

Youth Violence and Related Risk Factors: A Cross-sectional Study in 2800 Adolescents

Abstract

Background: Youth violence is an important public health challenge, and the literature on this problem in developing countries has been limited. The present study aims to determine the prevalence of violence its related risk factors in a sample of students in Isfahan, Iran. **Materials and Methods:** In this cross-sectional study, 2800 middle and high school, aged 11–18 years in urban and rural areas selected in a multistage sampling procedure and were questioned using a self-administered questionnaire. Collected data included sociodemographic and family characteristics, students' knowledge, verbal and physical violence (as a perpetrator and/or victim), risk-taking behaviors (weapon carrying, threatening behaviors), family violent status, watching movies, and accessibility of sport facilities. **Results:** The prevalence of verbal and physical violence in studied students was 45% and 33.3%, respectively. The prevalence of verbal and physical victimization was 45.8% and 23.6%, respectively. The prevalence of physical violence was higher in middle school students than high school students ($P = 0.0001$) and in boys was higher than in girls ($P = 0.0001$). Being boy, carried a weapon out of home or in school, victimization, feel unsafe at school, and violence in the family are the significant related risk factors with students violence ($P < 0.05$). **Conclusion:** The prevalence of students' violence in Iranian students is similar to the most of other developing countries, although, high rate violence and related risk factors emphasize the need for comprehensive and interventional prevention programs to reduce and manage student violence and associated risk behaviors.

Keywords: Family violence, physical fighting, school violence, violence, youth violence

Introduction

Violence as a known serious public health problem affects people in all stages of life, from childhood to the elderly.^[1] In society, one of the most visible forms of violence is young people violence, whereas they, adolescents and young adults, are the main victims of such violence.^[2] Homicide is the fourth leading cause of death in youth and a young adult (10–29 years old). It is estimated that, each year, 200,000 homicides occur in this age group in the world. Nearly all of these deaths occur in low- and middle-income countries and the majority of victims (83%) are male.^[1] For each death, many more are hospitalized with injuries from youth violence. Beyond deaths, injuries, mental and/or emotional health problems, disability, and increased health-risk behaviors are the main consequence of youth violence.^[3]

Victims are not the only heirs of youth violence, but also deeply harm their

families, friends, and communities. Great increase in the costs of health and welfare criminal justice services, decreases the value of property in areas where it occurs, disrupts a range of essential services, reduces productivity, and generally undermines the fabric of society are imposed consequences of youth violence.^[3] Biological, psychological, social, and cultural factors are the determinants of behaviors, where, risk factors at different levels and at different life stages of an individual are affected youth violence. Gender, history of violence, aggressive behaviors, psychological conditions, and the harmful use of alcohol and illicit drugs are among the individual level, risk factors. Moreover, socioeconomic status, parental antisocial behaviors, associating with delinquent peers, and ease of access to weapons are among strong identified risk factors associated with youth violence.^[3-5]

The burden of youth violence is highest in low- and middle-income countries and

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the very high prevalence of both physical fighting and bullying is reported in these countries.^[3,6] The World Health Organization (WHO) based on data from selected twenty countries in low-and middle-income regions reported that an average of 47% of boys and 26% of girls participated in physical fighting during the past 12 months and 42% of boys and 37% of girls having been bullied in the past month. It means that nearly one in two males, reported involvement in physical fighting. In this report, the lowest physical fighting and bullying between twenty studied countries were for females in Myanmar (8% and 16%, respectively), whereas, the highest rates is reported for boys in Samoa (73% and 79%, respectively).^[3]

Violence in education settings like schools causes serious harm to children and adolescents that can last into adulthood. The increase in the aggressive behavior among the school students concerning both the families and communities, and has drawn attention to this subject.^[7,8] Violence in schools has a negative impact on the school environment by creating an atmosphere of anxiety, fear and insecurity, and it can violate the rights of students, including their right to education and to health. Schools do not exist in social isolation from the communities, and violence at home or within the community can affect students in school, and may be replicated or intensified in schools.^[9]

In Iran, data about violence among schools' students are limited; in a systematic review in 2014, the prevalence of violence and aggression among the Iranian adolescents and youth, reported to be between 30% and 65.5%.^[10] Although collecting data on levels of fatal violence is successful, data about the more common and often unnoticed forms of violence is unknown and often underreported. Hence, the present study was designed to determine the prevalence of violence and related factors among school students in a sample of Iranian students.

