

Study of aggression and its factors among school going adolescents of Delhi, India

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ABSTRACT

Background: Adolescence is an important developmental phase of life associated with various ideas and emotions filled with energy, many times spent in the form of aggressive behavior. Mental Health, as an important part of healthy well-being, cannot be ignored, and hence it becomes imperative to study aggression and associated factors among adolescents. **Objective:** To determine the prevalence of aggression among school-going adolescents and to study factors associated with aggression amongst study participants. **Materials and Methods:** A cross-sectional study was conducted using a self-administered semi-structured questionnaire having questions regarding socio-demographic data, details of friends, history of substance use etc. and the Buss and Perry Aggression Questionnaire (BPAQ). Data were analyzed using appropriate statistical tests. Ethical clearance was obtained from the Institutional Ethics Committee of Safdarjung Hospital, and informed written consent was taken from participants. **Results:** The study involved a total of 463 school-going adolescents with a mean age of 13.78 ± 2.06 years. More than half (50.5%) of the participants were found to be aggressive. Male gender, history of family member ever jailed, parent's argument in front of them, ever tried cigarette/smoking, being involved in some fight and provocation by friends for aggression were the factors found to be significantly associated with aggression. **Conclusion:** The prevalence of aggression among school-going adolescents of Delhi was quite high. There is a need to make the students aware about aggression and how to deal with it. A holistic approach may be adopted in which all authorities and stakeholders must work together to provide safer and nurturing environment to all students.

Keywords: Adolescents, aggression, Delhi, school-going

Introduction

Adolescence is a developmental phase which amounts toward achieving an identity. It is also a time to develop knowledge and skills, learn to manage emotions and relationships, and acquire attributes and abilities that will be important for enjoying

the adolescent years and assuming adult roles.^[1] The WHO defines adolescence as age 10–19 years.^[2] There are three main stages of adolescence. One may describe the three stages of adolescence as Early (10–13 years), Middle (14–16 years), and Late adolescence (17–19 years).^[3] India is home to more than 243 million adolescents, who account for a quarter of the country's population.^[2] Being an important age group of the population, various needs of adolescents cannot be ignored. Mental well-being is fundamental to good quality of life. Happy and confident adolescents are most likely to grow into happy and confident adults, who in turn contribute to the health and well-being and development of nations.^[4]

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Adolescence is the phase when individuals have multiple things in their mind and feel immense energy in themselves which they need to utilize or express in some way. Many a times this expression is not direct and comes out in the form of aggression. Aggression may be defined as the delivery of an aversive stimulus from one person to another, with intent to harm and with an expectation of causing such harm, when the other person is motivated to escape or avoid the stimulus.^[5] During recent past years, society has seen an increase in the incidents of aggression/violence among youth.^[6,7]

Many types of aggression may be described based on the form of expression. Aggression may be physical or verbal. It may also be expressed as anger or hostility. Gender is an important factor which is found to be responsible for human aggression. Studies in the past have reported more aggression among males than females.^[8,9] The family and school environments have regularly been linked to psycho-social and behavioral adjustment problems in the adolescent period. In addition to the family processes, peer contexts in adolescence have implications for adolescent aggression.^[10] Considering the factors associated with aggression, researchers have focused on factors such as perceived popularity among the peer group,^[11] the risk factors such as family system, environment, families where domestic violence is occurring,^[12] aggressive parents and academic performance,^[13] and peer aggression.^[14]

Some studies have shown an association of aggression among youth/adolescents with reported work pressure, substance use, violent activities, road rage, mood disturbance and psychological problems along with family disturbances and peer relationships.^[13,15] Hence, it was decided to conduct a study to know the prevalence of aggression among school-going adolescents and to study factors associated with it. This study was done to guide further research in the field for prevention, early detection, and appropriate management of aggression among the adolescents.

Materials and Methods

It was a school-based cross-sectional study conducted in a government-aided school in Delhi from October 2015 to March 2017. The study participants were students of classes 6 to 12 from selected schools. All those who gave consent for the study were included.

Sample size

Aggression was considered as a primary outcome and based on a study conducted by Debashis Dutt *et al.*,^[16] which had a prevalence of verbal aggression as 56.8% (P), sample size was calculated using the formula for cross-sectional study as $N = 4P(1-P)/L^2$, taking P as 56.8% and L as 5%, Sample size = 393. No response rate of 10% was added and the final sample size was taken as 440.

Sampling strategy

There are 11 administrative districts in Delhi. Among these, one district, Central District, was identified by Simple Random

Sampling (Lottery Method) for the purpose of conducting the study. A list of all Government and Government aided schools which were Co-Educational, Senior Secondary and having a minimum strength of 1000 students was prepared. Among these schools, one school fulfilling all criteria was selected again by a simple random sampling method. The sample size calculated here was 440. And total number of classes to be studied were seven. So, 65–70 students from each class who satisfy the inclusion criteria were selected for the study. In case of a class which had multiple sections, required no. of sections (2–3, depending upon the strength of each section) were again selected by simple random sampling method to get the required number of study participants as calculated. A total of 463 students from 14 sections of 7 classes participated in the present study.

