

Translation and Validation of Hindi Version of Adolescent Peer Relation Instrument for Bullying Victimization

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ABSTRACT

Objectives: To translate and validate Hindi version of Adolescent Peer Relation Instrument (APRI) and to evaluate burden of bullying victimization among school-going adolescents.

Methods: A school-based cross-sectional study was performed from July 2021 to June 2022 on 9th-12th class students. Adolescent peer relation instrument was used to evaluate bullying victimization. Reliability and validity of tool, prevalence and strength of association was analyzed by appropriate statistical methods.

Results: Bullying and victimization were present in 70.8% and 62.9% adolescents, respectively. Total bullying was significantly less in students <16 years of age (OR 0.995, 95% CI 0.483, 2.049) and those with less than three friends (OR 0.816, 95% CI 0.482, 1.383). Total bullying and total victimization was significantly more in boys (OR 1.993, 95% CI 1.281, 3.099 for bullying and OR 1.584, 95% CI 1.047, 2.397 for victimization). Cronbach's alpha for bullying and victimization was 0.89 and 0.897, respectively. Convergent validity between items of different subscales of bullying and victimization was observed (r value > 0.7) except for social bullying and social victimization. There was weak correlation between subscales of bullying and victimization suggestive of discriminant validity (r value < 0.4).

Conclusion: The Hindi version of APRI has a good reliability and construct validity. About three-fourths and two-thirds of adolescents were involved in bullying and victimization, respectively, with a few identified risk factors. Special counselling sessions at schools must be implemented for children involved in bullying.

Keywords: Accuracy, Adolescents, Adolescent Peer Relation Instrument, APRI, Bullying, Victim

Published online: March 27, 2024; PII: S097475591600623

INTRODUCTION

Bullying victimization among adolescents is a worldwide public health problem associated with mental health issues [1,2]. Bullying is a type of interpersonal aggression with intentional and repetitive actions that lead to a power disparity between two persons or groups [3-5]. Conventional bullying involves physical aggression (shoving, punching), verbal abuse (insults, taunting), spreading rumors, deliberately excluding someone from a group, and making offensive gestures. Cyberbullying is a recently recognized significant public health concern [6,7]. The

students who act as a bully are prone to be victimized later, and victims are prone to become bully later [8].

The pooled prevalence of bullying victimization on at least one day among adolescents aged 12-17 years varied from 8.4% in Europe to 43.5% in the African region [9]. The prevalence of bullying was reported to be higher in boys than girls [10,11]. The other factors that increased the likelihood of bullying included, physical appearance, personality characteristics, behavioral issues, relationship problems, and online environment [11,12]. Bullying victimization negatively affected academic achievements [13].

The adolescent peer relation instrument (APRI) is a behavioral measure of bullying designed for secondary school adolescents. APRI has been used in a few studies earlier [14,15], but has not been translated and validated in Hindi language. This study aimed to translate and validate the Hindi version of APRI in Indian school-going

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Received: Sep 26, 2023; Initial review: Oct 01, 2023;
Accepted: Mar 16, 2024.

adolescents. The second objective was to estimate the burden of bullying victimization and assess its risk factors.

METHODS

A school-based cross-sectional study was carried out in an urban area of Rohtak, India from July 2021 to June 2022. The study was undertaken in both private and government schools involving the students of selected secondary and senior secondary schools of 9th, 10th, 11th, and 12th class after institutional ethics committee approval. Students were included after written informed consent and assent and if they were present on the day of investigators' visit to school. The students with persistent systemic illness, developmental disabilities, mental disorders, attention deficit hyperactivity disorder, specific learning disabilities, neurological issues, and compromised sensory abilities were omitted from the study. As per an earlier study [16], the prevalence of bullying was 49%. The calculated sample size was 384 at a confidence level of 95% and an absolute error of 5%.

APRI was used to assess the frequency of verbal, physical, and social bullying as both the perpetrator and victim after permission from the APRI tool developer [17]. It is a self-administered measure with 36 items and six subscales comprising six items each. The scale assesses data from the preceding year to generate responses. The scale has strong internal consistency with Cronbach's alpha (α) range from 0.81 to 0.90 for six scales of bullying victimization [9], α value 0.93 for total bully score and 0.95 for total victim score [8,17,18]. A six-point Likert scale was used to generate subdomain scores, namely, 1 for never to 6 for every day. Children who scored under 36 (or 18 on each scale) were regarded as those who had never bullied others or had never been bullied by others during the past year.

