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Prevalence of Bullying and its Associated Factors among Iranian Middle School Students

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Abstract

Aim: School bullying is a worldwide problem and crosses national boundaries. Students involved in bullying have a greater chance of developing emotional and behavioral disorders, as well as a higher risk of engaging in criminal behavior later in their lives. This study aims to examine the prevalence of bullying behavior and some of its associated factors among male middle school students in Tehran, Iran.

Methods: Overall, 1803 middle school students, aged 11 to 15, were enrolled in the study between January and March, 2012. Bullying behavior of and on participants was evaluated using Persian version of the revised Olweus Bully/Victim Questionnaire (OBVQ).

Findings: More than 55% of students reported being involved in bullying behaviors in school, either as a victim (51%), a bully (31%) or both a bully and a victim (18%). The most common subtypes of bullying were verbal (61.3%), physical (47.6%), and indirect (50.3%) bullying. In a regression analysis, the number of students' close friends, their age, their father's education level and home atmosphere were the only significant predictors of bullying behavior.

Conclusion: The prevalence of bullying among Iranian middle school students is highly concerning; hence, implementation of a comprehensive, school-based anti-bullying program is an urgent need because students, who are involved in bullying behavior, are at higher risk for developing psychosocial disorders and engaging in criminal behavior later in their lives.

Keywords: School bullying, Adolescent violence, Peer harassment, Peer victimization, Prevalence

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Introduction

Bullying is a major health problem among school students all over the world [1]. Bullying is defined as "a specific form of aggression that includes three main elements: a) There is an intention to inflict harm or discomfort on another person; b) The aggressive behavior is being repeated over time; and c) There is an actual or perceived physical or psychological power imbalance between perpetuators and victims" [1-4].

Direct bullying includes physical and verbal aggression. Indirect bullying is performed by manipulating social relationships i.e. gossiping, spreading rumors, excluding from groups, and enforcing social isolation [1, 2]. With the widespread use of cell phones and the Internet among adolescents, another form of bullying, which is referred to as cyber bullying, has emerged. It occurs through texting, e-mailing, and instant messaging [3, 5].

Involvement in bullying behavior peaks in middle school [6] and decreases during the following years. As social skills of students develop, their physical aggression declines [1]. According to some research, personal characteristics are associated with the perpetration of bullying and victimization [7]. Bullies show a higher degree of conduct problems, whereas victims tend to have higher rates of anxiety, depression, and low self-esteem. They have difficulty in social relations and making friends. They are usually lonely [3]. Supportive parenting, good child-parent communications and a peaceful home atmosphere can protect against bullying, as well as being bullied [5].

Bullying violates students' right to learn in a safe and secure environment [2]. It has adverse effects on the level of school satisfaction, attendance [8], and academic achievement [5]. Moreover, it imposes a negative influence on the physical, emotional and psychosocial well-being of the involved students [2, 5]. Bullies are at a higher risk for smoking, drinking, early involvement in sexual behaviors [9], substance abuse, carrying weapons [5] and later engaging in criminal behaviors [1].

The first step to understand school bullying is estimating its magnitude and prevalence [1]. Since early studies by the Norwegian researcher, Dan Olweus, bullying has attracted much attention in different countries all over the world. In a study in 40 different countries, 26% of adolescents reported involvement in bullying. However, 8.6 % to 45.2 % of boys from different countries were involved in bullying as the perpetrator, victim or both victim and perpetrator. The lowest and highest rate belonged to Sweden and Lithuania, respectively. Being both bully and victim was more common in boys than girls. Scandinavian and northwestern European countries had

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lower rates compared to eastern European countries [1].

In a study of 15,686 students in grades 6 to 10 in the United States, 29.9% reported that they were involved in bullying as either the bully, the victim, or both bully and victim [3]. In Australia its prevalence was 57.6%. A study among 1,182 students aged 14 to 16 years in Jerusalem revealed a prevalence of 74.1% in male participants [10]. The prevalence was 20% in Polish students [11] and 26.4% in Greek adolescents [12]. In Turkey, the prevalence ranged from 20% to 40% in different studies [8, 9] and in one study involving five high schools in Ankara, each of the 692 students reported being bullied during one academic year [2] and about two-thirds of the students had got help in coping with bullying.

