Bullying and Victimization among Adolescents in Governmental Schools in Aswan City, Upper Egypt

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Abstract

Background: Detecting the magnitude and determinants of bullying and victimization among school students is important for starting suitable preventive measures. **Objective:** This study aimed to determine the prevalence and determinants of bullying and victimization among school adolescents. **Method**: A cross-sectional study was conducted on 400 students from 10 schools in Aswan city. An interviewer-administered questionnaire was used to collect sociodemographic characteristics and determinants of bullying and victimization. The frequency of bullying and victimization was measured using the school life survey tool. **Results**: Prevalence of bullying behavior was high (67.5%) among the studied group, where 30.2% were victims, 29.8% were bully-victims, and 7.5% were bullies. On multinomial logistic regression, family members using weapons (OR=6.2, P=0.003), violent movies (OR=5.52, P=0.003) and school climate (OR=0.857, P=0.001) were the significant predictors for 'bully' category. Exposure to corporal punishment, bad language and insults in home (OR=2.389, P= 0.006; OR=2.335, P=0.031; OR=2.265, P=0.013 respectively) and school climate (OR=0.939, P=0.02) were the significant predictor for 'victim' category. Lastly, the significant predictors for being bully-victims were exposure to insults in home (OR=4.313, P<0.001), threatening with weapon among family members (OR=3.999, P=0.02), violent friends (OR=2.592, P=0.009), exposure to bad language in home (OR=2.408, P=0.04), school punishment (OR=2.482, P=0.019) and school climate (OR=0.851, P<0.001). **Conclusions**: The prevalence of bullying is high among school adolescents in Aswan city. A negative family environment and poor school climate have a role in the student involvement in bullying and victimization, so starting parental educational programs and effective bullying prevention programs in the schools is recommended.

Keywords: Bullying, victimization, adolescent, students.

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Introduction

Violence among young people is a global public health problem. It includes a range of acts from bullying and physical fighting, to more severe sexual and physical assault to homicide.[1] Nowadays, bullying is an issue of increasing concern for researchers, educators, clinicians and parents due to its visible and hidden impacts on adolescents and youth.[2] Till now, there is no a universal definition of bullying, despite

efforts made by researchers.[3] One of the offered definitions is the definition of the Center for Disease Control and Prevention (CDC) which reflects the critical elements of bullying as it includes aggressive behavior that is repeated over time and involves a real or perceived imbalance of power; moreover, it mentions the outcome of harm on targeted youth.[4]

Bullying is usually seen as physical act of violence. However, the broader definition shows that children experience different types of bullying which include direct bullying either physical (such as hitting or kicking) or verbal (name-calling, nasty teasing) and indirect bullying like by using third parties to damage social relationships by spreading harmful rumors and other measures aimed at social exclusion.[4,5] There is no one causal factor for bullying but multiple determinants across different contexts which include individual-level factors, family-level factors, school-level factors, community-level factors, and societal factors.[6–8]

Being bullied has many short- and long-term effects which include poorer health, poor academic achievement, and lower-wage earnings in the adulthood.[5,9–11]

According to the UNESCO, almost one-third of young teens worldwide have experienced bullying.[12] In Egypt, the Global School-based Student Health Survey which was implemented in 2011, showed that 70% of adolescent students aged 13-15, had been bullied at the time of the study assessment.[13] Although this showed that bullying is a prevalent problem in Egypt, reviewing literature showed that there are few studies which discussed this phenomenon among Egyptian adolescents. So, this study was conducted to detect the prevalence and the determinants of bullying behavior among school-attending adolescents in Aswan

city, Upper Egypt. Thus, this information will help in designing of policies and programs that aim to ensure that schools are free from bullying.

Method

A cross-sectional study was conducted among school-attending adolescents aged 11- 17 years in Aswan city, Egypt. While taking permission from the Aswan education directorate to conduct the study, a list of 140 schools in Aswan city was provided. Out of them, 10 public schools were selected according to a probability proportional to their population size. From each selected school, one class was chosen randomly as a cluster.

The sample size was calculated using the Epi Info software program version 7.1.5. At 95% confidence interval and population size of 93790 students (Students registered in primary, preparatory, and secondary schools in Aswan city), assuming that bullying rate among school-attending adolescents (11-16 years) in Egypt was 34,2% [14], with a margin of error of 5%, the sample size required was 346 participants. Adding 15% to compensate for potential non-response, the final sample size was estimated to be 398 students. Out of the 443 students who were approached, 400 agreed to participate (response rate of 90%).