For the purpose of better comprehension of APRI by the students, the Hindi translated version was linguistically validated in Hindi language. The Hindi translation process involved forward translation of the original APRI into Hindi by two native speakers who were also fluent in English. A third independent translator compared and merged the two forward translations into a single forward translation (Hindi version), that was reviewed by two investigators to observed that the theme of bullying victimization was understood. The common repetitive words were removed for simplification. The back translation of the reconciled Hindi version to English version was done by a professional translator (English teacher at university with PhD. A few modifications were made in the reconciled version by the investigators for the terms which were colloquial rather than conceptual. The

translated version was pretested in 10 adolescents who were excluded from the study [Supplement 1]. A few Hindi words which were difficult to understand by the students were substituted with the respective synonyms. It was proof-read by a Hindi language scholar to consider final acceptance.

Two private and two government secondary schools were randomly selected by lottery method out of a total of 68 private secondary schools and 21 government secondary schools in Rohtak from the list obtained from the District Education Officer, Rohtak. The investigator visited the selected school and shared an informed consent form that was sent to the parents seeking consents for their child's involvement in the study before the day of data collection. The parents who gave their consent were included in the study. On the day of data collection, the class wise list of students was prepared. With the target of obtaining 30 samples from each class at each school, the extra students were excluded by lottery method if the number of participants exceeded the cut off. This cut-off was decided to make the selection process inclusive. The strength of students in a class was less in government than in public school. The selected students from different classes were assembled in separate classrooms. Four investigators with their team of interns recorded the responses in the Google form with pre-tested, semi-structured questionnaire. The mobile phone of teachers and investigators were used to fill the Google form in three rounds of data collection per class. After completing the data collection, the status report was shared with the principals of the schools and the District Education Officer.

Statistical analysis: Statistical analysis was done using IBM SPSS (Statistics version 26) software. Quantitative descriptive analysis was performed using univariate statistics, in percentages. For comparison of quantitative variables, *t*-test was used at 5% level of significance with $P < 0.05$. The outcome variables were grouped and binary logistic regression was conducted for variables with $P < 0.25$ to measure the strength of the association (odds ratio). Scree plot was drawn to visualize the factor extracted in the construct. To test the reliability, Cronbach's alpha (α) coefficient was used to assess the internal consistency of the questionnaire, and a value equal to or greater than 0.70 was considered satisfactory [19]. To test construct validity, Pearson product-moment statistic (Pearson's correlation coefficient = r) and factor analysis were used. Convergent validity was established when r value was more than 0.70 [20], and the average variance extracted (AVE) that implies the average variance of variables explained by a construct, was greater than or equal to 0.5 [19].

RESULTS

The mean (SD) age of study participants ($n = 391$) was 15.36 (1.3) years. The majority ($n = 222$) (56.8%) were boys and from private schools was ($n = 227$) (56.8%). As per the grade-wise distribution, 111 (28.4%) students belonged to ninth grade, 88 (22.5%) to the tenth, 87 (22.3%) to the eleventh, and 105 (26.9%) to the twelfth grade. A total of 228 (58.3%) were from the general caste. The mean APRI scores are shown in **Table I**.

The scale had an acceptable level of internal consistency for total bullying total victimization and for the subscales except for social bullying. The correlation (r) between total bullying and total victimization was 0.355 ($P < 0.001$). The correlation between the subscales of bullying and victimization (r value between 0.154 to 0.367) was suggestive of discriminate validity among respective subscales.

After testing all the assumptions of factor analysis, two factors were extracted as visualized by scree plot. Subscales of perpetrators (social, verbal and physical) showed high positive loading on first component but low loadings on second component. Subscales of victims (social, verbal and physical) showed high positive loading on second component but low loadings on first component (**Web Fig. 1**). The average loading of social, verbal, and physical was 0.87 for perpetrators and 0.86 for victims suggesting convergent validity for subscales of perpetrators and of victims.

Table II depicts the comparison of APRI scores with respect to gender, type of school, age of students, class, academic performance and number of friends. **Table III** depicts the strength of association of bullying and victimization with independent variables whose P value was < 0.25 . The odds ratio was significantly higher in boys.

