-report version of MES, following a gap of 60 days the PES was administered. 40 participants were freshly recruited and were in the age range of 8 to 10 years. PES was individually administered and the process of administration ranged from 40-55minutes.

### **Results**

Results have been presented under two headings:

- (1) Process of Developing the Pictorial Experiences Scale
- (2) Results obtained on the Pictorial Experiences Scale

#### **Process of Developing the Pictorial Experiences Scale**

The process of developing PES was carried out across 5 steps. Each step has been illustrated below.

##### *Step 1: Creating Item Descriptions*

Each item along with verbatim and picture descriptions were given to the senior artist. The plan for each picture was discussed in detail like gender of the child, age of the child, clothes worn by the child – uniform or regular wear, back ground details, use of text and socio-economic background. For some of the pictures, available illustrations from books and internet were given as an example to better explain the description.

**Table 1: Examples of Three Item Descriptions given to the artist for development of sketches**

| <i>Item No</i> | <i>Question</i>   | <i>Item Descriptions</i>  | <i>Background Details of the Picture</i>   |
|----------------|---|---|--|
| 1              | <b>Have you experienced having a close friend?</b>  | A group of girls enjoying lunch break at school, sharing their Tiffin and chatting.                                 | Gender of the child: 3girls<br>Age of the Child: 10 -12 years<br>Place/Setting: School<br>Objects in the picture: School Desks, Tiffin boxes   |
| 2              | <b>Have you experienced doing well in extracurricular activities? (E.g.: Sports/Art/Drawing, Painting/Dance/ Music)</b> | School gathering for an event and girl singing in front of the crowd, looking happy, everyone appreciating.         | Gender of the child: 1 girl, many boys and girls in the background<br>Age of the Child: 13 -15 years<br>Place/Setting: School<br>Objects in the picture: Stage, Microphone with the girl, School auditorium setting. |
| 3              | <b>Have you experienced having difficulties in studies?</b>   | Boy looking frustrated while studying, experiencing difficulties, unable to move forward with studies and is stuck. | Gender of the child: Male<br>Age of the Child: 10 -12 years<br>Place/Setting: Home setting<br>Objects in the picture: Study desk, bits of paper, books.  |

*Step 2 -Item Development by the artist and Item Review by the research guide*

The artist would make an initial rough sketch of the item using pencil on a transparent traceable paper which formed the negatives. These were then reviewed by the research guide and evaluated with regard to:

- i) If the picture is depicting the actual experience.
- ii) The clarity of the picture
- iii) If any background modifications are required.

### *Step 3 - Item Modification and Final Sketch Drawing*

Certain minor suggestions given by the research guide, like:

- i) Clothes especially worn by the authority figures like teachers and parents needed to be more of Indian wear like Sari or Salwar Kameez as children would relate better to them.
- ii) Facial reactions- few of the pictures would have grotesque features which needed alternations.
- iii) Background details- while few of the pictures had way too many details that would distract the children from the actual experience that the picture is trying to depict. E.g.- Too many children in the picture; Few others needed more details to add to the experience. E.g. – establishing the environment like school ground/auditorium.
- iv) Three pictures needed to be redone as they were unable to communicate the experience that the item was depicting.

After incorporating these suggestions, a fair copy of the pictures was made using a specialized black ink by the artist.

### *Step 4- Developing Administration Procedure: Question format, Response Format and Administration Format*

- Question Format – It was decided that the question would be on the top of the picture and read out by the Researcher to the participant.
- Response Format – It was decided to have a pictorial response format using glasses of water to depict the frequency of the experience. E.g. – A Full glass of water for the

response many times, an empty glass for never, a partially full glass for a few times and a glass with very little water for once.

- Administration Format – The Pictorial Experience Scale would require individual structured interview-based format for administration.

#### *Step 5 -Digitalization and Printing*

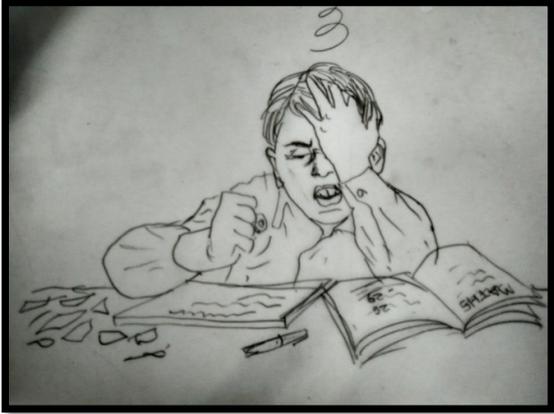
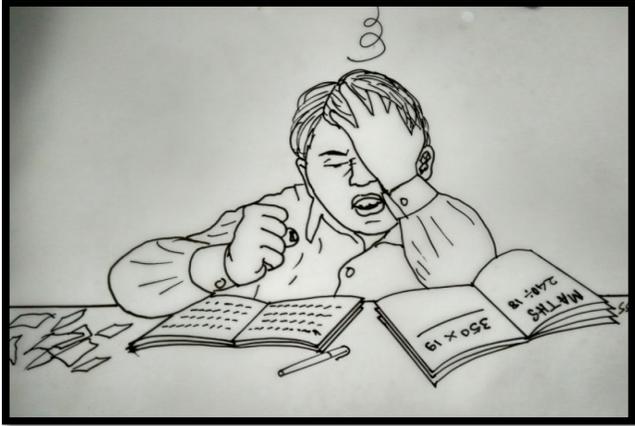
The pictures were then digitalized and printed for an initial try out.