Materials and Methods

This cross-sectional study was conducted between 2015 and 2016. The study sampled students in the middle and high school, attending public schools in the urban and rural areas of Isfahan, Iran. Male and female students ranging in age from 11 to 18 years were eligible if they and their parents were satisfied to participate in the study. The protocol of the present study is reviewed and approved by the Ethics Committee of Isfahan University of Medical Sciences and all students gave informed consent to participate.

To obtain the samples, a multistage sampling procedure was used. First, twenty cities of Isfahan province were selected as clusters, and then the proportion of students in each city in regard to urban and rural areas, represented the proportion of samples in that city. In each city, some schools were randomly selected based on area and grade of school, and the proportion of students in selected schools

represented the number of students in that school. Totally, 239 schools were selected and from each school, sample students were randomly selected from each class list for participation using random number table.

The instrument comprised a designed questionnaire contain 75 questions. Forty questions were designed to access the students' knowledge about violent behaviors; responses to these questions were limited to "Yes" or "No." Fifteen questions were designed to access acting verbal and physical violence, being verbal and physical victims, risk-taking behaviors (weapon carrying, threatening behaviors) and unsafe feeling. Responses to these questions were limited to "Yes" or "No," or report the number of happened behaviors. Other 15 questions addressed demographics, family violent status and accessibility of sport facilities.

Time scales for in the questions regarding verbal violence behaviors referred to the past month and for physical violence behaviors referred to the past year. Acting verbal violence was asked as follow: During the past month, have you ever had verbal fight (insults, shouting, ridiculing, humiliating and unsettling...) to anybody at school? And acting physical violence was asked as follow: During the past year, have you ever had physical fight (molesting, manhandling, hitting, kicking and pushing...) to anybody at school? Weapons appearing in the questionnaire include Knife, chain, sword, club, brass knuckles, shotgun, belt, stone and brick, nunchaku, shocker, spray.

Our questionnaire was established by selecting items from other questionnaires and based on expert opinion. The content validity of the questionnaire was confirmed by an expert panel, included follow experts; social medicine specialist, psychiatrist, public health experts, police experts, statistician and health school experts. Also, the reliability of the questions of the questionnaire was evaluated by the Cronbach's alpha on thirty students that were not drawn to compose the sample. Cronbach's alpha was 0.80.

The questionnaire was self-administered during a regular class period and supervised by trained data collectors. Data collectors were fifty health school experts that had an 8-h training scheduled course to level out the data collection and control of confounders. Also, supervisors were selected and trained to monitor the quality control of data gathering. Beside these, a 21-item protocol contain all details about complete the questionnaire and other procedures was provided by researchers and were given to data collectors and supervisors.

All data were analyzed using SPSS 24 for Windows (SPSS Inc., Chicago, IL, USA). Descriptive statistics are presented as mean \pm standard deviations or number (percent) as appropriate. Statistical significance was set at $P < 0.05$. Comparisons were made using Independent sample *t*-test and Chi-square test. The univariate and

multivariate logistic regression technique was performed and adjusted odds ratio (OR) is reported to identify risk factors associated action violence. The model included all variables considered according to their statistical significance obtained in the univariate analysis for each outcome evaluated, and those with significant impact, were implemented in multivariate logistic regression model.

Results

Of 2800 studied students, a sample of 2727 students completed questionnaires. Nearly 38.1% were middle school students and 61.9% were high school students. The mean age of middle school students was 13.92 ± 1.06 years and in high school student was 16.18 ± 1.12 years. Of students, 2381 students (87.3%) and 346 students (12.7%) residing in urban and rural areas, respectively. Also, the sample comprised of 1386 (50.8%) girls and 1341 (49.2%) boy students. Table 1 shows the characteristics of studied students and their parents' job in regard to residency area. More than two-third of the students' mothers and fathers were housekeeper (82%) and employed (83.7%).

