

Cyber bullying and academic achievement among adolescent students in Aswan city schools.

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Abstract

Background: Cyber bullying has been recognized as a significant problem between adolescents that describes bullying *via* the internet and mobile phones.

Study Aim: To assess the relationship between cyber bullying and academic achievement among adolescent students in Aswan city schools.

Study Design: A cross-sectional research design was used.

Setting: This study carried out at preparatory and secondary schools in Aswan city.

Study Subject: A purposive sample of all students attended the selected schools (880 students) in the period from the beginning of October, 2019 to the beginning of December, 2020.

Data Collection Tools: Three tools were used;

Tool I: A structured interview questionnaire sheet composed of two parts, socio-demographic data of students and students' knowledge about cyber bullying.

Tool II: Cyber bullying scale included five subscales as a following: mockery and denigration, the exclusion, inconvenience and violation of privacy, insulted and threatened and sexual harassment.

Tool III: Students school achievement included student's grade sheet in the previous year.

Results: More than one quarter (27.4%) of studied students exposed to cyber bullying and the most common type of cyber bullying among them was mockery and denigration (27.2%) followed by inconvenience and violation of privacy, insulted and threatened, exclusion and finally sexual harassment (25.8%, 24.1%, 24%, 19.1 %) respectively.

Conclusion: Nearly all of the studied students in the aforementioned settings were exposed to cyber bullying with its different types, which in turn affected their academic achievement which proofed by the presence of a statistically significant relationship between cyber bullying and academic achievement.

Recommendations: School based educational programs should be conducted to improve adolescent's knowledge about cyber bullying and consequently help in cyber bullying prevention. Additionally, conducting further research to identify actual causes, psychological and social consequences of cyber bullying.

Keywords: Cyber bullying, Academic achievement, Adolescent students.

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Introduction

Cyber bullying is utilization of information and communication technologies in order to support deliberate, repeated, and hostile behavior by an individual or group that is intended to harm and hurt of weaker schoolmates *via* these modern communication technologies. It represents an actual risk, especially for the online generation which is often unable to distinguish between virtual and real-reality. Moreover, the Internet is a really wide, intriguing world, difficult to penetrate in depth, rich with dissimulations, full of useful and also evil things that are continuously changing [1].

Cyber bullying behavior peaks during the middle school years. Adolescents are continuously connected with their peers and use social networks to communicate amongst themselves, sharing all sort of experiences, emotions, and personal secrets.

So, it has been found that adolescents are most at risk for negative mental and physical health consequences [2,3].

There are different forms of cyber bullying. Firstly, harassment, which can be defined as repetitiously sending threatening messages to another person by e-mail, SMS, instant messaging or in chat rooms. Secondly, denigration, which is the spreading of rumours *via* electronic communication devices. Thirdly, outing and trickery is similar: a message revealing personal information, which the victim sent to someone in confidence, is forwarded to other people in order to compromise the victim. And finally, exclusion which is equivalent to exclusion in real life and means withholding the opportunity of taking part in social electronic activities [4,5].

Cyber bullying has a consequence impact and associated with behavior problems that include intimidation and inappropriate

role modeling. Bullies' negative behavior is reinforced when bystanders laugh at their behavior or simply stand by and watch bullying occur. A recent review showed a link between cyber bullying victimization and depression, poor academic achievement, negative outcomes, school absenteeism, and suicidal behavior and it caused as a serious problem among adolescent students in academic settings in all parts of the world [6].

Prevention strategies of cyber bullying can be achieved through knowledge acquisition, it is important to broaden knowledge and develop different skills that will allow everyone to deal with difficult situations related to bullying and emotions experienced in relation to them. Schools play an important role in student's social lives and it is at school that various behaviors are manifested. It often takes the form of anti-bullying and cyber bullying policies and/or school-wide educational programs. School-wide programs should be directed toward changing attitudes and behaviors of teachers, students, practitioners and parents [7].

Significance of the study

Cyber bullying is considered as global problem that affect emotional, social, and physical wellbeing of school-age children worldwide. It is a proliferating phenomenon that could psychologically scar victims for life by bringing about poor psychological well-being, poor adjustments to society, psychological distress, and even physical illness [8].

