



Beliefs Supporting Violence, Attitudes and Aggressive Behavior Among School Adolescents in Rural Delhi

Tanu Anand¹ · Jugal Kishore² · Shekhar Grover³ · Swati Bhawe⁴ · Sangeeta Yadav⁵

Received: 10 November 2017 / Accepted: 28 July 2018 / Published online: 4 August 2018
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Abstract

Violence and aggression amongst adolescents is increasing across the globe. However, the research on adolescent violence in India is limited. The present study was undertaken to study aggressive beliefs, attitudes, behavior rural schools in north district of Delhi. It was a cross-sectional study conducted among adolescents studying in grade VIII–X in three rural schools in Delhi, selected by non-probability sampling. The data was collected using a questionnaire adapted from CDC Compendium of tools measuring aggression. Out of the total 270 adolescents, there were 119 boys (44.1%) and 151 (55.9%) girls. The mean score of beliefs, attitude aggressive behaviour for private co-ed school was highest while all girls' school had lowest ($p < 0.001$). Being male ($p < 0.001$), studying in private co-ed school ($p < 0.001$) and having attitude towards violence ($p = 0.02$) contributed significantly to total aggression score. The study highlighted that type of school, gender and attitudes influence adolescents' behavior towards aggression.

Keywords Aggression · School · Gender · Violence

Introduction

Violence and aggressive behavior amongst adolescents is a cause of growing concern in most of the contemporary societies. Every day worldwide, an estimated 227 children and adolescents (age 0–19 years) die as a result of interpersonal violence, and for each death many more are hospitalized with injuries (WHO 2009). The World Health Organization (WHO) has listed interpersonal violence as the fifth leading cause of death amongst adolescents in 2012 (WHO 2016). Evidently, violence and aggressive behavior is contributing to mortality and morbidity among adolescents and hence,

now being recognized as a public health problem particularly among them.

Adolescence is a time of heightened violence. Some children exhibit problem behavior in early childhood that gradually escalates to more severe forms of aggression as they enter adolescence, and typically continues into adulthood (WHO 2002). It has been hypothesized that many beliefs seem to play a role in preparedness to aggress (Anderson and Heusmann 2003). In a study by Huesmann and Guerra among urban students in 1997, it was demonstrated that normative beliefs about aggression and violence get established in middle-elementary grades for most of the children (Huesmann and Guerra 1997). Archer and Haigh (1997) have also predicted a link between belief about aggression and level of aggression (Archer and Haigh 1997). On the other hand, attitude to violence correlate with both mild and serious forms of aggression among adolescents and youth (Huesmann and Guerra 1997). Positive attitudes towards violence in general prepare certain individuals for aggression. Modern theories of aggression define beliefs, attitudes and behavioural tendencies as personological factors that along with situational factors converge to result in aggressive behavior (Archer and Haigh 1997).

Theoretical framework of violence and aggression: Human aggression has been defined as any behavior directed

✉ Tanu Anand
drtanu.anand@gmail.com

¹ Department of Community Medicine, North DMC Medical College, Hindu Rao Hospital, New Delhi 110007, India

² Department of Community Medicine, Vardhaman Mahavir Medical College, New Delhi, India

³ National Institute of Cancer Prevention & Research, Noida, India

⁴ AACCI, Mumbai, India

⁵ Department of Paediatrics, Maulana Azad Medical College, New Delhi 110002, India

towards another individual that is caused with proximate (immediate) intent to cause harm (Allen and Anderson 2015). Most social psychologists consider violence to be subset of aggression and define it as ‘the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation.’ Thus, both aggressive and violent behaviors are best conceptualized as being on continuum of severity with minor acts of aggression being at the low side of spectrum and violence at the high end of spectrum (Allen and Anderson 2015).

The basic heuristic model describes the neurobiological and social, individual, economic and environmental influences on violence. It is hypothesized that genetic, social and other factors and their interaction contribute to changes in neurobiological structure and function, which in turn influence a developmental cascade of behaviours that can eventually lead to violence (Loeber and Pardini 2008).