Study tool

A pretested, semi-structured and self-administered questionnaire with following components: socio-demographic profile having details regarding socio-demographic data, family details, details of friends, academic performance, any history of substance use, etc. and Buss and Perry Aggression Questionnaire (BPAQ).^[17] It has 29 items measuring anger, hostility, verbal, and physical aggression. All items are scored on a five-point scale. Total scores range from 29 to 145, and the mean score was taken as cut-off. Study participants scoring more than the mean score were considered aggressive for a particular component of the scale. A bilingual questionnaire, containing both the English and the Hindi versions, was used so that it was easily understood by all the students. Pretesting of the questionnaire was done at another government aided school. Minor changes as required were incorporated and no change was made in validated scales.

Data collection

The purpose of the study was informed in detail to the principal in charge of the selected school. Students were also briefed with details of the questionnaire. All students were instructed on how to fill the questionnaire.

Ethical issues

The study protocol was approved by the Institutional Ethics Committee Safdarjung Hospital, New Delhi. Informed written consent from the principal was taken. Each study participant was told about the purpose of the study and written assent was also taken. At the end of the study, feedback was taken from each student. A session for each class on aggression, its factors, and sensitization of the study participants on how to deal with aggression was also taken by the investigator at the end of the study. The confidentiality of the subjects was always maintained during the study. Referral to a child psychiatrist was provided to those who scored high on aggression and/or desirous of such services in consultation with the parents of such students.

Statistical analysis

All the data was coded and entered in MS Office Excel and was analyzed using IBM SPSS Statistics 21.0. All the variables were

analyzed using descriptive statistics to calculate frequencies, mean etc. Bivariate analysis for determining the association between aggression and socio-demographic characteristics of the study subjects was done using Chi-square test. Significance level of the *P* value was taken as $P < 0.05$.

Results

The study included 463 adolescents of a government-aided school in central Delhi. The mean age of study participants was 13.78 years (SD =2.06). Most of them (46.87%) were in the early adolescent age group. About two-thirds (66.3%) were males, and majority of the study subjects were Hindus (75.37%). The majority (68%) of adolescent students belonged to nuclear families, and almost two-third (64.8%) of them had 4–6 members in their family. It was observed that parents of almost all (98.27%) participants were literate.

Family, psychosocial, and academic profile of the study participants

Almost all (97.4%) the study participants lived with both their parents. Majority (90.5%) of the study participants were happy with their siblings. Out of 463 participants, 379 (81.86%) reported no alcohol or any substance use in their families, however, 50 (10.8%) answered affirmatively for this. Eleven (~2.4%) participants reported any of their family members ever been imprisoned. About 19.5% (90) of the study participants responded affirmatively when asked whether their parents argue in front of them. About one-fourth (26.13%) of the study participants were hit by family members. About 5.62% of the participants said that their parents use abusive language against them, whereas 10.6% of them often felt neglected at their home.

Most (90%) of the study participants watched TV in their leisure time, ~81% played some sport, and about two-thirds surfed internet or used social messengers for recreation. Nearly all (99.1%) of the study participants had one or more friends. 65% of them were using social media messengers like WhatsApp and Facebook to stay in touch with their friends.

Nearly half of the participants (41.5%) reported ever being involved in a fight. One-fourth (25%) of them reported being provoked by their friends for fight or aggressive behaviour. 3.9% of the study participants also reported of being forced into smoking or alcohol by their friends. A large majority of the study participants had not been smoking (~96%) or taking alcohol (~97%) or using any tobacco product (~99%). There were almost equal number of participants from each class. Most (53.3%) of the study participants scored between 60–80%, and only 3.7% scored below 50%. Almost three-fourth (73.65%) of the study participants had attendance more than 75%.

Aggression and associated factors

Total aggression score ranged from 36 to 126 and the mean score was 74.68 (SD = ±1.68). 232 participants scored more

than mean and were found to be high on aggression whereas 231 scored less than the mean score and were not found to be high on aggression. When evaluated over the individual component of BPAQ, it was found that almost half, that is, 51.8% and 50.5% of the study participants showed high levels of hostility and verbal aggression, respectively. Anger was found in 48.4% of the study participants, and 46.7% of the study participants were found to be physically aggressive [Figure 1].