Findings of students' reports of their own and families' violent behavior are presented in Table 2. Having verbal violence in past month is reported by 45% of students and 33.3% reported the acting physical violence in past years. Of students, 32.1% reported that they have witnessed violence in their family and brothers had the frequent violent behavior within students' family. Violent behavior in all formats is reported to be more frequent in boy students than girl students. Boy students in both middle and high schools reported higher rates of verbal and physical violence toward others than did girl students. More than half of boys in middle school have verbal and physical violence. Nearly, one-fourth of students were physical victims (23.6%) in the past year and 45.8% were

verbal victims during the past month. In both middle and high school students, boys were more physical and verbal victims than girl students.

Verbal violence during the past month is reported by 45.3% of middle school students, and 44.7% of high school students. Verbal violence in both middle and high school boys is reported significantly more than girls. Those of both middle and high school students that reported violence behaviors in their families had significantly higher verbal violence than those that did not report family violence behaviors. Middle school students who had high access to sports facilities had significantly lower verbal violence acting. Physical violence during the past year is reported by 38.6% of middle school students and 30% of high school students. The frequency of physical violence among boy students in both middle and high schools was significantly more than girl students. Score of knowledge about violence in high school students who did not have physical violence during past year was significantly higher than those that have physical violence. Family violence behavior was more reported in middle and high school students who had physical violence during past year than the others [Table 3].

Figures 1 and 2 show the frequent observed violence behaviors and weapons used in violence in place of living and schools by areas and gender. Verbal and physical violent were reported to be a very common behavior for both urban and rural areas. In both urban and rural areas, verbal violent was most common observed violent behavior reported by both genders but physical violent was more reported by boys. Furthermore, among weapons used in the observed violence behaviors reported by students in in place of living and schools, knife and chain were most used weapons in violence acts in both genders and both urban and rural areas.

The result of the logistic regression multivariate analysis for verbal violence is presented in Table 4. In middle school students, being boy was associated with a higher risk of verbal violence action (OR, 2.16; $P = 0.001$). Also, carried a weapon out of home (OR, 2.65; $P = 0.028$), and verbal victimization (OR, 17.72; $P = 0.0001$) were the other significant risk factor for verbal violence action in middle school students. For high school students, carried a weapon out of home (OR, 4.18; $P = 0.0001$), verbal victimization (OR, 24.23; $P = 0.0001$), physical victimization (OR, 2.03; $P = 0.001$), and feel unsafe at school (OR, 1.74; $P = 0.020$) were the significant associated risk factors with verbal violence action. Also, witnessing of violence in the family was the other significant associated risk factors with verbal violence action in these students (OR, 2.17; $P = 0.047$).

Table 5 shows the result of the logistic regression multivariate analysis for physical violence. In middle school students, boy gender is known as

Table 1: Characteristics of studied students

Variables	Area	
	Urban	Rural
Age (year)	15.39±1.56	14.73±1.37
Sex		
Boy	1176 (49.40)	165 (47.70)
Girl	1205 (50.60)	181 (52.30)
Grade		
Middle school	837 (35.20)	1544 (64.80)
High school	202 (58.40)	144 (41.60)
Mothers job		
Employed	342 (14.4)	25 (7.2)
Retired	48 (2.0)	6 (1.7)
Housekeeper	1922 (80.7)	313 (90.5)
Fathers job		
Employed	1984 (83.3)	299 (86.4)
Retired	211 (8.9)	19 (5.5)
Unemployed	101 (4.2)	18 (5.2)