Developing countries are home for more than 2.5 billion internet users. In Egypt, the digital society expanded markedly from 12.3 million internet users in 2009 to 29.84 million users in 2016. It is ranked 17th, as 98% of internet users have Facebook accounts; 52% of them are younger than 24 years. Half of the Egyptian internet users have twitter accounts, whereas a third of them are active on Instagram [9].

Adolescents' environment is not just what happens in their immediate physical environment, but above all, what is happening in the rapidly growing and changing media space that there has been a strong transfer from a desktop computer to mobile telephony as a medium of internet connectivity. They have social contacts through the internet, using increasingly sophisticated instant messengers and multicomputer [10]. Therefore, the study was conducted to assess its relationship with school achievement among adolescent students.

Aim of the Study

To assess the relationship between cyber bullying and academic achievement among adolescent students in Aswan city schools.

Research question

- What is the prevalence of cyber bullying among adolescent students in Aswan city schools?
- What are the most common forms of cyber bullying among adolescent students in Aswan city schools?

- Is there relationship between cyber bullying and academic achievement among adolescents in Aswan city?

Materials and Methods

Research design

A cross sectional descriptive study design was utilized to conduct this study.

Setting of the study

The study was conducted in two schools in Aswan city one preparatory and one secondary school, named Al-Gomhoria preparatory school and Taha Hussein secondary school. Four classes were purposefully selected; one class from each grade (1st and 2nd level of preparatory school) and (1st and 2nd level of secondary school) with exception to third level, as they weren't attending school.

Subjects of the study

A purposive sample of all students who attended the selected schools (880 students).

Study tools

Three tools were used in this study.

Tool I: A structured interview questionnaire sheet; it developed by the researchers and composed of two parts:

Part I: Students' personal data; this part consisted of seven items which include the following: code number, gender, age, number of siblings, classroom level, parents education, students usage of social media applications etc...

Part II: Students' knowledge regarding cyber bullying; include closed ended questions of definition of cyber bullying, forms, cause's, methods of prevention.

Scoring system for the knowledge items, a correct answer was scored 1 and the incorrect was scored 0. For each area of knowledge, the scores of items were summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percentage score. Knowledge was considered satisfactory if the percentage was 50% or more and unsatisfactory if less than 50%.

Tool II: Cyber bullying scale, initiated by Doane et al. developed by Stewart et al. and modified by researcher. It consists of 26 items, five subscales as a following: mockery and denigration, the Exclusion, inconvenience and violation of privacy, insulted and threatened, and sexual harassment [10,11].

Scoring system for cyber bullying scale, items were scored 0, 1 and 2 for the responses never, sometimes, and always, respectively. For each item, the scores were summed-up and the total divided by the number of the items giving a mean score for the part. These scores were converted into a percentage score. The students was considered to be exposed to

cyber bullying if the percentage score was 50% or more and not exposed if the percentage score was less than 50%.

Tool III: Students school achievement included student's grade sheet in the previous year.

Methods

An official approval was obtained from administrative authorities from both university and schools to carry out the study after explanation of the purpose of the study.

Validity

Tools were tested for content related validity by five experts (jury) in the related field, three professors from pediatric nursing department, and two professors from community health nursing department. Reliability of the developed tool was estimated using the Cronbach's alpha test, to measure the internal consistency of tools $r=(0.70)$. A pilot study was carried out on 10% of the study subjects to test applicability and feasibility of the developed tool, necessary modifications were done. Data obtained was excluded from the actual study. Data collection was taken from 1/10/2019 to 2/12/2020.

Ethical considerations

Official permissions were obtained after explanation of the aim of the study; privacy and confidentiality are assured to the study subjects. Students were informed that their participation is voluntary and they have the right to be withdrawn from the study with a full respect.

Statistical analysis

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. Quantitative data were described using number and percent. Significance of the obtained results was judged at the 5% level. The observed differences and relationships were considered as the following: Significant (S) $p \leq 0.05$, highly significant $p < 0.001$ and Non-Significant (NS) $p > 0.05$.