The prevalence of "bully/ victim" ranged from 2-6% in European countries [6, 11, 12] and the United States [3] to 22% in Australia and Turkey [13]. Prevalence of "bully/ victim" in Jerusalem (33.2%) was high [10].

According to some research, adolescents with no close friends are more likely to be bullied than adolescents who have close friends [14]. In addition, some findings indicate that low socioeconomic background is associated with an increased risk of being a bully or bully-victim [15].

In Iran, to our knowledge, no conducted or documented study has already been reported in this field of research. There is no comprehensive anti-bullying program running in the schools and school staffs are unaware of the importance of the problem and/or prefer to be ignorant. This study aims to examine the prevalence of bullying and its associated factors among Iranian middle school students.

Methods

A total of 1,960 students aged 11 to 15 years agreed to participate in the research and were enrolled in the study between January and March 2012. The Iranian educational system is based on single-sex schools through grades 1-12 and students spend 3 years in the middle school (grades 6 through 8). Participants included all male students, who were studying at Tehran urban public or private middle schools. Since doing research on female students was not allowed, participants were limited to males.

Representative students were employed through two-stage stratified cluster of classes. Sample stratification was done based on different districts of the metropolitan city of Tehran and also by school type (public or private). Twelve schools from six different districts were chosen based on the number of students in each school. In all, 1600 students were recruited by random sampling. Sample

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size was determined with a precision of 3% at a 95% confidence level. Almost two thirds of the study population were students from public schools.

Bullying behavior was evaluated using a questionnaire based on the revised Olweus Bully/Victim Questionnaire (OBVQ) (Olweus, 1996) [17].

Persian version of Olweus Bully/Victim Questionnaire (OBVQ) was forward-backward translated by qualified translators. At the Ministry of Education request, 3 items were deleted from the research tool, including the items concerning "loving school", "being bullied with mean names, comments, or gestures with a sexual meaning", and "Cyberbullying ".The item "How do you describe yourself", which questioned students' ethnic ancestry and was irrelevant to the aim of the present study, was omitted too. Therefore, the research questionnaire with 36 items was provided to the participants. It was composed of three parts: part one with 2 items, about students' gender and number of their good friends; part two consisting 19 items, including questions about being bullied by other students and part three consisting 15 items, including questions about bullying other students. Explanations on how to answer the questions was provided and it had been emphasized not to inscribe their names on the completed questionnaires. Students were asked to answer the questions based on their involvement in bullying behavior in the last three months. Before part two, some explanations about being bullied, such as examples of different kinds of bullying, were provided for participants. It was stressed that when talking about bullying, the events happen "more than just once" and "it is difficult for a student to defend him or herself when being bullied". It was also explained that "when teasing is done in a friendly and playful way" and similarly "when two students with equal strength or power argue or fight" it is not called bullying. Participants' answers to the items addressing bullying or being bullied were rated based on a five-part Likert scale, ranging from "It has not happened …" to "Several times a week". Choosing 2-3 times in a month was considered as involvement in bullying (bullying others or being bullied). Students who reported both bullying and being bullied were considered as "bully-victims".

A brief questionnaire including some socio-demographic characteristics and school-related factors was administered to the participants too. In addition, students' home atmosphere was assessed by a question about "emotional space of their home" with response categories of "Friendly and full of love", "Family members pay attention to each other not so much", "Full of arguments and fights", and "Others (Please explain)".

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In this study, socioeconomic status of students' families was considered based on the districts they lived in because different residential districts of Tehran represented different socioeconomic levels of families and students whether in public or private schools lived near their schools. To be careful, the variable was named socioeconomic status of district of residence, instead of socioeconomic status of students' families. Consequently, socioeconomic status of district of residence was divided into three groups: low, middle and high.