Data are mean±SD or *n* (%). SD: Standard deviation

Table 2: Distribution of violent behavior among studied students by gender

Variables	Middle school		High school	
	Boys	Girls	Boys	Girls
Having verbal violence (past month)	258 (50.1)	213 (40.6)	403 (48.8)	352 (40.8)
Having physical violence (past year)	275 (53.4)	126 (24.0)	350 (42.4)	156 (18.1)
Carried a weapon out of home (past month)	97 (18.8)	27 (5.2)	137 (16.7)	37 (4.3)
Carried a weapon to school (past month)	63 (12.2)	17 (3.2)	94 (11.4)	18 (2.1)
Using a weapon in a fight (past year)	97 (18.8)	14 (2.7)	116 (14)	26 (3)
Threatened someone (past year)	129 (25.0)	42 (8.0)	158 (19.1)	53 (6.1)
Physical victimization (past year)	179 (34.8)	129 (24.6)	190 (23.0)	146 (16.9)
Verbal victimization (past month)	264 (51.3)	248 (47.3)	380 (46.0)	357 (41.4)
Threatened by someone (past year)	131 (25.4)	38 (7.3)	162 (19.6)	42 (4.9)
Feel unsafe at school (past year)	110 (21.4)	103 (19.7)	138 (16.7)	188 (21.8)
Absence due to feeling unsafe (past year)	47 (9.1)	24 (4.6)	51 (6.2)	49 (5.7)
Family violence	151 (29.3)	188 (35.9)	233 (28.2)	304 (35.3)
Family member violence				
Father	40 (7.8)	30 (5.7)	70 (8.5)	62 (7.2)
Mother	16 (3.1)	17 (3.2)	10 (1.2)	27 (3.1)
Brother	51 (9.9)	67 (12.8)	91 (11.0)	103 (11.9)
Sister	18 (3.5)	40 (7.6)	26 (3.1)	51 (5.9)
Mother and father	26 (5.0)	34 (6.5)	36 (4.4)	61 (7.1)
Access to sports facilities				
No	59 (11.5)	98 (18.7)	92 (11.1)	172 (20.0)
Low to medium	125 (24.3)	131 (25.0)	196 (23.7)	277 (32.1)
Medium and high	320 (62.1)	287 (54.8)	498 (60.3)	394 (45.7)

Data are mean±SD or *n* (%). SD: Standard deviation

Table 3: Comparison of studied students in regard to having verbal or physical violence

Variables	Middle school			High school		
	Yes	No	<i>P</i>	Yes	No	<i>P</i>
Verbal violence						
Sex						
Boy	258 (54.8)	226 (44.7)	0.002	403 (53.4)	370 (45.1)	0.001
Girl	213 (45.2)	280 (55.3)		352 (46.6)	450 (54.9)	
Score of knowledge about violence	25.8±4.8	25.9±4.9	0.79	25.9±4.2	26.1±4.5	0.56
Region						
Urban	380 (80.7)	411 (81.2)	0.83	684 (90.6)	751 (91.6)	0.49
Rural	91 (19.3)	95 (18.8)		71 (9.4)	69 (8.4)	
Family violence	208 (45.1)	118 (23.8)	0.0001	318 (43.1)	192 (24.2)	0.0001
Sports facilities						
No	75 (16.4)	70 (14.0)	0.014	112 (15.2)	137 (17.1)	0.306
Low to medium	130 (28.4)	109 (21.8)		219 (29.8)	213 (26.6)	
Medium and high	252 (55.1)	322 (64.3)		404 (55.0)	452 (56.4)	
Physical violence						
Sex						
Boy	275 (68.6)	220 (34.7)	0.0001	350 (69.2)	437 (40.1)	0.0001
Girl	126 (31.4)	369 (62.6)		156 (30.8)	653 (59.9)	
Score of knowledge about violence	25.6±4.8	26.0±4.9	0.29	25.2±4.5	26.3±4.2	0.0001
Region						
Urban	315 (78.6)	485 (82.3)	0.137	459 (90.7)	996 (91.4)	0.663
Rural	86 (21.4)	104 (17.7)		47 (9.3)	94 (8.6)	
Family violence	170 (43.8)	158 (27.1)	0.0001	216 (44.3)	299 (28.3)	0.0001
Sports facilities						
No	63 (16.2)	85 (14.6)	0.515	73 (15.0)	180 (16.9)	0.644
Low to medium	101 (26.0)	140 (24.0)		137 (28.1)	298 (27.9)	
Medium and high	224 (57.7)	358 (61.4)		277 (56.9)	590 (55.2)	

Data are mean±SD or *n* (%). *P* values were calculated by Chi-square test and *t*-test. SD: Standard deviation

Table 4: Factors associated with verbal violence behavior among middle and high school students by logistic regression