48.4% of the study participants in the early adolescent age group, 51% in the middle, and about 55.6% in late adolescent age group were found to be aggressive. 50% of the study participants in the late adolescent age group were found to be physically aggressive, and 66.7% of them were found to be verbally aggressive. 52.5% of the study participants in the early adolescent age group and 54.3% of the study participants in the middle adolescent age group were found to be getting angry and showed higher hostility, respectively. However, there was no significant association of aggression with age ($P = 0.689$). There is a significant association of verbal aggression with age ($P = 0.001$) [Table 1].

Majority (54.1%) of the male study participants were found to be aggressive as compared to females (42.3%). This difference was found to be statistically significant ($P = 0.017$) [Figure 1/ Table 2]. Male gender was also found to be significantly associated with having a higher proportion of physical aggression (52.8%), anger (52.1%), and hostility (57%) (P value < 0.001, 0.024, and 0.002, respectively) [Table 1].

When assessed for various factors associated with aggression, it was found that participants who had a history of having their family members ever jailed (9, 81.8%), had parental arguments (55, 61.1%), had a history of cigarette smoking (15, 78.9%), were either ever involved in fights, or were provoked for aggression were reported to have significantly high aggression (P value 0.032, 0.020, 0.010, <0.001, and <0.001, respectively) as compared to those who responded negatively to these factors [Table 2].

Discussion

A total of 463 students participated in the study and the response rate was 100%. Age of the study participants ranged between 10 and 19 years. The mean age was found to be 13.78 years (±2.06 years). This finding is like that reported by Prabhjot

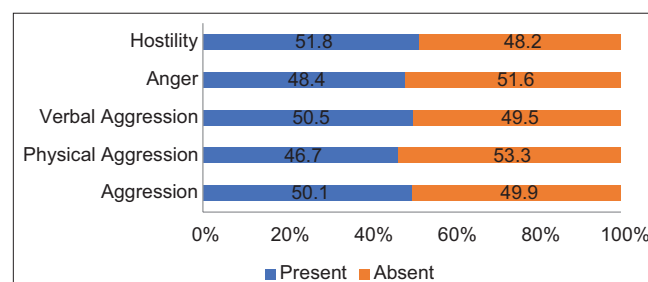


Figure 1: Prevalence of aggression and its different types among study participants

Table 1: Association of aggression and its types with age distribution of the study participants (N=463).

Aggression	Aggression		Physical aggression		Verbal aggression		Anger		Hostility	
	Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent
Age Distribution										
Early Adolescence	105 (48.4%)	112 (51.6%)	99 (45.6%)	118 (54.4%)	90 (41.5%)	127 (58.5%)	114 (52.5%)	103 (47.5%)	105 (48.4%)	112 (51.6%)
Middle Adolescence	107 (51%)	103 (49%)	99 (47.14%)	111 (52.86%)	120 (57.1%)	90 (42.9%)	96 (45.71%)	114 (54.29%)	114 (54.3%)	96 (45.7%)
Late Adolescence	20 (55.6%)	16 (44.4%)	18 (50%)	18 (50%)	24 (66.7%)	12 (33.3%)	14 (38.9%)	22 (61.1%)	21 (58.3)	15 (41.7%)
Significance	P=0.689		P=0.875		P=0.001		P=0.183		P=0.342	
Gender										
Male	166 (54.1%)	141 (45.9%)	162 (52.8%)	145 (47.2%)	164 (53.4%)	143 (46.6%)	160 (52.1%)	147 (47.9%)	175 (57%)	132 (43%)
Female	66 (42.3%)	90 (57.7%)	54 (34.6%)	102 (65.4%)	70 (44.9%)	86 (55.1%)	64 (41%)	92 (59%)	65 (41.7%)	91 (58.3%)
Significance	P=0.017		P<0.001		P=0.082		P=0.024		P=0.002	

Table 2: Distribution of study participants according to factors associated with aggression (N=463).

Socio-demographic factor	Aggression		Significance
	Present	Absent	
Family member jailed			
Yes	09 (81.8%)	02 (18.2%)	P=0.032
No	223 (49.3%)	229 (50.7%)	
Parental arguments			
Yes	55 (61.1%)	35 (38.9%)	P=0.020
No	177 (47.5%)	196 (52.5%)	
Cigarette/Smoking			
Yes	15 (78.9%)	04 (21.1%)	P=0.010
No	217 (48.9%)	227 (51.1%)	
Alcohol			
Yes	10 (71.4%)	04 (28.6%)	P=0.105
No	222 (49.4%)	227 (50.6%)	
Ever involved in fights			
Yes	120 (62.5%)	72 (37.5%)	P<0.001
No	112 (41.3%)	159 (58.7%)	
Ever provoked for aggression			
Yes	88 (74.6%)	30 (25.4%)	P<0.001
No	144 (41.7%)	201 (58.3%)	
Ever forced to try alcohol/cigarette			
Yes	12 (66.7%)	06 (33.3%)	P=0.152
No	220 (49.4%)	225 (50.6%)	

Malhi *et al.* and Ray Munni and Prabhjot Malhi.^[18,19] Most of the study participants in the present study were early adolescents (~47%) followed by middle adolescents (~45%). These findings were in contrast with studies done by Mohanraj Bhuvneshwari *et al.* and by Pratyay Pratim Datta.^[19,20] This difference can be attributed to selection of restricted age groups by the other studies. Majority (66.3%) of the study participants in the present study were males. These results were like the results of a study by Rahul Sharma *et al.* and comparable to the study done by Dipta K Mukhopadhyay *et al.*^[21,22] However, the results differed from those given by Rashmi Ranjan Puhan *et al.*^[23] This can be explained by the purposeful selection of an equal number of male and female study participants in this study.