Data were collected by an interviewer-administered questionnaire which was revised comprehensively by two professors of public health. It was divided into three parts: (1) Sociodemographic characteristics including gender, age, school grade, parents' occupation, parents' educational levels, living with single or both parent(s), birth order, and family type. (2) Risk factors of bullying and victimization derived after reviewing the literature,[15–18] included: a-Individual factors including

academic achievement (last year result), watching violent media, and carrying a weapon. b- Peer factors including having violent friends and having friends who are drinking alcohol or taking drugs. c- Family factors including exposure to corporal punishment and insults by family members, exposure to bad language at home, witnessing violent arguments and threatening by/or using weapons among family members. d- School factors including exposure to punishment at school (beating and mortification words), teachers response toward peer violence, and lastly school climate which was measured by the school climate subscale that is part of the California School Climate and Safety Survey which contains 7 items of 5-point Likert scale ranging from 1 "Strongly disagree" to 5 "Strongly agree", giving a range between 7 and 35 with higher scores indicating stronger agreement with good school climate.[19] e- Community factors including witnessing fights, weapons carrying and threatening by weapons in the neighborhood. (3) Bullying/victimization measure: School Life Survey was used to detect the frequency of bullying and victimization. It is formed of a bullying scale and a victimization scale, each of them contains various items for measuring the three types of bullying and victimization (physical, verbal, and relational). There are 9 items in the bullying scale and 15 items in the victimization scale. We summed the items in each scale to give an overall score of bullying or victimization. A frequency of four acts during the past four weeks was the cut-off level for defining bullying or victimization. Regarding the psychometric properties, Cronbach's alpha of the whole scale is 0.83, and the 1-week test-retest reliability of the bullying scale and

victimization scale were respectively 0.84 and 0.94.[20]

Data were collected in the academic year 2019–2020 between October 2019 and March 2020 after taking the required administrative permissions from the local education directorate. First, before starting data collection, a pilot study was carried out on 30 students from different schools in Aswan city to test the questionnaire form and to estimate of the time needed to collect data. The pilot study cases were not included in the results of the study. Then, after orienting each school principal, consent forms were sent to parents of the selected students explaining the purpose and procedures of the study. After obtaining parents consents and adolescent assents from students, the researchers invited each student to a personal interview to complete the questionnaire through a 20- to 30-min period during lunch breaks or other school periods.

Statistical analysis

Pre-coded data were entered on the computer using the Statistical Package for Social Science (SPSS) version 23. The data were summarized using mean +/- standard deviation for normally distributed quantitative variables and median and interquartile range for not normally distributed ones, while frequency and percentages were calculated for qualitative variables. Statistical differences between the groups were tested using the χ^2 test and Monte Carlo probability test (MCP) for qualitative variables and the independent sample t-test, One-way ANOVA, and Kruskal-Wallis Test for analysis of quantitative ones. Significance was considered at a p-value of less than 0.05. lastly, significant variables were presented in multinomial logistic regression with backward elimination

model to assess the determinants of bullying/victimization.

Ethical considerations

The study was approved by the Medical Research and Ethics Committee of the Faculty of Medicine, Aswan University,

Table (1): Association between sociodemographic characteristics and bullying/victimization among school adolescents in Aswan city, 2019.

Variable	Neither victim nor bully		Victim		Bully		Bully-victim	
	No.	%	No.	%	No.	%	No.	%
Gender of the student								
Male	50	25.5	54	27.6	22	11.2	70	35.7
Female	80	39.2	67	32.8	8	4.0	49	24.0
P-value	< 0.001							
Age categories /Adolescence stages								
Early (11-14)	101	31.1	100	30.8	18	5.5	106	32.6
Middle (15-17)	29	38.7	21	28.0	12	16.0	13	17.3
P-value	0.002							
Educational level of the student								
Primary	58	35.8	53	32.7	9	5.6	42	25.9
Preparatory	42	26.1	47	29.2	8	5.0	64	39.2
Secondary	30	39.0	21	27.1	13	16.9	13	16.9
P-value	< 0.001							
Educational level of the father								
Illiterate/literacy classes	11	26.8	12	29.3	2	4.9	16	39.0
Basic education	9	32.1	5	17.9	2	7.1	12	42.9
Secondary/technical	57	32.2	61	34.5	10	5.6	49	27.7
University degree/ higher	53	34.4	43	27.9	16	10.4	42	27.3
P-value	0.383							
Educational level of the mother								
Illiterate/literacy classes	13	28.9	11	24.4	3	6.7	18	40.0
Basic education	11	30.6	14	38.9	2	5.5	9	25.0
Secondary/technical	68	35.2	62	32.1	12	6.2	51	26.5
University degree/ higher	38	30.2	34	27.0	13	10.3	41	32.5
P-value	0.552							
Working status of the father								
Working for cash	126	32.5	117	30.1	29	7.5	116	29.9
Not working for cash	4	33.3	4	33.3	1	8.3	3	25
P-value	1.000*							
Working status of the mother								
Working for cash	35	29.7	35	29.7	11	9.3	37	31.0
Not working for cash	95	33.7	86	30.5	19	6.7	82	29.1
P-value	0.724							
Marital status of the parents								
Married couple and living together	122	33.2	112	30.5	27	7.4	106	28.9
Other† (single parenthood)	8	24.2	9	27.3	3	9.1	13	39.4
P-value	0.551							
Birth order of the student								
First	45	29.8	48	31.8	13	8.6	45	29.8
Last	31	35.6	25	28.7	8	9.2	23	26.5
Middle/In between	54	33.3	48	29.6	9	5.6	51	31.5
P-value	0.843							
Type of student's family								
Nuclear	88	32	85	30.9	26	9.5	76	27.6
Extended	42	33.6	36	28.8	4	3.2	43	34.4
P-value	0.112							

*   Monte   Carlo   probability   test,   †divorced,   widow,   or   separated

Egypt. Before data collection, written informed consents from the parents and adolescent assents from students were obtained after explanation of the purpose of the study. Confidentiality and anonymity were guaranteed and maintained.