Variables	Middle school		High school	
	OR (95% CI)	P	OR (95% CI)	P
Gender (ref, girl)	2.16 (1.38-3.38)	0.001	1.29 (0.87-1.90)	0.206
Mothers job (ref, housekeeper)				
Employed	1.64 (0.89-2.98)	0.109	1.33 (0.81-2.18)	0.262
Retired	0.40 (0.03-5.04)	0.479	1.12 (0.32-3.98)	0.859
Knowledge about violence	0.97 (0.93-1.01)	0.142	0.99 (0.95-1.03)	0.603
Carried a weapon out of home (past month)	2.65 (1.11-6.31)	0.028	4.18 (1.90-9.17)	0.0001
Carried a weapon to school (past month)	1.23 (0.41-3.71)	0.715	0.43 (0.17-1.12)	0.085
Physical victimization (past year)	1.57 (1.00-2.47)	0.050	2.03 (1.31-3.14)	0.001
Verbal victimization (past month)	17.72 (11.38-27.58)	0.0001	24.23 (17.07-34.41)	0.0001
Feel unsafe at school (past year)	0.78 (0.46-1.32)	0.362	1.74 (1.09-2.77)	0.020
Family violence	1.39 (0.59-3.28)	0.445	2.17 (1.01-4.66)	0.047
Family member violence (ref, mother and father)				
Father	1.45 (0.48-4.41)	0.509	0.77 (0.29-2.04)	0.601
Mother	0.99 (0.26-3.84)	0.993	1.07 (0.29-3.69)	0.925
Brother	0.90 (0.34-2.43)	0.842	0.44 (0.19-1.07)	0.071
Sister	2.42 (0.72-8.13)	0.153	0.53 (0.18-1.54)	0.240
Access to sports facilities (ref, no access)				
Low to medium	0.76 (0.39-1.46)	0.415	1.22 (0.71-2.09)	0.465
Medium and high	0.59 (0.32-1.07)	0.084	1.17 (0.72-1.89)	0.534

Data are mean±SD or n (%), OR: Odds ratio, CI: Confidence interval, SD: Standard deviation, ref: Reference

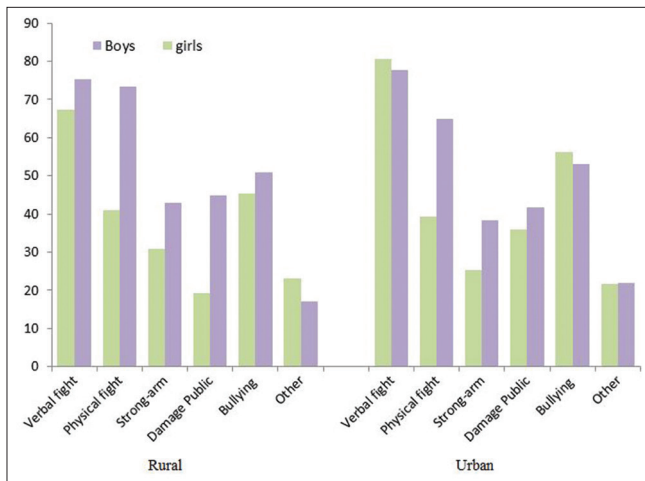


Figure 1: Distribution of the frequency of observed violence behaviors in place of living and schools by areas and gender

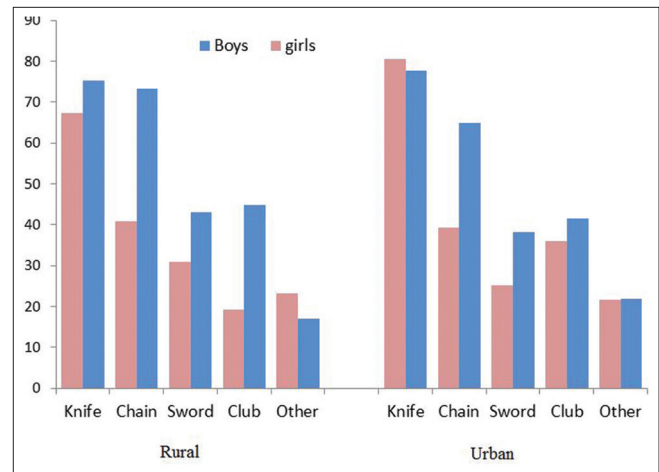


Figure 2: Distribution of the frequency of weapon used in violence behaviors in place of living and schools by areas and gender