Results

Additionally, the present study showed that age was a statistically significant negative predictor of CB ($\beta=-8.094$, $P=<0.001$). This may be explained as younger students were less experienced than older ones in using telecommunication means which in turn made them more exposed to CB than older ones. In the same line, Livazović et al. in Croatia found that age was a significant negative predictor of cyber bullying. In contrast, a study by Guo, in USA found that age was a relatively weak, but a significant positive predictor for cyber bullying. This study also clarified that both mother education and father education were negative predictors of CB. This may be explained by the fact that the higher the education of parents the higher the emotional support which they can provide for sons and daughters and consequently can prevent exposure to CB (Tables 1 to 7) and (Figures 1 to 5).

Socio-demographic characteristics	N	%
Age (years)		
<15	439	49.9
>15	441	50.1
Mean ± SD	14.9 ± 1.7	
Gender		
Males	399	45.3
Females	481	54.7
Number of siblings		
One	10	1.1
Two	121	13.8
Three	694	78.9
Four	55	6.3
Ranking among siblings		
First	96	10.9
Second	461	52.4
Third	223	25.3
Fourth	100	11.4

Classroom level		
Preparatory stage 1st year	239	27.2
Preparatory stage 2nd year	200	22.7
Secondary stage 1st year	200	22.7
Secondary stage 2nd year	241	27.4

Table 1. Frequency distribution of the socio-demographic characteristics of adolescent students (n=880).

Socio- demographic characteristics of the family	N	%
Father job		
Not working	309	35.1
Working	571	64.9
Mother job		
Not working	418	47.5
Working	462	52.5
Father education		
Illiterate	7	0.8
Basic education	48	5.5
Secondary education	473	53.8
University education	352	40
Mother education		
Illiterate	42	4.8
Basic education	131	14.9
Secondary education	480	54.5
University education	227	25.8
Family income		
1000–2000	190	21.6
>2000	690	78.4

Table 2. Frequency distribution of the socio-demographic characteristics of the family (n=880).

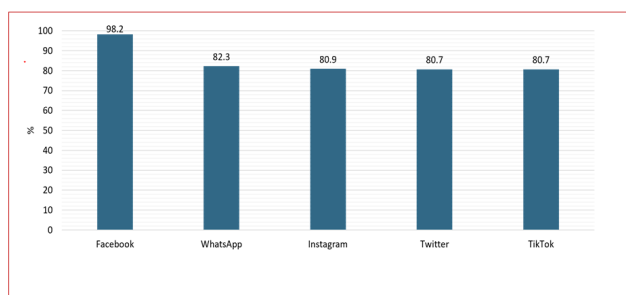


Figure 1. The types of social media applications used by adolescent students (n=880).

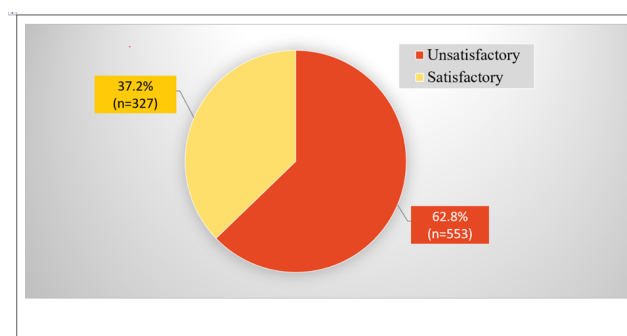


Figure 2. Distribution of the student's knowledge regarding cyber bullying (n=880).