Thus, it is evident that children form their mental frameworks and patterns in their early formative years. Further, socio-culture factors also play an important role in shaping individual behavior, including the use of violence (WHO 2009) and global evidence states gender wise differences in forms of aggressive behavior among adolescents and youth (Finigan-Carr et al. 2015). However, research on adolescent violence is limited in India particularly in rural settings (Mahajan et al. 2011; Kumar et al. 2016). Rural settings represent vulnerability amongst adolescents owing to various environmental factors (Sunitha and Gururaj 2014). Hence, it becomes pertinent to explore this aspect of adolescent behavior in such settings. With this background, this paper attempts to study empirically the various patterns of aggressive beliefs, attitudes and behavior that emerge in different types of schools in rural areas in Delhi and to analyze the association of aggressive behavior with some socio-demographic variables like age, gender and type of school.

Materials and Methods

Study Settings and Participants

It was a school based cross-sectional study conducted amongst adolescents in rural part of Delhi, the capital state of India. Delhi is divided into 11 districts as South, South-east, South-west, North, North-east, North-west, Central, New Delhi, East, West, and Shahdara. In Delhi, there are about 5043 schools (2666 govt. and 2377 private schools) (Chapter-6. Education 2010).

The present study was undertaken among secondary school students in North district of Delhi. The study was

conducted in 3 schools—all girls’ government school, private and government co-educational school. The reason behind choosing these specific schools was to study whether type of school influences the aggressive behavior amongst adolescents or not. All students studying in grades 8–10 constituted the study population. While there were 500 students studying from nursery to grade 10 in private school, both government schools had nearly 800 students studying in them. The medium of instruction in private school was English and that in government schools was Hindi. This group of adolescents was chosen as evidence reveals that violence begins to rise in mid-adolescence and peaks in late adolescence (Loeber and Pardini 2008). Hence, it would be worthwhile to study the patterns emerging during the early part of the curve of violence and identify the factors that influence aggressive behavior during this phase.

Sample Size and Sampling

Based on the prevalence of 69% violence ever experienced by school adolescents in a previous study (Mahajan et al. 2011) and taking absolute error of 10% with 95% confidence interval, minimum sample size was calculated to be 180. However, all the eligible students who were present on the day of survey were taken from the respective schools as sample. Non-probability sampling was used. However, all the eligible students (adolescents studying in grades 8–10, present on the day of survey and consenting to participate were considered eligible) were taken from the respective schools as sample. While there were 81 students in all girls’ government school who were eligible out of total 99 (response rate: 81.8%), 98 students in co-educational government school out of total of 105 were eligible (response rate: 93.3%). There were 91 eligible students out of total of 102 from private school (response rate: 89.2%). Overall a sample of 270 was taken with response rate of 88.2%. No student refused to participate. The reason for students who were not included in the sample was that they were absent on the day of data collection.

Study Tool

A validated self reported, pre-tested questionnaire containing a scale to assess aggression (11 items), beliefs supporting aggression (6 items) and attitude towards violence (6 items) was used for data collection. This questionnaire is based on CDC (Centers for Disease Control and Prevention) Compendium of tools measuring aggression (CDC 2005). Internal consistency of 11 item scale to assess aggression is 0.88–0.90 (developed by Orpinas and Frankowski 2001; target groups: students in grades 3–8; validity studies done by Orpinas et al. 2003); 6 items scale on beliefs supporting aggression is 0.66 (developed by Bandura 1973; target

groups: African-American males aged 12–16; validity studies done by Parke and Slaby 1983; Slaby and Guerra 1988) and 6 items scale to assess attitude towards violence is 0.67 (developed by Houston Community Demonstration Project 1983; target groups: middle school students grades 6–8). While the 6-item scale assessing beliefs supporting aggression refer to perception of an adolescent regarding how acceptable it is to behave aggressively under varying conditions of provocation and when no conditions are specified, the scale on attitude towards violence represents attitudes in relation to fighting.