Nearly half of the participants (41.5%) reported ever being involved in a fight which differed from the findings of a study by Manoj Kumar Sharma and Palaniappan Marimuthu.^[6] They also reported that 21.5% of the study participants were provoked for aggression by the peer group which was like the present study where 25% of the study participants reported being provoked by their friends for fight or aggressive behavior.^[6] Similar to the results of the study done in 2014 by Fawwad Shaikh *et al.*, in the present study also 4.1% of the study participants reported smoking bidi or cigarette while 1.08% reported use of other tobacco products (guthka/khaini/pan masala).^[24]

Aggression and associated factors

The mean score on total of BPAQ in the present study came out to be 74.68 with a standard deviation of 1.68. A similar mean

score of 80.24 with an SD of 19.59 was reported by Manoj Kumar Sharma and Palaniappan Marimuthu,^[6] and in a study by Ali Alami *et al.* mean score of 72.45 with an SD of 15.49 was reported.^[25] Such results indicate similar aggression profile among adolescents across various settings. Two hundred and thirty-two (50.5%) of the study participants scored more than the mean, comparable to findings by Rashmi Ranjan Puhan *et al.* with 45.5% of the study participants having high aggression.^[21] Majority (50.54%) of study participants showed high levels of verbal aggression. Similar findings were reported by Pratyay Pratim Datta and Kazi Ashique Firdoush.^[26] Verbal aggression was also found to be high among 48.3% of the participants in a study done by Jonathan N Onukwufor comparable to the results of the present study and establishing a similar profile of aggression among adolescents globally.^[27] Physical aggression was found to be high in 46.7% of the study participants of the present study. The results contrasted with the study done by Jonathan N Onukwufor.^[27] In the present study, 48.4% of the study participants were found to be getting angry, and majority (51.8%) of them were found to be high on hostility. Although an important part of the aggression profile but not many studies have reported the prevalence of these two types of aggression, exclusively.

It was observed that proportion of study participants found to be aggressive increased as one moved from the stage of early adolescence to late adolescence, but this increase in aggression with age was not significantly associated. These findings differed from the findings of a study by Manoj Kumar Sharma and Palaniappan Marimuthu where the younger age group experienced more aggression than the older age group.^[6] It was found that majority (54.1%) of the male study participants were more aggressive, and this distribution was found to be statistically significant ($P = 0.017$). Parinda Khatri and Janis B. Kupersmidt and Pratyay Pratim Datta and Kazi Ashique Firdoush also reported similarly in their studies.^[26,28] Similar to the findings reported by Gupta A *et al.* in their study, participants in the present study who were having a history of any of their family members ever being jailed were also found to be significantly more aggressive ($P = 0.032$).^[29] Study participants whose parents argued in front of them were found to be significantly more aggressive (~61%) ($P = 0.020$). These findings were comparable to the those of study by Prashant Talwar.^[30] In the present study, the proportion of study participants who had ever tried/used cigarettes or any other form of smoking were found to be significantly more aggressive as compared to those who never tried smoking ($P = 0.010$). Similar results were reported by Manoj Kumar Sharma and Palaniappan Marimuthu ($P = 0.001$).^[6,31] Among the study participants who were ever involved in fights 62.5% were found to be significantly more aggressive ($P < 0.001$). Also, provoked aggression was also found to be significantly associated with aggression in the present study ($P < 0.001$).

The present study deals with assessing prevalence of aggression and tries to explore the factors associated with it. Family physician can be of great help in early identification of such behaviors and

can be a guiding person for timely management of such issues. Perhaps a separate study may highlight this relationship in a better way rather than the present study which only deals with a part of the larger issue.

Conclusion

Prevalence of aggression was found to be high among school going adolescents of Delhi. Factors that were found to be significantly associated with aggression were male sex, having a history of any family member ever being jailed, arguments among parents, ever trying smoking, being involved in some fights, and being provoked by friends.

Detailed qualitative analysis is required to explore more about factors associated with aggression in order to work up comprehensive module for children to identify triggers of aggression and management of the same.

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Conflicts of interest

There are no conflicts of interest.

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