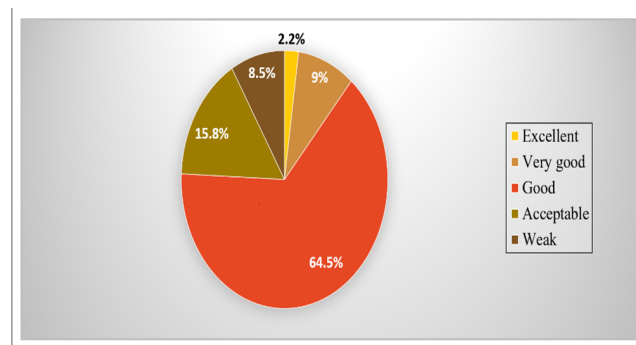
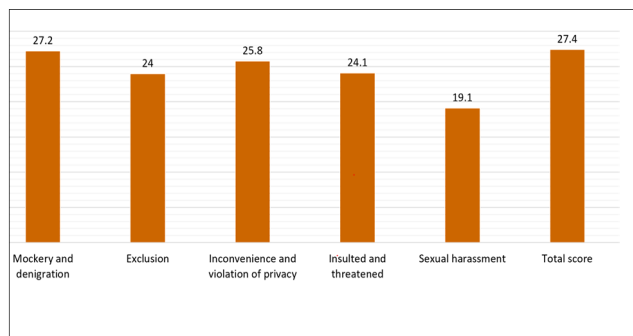


Figure 3. Distribution of total score forms of cyber bullying among adolescent students (n=880).

Figure 4. Distribution of the academic achievement for adolescent students in the last year (n=880).

Socio-demographic characteristics of the family	Cyber bullying		Chi square test			
	No (n=639)	Yes (n=241)	n	%	χ^2	P
Age (years)						
<15	198	31	241	100		
>15	441	69	0	0	333.406	<0.001
Gender						
Males	330	51.6	69	28.6		
Females	309	48.4	172	71.4	37.395	<0.001
Number of siblings						
One	0	0	10	4.2		
Two	9	1.4	112	46.5		
Three	601	94.1	93	38.6		
Four	29	4.5	26	10.8	364.18	<0.001
Ranking among siblings						
First	49	7.7	47	19.5		
Second	359	56.2	102	42.3		
Third	147	23	76	31.5		
Fourth	84	13.1	16	6.6	40.425	<0.001
Classroom level						
Preparatory stage 1st year	0	0	239	99.2		
Preparatory stage 2nd year	198	31	2	0.8		
Secondary stage 1st year	200	31.3	0	0		
Secondary stage 2nd year	241	37.7	0	0	870.043	<0.001

Table 3. Relationship between the total cyber bullying and personal data of the students (n=880).

Socio-demographic characteristics of the family	Cyber bullying					
	No (n=639)		Yes (n=241)		Chi square test	
	N	%	n	%	χ^2	P
Father job						
Not working	267	41.8	42	17.4		
Working	372	58.2	199	82.6	45.566	<0.001
Mother job						
Not working	287	44.9	131	54.4		
Working	352	55.1	110	45.6	6.257	0.012
Father education						
Illiterate	0	0	7	2.9		
Basic education	19	3	29	12		
Secondary education	347	54.3	126	52.3		
University education	273	42.7	79	32.8	49.352	<0.001
Mother education						
Illiterate	38	5.9	4	1.7		
Basic education	114	17.8	17	7.1		
Secondary education	328	51.3	152	63.1		
University education	159	24.9	68	28.2	25.592	<0.001
Family income						
1000–2000	157	24.6	33	13.7		
>2000	482	75.4	208	86.3	12.229	0.002

Table 4. Relationship between the total cyber bullying grades with socio-demographic characteristics of the family (n=880).

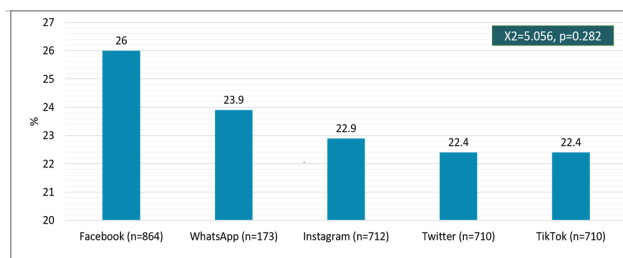


Figure 5. Relationship between exposure to cyber bullying and type of social media platform used by adolescent students (n=880).