Table (2):   Association between individual factors and bullying/victimization among school adolescents in Aswan city, 2019.

Variable	Neither victim nor bully		Victim		Bully		Bully-victim	
	No.	%	No.	%	No.	%	No.	%
Last year result/ Academic achievement (1-5, range from fail to excellent)								
Median (interquartile range)	2 (2)		2 (2)		2(3)		2 (2)	
P-value	0.456‡							
Carrying any weapon								
Yes	8	18.6	5	11.6	5	11.6	25	58.2
No	112	34.2	116	32.5	25	7.0	94	26.3
P-value	**< 0.001**							
Watching action /violent movies								
Action/violence movies & shows	25	24.8	21	20.8	19	18.8	36	35.6
Others	105	35.1	100	33.4	11	3.7	83	27.8
P-value	**< 0.001**							

‡ *Kruskal-Wallis Test*

Results

A total of 400 school-attending adolescents aged 11–17 years with a mean of 12.77±1.68 years were enrolled for this study. The entire sample comprised 196 boys (49.0%) and 204 girls (51.0%). Frequencies of bullying and victimization showed that 67.5% of the participated students were involved, as 30.2% of them were victims, and 29.8% of them classified as bully-victims, while unique bullies represented 7.5% of the participated students

Bullying and victimization were significantly associated with gender, age, and educational level of the student. Being a 'bully-victim' (35.7%) was significantly high among males, and approximately 33% of early adolescents are classified as bully-victims. 'Bully-victim' category represented nearly 40% of participants in preparatory schools, while, in secondary schools, 39% of students were classified in "neither bully nor victim" category (table.1). Furthermore, table.1 shows that no significant association was found between bullying or victimization and other sociodemographic factors such as educational level of parents, working status of parents, and family composition of single parent or couple parents.

Between the studied individual variables, bullying and victimization were significantly associated with history of carrying a weapon by the student (P<0.001) and watching violent movies and shows (P<0.001). By contrast, students' academic achievement was not associated with bullying and victimization (table.2).

As can be seen by the frequencies cross-tabulated in table 3, bullying and victimization were associated with having violent friends and having friends drinking alcohol or taking drugs. Nearly 45% of the

students having violent friends were categorized as bully-victims, and 26.4% of them were categorized as victims. The same high percentage of bully-victims

were noted with students having friends who are drinking alcohol or taking drugs. Moreover, table.3 shows that all the studied family

Table (3): Association of peer factors and family factors with bullying/ victimization among school-attending adolescents in Aswan city, 2019.

Variable	Neither victim nor bully		Victim		Bully		Bully-victim	
	No.	%	No.	%	No.	%	No.	%
Having violent friends								
Yes	25	16.4	40	426.	18	11.8	69	45.4
No	105	42.3	81	32.7	12	4.8	50	20.2
P-value				< 0.001				
Having friends drinking alcohol								
Yes	9	19.1	10	21.3	7	14.9	21	44.7
No	121	34.3	111	31.4	23	6.5	98	27.8
P-value				0.007				
Having friends taking drugs								
Yes	7	22.6	4	12.9	5	16.1	15	48.4
No	123	33.3	117	31.7	25	6.8	104	28.2
P-value				0.009				
Witnessing violent arguments among family members								
Yes	33	20.5	47	29.2	9	5.6	72	44.7
No	97	40.6	74	31.0	21	8.8	47	19.6
P-value				< 0.001				
Exposure to bad language in home								
Yes	15	13.9	35	32.4	6	5.6	52	48.1
No	115	39.4	86	29.5	24	8.2	67	22.9
P-value				< 0.001				
Exposure to corporal punishment in home								
Yes	76	26.0	97	33.2	20	6.9	99	33.9
No	54	50.0	24	22.2	10	9.3	20	18.5
P-value				< 0.001				
Exposure to insults in home								
Yes	28	16.4	54	31.8	11	6.5	77	45.3
No	102	44.3	67	29.1	19	8.3	42	18.3
P-value				< 0.001				
Witnessing family member using a weapon								
Yes	13	18.8	15	21.7	11	15.9	30	43.6
No	117	35.4	106	32.0	19	5.7	89	26.9
P-value				< 0.001				
Threatening with weapon among family members								
Yes	5	13.2	10	26.3	1	2.6	22	57.9
No	125	34.5	111	30.7	29	8.0	97	26.8
P-value				< 0.001				

factors have been found to be significantly associated with bullying and victimization, where the students exposed to family risk factors, were more likely to be classified as bully-victims and victims.