Scoring system (CDC 2005): The 11 item scale measuring anger and aggression was assessed using point scoring system with minimum value 0 and maximum value 66 as described in the manual. The shorter 6-item tool for assessment of beliefs supporting aggression was scored with point values such as ‘4’ for ‘strongly agree’, ‘3’ for ‘agree’, ‘2’ for disagree and ‘1’ for strongly disagree. Point values are summed for each respondent. The intended range of score ranged from 4 to 24, with higher scores indicating more beliefs that support aggressive behavior. The tool for assessing the attitude towards violence consisted of 6 items which were scored with point values ‘5’ for ‘strongly agree’, ‘4’ for ‘agree’, ‘3’ for ‘neither’, ‘2’ for disagree and ‘1’ for strongly disagree. The item 2 and 5 are reverse scored. A total score of 30 is possible by summing across all items. Higher scores indicate a positive attitude toward violent strategies and limited use of nonviolent strategies.

The scale was translated into Hindi by bi-lingual expert and then back translated to English by another expert to ensure that translation was appropriate. The scale was reviewed by panel of experts consisting of a psychiatrist, clinical psychologist, pediatrician and public health specialist. It was then pretested on 10 adolescents from a similar setting, after which it was applied in study settings.

Study Methodology

Permission was obtained from the school authorities before beginning the study. The school authorities and study participants were explained the purpose of the study and assured privacy and confidentiality of the information provided by them. The study was approved by Institutional Ethics Committee (IEC). Informed consent from the parents of all the students was taken while assent was also obtained from children aged 12–14 years. The questionnaires were filled by the students under the supervision of the research team in their classroom.

Statistical Analysis

Data were entered into excel sheet and analyzed by SPSS version 18 software. Descriptive statistics including mean

and standard deviation for quantitative data and proportions for qualitative variables were used to characterize the study population. For quantitative data, the difference between the means of 2 groups was compared using the *t* test (for normal distribution) or Mann Whitney test (non-normal distribution). Pearson correlation coefficients were calculated for independent factors with total aggression score. Multiple linear regression analysis was done to assess the contribution of various factors in total aggression score of the children. All significance tests were 2-tailed and statistical significance was defined as a value of $p < 0.05$.

Results

Socio-demographic Profile of School Adolescents

Out of the total of 270 adolescents who participated in the study, there were 119 boys (44.1%) and 151 (55.9%) girls. The mean age of the study group was 13.99 ± 1.44 years [12–15 years = 229 (84.8%); 16–18 years = 41 (15.2%)]. School wise distribution of adolescents was: All Girls’ Government School-81 (30%); Government co-education School-98 (36.3%); and Private co-education School-91 (33.7%). A large proportion of school adolescents were studying in 8th grade (46.3%) while 28.1% ($n = 76$) and 25.6% ($n = 69$) were in 9th and 10th grade respectively.

Beliefs Supporting Aggression

Nearly one-third students (31.7%) of government co-ed school expressed their agreement to the belief that ‘it makes them feel big and tough to push someone around’ while majority of girls in all girls’ school disagreed with the same. Significant statistical difference was seen with respect to beliefs such as ‘if you back down from a fight, everyone will think you are a coward’, ‘it is OK to hit someone when angry...’, ‘A guy who doesn’t fight back when other kids push him around will lose respect amongst the schools’ and ‘to show your love to your girl friend, one needs to indulge in fights’, among the girls’ and co-ed schools ($p < 0.01$). The mean score for private co-ed school was highest amongst the three schools while all girls’ school had lowest (Table 1).

Attitude Towards Violence

Nearly half the adolescents (49%) from government co-ed school and 40.7% adolescents from private school agreed with the statement that ‘If I walk away from a fight, I’d be a coward’. The difference between the co-ed schools and only girls’ school was statistically significant with respect to other statements measuring attitude towards violence ($p < 0.01$) with mean score of private school being the highest while