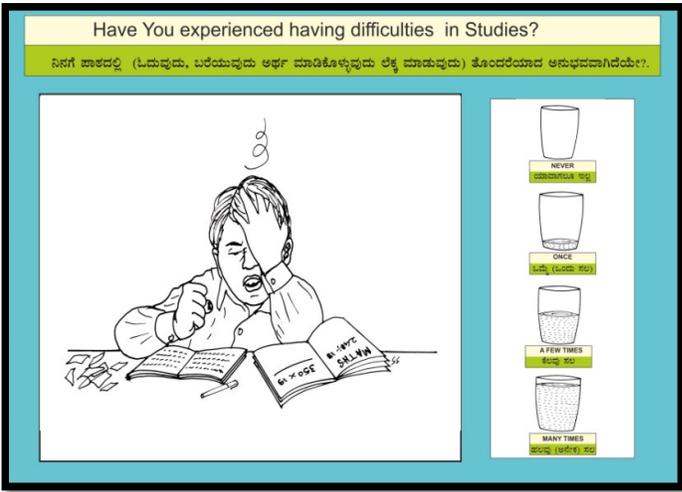
- Digitalization of the pictures was done using Adobe Photoshop and Coral Art. The process of digitalization improves the clarity and sharpness of the pictures. After digitalization, the pictures are formatted incorporating the question on the top and frequency response set in the right-hand side.
- The pictures are then printed on a gloss finish paper and spiral/wire bound. The purpose of spiral binding the pictures is so that it can be used in a desktop calendar format.

Step 2 to Step 5 contribute to the transformation of the pictures through inputs and technical value adding. This transformation is illustrated using pictures in Table given below.

**Table 2: Transformation of the pictures across Step 2 to Step 5**

| <i>Steps &amp; Processes</i>  | <i>Picture</i>   |
|---|--|
| <p style="text-align: center;"><b>Step 2 –</b><br/><b>Item development:</b><br/><b>Initial Rough Sketch</b></p> |  |

|  |  |
|--|--|
| <p><i>Step 3-</i><br/><i>Post Modification:</i><br/><i>Initial Pencil Sketch</i></p>                       |  A pencil sketch of a student sitting at a desk, looking stressed. The student is holding a pencil to their forehead. There are two open books on the desk. One book has 'MATHS' and '350 x 19' written on it. The other book has '24th 18' written on it. There are some papers and a pen on the desk. A small spiral symbol is above the student's head. |
| <p><i>Step 3-</i><br/><i>Post Modification:</i><br/><i>Final Sketch Using Black Ink</i><br/><i>Ink</i></p> |  A black ink sketch of the same student and desk scene as in the first image. The lines are more defined and solid black.   |
| <p><i>Step 5 –</i><br/><i>Pre-Digitalization</i></p>   |  The same black ink sketch as in the second image, but now set against a solid purple background. The student's head is tilted slightly more to the right. A small number '37' is visible at the bottom center of the sketch.  |

|  |   |
|--|---|
| <p><b>Step 5 –<br/>Post Digitalization</b></p> |   |
| <p><b>Step 5-<br/>Post Formatting</b></p>      | <p>Have You experienced having difficulties in Studies?</p> <p>ನಿನ್ನೆ ಕಾಲದಲ್ಲಿ (ಓದುವುದು, ಬರೆಯುವುದು ಅಥವಾ ಮಾರಿತಿಗಳನ್ನು ಲೆಕ್ಕ ಮಾಡುವುದು) ತೊಂದರೆಯಾದ ಅನುಭವವಾಗಿದೆಯೇ?</p>  |

Post Formatting, the Pictorial Experiences Scale was ready for administration.

### Findings on the Pictorial Experiences Scale: Administration

The pictorial version was administered on 40 boys and girls, who had previously completed the modified 51 item, English and Kannada self-report version of 'My Experiences Scale'. The sample was recruited after a gap of 2 months. The age range of the sample was found to be between 12 to 16 years of age. Equal numbers of participants were taken from the age range.