Regarding the association between bullying/victimization and school factors, 50.5% of students exposed to school punishment were categorized as bully-victims, and 22% of them were categorized

Table (4): Association between school factor and bullying/victimization among school adolescents

Variable	Neither victim nor bully		Victim		Bully		Bully-victim	
	No.	%	No.	%	No.	%	No.	%
Exposure to school punishment								
Yes	17	17.5	22	22.7	9	9.3	49	50.5
No	113	37.3	99	32.7	21	6.9	70	23.1
P-value	< 0.001							
Positive teachers' response toward physical violence								
Yes	116	33	104	29.5	26	7.4	106	30.1
No	14	29.2	17	35.4	4	8.3	13	27.1
P-value	0.838							
Positive teachers response toward verbal violence								
Yes	74	34.1	68	31.3	13	6.0	62	28.6
No	56	30.6	53	29	17	9.3	57	31.1
P-value	0.528							
School climate								
Mean ± SD	26.85±5.14		24.98±5.598		22.50±5.66		21.21±5.88	
P-value	< 0.001§							

§*one-way ANOVA*

Table (5): Association between community factors and bullying/victimization among school adolescents.

Variable	Neither victim nor bully		Victim		Bully		Bully-victim	
	No.	%	No.	%	No.	%	No.	%
Witnessing fight in the neighborhood								
Yes	65	26.0	75	30.0	20	8.0	90	36.0
No	65	43.3	46	30.7	10	6.7	29	19.3
P-value	0.001							
Carrying a weapon in the neighborhood								
Yes	54	25.4	59	27.7	19	8.9	81	38.0
No	76	40.6	62	33.2	11	5.9	38	20.3
P-value	< 0.001							
Threatened with a weapon in the neighborhood								
Yes	7	18.9	6	16.2	2	5.4	22	59.5
No	123	33.9	115	31.7	28	7.7	97	26.7
P-value	0.001							

victims. Furthermore, the mean value of a good school climate is significantly higher among students who are neither bullies nor victims (26.85±5.14) compared with bullies (22.50±5.66) and bully-victims (21.21±5.88) (table.4). Table.5 shows significant association between bullying/victimization and community factors. As can be seen by the frequencies cross-tabulated, a high percentage of

students who reported witnessing the three studied factors of neighborhood violence, were classified as bully-victims.

Multivariate associations between previous variables and involvement in bullying/victimization

Table (6): Backward stepwise multinomial logistic regression model of factors associated with bullying /victimization behaviors among school adolescents in Aswan city, 2019.

Predictors	Victim			Bully			Bully-victim		
	β	Odds ratio	P-value	β	Odds ratio	P-value	β	Odds ratio	P-value
Gender of the student (male vs. female)	0.283	1.327	0.375	0.453	1.573	0.449	0.544	1.722	0.150
Adolescence stage (early)	0.127	1.135	0.901	2.171	8.766	0.132	0.914	2.494	0.424
Educational level (prim. vs. sec.)	0.199	1.220	0.850	-3.301	0.037	0.028	-0.589	0.555	0.615
Educational level (prep vs. sec.)	0.460	1.584	0.645	-2.704	0.067	0.068	0.171	1.187	0.881
Carrying weapon	-0.822	0.439	0.197	-0.198	0.820	0.797	0.609	1.839	0.281
Violent movies	-0.179	0.836	0.639	1.708	5.520	**0.003**	0.332	1.393	0.428
Violent friends	0.409	1.505	0.217	1.338	3.810	0.120	0.952	2.592	**0.009**
Witnessing violent arguments among family members	-0.512	0.600	0.186	-2.423	0.089	**0.037**	-0.243	0.784	0.564
Exposure to corporal punishment in home	0.875	2.398	**0.006**	0.347	1.415	0.529	0.426	1.531	0.276
Exposure to insults in home	0.818	2.265	**0.013**	0.825	2.282	0.132	1.462	4.313	**< 0.001**
Exposure to bad language in home	0.848	2.335	**0.031**	0.002	1.002	0.997	0.879	2.408	**0.040**
Witnessing family member using weapon	-0.009	0.991	0.984	1.825	6.204	**0.003**	0.240	1.271	0.622
Threatening with weapon among family members	0.632	1.881	0.314	-0.850	0.427	0.508	1.386	3.999	**0.023**
Exposure to school punishment	1.31	1.140	0.731	0.107	1.113	0.855	0.909	2.482	**0.019**
School climate	-0.063	0.939	**0.02**	-0.154	0.857	**0.001**	-0.162	0.851	**< 0.001**

"Neither bully nor victim" is the reference category.