Table 1 Beliefs supporting aggression among adolescents of three schools

Beliefs	All girls' school N=81	Private co-ed school N=91	Govt. co-ed school N=98	p value
It makes you feel big and tough when you push someone around				0.68
Strongly agree	0 (0)	13 (14.3)	5 (5.2)	
Agree	21 (25.9)	12 (13.2)	26 (26.5)	
Disagree	50 (61.7)	35 (38.5)	41 (41.8)	
Strongly disagree	10 (12.3)	31 (34.0)	26 (26.5)	
If you back down from a fight, everyone will think you are a coward				<0.001*
Strongly agree	2 (2.5)	17 (18.7)	17 (17.4)	
Agree	27 (33.3)	31 (34.0)	46 (46.9)	
Disagree	44 (54.3)	33 (36.3)	23 (23.5)	
Strongly disagree	8 (9.9)	10 (11.0)	12 (12.2)	
Sometimes you have only two choices-getting punched or punch the other kid first				0.080
Strongly agree	1 (1.2)	16 (17.5)	15 (15.3)	
Agree	27 (33.3)	30 (33.0)	32 (32.7)	
Disagree	48 (59.3)	24 (26.4)	34 (34.7)	
Strongly disagree	5 (6.2)	21 (23.1)	17 (17.3)	
It's OK to hit someone if you just go crazy with anger				<0.001*
Strongly agree	0 (0)	12 (13.2)	4 (4.1)	
Agree	4 (4.9)	22 (24.1)	13 (13.3)	
Disagree	60 (74.1)	33 (36.3)	56 (57.1)	
Strongly disagree	17 (21.0)	24 (26.4)	25 (25.5)	
A guy who doesn't fight back when other kids push him around will lose respect				0.002*
Strongly agree	4 (4.9)	17 (18.7)	11 (11.2)	
Agree	22 (27.2)	36 (39.6)	38 (38.8)	
Disagree	47 (58.0)	24 (26.4)	34 (34.7)	
Strongly disagree	8 (9.9)	14 (15.4)	15 (15.3)	
A guy shows he really loves his girl friend if he gets in fights with other guys about her				<0.001*
Strongly agree	3 (3.7)	34 (37.4)	6 (6.2)	
Agree	11 (13.6)	29 (31.9)	32 (32.6)	
Disagree	57 (70.4)	16 (17.6)	40 (40.8)	
Strongly disagree	10 (12.3)	12 (13.1)	20 (20.4)	
Total mean score of beliefs supporting aggression	12.91 ± 2.09	14.92 ± 3.19	13.92 ± 2.89	<0.001*

P values for each belief is calculated between schools vs (agree + strongly agree) and (disagree + strongly disagree)

**P* value < 0.05

only girls' school having the lowest amongst three schools ($p < 0.001$) (Table 2).

Aggression Amongst School Adolescent

Assessment of aggressive behavior and anger amongst the school adolescents showed that while no student reported to be involved in verbal violence (like teasing, encouraging students to fight, threatening to hurt or calling other students bad names) in all girls' school for more than 3 times in last week, large proportion of students from private co-ed school indulged in such activities ($p < 0.01$). Similarly,

higher proportion of students from co-ed schools reported to be angry ($p < 0.01$) and indulged into fight due to anger ($p = 0.06$) for more than 3 times in last week as compared to all girls' school adolescents. No significant difference was seen in between the schools with respect to physical violence. However, both private and govt. co-ed school adolescents reported more physical violence for more than 3 times in last week in the form of pushing (Private school = 6.6%; Govt. co-ed school = 3.1%), slapping and kicking (Private school = 8.8%; Govt. co-ed school = 9.2%) as compared to only girls' school (pushing = 0% and slapping and kicking = 1.2%). The mean score of private co-ed school was