Table I Prevalence of Bullying and Victimization as per Adolescent Peer Relation Instrument ($n = 391$)

Scale	n (%)	Score Mean (SD)	Cronbach's Alpha
Bullying total	277 (70.8)	23.29 (8.28)	0.890
Verbal bullying	251 (64.2)	8.65 (3.89)	0.779
Social bullying	144 (36.8)	6.99 (2.18)	0.642
Physical bullying	194 (49.6)	7.65 (3.2)	0.807
Victimization total	246 (62.9)	22.96 (8.02)	0.897
Verbal victimization	198 (50.6)	8.31 (4.0)	0.827
Social victimization	166 (42.5)	7.33 (2.51)	0.726
Physical victimization	153 (39.1)	7.32 (2.6)	0.787

DISCUSSION

The present study reported bullying and victimization in a majority of school going adolescents. The reliability and validity of APRI Hindi version was found to be good as per internal consistency and construct validity.

The APRI is a well-known instrument to measure bullying victimization in school-going adolescents and has been translated into other languages from the original English version [15]. The internal consistency for most subscales of bullying and victimization, except for social bullying. According to the psychometric theory given by Nunnally and Bernstein, the internal consistency of any construct is satisfactory if Cronbach's alpha coefficient value is equal to or greater than 0.70 [21]. The reliability of the Urdu version of APRI [15], was similar to the Hindi version used in the present study, with Cronbach's alpha value of 0.87 for bullying and 0.90 for victimization. The internal consistency for different subscales of APRI was lower to the findings for the subscales of APRI (English version) [9] that were 0.89 for bully-verbal, 0.82 for bully-social, 0.85 for bully-physical, 0.92 for target-verbal, 0.87 for target-social and 0.88 for target-physical probably, because of a different language.

The present study showed convergent validity ($r > 0.5$) between the subscales of bullying and subscales of victimization and a weak positive correlation between bullying and victimization. This finding was concordant with the findings of APRI developers [13,18], where a positive correlation was found between all the subscales of constructs of this instrument. This depicts that the adolescents who bully others are likely to be victims in the future and vice versa as has also been reported earlier [15]. The present study revealed two factors (components) on factor analysis, with high positive loading of physical, verbal, and social perpetrators on the first factor and high positive loading of social, verbal, and physical victims on the second factor. The average loading of perpetrators and victims was > 0.7 suggesting convergent validity for subscales of perpetrators and convergent validity for subscales of victims. The findings of construct validity by Parada et al [9], on the 6-factor structure of the APRI depicted a strong first-order and acceptable second-order two-factor form (Bullying, Target).

Bullying victimization was present in the majority of adolescents, with significantly more verbal, physical, and social bullying victimization among boys than girls in this study. The verbal, social, total victimization and all types of bullying was more among students studying in senior secondary classes. An earlier study from Bengaluru, India, revealed that almost 97% of adolescents, had bullied others or had been victimized. Verbal bullying and verbal

Table II Comparison of Adolescent Peer Relation Instrument Scores as per Socio-Demographic Variables