Variables entered in step 1 were the significant factors detected by bivariate analysis. For 'bully' category, witnessing family members using weapons (OR=6.2, P=0.003), watching violent movies (OR=5.52, P=0.003), school climate (OR=0.857, P=0.001), and primary educational level (OR=0.037, P=0.028) were the significant predictors. Exposure to corporal punishment in home (OR=2.389, P=0.006), exposure to bad language in home (OR=2.335, P=0.031), exposure to insults in home (OR=2.265, P=0.013), and school climate (OR=0.939, P=0.02) were the significant predictor for 'victim' category. Lastly, the significant independent predictors for being bully-victims were exposure to insults in home

(OR=4.31, P<0.001), threatening with weapon among family members (OR=3.999, P=0.02), having violent friends (OR=2.592, P=0.009), exposure to school punishment (OR=2.482, P=0.019), exposure to bad language in home (OR=2.408, P=0.04) and school climate (OR=0.851, P<0.001) (table.6).

Discussion

Bullying among adolescents is a fundamental problem worldwide with serious immediate and long-standing consequences.[21] Our study findings contribute to our understanding of bullying and victimization behaviors among adolescent students.

The present study found that 67.5% of the adolescent students in Aswan city were involved in bullying and victimization. Where 30.2% were victims, 29.8% were bully-victims and 7.5% were bullies. Similar proportions of bullying and victimization were also detected by other Egyptian studies; Hussein study which was conducted in 2013 among primary school students (10-12 years) in Alexandria, Egypt, found that 60.2% of the students were involved in bullying or exposed to victimization.[22] While Gala et al study, conducted in Giza, Egypt, displayed a higher percentage (77.8%) of students who were involved in bullying and victimization among the rural school students; the highest proportion was for bully-victims (57.8%).[16]

However, on the global level, Biswas et al. study which used data from the Global School-based Student Health Survey that was administered to adolescents aged 12–17 years in 83 low and middle-income countries and high-income countries, th middle adolescence, however; this finding was not statistically significant.

found that the pooled prevalence of bullying victimization was 30.5% (95% CI: 30.2–31.0%). The highest pooled prevalence was detected in the Eastern Mediterranean Region (45.1%) and the European region had the lowest prevalence (8.4%).[23] Additionally, another national survey which was conducted in 40 western countries, reported lower rates of involvement of the adolescent students in different groups of bullying (bully, victim, bully-victim).[24] These cross-national variations in the prevalence of bullying and victimization might be explained by methodological variations; additionally, they could reflect the cultural differences in defining the bullying.[24,25]

Regarding sociodemographic factors associated with bullying and victimization in the study, gender was not identified as a significant predictive factor of bullying or victimization, which was in agreement with the meta-analysis study of Kljakovic and Hunt.[26] However, the results of Cook et al.[27] and Galal et al.[16] found that boys were more prone to bullying perpetration than girls, and they attributed that to the cultural factors where boys are less often punished for misbehavior compared to girls. However, their finding might be explained by that boys, in general, tend to engage in an overt type of bullying (i.e. physical bullying), while girls tend to engage in relational and hidden bullying.[28]

Some studies suggested that as adolescents get older, violent behavior tended to decrease, and that older age was a protective factor for bullying.[26,29] The current study results also found that early adolescence was a positive predictor for being bullies (OR=8.766) and bully-victims (OR=2.494) compared wi In this study, students who reported watching violent movies, were more likely to be involved in bullying. This finding is

consistent with previous studies that have shown that exposure to media violence was directly associated with bullying at school.[30,31]

Conversely, in USA, Ferguson et al.[32] study that was conducted in 2009 among Hispanic adolescents (ages 10-14 years), reported that exposure to violent television was not predictive of adolescents aggression.

Concerning the friends' influence on adolescent involvement in bullying, the present study found that students having violent friends were more likely to be bully-victims. Similarly, Galal et al.[16] observed that being a bully and bully-victim associated with having violent friends. Furthermore, this finding has been supported by the longitudinal study of Henneberger et al.[33] that proved a significant average causal effect of having aggressive friends on aggressive behavior.

In terms of family risk factors, the current study pointed to that the family environment might have an important role in involvement in bullying and victimization. The study revealed that being a victim was significantly more associated with exposure to corporal punishment and insults at home and exposure to bad language. Furthermore, being a bully-victim was significantly associated with exposure to insults and bad language. This was in agreement with a meta-analysis study,[27] which revealed that the family environment significantly predicted involvement for bullies and victims. Moreover, the current study finding supported Elmasry et al. study, conducted in Egypt, where exposure to physical abuse had a significant positive association with verbal aggression among students.[34] Other family factors like single parenthood and low parenteral educational level or occupational level, have been

suggested in some studies to be associated with the involvement in bullying and victimization.[35,36] By contrast, in the current study, they were not significantly associated with bullying behavior, which is in line with the longitudinal study of Sourander et al.[37], where parental education level, socioeconomic status, and family composition were not significantly associated with bullying, too. This conflict might be explained by variations in the sample design and the studies informants.[35,36]