Table 2 Attitude towards violence among adolescents of three schools

Attitude	All girls' school N=81	Private co-ed school N=91	Govt. co-ed school N=98	p value
If I walk away from a fight, I'd be a coward				<0.001*
Strongly agree	1 (1.2)	19 (20.9)	13 (13.3)	
Agree	18 (22.2)	18 (19.8)	35 (35.7)	
Neither	5 (6.2)	25 (27.5)	17 (17.3)	
Disagree	52 (64.2)	24 (26.4)	29 (29.6)	
Strongly disagree	5 (6.2)	5 (5.4)	4 (4.1)	
I don't need to fight because there other ways to deal with being mad				0.25
Strongly agree	2 (2.5)	1 (1.1)	3 (3.1)	
Agree	8 (9.9)	4 (4.4)	9 (9.2)	
Neither	1 (1.2)	11 (12.1)	12 (12.2)	
Disagree	57 (70.4)	40 (43.9)	54 (55.1)	
Strongly disagree	13 (16.0)	35 (38.5)	20 (20.4)	
It's OK to hit someone who hits you first				<0.001*
Strongly agree	3 (3.7)	18 (19.7)	9 (9.2)	
Agree	15 (18.5)	35 (38.5)	33 (33.7)	
Neither	0 (0)	11 (12.1)	10 (10.2)	
Disagree	59 (72.8)	13 (14.3)	37 (37.7)	
Strongly disagree	4 (4.9)	14 (15.4)	9 (9.2)	
If a kid teases me, I usually cannot get him/her to stop unless I hit him/her				<0.001*
Strongly agree	3 (3.7)	20 (21.9)	14 (14.3)	
Agree	16 (19.7)	33 (36.3)	29 (29.6)	
Neither	4 (4.9)	13 (14.3)	10 (10.2)	
Disagree	47 (51.6)	18 (19.8)	33 (33.7)	
Strongly disagree	11 (13.6)	7 (7.7)	12 (12.2)	
If I really want to, I can usually talk someone out of trying to fight with me				0.60
Strongly agree	5 (6.2)	3 (3.2)	1 (1.0)	
Agree	8 (9.9)	9 (9.9)	9 (9.2)	
Neither	1 (1.2)	5 (5.5)	7 (7.2)	
Disagree	37 (45.7)	33 (36.3)	60 (61.2)	
Strongly disagree	30 (37.0)	41 (45.1)	21 (21.4)	
If I refuse fight, my friends will think I'm afraid				<0.003*
Strongly agree	4 (4.9)	28 (30.8)	14 (14.3)	
Agree	25 (30.9)	22 (24.2)	36 (36.6)	
Neither	3 (3.7)	12 (13.2)	8 (8.2)	
Disagree	44 (54.3)	24 (26.4)	33 (33.7)	
Strongly disagree	5 (6.2)	5 (5.5)	7 (7.2)	
Total mean score of beliefs supporting aggression	17.89±2.85	21.75±3.52	20.11±3.30	<0.001*

P values for each attitude statement is calculated between schools vs (agree + strongly agree) and (disagree + strongly disagree)

*P value < 0.05

the highest and varied significantly from other two schools ($p < 0.001$) (Table 3).

Gender wise analysis of total aggression score in three schools showed that girls from private co-ed school tend to have more aggression score as compared to girls from govt. co-ed school and only girls' school (Fig. 1).

Univariate analysis of total aggression score with socio-demographic variables and belief attitude score showed that being male ($p < 0.001$), studying in private co-ed school ($p < 0.001$), being older ($p = 0.002$) with beliefs supporting aggression ($p < 0.001$) and attitude