**Table 3: Alternate Form Reliability of English & Kannada 'Pictorial Experiences Scale'**

|   | English     |        | Kannada     |        |
|---|-------------|--------|-------------|--------|
|   | Mean        | SD     | Mean        | SD     |
| 'My Experiences Scale' Self-report<br><b>Total Experiences Score</b>              | 50.45       | 18.306 | 65.20       | 17.298 |
| 'Pictorial Experiences Scale' Alternate<br>Form<br><b>Total Experiences Score</b> | 51.70       | 18.508 | 64.05       | 16.240 |
| <b>Paired 't' test Correlation</b>  | <b>0.99</b> |        | <b>0.98</b> |        |

The mean of total experiences scores on the self-report version and alternate form has a very small difference. The mean total experience score is slightly lesser in the self-report form for the English version. On the other hand, the mean total experience score is slightly lesser in the alternate form for the Kannada version. Paired 't' test correlation was done in order to establish Alternate Form Reliability and was found to be 0.99 (English version) and 0.98 (Kannada Version), indicating excellent reliability. This would mean that the alternate form efficiently measures the same construct.

The 'Pictorial Experiences Scale' was also administered on a fresh sample of 40 boys and girls in the younger age range (8 to 10 years of age). Items related to heterosexual attraction and changes due to puberty were not included for this group. Therefore, a total of 45 items were administered. Sample was chosen in a way that it has equal representation of age ranges and gender.

**Table 4: Scores of the participants (8-10years) on ‘Pictorial Experiences Scale’**

|                                   | <b>School 1</b> |           | <b>School 2</b> |           |
|-----------------------------------|-----------------|-----------|-----------------|-----------|
|                                   | <b>Mean</b>     | <b>SD</b> | <b>Mean</b>     | <b>SD</b> |
| <b>Total Experiences Score</b>    | 39.45           | 12.78     | 33.05           | 7.508     |
| <b>Positive Experiences Score</b> | 17.80           | 3.31      | 15.90           | 8.149     |
| <b>Negative Experiences Score</b> | 27.65           | 12.71     | 17.15           | 2.852     |

Possible range of the score on Pictorial Experiences Scale is 0-153. The mean scores on indicate that participants have lesser negative experiences especially when compared to the older groups.

Minor modifications with regard to background information, clothes of the characters in the illustrations were made in few of the pictures based on the feedback given by the 80 boys and girls who participated in the study. Following which the final version of the pictorial scale was digitalized and printed.

### **Discussion**

The present study aimed at developing a pictorial measure of the tool ‘My Experiences Scale’. It was decided to not have separate forms for boys and girls for two reasons. While most of the previously developed pictorial scales have separate versions for boys and girls. [7, 16] [17, 18]. Few others do not have separate forms based on gender. [12, 19]. Firstly, Pictorial Instrument for Children and Adolescents: PICA III R [12] a gender-neutral pictorial tool was used in previous researches in India with ease [13, 14]. Secondly, the process of illustration making is labour intensive and time-consuming. Therefore, gender-neutral pictures would save both time and resources.

Water cups with different levels of water were chosen for frequency response. The picture consists of 4 water cups with different levels of water. This would be indicative of the responses, never (no water in the cup), once (very little water in the cup), a few times (water

cup half full) and many times (water cup almost full). The participants provided positive feedback for the response set as well. Response sets in pictorial tools are very critical as it determines the credibility of the tool. An ideal response set would require being relatable as well as easily comprehensible. Various response sets in previous instruments to measure a frequency measure was reviewed. PICA III R [12] was a scale that uses a frequency measure with a man extended his hands, indicating an increased frequency response. Koala Fear Questionnaire [19] uses Koala bears depicting fear responses was yet another innovative response set. Various other options of fruits, grapes, coins etc. were considered for a frequency-based response set for the given measure. However, cups of water were finalised as it seemed the most apt and simple to relate to.

If two strictly parallel forms of a scale exist, then the correlation between them can be computed as long as the same people complete both parallel forms [20]. The ‘Pictorial Experiences Scale’ was considered as an alternate form of the scale. Table-3 highlights the alternate form reliability using the English and Kannada ‘Pictorial Experiences Scale’. The total experiences score of the two forms were found to have a correlation coefficient of 0.994 and 0.975 indicative of excellent alternate form reliability. Therefore, the ‘Pictorial Experiences Scale’ scores when compared to the ‘My Experiences Scale’ were found to be highly correlated in both versions – English and Kannada. This would mean that the alternate form efficiently measures the same construct of experience.