As regards bullying and victimization association with school climate, school climate has been supported by research as a contextual variable associated with peer aggression.[38] For example, Konstantina and Pilios-Dimitris[17] detected that school climate variable is negatively associated with bullying and victimization, and Cook et al.[27] found that school climate had the largest effect sizes for victimization. Similarly, the current study result found that good student's perception of school climate was negatively associated with being a bully and a bully-victim. Also, students' exposure to school punishment) corporal punishment and mortification words) was found to be positively associated with being a bully-victim, which agrees with the results of many studies.[16,39]

The association of bullying and victimization with academic achievement was one of the conflicts that arose after comparing our study results with other studies. The meta-analysis study by Nakamoto and Schwartz revealed a small but significant negative correlation between peer victimization and academic achievement.[40] Also, on the one hand, researchers have hypothesized that peer victimization might lead to poor academic performance as a proximal impact on

psychosocial adjustment.[41,42] On the other hand, others suggested that children with learning difficulties are at a greater risk of experiencing peer victimization than their normally achieving peers.[43] Contrary to these results, the present study found that student's academic achievement was not associated with bullying and victimization. This finding agrees with Woods and Wolke that found no relationship between direct bullying behavior and poor academic achievement.[44] The reported result of no association may be referred to that, young students are not always reliable informers of their academic progress.[45]

Lastly, concerning the studied community factors, neighborhood violence suggested to be associated with being a bully-victim by Bowes et al.,[46] as well as Cook et al.[27] revealed that neighborhood characteristics had the largest effect sizes for bullying perpetration. Their explanation is that violence in local communities may be provided children with examples of bullying practices that they could imitate among their peers. In contrast to the previous result, our study found no association between exposure to neighborhood violence and bullying. This can be explained that few is known about the relationship between neighborhood context and bullying behavior and more research is needed on neighborhood correlates especially in low-income countries which have different kinds of community environment.[47]

Conclusion

Prevalence of bullying behavior was high among adolescent students in Aswan city reflecting the importance of implementing effective intervention programs in Egyptian schools which should focus on identifying students with risk factors. Given the findings that a bad family environment and less good perception of school climate were associated with involvement in bullying behavior, parental educational programs should be directed to parents, and a good school climate should be provided for students. Also, a bullying prevention committee at school including all school staff and involving parents is recommended.

Limitations of the study: First, this study is cross-sectional, and thus inferences about causality are not warranted; second, this study relied on a single informant assessment from the students and not from the teachers or the parents, which may not have provided a complete picture of the problem. Lastly, the participants were only from governmental schools, so the students in private schools were not represented in the study.

References

1. WHO. Youth violence [Internet]. 2020 [cited 2020 Dec 31]. Available from: https://www.who.int/news-room/fact-sheets/detail/youth-violence

2. WHO. Youth Violence: The health sector role in prevention and response. 2015. Available from: https://www.who.int/violence_injury_prevention/violence/youth/yv_infographic_small.pdf?ua=1

3. Slattery LC, George HP, Kern L. Defining the word bullying: Inconsistencies and lack of clarity among current definitions. Prev Sch Fail. 2019;63(3):227–35.

4. Gladden RM, Vivolo-Kantor AM, Hamburger ME, Lumpkin CD. Bullying surveillance among youths: Uniform definitions for public health and recommended data elements, version 1.0. Atlanta, GA; Centers for Disease Control and Prevention; 2014. Available from: http://www.cdc.gov/violenceprevention/pdf/bullying-definitions-final-a.pdf

5. Pells K, José M, Portela O, Revollo PE. Experiences of peer bullying among

adolescents and associated effects on young adult outcomes: longitudinal evidence from Ethiopia, India, Peru and Viet Nam. UNICEF;2016. Available from: https://www.unicef-irc.org/publications/pdf/IDP_2016_03.pdf

6. Gendron BP, Williams KR, Guerra NG. An analysis of bullying among students within schools: Estimating the effects of individual normative beliefs, self-esteem, and school climate. Journal of school violence. 2011;10(2):150-64.

7. Swearer Napolitano SM. Risk factors for and outcomes of bullying and victimization [Internet]. Vol. 132. 2011 [cited 2019 Jan 1]. Available from: http://digitalcommons.unl.edu/edpsychpapers/132

8. Abdulsalam AJ, Al Daihani AE, Francis K. Prevalence and associated factors of peer victimization (bullying) among grades 7 and 8 middle school students in Kuwait. Int J Pediatr [Internet]. 2017 [cited 2020 Aug 16];2017:1–8. Available from: https://pubmed.ncbi.nlm.nih.gov/28348603/

9. Fraser S, Edwards D, Williams R.S. The effects of traditional bullying on the academic performance of learners at the primary level in Guyana. Int. J. Educ. Pol. Res. Rev. 2018;5(8):144–53.