In all 1,960 students completed Persian version of revised Olweus Bully/Victim Questionnaire (OBVQ) about the frequency of their involvement in bullying behavior as well as another brief questionnaire. Fifty students completed the questionnaires for the second time, two weeks later. Psychometric properties of Persian version of revised Olweus Bully/Victim Questionnaire were appropriate.Cronbach's alpha was0.84 and 0.87 for bully perpetrating subscale and victimization, respectively. The overall Cronbach's alpha was 0.91.

Descriptive statistics were used to present the distribution of the data. When analyzing the data, in bully, victim or victim-bully groups, cut-off point of "Two- Three times monthly" was considered as occurrence of bullying behavior. The Chi-square tests were used to assess the association between different variables and bullying behavior. Multinomial and Logistic regression analysis was conducted to test a model predicting bullying behavior. P-values less than 0.05 were considered statistically significant. Data from 1,803 fully completed questionnaires were analyzed using IBM®SPSS® Statistics version 20.

Conducting this study was approved by the ethics committee of Tehran University of Medical Sciences. Both the students and their parents received detailed information about study aims and procedures and a written informed consent form was signed by parents of the students who agreed to participate in the research.

Results

Overall, 1,803 students completed the questionnaires (response rate: 92%). 833 students (46.2%) were in grade 6; 512 (28.4%) in grade 7 and 458 (25.4%) in grade 8. Mean age of the participants was 12.92(SD=1.04). Socioeconomic status in residential district of 32.5%, 39.9% and 27.6% of participants was low, medium and high, respectively. Table 1 demonstrates the descriptive characteristics of the study population.

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Table 1 Descriptive characteristics of the participating school students

Age (yr)	**Frequency (%)**	
11	120(6.7)	
12	563(31.3)	
13	574(31.9)	
14	420(23.3)	
15	123(6.8)	
Mean age (SD)	12.92(1.04)	
School Type		
Public	1258(69.8)	
Private	545(30.2)	
Grade		
6th	833(46.2)	
7th	512(28.4)	
8th	458(25.4)	
Parents Education	**Mother**	**Father**
Illiterate	54(3.1)	51(2.9)
Primary	400(22.9)	448(25.7)
High school / HS graduate	696(39.8)	631(36.1)
Secondary education	438(25)	394(22.6)
Tertiary Education	161(9.2)	222(12.7)
Socioeconomic status		
Low	560(32.5)	
Middle	687(39.9)	
High	476(27.6)	
Bullying behaviour		
Involving	1004(55)	
Victim	512(51)	
Bully	311(31)	
Victim - Bully	181(18)	
Verbal	1105(61.3)	
Physical	858(47.6)	
Indirect	906(50.3)	

A great number of students, 55% of them, reported being involved in bullying behavior at school, 31% as the perpetrator, 51% as the victim and 18% as both victim and perpetrator. The most common type of bullying was verbal (61.3%), followed by racial/accent (56.2%), physical (47.6%), and indirect (50.3%) bullying. The site where most bullying events occurred was playground, followed by classroom and stairs/hallway. Nearly one out of five students reported being bullied frequently (once a week or more). The rate of frequent bullying (Few times in a week) was 9.6%.

The frequency of bullying and victimization among different grades and school types are summarized in Table 2. More than 77% of students believed that school staff had done nothing or just a little or fairly little to cut bullying in their school.

Table 2 Frequency (%) of victim / bully by school type and grades

School type/Grade	**Not victim/ bully**	**One-two times**	**Two - three times monthly**	**Once weekly**	**Few times weekly**
Victim					
All students	36.3	28.9	15.2	6.8	12.7
Public	33.9	30.9	15.8	7.0	12.4
Private	41.9	24.4	14.0	6.4	13.2
Grade					
6th	32.0	32.0	15.9	6.9	13.3
7th	35.0	27.7	15.2	7.2	14.8
8th	45.8	24.8	14.0	6.4	9.0
Bully					
All students	56.5	22.1	11.9	2.9	6.7
Public	56.4	22.0	11.8	2.7	7.2
Private	56.8	22.5	11.9	3.4	5.5
Grade					
6th	62.5	21.7	9.4	2.1	4.4
7th	48.7	25.8	14.9	2.4	8.2
8th	54.2	18.9	13.0	4.8	9.0