significant risk factor to have physical violence action (OR, 3.30; $P = 0.0001$). Students who carried a weapon out of home are at higher risk of physical violence action (OR, 4.17; $P = 0.0001$). Verbal victimization (OR, 3.55; $P = 0.0001$), physical victimization (OR, 2.13; $P = 0.0001$) and family violence (OR, 2.46; $P = 0.021$) were the other significant associated risk factors with physical violence action in middle school students. For high school students, being boy (OR, 2.75; $P = 0.0001$), carried a weapon out of home (OR, 2.89; $P = 0.0001$), or at school (OR, 3.62; $P = 0.002$), verbal victimization (OR, 4.06; $P = 0.0001$) and physical victimization

(OR, 2.22; $P = 0.0001$) were the significant associated risk factors with physical violence action.

Discussion

The results of the present study confirm that school students' violence is a serious problem in Iran, whereas, one in three students reported involvement in physical fighting and nearly one in two reported verbal violence. We find that boys were more likely to experience violence and they boys were more violence victims than girl students. Being boy was the risk factor of students' violence. Students who carried a weapon, or had a history of benign victim were

Table 5: Factors associated with physical violence behavior among middle and high school students by logistic regression

Variables	Middle school		High school	
	OR (95% CI)	P	OR (95% CI)	P
Gender (ref, girl)	3.30 (2.27-4.80)	0.0001	2.75 (1.99-3.79)	0.0001
Carried a weapon out of home (past month)	4.17 (2.08-8.35)	0.0001	2.89 (1.62-5.15)	0.0001
Carried a weapon to school (past month)	1.95 (0.83-4.56)	0.126	3.62 (1.62-8.06)	0.002
Physical victimization (past year)	2.13 (1.47-3.09)	0.0001	2.22 (1.59-3.11)	0.0001
Verbal victimization (past month)	3.55 (2.45-5.15)	0.0001	4.06 (2.98-5.55)	0.0001
Feel unsafe at school (past year)	1.17 (0.75-1.81)	0.490	1.21 (0.84-1.76)	0.306
Family violence	2.46 (1.14-5.28)	0.021	1.53 (0.85-2.73)	0.153
Family member violence (ref, mother and father)				
Father	0.75 (0.29-1.93)	0.548	1.61 (0.77-3.34)	0.203
Mother	0.76 (0.22-2.62)	0.661	1.02 (0.37-2.76)	0.973
Brother	0.64 (0.27-1.51)	0.311	0.971 (0.49-1.89)	0.932
Sister	0.341 (0.13-0.92)	0.034	0.79 (0.34-1.87)	0.604

Data are mean±SD or *n* (%), OR: Odds ratio, CI: Confidence interval, SD: Standard deviation, ref: Reference

more likely to have violence; also, violence in the family was the other effective factor in students' violence action. Hence, policies, laws, and strategies needed to address the problem of violence among students to provide the safe and nonviolent learning environments for all children and adolescents.

The prevalence of physical fighting in the present study in high school student boys and girls were 42.4% and 18.1%, respectively, this was similar to finding of previous systematic review in Iran and similar to or higher than those reported in developed and other developing countries.^[10-17] In line with our results, data from the Global School-based Student Health Survey (GSHS) shows that the prevalence of physical fighting ranged from 21% to 73% in boys, 8% to 62% for females (aged 13–15 years) in twenty countries of low- and middle-income reigns.^[11] Data from a nationally representative survey in the USA show that 7.8% student being in a physical fight on school property which is lower than our findings.^[17] The differences between cultural norms and societal tolerance between countries are the possible cause of variety in students' physical fighting rates.