Table 3 Aggression among adolescents of three schools

Aggression during the last 7 days	All girls' school N = 81	Private co-ed school N = 91	Govt. co-ed school N = 98	p value
I teased the students to make them angry				<0.001*
≤ 3 times	81 (100)	75 (82.4)	89 (90.8)	
> 3 times	0 (0)	16 (17.6)	9 (9.2)	
I said things about other kids to make other students laugh				<0.001*
≤ 3 times	81 (100)	74 (81.3)	92 (93.9)	
> 3 times	0 (0)	17 (18.7)	6 (6.1)	
I encouraged other students to fight				0.004*
≤ 3 times	81 (100)	81 (89.0)	94 (95.9)	
> 3 times	0 (0)	10 (11.0)	4 (4.1)	
I called other students bad names				<0.001*
≤ 3 times	81 (100)	70 (76.9)	81 (82.6)	
> 3 times	0 (0)	21 (23.1)	17 (17.4)	
I threatened to hurt or to hit someone				0.004*
≤ 3 times	81 (100)	81 (89.0)	94 (95.9)	
> 3 times	0 (0)	10 (11.0)	4 (4.1)	
I was angry most of the day				0.005*
≤ 3 times	81 (100)	82 (90.1)	95 (96.9)	
> 3 times	0 (0)	9 (9.9)	3 (3.1)	
I got angry very easily with someone				<0.001*
≤ 3 times	74 (91.4)	59 (64.8)	78 (79.6)	
> 3 times	7 (8.6)	32 (35.2)	20 (20.4)	
I got into physical fight because I was angry				0.06
≤ 3 times	80 (98.8)	82 (90.1)	91 (92.8)	
> 3 times	1 (1.2)	9 (9.9)	7 (7.2)	
I fought back when someone hit me first				0.16
≤ 3 times	72 (88.9)	81 (89.1)	79 (80.6)	
> 3 times	9 (11.1)	10 (10.9)	19 (19.4)	
I pushed or shoved other students				0.05
≤ 3 times	81 (100)	85 (93.4)	95 (96.9)	
> 3 times	0 (0)	6 (6.6)	3 (3.1)	
I slapped or kicked someone				0.07
≤ 3 times	80 (98.8)	83 (91.2)	89 (90.8)	
> 3 times	1 (1.2)	8 (8.8)	9 (9.2)	
Total mean score of aggression	5.79 ± 4.33	17.84 ± 12.0	12.23 ± 9.22	<0.001*

P values for each aggressive behavior is calculated between schools vs. (≤ 3 times and > 3 times)

*P value < 0.05

towards violence ($p < 0.001$) are positively correlated with increased aggression scores (Table 4). When these factors are put into linear regression analysis being male

($p < 0.001$), studying in private co-ed school ($p < 0.001$) and having attitude towards violence ($p = 0.02$) contributed to total aggression score (Table 5).

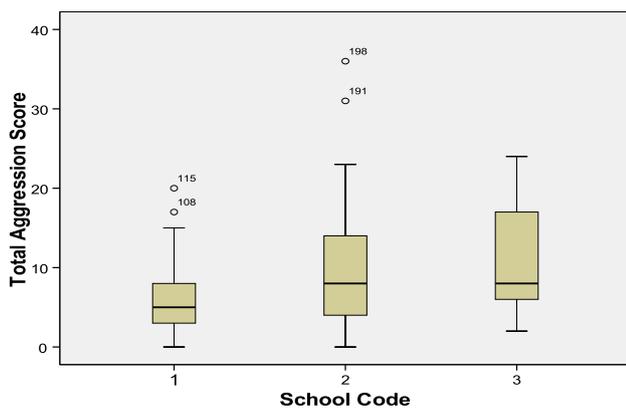


Fig. 1 Comparison of total aggression score amongst girls in three schools

Table 4 Univariate analysis of total aggression score with socio-demographic variables and beliefs and attitude supporting violence

Variables	Correlation coefficients	p value
Gender (1: male 2: female)	-0.463	<0.001*
School (1: all girls' school 2: govt. co-ed school 3: private co-ed school)	0.462	<0.001*
Age	0.188	0.002*
Total beliefs score	0.320	<0.001*
Total attitude score	0.367	<0.001*

*p < 0.05

Table 5 Multivariate analysis of total aggression score with socio-demographic variables and beliefs and attitude supporting violence

Variables	Coefficients	p value
Gender (1: male 2: female)	-5.496	<0.001*
School (1: all girls' school 2: govt. co-ed school 3: private co-ed school)	2.987	<0.001*
Age	-0.157	0.698
Total beliefs score	0.362	0.091
Total attitude score	0.431	0.02*

r² = 0.31

*p < 0.05

Discussion

Violence among and adolescents is on rise in India (Mahajan et al. 2011; Ray and Malhi 2006; Sharma et al. 2008). Evidence suggests that violence and anti-social behavior gets manifested during adolescence in nearly a fifth of young people (Australian Research Alliance for Children & Youth 2010). Therefore, the present endeavor

was undertaken to study the patterns of beliefs, attitudes and behavior supporting aggression and violence and their relation with some socio-demographic factors.