The prevalence of victimization showed a downward trend through grades 6-8 (from 36.1% in grade 6 to 29.4% in grade 8). The rate of bullying peaked in grade 7 (21.7%), falling to 20.8% in grade 8 (Table 2). The prevalence of bullying was greater among students, who were from families with low socioeconomic status and who were studying

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in public schools (Table 3). Number of close friends, county of residence, home atmosphere and parental education level were also associated with school bullying behavior (p-value of Pearson Chi-Square <0.05). On the contrary, family size and birth order did not show a statistically significant association with school bullying behavior.

Table 3 Frequency (%) of school bullying behavior subtypes by victim, bully and victim-bully groups

Bullying behavior subtypes	Verbal	Physical	Exclusion	Racial/Accent
Victim	417(66.4%)	223(35.5%)	220(35%)	284(45.2%)
Bully	196(47.8%)	113(27.6%)	121(29.5%)	141(34.4%)
Victim-Bully	146(73%)	92(46%)	88(44%)	102(51%)

Table 4 Factors associated with school bullying behavior by Victim- Bully and Not involved students

Factors			Victim/ Bully =181(18%)			Not involved n=799(45%)
	Wald	Sig.	Odds(CI 95%)	Wald	Sig.	Odds(CI 95%)
Age	.084	.772	1.03(0.81-1.32)	1.368	.242	1.09(0.94-1.27)
Family size	.111	.740	1.05(0.88-1.24)	5.651	.017	0.96(0.86-1.07)
School type	.328	.567	0.92(0.59-1.45)	.487	.485	1.36(1.05-1.76)*
Grade	3.421	.181		3.533	.171	
Grade=1	.609	.435	0.77(0.41-1.46)	.014	.906	1.02(0.69-1.51)
Grade=2	.548	.459	1.19(0.74-1.89)	1.705	.192	0.81(0.60-1.10)
Nunmber of Friends	12.240	.016		21.468	.000	
None	11.198	.001	2.90(1.55-5.43)*	10.464	.001	0.44(0.27-0.72)*
One	2.075	.150	1.46(0.87-2.44)	13.601	.000	0.54(0.39-0.75)*
2-3	.176	.675	1.10(0.70-1.73)	5.682	.017	0.73(0.56-.0.94)*
4-5	1.313	.252	1.30(0.82-2.05)	2.813	.093	0.79(0.60-1.04)
Socio-economic status	1.308	.520		4.177	.124	
Low	1.253	.263	0.51(0.16-1.64)	.659	.417	0.76(0.39-1.47)
Middle	.482	.488	0.76(0.35-1.64)	3.562	.059	0.67(0.44-1.01)
Home Atmosphere=Lovely	6.729	.009	0.56(0.36-0.86)*	10.527	.001	1.70(1.23-2.35)*
Mother Education	3.910	.562		5.097	.404	
Illiterate	.009	.925	1.06(0.29-3.81)	.449	.503	1.35(0.56-3.25)
Primary	.012	.913	0.94(0.34-2.56)	.005	.945	1.02(0.55-1.86)
High school/HS graduate	.285	.594	0.75(0.26-2.13)	.271	.603	1.18(0.63-2.20)
Secondary education	1.400	.237	0.61(0.27-1.38)	2.100	.147	1.43(0.88-2.32)
Tertiary Education	1.808	.179	0.62(0.31-1.23)	.589	.443	1.17(0.77-1.77)
Father Education	7.755	.170		8.356	.138	
Illiterate	4.162	.041	3.67(1.05-12.83)*	2.642	.104	0.48(0.20-1.16)
Primary	3.681	.055	2.62(0.97-7.01)	.195	.659	0.87(0.49-1.55)
High school/HS graduate	1.318	.251	1.79(0.66-4.89)	.023	.880	0.95(0.53-1.71)
Secondary education	.131	.717	1.16(0.50-2.66)	.862	.353	1.24(0.78-1.97)
Tertiary Education	.028	.868	1.06(0.53-2.10)	1.569	.210	1.28(0.86-1.89)
Constant	1.501	.220		1.393	.238	

R^2 Cox&Snell =0.032, Bainary Logistic Regression
* P value ≤ 0.05

Doing multinomial and logistic regression analyses, number of close friends, age, father education level and home atmosphere were the only significant predictors of bullying behavior (Tables 4 and 5). The same results were observed using a stepwise backward logistic regression, which is not shown in the tables.