In line with previous studies,^[11,12,17-20] results of the present study show that the prevalence of school violence appears to vary with age. In high school students, all types of violence and risky behaviors declines in compare to middle school students. The GSHS shows that, in some countries, the prevalence of bullying declines between the ages of 11 and 15 years, but in other countries the opposite is the case.^[12] Another study in the USA shows that the most common forms of bullying tend to decrease with age.^[17] Also, other studies show that school violence in the form of physical aggression is more frequent in primary and declines in high school students.^[20] Decline in school violence with aging may be due to the development of nonviolent skills to solve conflicts in older students, whereas; in younger students physical fighting is known as a method of solving conflicts.

The present study in similar with other studies,^[10-12,17,21-24] also show the differences in violence perpetuated and experienced by boys and girls. Results of previous systematic review in Iran show that boys being 2.5 times more affected than females.^[10] One study shows that girls are more likely to perpetrate and experience psychological violence whereas, boys likes to experience physical violence.^[21] GSHS shows that boys are more likely to report fighting than girls.^[11] The USA survey found that boys were more likely to experience physical violence,^[17] also, one study conducted on six Western pacific countries, and the other studies in Malta and Australia found that boys were at greater risk of physical and verbal violence than girls.^[23,24] Differences in social and cultural factors between societies, different in physical appearance and societal tolerance of physical violence among males versus females, and biological differences may explain some differences in levels of violence between boys and girls.

Carried a weapon is known as a strong risk factor for school violence. In the present study, 11.4% of boys and 2.1% of girls among high school students reported that they carried a weapon on school property. of boys 16.7 and 4.3 of girls reported carried a weapon out of home at least 1 day during the previous 30 days. This is higher than those that reported among US and Hispanic adolescents. In US 5% in 2013, and 4.1% of students in 2015 reported carrying a weapon on school property, whereas in 2013, 18% of students in grades 9–12 reported that they had carried a weapon anywhere.^[17,25] Carrying a weapon on school property in Hispanic male students in grades 9–12 found that adolescent was 6.1% and in girls was 2.9%.^[26] The higher percentage of students reported that they had carried a weapon show the need for primary prevention programs for students in Iran. These programs could be instituted by schools by offering academic enrichment programs for students. Also, interpersonal relationships among students could be improved by focusing on reducing risky behaviors

among students by teaching healthy relationships, conflict resolution, and stress/anger management in school and families.

Our study also showed that the prevalence students' violence was higher in students that reported family violence than those who do not report violence in their families. Similar to our findings a population-based study in Sweden^[27] found that having been convicted for a violent crime was four times higher in those with a sibling that had been convicted of a violent crime. The family has significant roles in healthy development and successful violence prevention programs during the adolescence. Antisocial behavior tends to be concentrated within families. Parents that demonstrate antisocial behaviors are more likely to have children who do the same.^[3] So, parent education and family-based interventions are acutely needed to increase parents' supportiveness and responsibility to their adolescence. Also, in students displaying problematic behavior, a cooperative effort between school staff and families should be create to manage the problem.

Conclusion

The results of the present study show that the prevalence of students' violence in Iranian school students is similar to most of the other countries in low- and middle-income regions and is higher than developed countries. Other findings show that some individual, family, and society risk factors are important for students' violence and suggest that interventional strategy and programs in individual, family, and society level are need to improve students and family skills in management of relationships, conflict, stress and anger in school and society.

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Conflicts of interest

There are no conflicts of interest.