The PES was administered on younger children from 8 to 10 years who were the primary target audience for the scale. Their responses on the scale can be seen in Table 4. Their scores are much lower when compared to older participants, which explains their limited exposure to various experiences at the present moment. However, the feedback was overwhelmingly positive, especially by younger children. The scale captured their attention, they were engrossed in the process of assessment, and the use of pictures made assessment interactive

and joyous. Therefore, the PES could ease the process of interviewing younger children about emotional issues which have been considered challenging. It can also be used with children who find it difficult to articulate. When children or adolescents are overwhelmed due to stressful experiences and are unable to express themselves, PES can be useful in interviewing them.

### **Conclusions**

The present work is a pioneering research contributing to the niche category of pictorial self-report measure. Pictorial Experiences Scale at the moment can be considered to have successfully completed the pilot phase of developing a pictorial instrument in India. The scale will need to be administered on larger samples, following which norms and cut off scores need to be developed and then manualised. The scale has a lot of potential application in both clinical and research setting.

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### **References**

1. Greene S, Hogan D. *Researching Children's Experiences: Methods and Approaches*. (1st, 2nd reprint ed.) Sage Publications, 2005.
2. Bhattacharyya S, Hirisave U. A review of picture based psychological assessment in children and adolescent. *Indian J Mental Health*, 2016, 3 :17-29. Retrieved February 21, 2019.
3. Anastasi A, Urbina S. *Psychological Testing*. (7th ed.). New Jersey, USA: Prentice Hall, 1997.
4. Community–University Partnership for the study of Children, Youth, and Families. *Review of the Peabody Picture Vocabulary Test, Fourth Edition [PPVT -4]*. Edmonton, Alberta, Canada, 2011.

5. Kush JC. Review of the Peabody Picture Vocabulary Test, Fourth Edition. *Mental Measurements Yearbook* 2008, 18.
6. Dunn L. Pearson, 2007. Retrieved 21February,2016, from <http://www.pearsonclinical.com/language/products/100000501/peabody-picture-vocabulary-test-fourth-edition-ppvt-4.html>
7. Harter S, Pike R. The pictorial scale of perceived competence and social acceptance for young children. *Child Development*1984, 55:1969-82.
8. Verma SK. Index of cognitive development, 1993. In Channabasavanna SM, Varghese M, Chandra PS. Indicators of mental Health – A multi centre ICMR study: Report of the study and manual for family interventions by the health worker. New Delhi: ICMR, 1995.
9. Pareek U, Rosenzweig S. Manual of The Indian Adaptation of Rosenzweig Picture Frustration Study( Children's Form). New Delhi: Manasayan, 1959:1989.
10. Choudhary U. Indian Adaptation of TAT. New Delhi: Manasayan, 1960.
11. Choudhary U. Indian Adaptation of CAT. New Delhi: Manasayan, 1985.
12. Ernst M, Cookus BA, Moravec BC. Pictorial instrument for children and adolescents (PICA-III-R). *J Am Acad Child Adolesc Psychiatry* 2000, 39:94–99.
13. Selvi M. Effectiveness of CBT for children with anxiety in school setting, 2013. (Unpublished doctoral dissertation). NIMHANS, Bangalore, India.
14. Vishwanatha K. Efficacy of narrative approach for childhood problems, 2009. (Unpublished doctoral dissertation). NIMHANS, Bangalore, India.
15. Bhattacharyya S. Development of a scale to assess experiences in children and adolescents, 2016. (Unpublished doctoral dissertation). NIMHANS, Bangalore, India.
16. Richters JE, Martinez P. Things I Have Seen and Heard: A Structured Interview for Assessing Young Children’s Violence Exposure. Rockville MD, National Institute of Mental Health, 1992.
17. Valla JP, Bergeron L, Smolla N. The Dominic-R: A pictorial interview for 6- to 11-year-old children. *J Am Acad Child Adolesc Psychiatry* 2000, 39:85–93.
18. Dubi K, Schneider S. The Picture Anxiety Test [PAT]: A new pictorial assessment of anxiety symptoms in young children. *J Anxiety Dis* 2009, 23:1148 - 1157.
19. Muris P, Meesters C, Mayer B, Bogie N, Luijten M, Geebelen E, et al. The Koala Fear Questionnaire: A standardized self-report scale for assessing fears and fearfulness in pre-school and primary school children. *Behav Res Therapy* 2003, 41:597–617.

20. DeVellis RF. Scale development: Theory and applications (Vol. 26) 2012. Sage publications.

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Snigdhasree Bhattacharyya, Clinical Psychologist, Uma Hirisave, Professor, Department of Clinical Psychology; N. Janardhana, Additional Professor, Department of Psychiatric Social Work; K. S. Meena, Associate Professor, Sripathacharya, Senior Artist, Rajeev. V, Senior Artist, Mental Health Education Department, NIMHANS.