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Table 5 Factors associated with school bullying behavior by Victim and Bully students

	Victim n=512(51%)			Bully n=311(31%)		
	Wald	**Sig.**	**Odss (CI 95%)**	**Wald**	**Sig.**	**Odss (CI 95%)**
Age						
2-3 Times Monthly	0	0.988	1.00(0.80-1.24)	.315	.575	1.07(0.84-1.35)
Once Weekly	5.817	0.016	0.68(0.50-0.93)*	.031	.860	0.96(0.61-1.50)
Few times weekly	4.729	0.03	0.77(0.61-0.97)*	3.356	.067	1.33(0.98-1.80)
Family size						
2-3 Times Monthly	0.185	0.667	0.96(0.83-1.12)	.126	.723	1.03(0.87-1.21)
Once Weekly	1.435	0.231	1.13(0.92-1.39)	.144	.704	0.93(0.67-1.30)
Few times weekly	1.71	0.191	1.11(0.94-1.30)	.127	.722	1.03(0.84-1.28
School type						
2-3 Times Monthly	0.922	0.337	0.83(058-1.20)	1.973	.160	0.75(0.50-1.11)
Once Weekly	0.884	0.347	0.78(0.46-1.30)	.489	.485	0.74(0.32-1.69)
Few times weekly	3.322	0.068	0.69(0.47-1.02)	.152	.697	1.11(0.63-1.96)
Grade=1						
2-3 Times Monthly	1.414	0.234	1.39(0.80-2.40)	.259	.611	0.85(0.47-1.55)
Once Weekly	1.405	0.236	0.63(0.29-1.35)	2.927	.087	0.37(0.12-1.15)
Few times weekly	0.856	0.355	1.33(0.72-2.47)	.750	.387	0.70(0.32-1.54)
Grade=2						
2-3 Times Monthly	1.038	0.308	1.24(0.81-1.91)	1.061	.303	1.26(0.80-1.97)
Once Weekly	0.038	0.846	0.94(0.52-1.69)	2.730	.098	0.48(0.20-1.14)
Few times weekly	4.413	0.036	1.68(1.03-2.74)*	.462	.497	1.21(0.69-2.10)
No of Friends=None						
2-3 Times Monthly	9.173	0.002	2.63(1.40-4.94)*	.052	.820	1.09(0.50-2.36)
Once Weekly	6.033	0.014	2.80(1.23-6.36)*	2.259	.133	2.47(0.76-8.03)
Few times weekly	13.99	0	3.57(1.83-6.95)*	2.579	.108	1.88(0.86-4.10)
No of Friends=One						
2-3 Times Monthly	0.741	0.389	1.23(0.76-1.96)	7.156	.007	1.87(1.18-2.96)*
Once Weekly	0.143	0.705	0.86(0.41-1.80)	1.797	.180	1.84(0.75-4.53)
Few times weekly	14.726	0	2.41(1.54-3.79)*	.615	.433	1.28(0.68-2.40)
No of Friends=2-3						
2-3 Times Monthly	5.021	0.025	1.51(1.05-2.16)*	1.024	.312	1.22(0.82-1.82)
Once Weekly	1.967	0.161	1.42(0.86-2.34)	.126	.722	0.85(0.35-2.05)
Few times weekly	5.03	0.025	1.59(1.06-2.39)*	4.059	.044	0.51(0.27-098)
No of Friends=4-5						
2-3 Times Monthly	3.481	0.062	1.42(0.98-2.07)	.056	.813	1.05(0.68-1.62)
Once Weekly	0.123	0.726	1.10(0.64-1.89)	.418	.518	1.30(0.58-2.94)
Few times weekly	0.697	0.404	1.20(0.77-1.88)	1.050	.306	1.31(0.77-2.23)
SES=Low						
2-3 Times Monthly	0.211	0.646	1.24(0.49-3.12)	.121	.728	1.20(0.42-3.36)
Once Weekly	0.818	0.366	1.89(0.47-7.52)	.000	.986	1.02(0.11-9.23)
Few times weekly	0.811	0.368	0.62(0.22-1.74)	.013	.908	0.92(0.23-3.68)
SES=Middle						
2-3 Times Monthly	0.36	0.549	1.19(0.66-2.16)	.007	.934	1.02(0.52-2.01)
Once Weekly	2.708	0.1	2.15(0.86-5.36)	.881	.348	0.49(0.11-2.14)
Few times weekly	0.178	0.673	1.15(0.59-2.21)	2.287	.130	2.06(0.80-5.31)
Home Atmosphere=Lovely						
2-3 Times Monthly	1.292	0.256	0.77(0.50-1.19)	5.333	.021	0.59(0.38-0.92)*
Once Weekly	1.336	0.248	0.70(0.39-1.27)	.020	.889	0.93(0.38-2.31)
Few times weekly	3.22	0.073	0.65(0.41-1.03)	13.109	.000	0.38(0.23-0.64)*
Mother Education=0						
2-3 Times Monthly	1.761	0.184	0.42(0.12-1.50)	.200	.654	0.74(0.20-2.69)
Once Weekly	0.053	0.819	1.20(0.24-6.04)	.028	.868	1.23(0.10-14.13)
Few times weekly	0.668	0.414	1.67(0.48-5.74)	.103	.748	0.75(0.13-4.28)
Mother Education=1						
2-3 Times Monthly	0.286	0.593	0.79(0.34-1.84)	.427	.513	0.73(0.28-1.86)
Once Weekly	0.09	0.765	1.19(0.36-3.92)	.118	.731	0.72(0.11-4.52)
Few times weekly	0.18	0.671	1.21(0.49-3.01)	.196	.658	1.34(0.36-4.91)
Mother Education=2						
2-3 Times Monthly	0.319	0.572	0.77(0.32-1.86)	1.184	.277	0.57(0.21-1.55)
Once Weekly	0.546	0.46	0.60(0.16-2.26)	1.671	.196	0.18(0.01-2.41)
Few times weekly	0.116	0.733	1.17(0.47-2.91)	.419	.517	1.53(0.42-5.57)
Mother Education=3						
2-3 Times Monthly	1.088	0.297	0.69(0.35-1.37)	1.266	.261	0.64(0.30-1.38)
Once Weekly	0.495	0.482	0.70(0.26-1.86)	.076	.783	0.81(0.18-3.55)
Few times weekly	1.003	0.317	0.69(0.33-1.42)	.170	.680	0.79(0.25-2.43)
Mother Education=4						
2-3 Times Monthly	1.376	0.241	0.70(0.39-1.26)	.917	.338	0.72(0.38-1.39)
Once Weekly	0.053	0.818	0.90(0.38-2.11)	.132	.717	1.23(0.39-3.85)
Few times weekly	0.371	0.542	0.82(0.44-1.52)	.029	.865	0.91(0.34-2.43)