References

1. Butchart A, Mikton C, Dahlberg LL, Krug EG. Global status report on violence prevention 2014. *Inj Prev* 2015;21:213.
2. Reza A, Mercy JA, Krug E. Epidemiology of violent deaths in the world. *Inj Prev* 2001;7:104-11.
3. World Health Organization. Preventing Youth Violence: An Overview of the Evidence. World Health Organization; 2015.
4. Jansen PW, Verlinden M, Dommissie-van Berkel A, Mieloo C, van der Ende J, Veenstra R, *et al.* Prevalence of bullying and victimization among children in early elementary school: Do family and school neighbourhood socioeconomic status matter? *BMC Public Health* 2012;12:494.
5. Resnick MD, Ireland M, Borowsky I. Youth violence perpetration: What protects? What predicts? Findings from the national longitudinal study of adolescent health. *J Adolesc Health* 2004;35:424.e1-10.
6. Hughes K, Bellis MA, Hardcastle KA, Butchart A, Dahlberg LL, Mercy JA, *et al.* Global development and diffusion of outcome evaluation research for interpersonal and self-directed violence prevention from 2007 to 2013: A systematic review. *Aggress Violent Behav* 2014;19:655-62.
7. Pinheiro PS. World Report on Violence against Children. United Nations Publishing Services (UN Geneva). United Nations; 2006.
8. Kaya F, Bilgin H, Singer MI. Contributing factors to aggressive behaviors in high school students in Turkey. *J Sch Nurs* 2012;28:56-69.
9. UNESCO. School Violence and Bullying: Global Status Report. Paris: United Nations Educational, Scientific and Cultural Organization; 2017.
10. Fakhari A, Tabatabavakili M, Javid YS, Farhang S. Family violence influences mental health of school girls in Iran: Results of a preliminary study. *Asian J Psychiatr* 2012;5:24-7.
11. World Health Organization. Global School-Based Student Health Survey (GSHS). Geneva: World Health Organization; 2009.
12. Yang L, Zhang Y, Xi B, Bovet P. Physical fighting and associated factors among adolescents aged 13-15 years in six Western Pacific countries. *Int J Environ Res Public Health* 2017;14. pii: E1427.
13. Mat Hussin SF, Abd Aziz NS, Hasim H, Sahril N. Prevalence and factors associated with physical fighting among Malaysian adolescents. *Asia Pac J Public Health* 2014;26:108S-15S.
14. Fraga S, Ramos E, Dias S, Barros H. Physical fighting among school-going portuguese adolescents: Social and behavioural correlates. *Prev Med* 2011;52:401-4.
15. Rudatsikira E, Muula AS, Siziya S. Variables associated with physical fighting among US high-school students. *Clin Pract Epidemiol Ment Health* 2008;4:16.
16. Celedonia KL, Wilson ML, El Gammal HA, Hagraas AM. Physical fighting among Egyptian adolescents: Social and demographic correlates among a nationally representative sample. *PeerJ* 2013;1:e125.
17. Kann L, McManus T, Harris WA, Shanklin SL, Flint KH, Hawkins J, *et al.* Youth risk behavior surveillance – United States, 2015. *MMWR Surveill Summ* 2016;65:1-74.
18. Rudatsikira E, Siziya S, Kazembe LN, Muula AS. Prevalence and associated factors of physical fighting among school-going adolescents in Namibia. *Ann Gen Psychiatry* 2007;6:18.
19. Williams K, Rivera L, Neighbours R, Reznik V. Youth violence prevention comes of age: Research, training and future directions. *Annu Rev Public Health* 2007;28:195-211.
20. Román M, Murillo FJ. Latin America: School bullying and academic achievement. *Cepal Rev* 2011;104:37-53.
21. Pickett W, Molcho M, Elgar FJ, Brooks F, de Looze M, Rathmann K, *et al.* Trends and socioeconomic correlates of adolescent physical fighting in 30 countries. *Pediatrics* 2013;131:e18-26.
22. Swahn MH, Gressard L, Palmier JB, Yao H, Haberlen M. The prevalence of very frequent physical fighting among boys and girls in 27 countries and cities: Regional and gender differences. *J Environ Public Health* 2013;2013:215126.
23. United Nations Children's Fund, Hidden in Plain Sight: A statistical analysis of violence against children, UNICEF, New York, 2014.
24. Owens L, Daly A, Slee P. Sex and age differences in victimisation and conflict resolution among adolescents in a South Australian school. *Aggress Behav Wiley Online Libr* 2005;31:1-12.
25. Zhang A, Musu-Gillette L, Oudekerk BA. Indicators of School Crime and Safety: 2015. NCES 2016-079/NCJ 249758. National

Center for Education Statistics. ERIC; 2016.

26. Khubchandani J, Price JH. Violence related behaviors and weapon carrying among hispanic adolescents: Results from the National Youth Risk Behavior Survey, 2001-2015. *J Community Health* 2018;43:391-9.
27. Frisell T, Lichtenstein P, Långström N. Violent crime runs in families: A total population study of 12.5 million individuals. *Psychol Med* 2011;41:97-105.