10. Fullchange A, Furlong MJ. An exploration of effects of bullying victimization from a complete mental health perspective. SAGE Open [Internet]. 2016 [cited 2020 Aug 16];6(1):215824401562359. Available from: http://journals.sagepub.com/doi/10.1177/2158244015623593

11. Wolke D, Copeland WE, Angold A, Costello EJ. Impact of Bullying in Childhood on Adult Health, Wealth, Crime, and Social Outcomes. Psychol Sci [Internet]. 2013 [cited 2020 Aug 16];24(10):1958–70. Available from: /pmc/articles/PMC4090076/?report=abstract

12. UNESCO. New SDG 4 Data on Bullying | UNESCO Institute for Statistics [Internet]. 2018 [cited 2020 Aug 22]. Available from: http://uis.unesco.org/en/news/new-sdg-4-data-bullying

13. WHO. Egypt-Global School-Based Student Health Survey [Internet]. 2012 [cited 2020 Sep 22]. Available from: https://extranet.who.int/ncdsmicrodata/index.php/catalog/96

14. Wilson ML, Dunlavy AC, Berchtold A. Determinants for bullying victimization among 11–16-year-olds in 15 low- and middle-income countries: a multi-level study. Soc. Sci.2013; 2(4), 208–20.

15. Tanya S, Samara M, Wolke D. Child abuse & neglect parenting behavior and the risk of becoming a victim and a bully / victim: a meta-analysis study &. Child Abuse Negl [Internet]. 2013;37(12):1091–108. Available from: http://dx.doi.org/10.1016/j.chiabu.2013.03.001

16. Galal YS, Emadeldin M, Mwafy MA. Prevalence and correlates of bullying and victimization among school students in rural Egypt. J Egypt Public Health Assoc. 2019;94(1),1-12.

17. Konstantina KA, Pilios-Dimitris ST. School characteristics as predictors of bullying and victimization among Greek middle school students. International Journal of violence and school. 2010;11,93-113.

18. Abdirahman H, Fleming LC, Jacobsen KH. Parental involvement and bullying among middle- school students in North Africa. EMHJ-Eastern Mediterranean Health Journal. 2013;19(3)227–233.

19. Furlong MJ, Greif JL, Bates MP, Whipple AD, Jimenez TC, Morrison R. Development of the California school climate and safety survey-short form. Psychol Sch [Internet]. 2005 [cited 2021 Jan 13];42(2):137–49. Available from: http://doi.wiley.com/10.1002/pits.20053

20. Chan JHF, Myron R, Crawshaw M. The efficacy of non-anonymous measures of bullying. Sch Psychol Int. 2005;26(4):443–58.

21. NaRivara F, Le Menestrel S. Preventing bullying through science, policy, and practice. [Internet]. national academies press; 2016 [cited 2020 Sep 7]. 1–341 p. Available from: https://books.google.com/books?hl=en&lr=&id=zDwUDQAAQBAJ&oi=fnd&pg=PR1&ots=bz

MAsOUBa7&sig=6O9E_KRJxZMU98s6L_T4RKe
SP6o

22.Hussein MH. The Peer Interaction in Primary School Questionnaire: testing for measurement equivalence and latent mean differences in bullying between gender in Egypt, Saudi Arabia and the USA. Soc Psychol Educ. 2010;13:57–76.

23.Biswas T, Scott JG, Munir K, Thomas HJ, Huda MM, Hasan MM, et al. Global variation in the prevalence of bullying victimization amongst adolescents: Role of peer and parental supports. EClinicalMedicine [Internet]. 2020[cited 2020 Sep 22];20. Available from: https://doi.org/10.1016/j.eclinm.2020.100276

24.Craig W, Harel-Fisch Y, Fogel-Grinvald H, Dostaler S, Hetland J, Simons-Morton B, et al. A cross-national profile of bullying and victimization among adolescents in 40 countries. Int J Public Health [Internet]. 2009 [cited 2020 Oct 29];54(SUPPL. 2):216. Available from: /pmc/articles/PMC2747624/?report=abstract

25.Analitis F, Velderman MK, Ravens-Sieberer U, Detmar S, Erhart M, Herdman M, et al. Being bullied: Associated factors in children and adolescents 8 to 18 years old in 11 European countries. Pediatrics [Internet]. 2009 [cited 2020 Oct 29];123(2):569–77. Available from: https://pediatrics.aappublications.org/content/1 23/2/569

26.Kljakovic M, Hunt C. A meta-analysis of predictors of bullying and victimization in adolescence. J Adolesc. 2016;49:134–45.

27.Cook CR, Williams KR, Guerra NG, Kim TE, Sadek S. Predictors of bullying and victimization in childhood and adolescence: A Meta-analytic Investigation. School psychology quarterly.2010;25(2):65–83.

28.de Frutos TH. Five independents variables affecting bullying: neighborhood, family, school, gender-age and mass media. Sociology Mind. 2013;3(4):304–313.