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	Victim n=512(51%)			Bully n=311(31%)		
	Wald	**Sig.**	**Odss (CI95%)**	**Wald**	**Sig.**	**Odss (CI95%)**
Father Education=0						
2-3 Times Monthly	4.487	0.034	3.33(1.09-10.16)*	2.307	.129	2.62(0.75-9.12)
Once Weekly	0.344	0.557	0.61(0.11-3.17)	.036	.850	0.76(0.45-12.87)
Few times weekly	0.967	0.325	1.88(0.53-6.70)	1.157	.282	2.32(0.50-10.82)
Father Education=1						
2-3 Times Monthly	0.504	0.478	1.34(0.59-3.03)	1.464	.226	1.76(0.70-4.39)
Once Weekly	0.758	0.384	0.59(0.18-1.90)	.458	.499	1.86(0.30-11.42)
Few times weekly	0.837	0.36	1.50(0.62-3.60)	.141	.707	1.25(0.38-4.16)
Father Education=2						
2-3 Times Monthly	0.283	0.595	1.25(0.54-2.87)	1.162	.281	1.67(0.65-4.27)
Once Weekly	1.423	0.233	0.47(0.13-1.61)	.500	.479	1.94(0.30-12.32)
Few times weekly	0.328	0.567	1.28(0.54-3.07)	.179	.672	0.77(0.23-2.55)
Father Education=3						
2-3 Times Monthly	0.001	0.976	1.01(0.51-1.96)	1.727	.189	1.66(0.77-3.53)
Once Weekly	1.538	0.215	054(0.20-1.42)	.041	.840	0.86(0.20-3.62)
Few times weekly	0.223	0.637	0.84(0.41-1.71)	3.726	.054	0.34(0.12-1.01)
Father Education=4						
2-3 Times Monthly	0.085	0.77	1.08(0.61-1.91)	.267	.605	1.18(0.61-2.28)
Once Weekly	4.241	0.039	0.41(0.17-0.95)*	1.348	.246	0.52(0.17-1.56)
Few times weekly	0.629	0.428	0.78(0.43-1.42)	.288	.592	0.78(0.32-1.91)
Constant						
2-3 Times Monthly	0.928	0.335		2.081		
Once Weekly	1.799	0.18		.289		
Few times weekly	0.803	0.37		6.260		