	N	Social victim (n = 166)	Physical victim (n = 153)	Verbal victim (n = 198)	Total victims (n = 246)	Social bully (n = 144)	Physical bully (n = 194)	Verbal bully (n = 251)	Total bully (n = 277)
<i>Gender</i>									
Boys ^a	222	7.45 (2.76)	7.85 (2.94) ^a	9.05 (4.60) ^a	24.35 (9.03) ^a	7.23 (2.36) ^a	8.30 (3.89) ^a	9.41 (4.54) ^a	24.94 (9.67)
Girls	169	7.18 (2.12)	6.62 (1.84)	7.35 (2.77)	21.14 (6.02)	6.67 (1.89)	6.79 (1.61)	7.66 (2.51)	21.12 (5.25)
<i>Type of school</i>									
Private	227	7.35 (2.39)	7.26 (2.27)	8.50 (3.99)	23.11 (7.5)	6.97 (2.15)	7.63 (2.88)	8.92 (4.13)	23.5 (8.08)
Government	164	7.30 (2.67)	7.40 (2.99)	8.05 (4.02)	22.75 (8.71)	7.01 (2.24)	7.68 (3.61)	8.29 (3.51)	22.98 (8.55)
<i>Age</i>									
< 16 y	217	7.29 (2.52)	7.37 (2.7)	8.24 (4.14)	22.91 (8.23)	6.82 (1.93)	7.31 (2.62) ^a	8.27 (3.64) ^a	22.4 (7.34) ^a
≥ 16 y	174	7.39 (2.51)	7.25 (2.48)	8.40 (3.84)	23.03 (7.78)	7.20 (2.46)	8.07 (3.77)	9.13 (4.15)	24.4 (9.22)
<i>Class</i>									
Secondary schooling ^a	199	7.07 (2.25) ^a	7.18 (2.31)	8.08 (4.05)	22.32 (7.51)	6.74 (1.89) ^a	7.14 (2.35) ^a	8.08 (3.18) ^a	21.95 (6.55)
Senior secondary schooling	192	7.61 (2.73)	7.46 (2.87)	8.56 (3.95)	23.63 (8.5)	7.24 (2.44)	8.18 (3.83)	9.26 (4.45)	24.68 (9.58)
<i>Academic performance</i>									
< 70%	117	7.26 (2.93)	6.86 (1.82) ^a	7.99 (3.87)	22.12 (7.86)	6.76 (1.32)	7.30 (2.23)	8.51 (3.24)	22.57 (5.83)
≥ 70%	274	7.36 (2.31)	7.51 (2.85)	8.45 (4.07)	23.32 (8.08)	7.08 (2.46)	7.80 (3.53)	8.72 (4.15)	23.59 (9.12)
<i>Number of friends</i>									
Less than three	86	7.56 (2.94)	7.26 (2.35)	8.15 (3.94)	22.97 (8.24)	6.80 (2.34)	7.15 (2.28) ^a	8.13 (3.78)	22.08 (7.62)
Three or more	305	7.27 (2.37)	7.33 (2.67)	8.36 (4.03)	22.96 (7.97)	7.04 (2.14)	7.79 (3.40)	8.80 (3.92)	23.63 (8.43)

Data expressed as Mean (SD); ^aP value < 0.05 for comparison between two groups as per socio-demographic factor

WHAT THIS STUDY ADDS?

- Adolescent Peer Relation Instrument showed good validity in Hindi language for assessment of bullying and victimization.

Table III Association of Bullying and Victimization with Socio-Demographic Risk Factors

Risk factor	Total victimization (n=246)		Total bullying (n=277)	
	OR (95% CI)	P value	OR (95% CI)	P value
Boys	1.584 (1.047, 2.397)	0.029	1.993 (1.281, 3.099)	0.002
Private school	1.324 (0.864, 2.030)	0.198	1.302 (0.826, 2.051)	0.256
Age<16y	1.535 (0.782, 3.011)	0.213	0.995 (0.483, 2.049)	0.989
Secondary schooling	0.801 (0.529, 1.212)	0.293	0.787 (0.505, 1.226)	0.290
Academic performance <70%	0.843 (0.532, 1.334)	0.466	1.137 (0.691, 1.872)	0.49
Less than 3 friends	1.326 (0.785, 2.240)	0.292	0.816 (0.482, 1.383)	0.613

victimization was the most common form, with higher risk in boys [14]. The pooled prevalence of bullying victimization on one or more days in the past 30 days was reported as 30.5%. Bullying prevalence was highest in the Eastern Mediterranean Region (45.1%) and African region (43.5%) and lowest in Europe (8.4%). Male gender and younger age were identified as risk factors for bullying victimization [8]. The bullying prevalence across 40 countries varied from 8.6 % to 45.2 % among boys and from 4.8 % to 35.8 % among girls. European countries had a lower prevalence than Baltic countries. The rates of victimization decreased as age increased [10]. Studies from other parts of the world have also reported a high proportion of students who were bullied or were preparators [22-24]. The frequency of males being victims and bullying others was more in boys than girls and the most common type of bullying was physical [23]. A US based survey reported high prevalence of bullying or victimization being apparent physically (20.8%), verbally (53.6%), socially (51.4%), or electronically (13.6%) [25]. Boys were more involved in physical or verbal bullying, while girls were more involved in relational bullying [25]. These differences in prevalence may arise from differences in the tools used to assess bullying, geographical differences, behavioral differences across the countries, and variations in school policies across the globe.

In the present study, physical and total victimization, social, physical and total bullying were significantly more in those who attained $\geq 70\%$ marks. In contrast, an earlier study from Gujarat depicted that bullying and victimization were more among students with poor academic performance [16]. The present study also showed that physical and verbal bullying were significantly more in

students who had less than three friends. This finding was concordant to the findings of another study where bullying was more in students with more friends but victimization was commoner in students with fewer friends [16]. A meta-analysis depicted a significant weak negative correlation between peer abuse and academic performance [12]. The other risk factors of bullying or victimization like nutrition status, self-image, self-esteem, mental status, behaviour and personality trait of students was not studied.