The results of present study revealed that mean belief score about violence were significantly higher among students private school as compared to other schools. The finding highlights two very important factors that may be influencing such beliefs. Firstly, there is significant difference in belief score with respect to school thereby pointing to the role the type of school may play role in inducing beliefs supporting violence (Loeber and Pardini 2008). Secondly, higher belief score in co-ed school could be attributed to gender as it is known that boys tend to display more aggressive beliefs as compared to girls (Bjorkqvist et al. 2001; Owusu-Banahene and Amedahe 2008).

The school adolescents from private co-ed school held higher mean score of attitudes towards violence while the only girls' school had the lowest. However, the participants from only girls' school also held attitudes towards violence even though it did not translate into frequent aggressive behavior as displayed in other schools. This can be accounted for by the variations in the manifestations of aggression. The social environmental factors of stereotypical behaviors allows for the boys to be able to express and accept their behavioral actions as a part of their natural disposition, while the females are limited in their expression so that they fit into the accepted norms of the society. Further, attitudes are privately held need not be displayed via behavior each time, it is possible that girls too harbor aggressive attitudes but hide them when it comes to public display of aggressive behavior. Also, it can be highlighted that while boys reportedly manifest more overt aggression, girls tend to exhibit more relational aggression (Finigan-Carr et al. 2015).

The study demonstrated that attitudes about violence and the beliefs supporting it are both contributing factors to the active expression of aggression. This further supports the social cognitive theory where beliefs and attitudes determine the appropriateness of aggression (Anderson and Heusmann 2003). Also, beliefs and attitudes go deeper and add valence to the behavior, deciding whether it can be called 'good' or 'bad' and whether or not it is 'justified.' However, the worrisome fact is that by the time the child grows older, the link between thought, action and attitude becomes tenuous, and therefore they may in fact become more suggestible and plastic in the hands of antisocial forces. This goes to emphasize the importance of the need for intervention strategies in early school life and help in the cementing of their thoughts in the formative years.

Also comparison of aggression scores between girls of different schools showed that girls in co-ed schools had pro-aggression. This is further revealed in regression analysis, where gender and school type tend to contribute significantly in aggressive behavior. The finding points to the suggested

role of presence of aggressive boys in co-ed schools which could influence the behavior of the girls' as well as evident in other studies as well (Elamsry et al. 2016).

The strengths and limitations of the study need to be acknowledged. Use of validated scales for measuring aggression, beliefs and attitudes, sample size as per estimation and inclusion of different types of schools adds to strength of the study. It is the first study of this nature studying aggression in Indian rural regions. It takes into account institutional effects by studying different types of schools. However, cross-sectional nature of the study and use of self-report method is a limitation of the study. Further, the study has been conducted in a single district and only in one school of each type, it limits external validity of the findings.

However, despite the limitations, the research has not defeated its purpose. The study adds to the relatively smaller body of research linking beliefs, attitudes and reported levels of aggression, particularly for children and adolescent students. The study provides further impetus for conducting large-scale multi-centric longitudinal studies for examining this casual hypothesis. Further, the study demonstrates gender differences in aggressive attitudes, beliefs and behavior as reported mainly in western countries. Considering the type of school and gender to be important predictors in shaping adolescents' behavior towards aggression and violence, there is need to design gender specific strategies in consonance with school settings for curbing the menace of violence and aggression among adolescents.

Author Contributions TA, Assistant Professor, Department of Community Medicine, contributed in preparation of protocol, literature search data analysis and its interpretation, and drafting the report. JK, Director Professor, Department of Community Medicine, conceptualized the idea for this study. He guided in preparation of protocol, questionnaire, data collection, analysis, writing and reviewing of the report. SG, Scientist B, NICPR, contributed in data collection, entry and statistical analysis of the data and writing of the report. SB, Director, AACCI, guided in preparation of protocol, questionnaire, and reviewing of the report. SY, Director Professor & Head, Department of Paediatrics, guided in preparation of protocol, questionnaire, and reviewing of the report.

Compliance with Ethical Standards

Conflict of interest All the authors declare that they have no conflict of interest.

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