R^2 Cox&Snell=0.044, Using Multinomial Logistic Regression
* P value ≤ 0.05

Discussion

The prevalence of involvement in bullying behavior was 55% among students in the study. Although all participants of this study were boys and involvement in bullying is more common in boys than girls [16], male students in this study involved in bullying behavior nearly 2 times more than their counterparts in other 40 different countries [1]. On the other hand, in the study in Jerusalem schools [10], 57.1% of boys reported bullying and 50.3% of them reported being bullied (higher rates compared to this study). Widely different rates of involvement in bullying behaviors across different countries can be explained by many various factors, such as using different research tools in studies; different operational definition of involvement in bullying; reporting different periods in them bullying or being bullied has happened , for instance in the past three months, during the academic year or in the last term [2, 10, 15]; willing to report bullying behaviors; ensuring confidentiality of participants' data; existence of a program to cope with the problem and so on.

Our study also showed an extremely high prevalence of being both bullied and victim (18%) among middle school students. This should be considered a pivotal concern because some studies reflect this group as "the most troubled group" [16].

The prevalence of bully/victim ranged from 2-6% in European countries [6, 11, 12] and the United States [3] to 22% in Australia [9]) and Turkey [13]. It was reported a high prevalence of bully/victim (33.2%) in Israel [10].

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High prevalence of being bully/victim in this study compared to the other studies could be explained by insufficient knowledge and improper response of school officials, which deteriorates school atmosphere and lets students solve problems themselves or use displacement defense mechanisms.

The association of bullying behavior with age, grade, socioeconomic status, home atmosphere and parental education level is concordant with the findings of previous studies [1, 5, 9].

There can be a negative association between supportive parenting, good child-parent communications, a peaceful home atmosphere and bullying/ being bullied [9].

Multivariate analysis shows that number of close friends, county of residence and home atmosphere are the three main factors contributing to bullying behavior. For instance, living and going to school in a low socioeconomic district can lead to increased bullying behavior despite the high socioeconomic background of the family and parents' education level.

This study had a few limitations. Boys were the only participants of the study. Other measures of participants' well-being such as their quality of life or some other delinquent behaviors were not assessed.

Conclusion

In conclusion, the high prevalence of bullying among students in this study is really alarming. The very high prevalence of being bully/victim in this study compared to the other studies could be the result of a negative attitude towards this common problem as well as not adopting any effective preventive strategies or proper management plans. The very high prevalence of involvement in bullying behaviors among students in this study may attract officials and researchers' attention at ministry of education or other institutions to this problem in order to implement proper strategies or conduct further studies in this regard.

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