We conclude that the Hindi version of APRI had a good reliability and high accuracy. Anti-bullying policies at school must be implemented with suitable rectification measures for these groups of children at school. The school authorities should be sensitive to bullying among students, and the school administration should support the victims through a grievance redressal system so that timely identification and rectification measures can be taken. The students involved in these activities or affected should be supported by special counselling sessions and parental guidance.

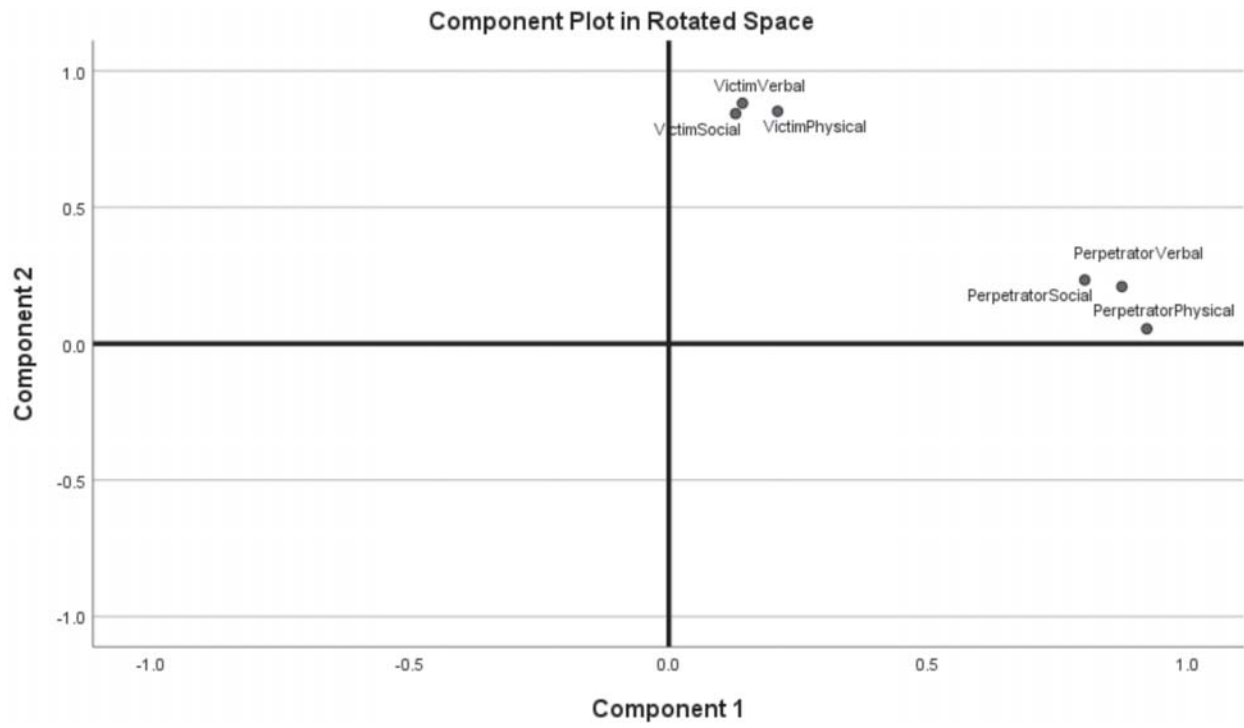
Ethics Clearance: Biomedical Research Ethics Committee of Pt BD Sharma Post Graduate Institute of Medical Sciences, Rohtak (No. BREC/20/182) dated Sept 09, 2020.

Contributors: PC, AKM, RBJ, SS, NS, SSB: Conceptualized and designed the study; PC, RG, AKM: Data collection; PC, NS, SSB: Statistical analysis; PC, AKM, NS: Data collection, Drafted the initial manuscript; SS, RBJ, PC, AKM: Critical appraisal of manuscript for important intellectual content, manuscript revision. All authors approved the final manuscript as submitted and agreed to be accountable for all aspects of the work.

Funding: None. *Competing interest:* None stated.

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Web Fig. 1 Component plot in rotated space to show two factors loading with convergent and discriminant validity for bullying and victimization