29.Reed KP, Nugent W, Cooper RL. Testing a path model of relationships between gender, age, and bullying victimization and violent behavior, substance abuse, depression, suicidal ideation, and suicide attempts in adolescents. Child Youth Serv Rev. 2015; 55:128–37.

30.Hong JS, Espelage DL. A review of research on bullying and peer victimization in school: An ecological system analysis. Aggression and violent behavior. 2012;17(4):311-22.

31.Lee E, Kim M. Exposure to media violence and bullying at school: mediating influences of anger and contact with delinquent friends. Psychol Rep [Internet]. 2004 [cited 2020 Sep 23];95(2):659–72. Available from: http://www.ncbi.nlm.nih.gov/pubmed/15587 236

32.Ferguson CJ, San Miguel C, Hartley RD. A multivariate analysis of youth violence and aggression: The influence of family, peers, depression, and media violence. J Pediatr. 2009;155(6):904-908.e3.

33.Henneberger AK, Coffman DL, Gest SD. The Effect of Having Aggressive Friends on Aggressive Behavior in Childhood: Using Propensity Scores to Strengthen Causal Inference. Soc Dev [Internet]. 2017[cited 2020 Nov 3];26(2):295–309. Available from: /pmc/articles/PMC5444876/?report=abstract

34.Elmasry N, Fouad A, Khalil D, Sherra K. Physical and verbal aggression among adolescent school students in Sharkia, Egypt: prevalence and risk factors. Egypt J Psychiatry [Internet]. 2016 [cited 2020 Sep 24];37(3):166. Available from: http://new.ejpsy.eg.net/text.asp?2016/37/3/ 166/195547

35.Kavanagh A, Priest N, Emerson E, Milner A, King T. Gender, parental education, and experiences of bullying victimization by Australian adolescents with and without a disability. Child Care Health Dev [Internet]. 2018 [cited 2020 Feb 22];44(2):332–41. Available from: http://doi.wiley.com/10.1111/cch.12545

36.Wahdan I, El Nimr N, Kotb R, Wahdan A. Risk of aggression and criminal behaviour among adolescents living in Alexandria Governorate, Egypt. EMHJ-Eastern Mediterranean Health Journal. 2014; 20(4):265-272.

37. Sourander A, Helstelä L, Helenius H, Piha J. Persistence of bullying from childhood to adolescence - A longitudinal 8-year follow-up study. Child Abus Negl [Internet]. 2000 [cited 2020 Sep 24];24(7):873–81. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0145213400001460

38. Juvonen J, Graham S. Bullying in Schools: The power of bullies and the plight of victims. Annu Rev Psychol [Internet]. 2014[cited 2020 Sep 26];65(1):159–85. Available from: http://www.annualreviews.org/doi/10.1146/annurev-psych-010213-115030

39. Kupchik A, Farina KA. Imitating authority: Students' perceptions of school punishment and security, and bullying victimization. Youth Violence and Juvenile Justice. 2016;14(2):147-63.

40. Nakamoto J, Schwartz D. Is peer victimization associated with academic achievement? A meta-analytic review. Soc Dev [Internet]. 2010 [cited 2020 Jul 31];19(2):221–42. Available from: https://onlinelibrary.wiley.com/doi/full/10.1111/j.1467-9507.2009.00539.x

41. Schwartz D, Gorman AH, Nakamoto J, Toblin RL. Victimization in the Peer Group and Children's Academic Functioning. Journal of educational psychology. 2005;97(3):425.

42. Holt MK, Finkelhor D, Kantor GK. Multiple victimization experiences of urban elementary school students: Associations with psychosocial functioning and academic performance. Child Abus Negl. 2007;31(5):503–15.

43. Walker A, Nabuzoka D. Academic achievement and social functioning of children with and without learning difficulties. Educ Psychol. 2007;27(5):635–54.

44. Woods S, Wolke D. Direct and relational bullying among primary school children and academic achievement. J Sch Psychol. 2004;42(2):135–55.

45. Kuncel N, Crede M. The Validity of Self-Reported Grade Point Averages, Class Ranks, and Test Scores: A Meta-Analysis and Review of the Literature Community of curiosity researchers View project Examining the Factor Structure of the Self-Compassion Scale (SCS) and Relationships with Clinically Relevant Outcomes View project. Artic Rev Educ Res [Internet]. 2005 [cited 2020 Sep 26];75(1):63–82. Available from: http://rer.aera.net/cgi/alerts

46. Bowes L, Arseneault L, Maughan B, Taylor A, Caspi A, Moffitt TE. School, neighborhood, and family factors are associated with children's bullying involvement: A nationally representative longitudinal study. J Am Acad Child Adolesc Psychiatry [Internet]. 2009 [cited 2020 Sep 26];48(5):545–553. Available from: /pmc/articles/PMC4231780/?report=abstract

47. Boswell, M. Alison. School level predictors of bullying among high school students. 2016.Theses and Dissertations--Educational, School, and Counseling Psychology. 44. Available from: https://uknowledge.uky.edu/edp_etds/44