Grades of academic achievement	Cyber bullying					
	No (n=639)		Yes (n=241)		Chi square test	
	N	%	n	%	χ^2	P
Excellent	19	3	0	0		
Very good	79	12.4	0	0		
Good	541	84.7	27	11.2		
Acceptable	0	0	139	57.7		
Weak	0	0	75	31.1	750.682	<0.001

Table 5. Relationship between the total cyber bullying and grades of academic achievement for adolescent students (n=880).

Knowledge	Cyber bullying					
	No (n=639)		Yes (n=241)		Chi square test	
	n	%	n	%	χ^2	P
Unsatisfactory	370	57.9	183	75.9		
Satisfactory	269	42.1	58	24.1	24.364	<0.001

Table 6. Relationship between the total cyber bullying and knowledge of adolescent students (n=880).

Constant	B	Std. Error	Wald	Significance
Age	-8.094	1.085	55.663	<0.001
Gender	2.466	1.098	5.045	0.025
Number of siblings	-1.271	0.554	5.27	0.022
Ranking among siblings	0.49	0.414	1.404	0.236
Classroom level	0.349	0.403	0.748	0.387
Father job	2.574	1.226	4.406	0.036
Mother job	2.858	1.256	5.181	0.023
Father education	-0.576	0.455	1.605	0.205
Mother education	-0.23	0.515	0.2	0.655
Academic achievement	-2.716	1.241	4.794	0.03
Level of knowledge	1.429	0.16	7.143	0.008

Table 7. Binary regression analysis for factors that predict CB among adolescent students (n=880).

Discussion

Cyber bullying is a serious public health issue among adolescent students which has received a significant attention from researchers for several decades through technological advances use for social media and online communication platforms such as Facebook and Twitter caused a devastating impact on students' emotions, can cause psychological problems such as depression, anxiety, loneliness, low self-esteem, social exclusion, school phobias and poor academic performance [12,13].

So, this study conducted to assess the relationship between cyber bullying and academic achievement among adolescent students.

This study showed that the most frequently used social media platforms by adolescent students were Facebook (98.2%), what's app (82.3%) and Instagram (80.9%) (Figure 1), this may be due to the digital transformation of the present time, social media offered a portal for entertainment, studying and communication and it is becoming one of the main platforms for accessing information and news. These findings come in agreement with Saied et al. in Egypt and Radcliffe et al. in university of Oregon who reported that the most used social

media platforms were Facebook, what's app and Instagram respectively [14,15]. On contrary, Statista Research Department in Singapore reported that the top social media platforms used by Singaporean adolescents were YouTube (86%), WhatsApp (81%), Facebook (79%) and Instagram (62%).

Concerning the prevalence of cyber bullying, this study revealed that 27.4% of studied students were exposed to cyber bullying. This may indicate the adolescents' misuse of recent technology, immorality or lack of bully's punishment by laws these findings come in disagreement with Arafa et al. in Egypt found that 48.2% of college students were exposed to cyber bullying during the past 6 months [16]. This difference may be attributed to difference in participants' age or sample's composition. Also Xantus et al. in USA found that less than half (47%) of studied students exposed to some form of cyber bullying [17]. Additionally Peled et al. in Israel found that 57% of the adolescent students had experienced cyber bullying at least once or twice through different types of media. On the other hand, Branislava et al. in Serbia found that only 10% of the adolescent students were involved in cyber bullying [18,19].

This study indicated that mockery and denigration (insults or made fun of) was the most reported type (27.2%) of cyber

bullying. This may be due to the nature of sarcasm of the Egyptians. In accordance Murwani et al. in Indonesia, found that denigration was the most reported type (79.2%) by adolescent participants. This difference in percentages may be due to cultural issues [20]. According to the current study findings, inconvenience and violation of privacy was reported by 25.8% of studied students. In the same line, Murwani et al. found that 18% of studied Indonesian adolescents were exposed to violation of privacy [21].

Concerning sexual harassment, this study found that it was the least reported type, as it reported only by 19.1% of studied students. This also may be due to religious factors and the religious traditions of the Egyptian society or the fear of being discovered by others. In agreement with these findings, Jain et al. [22] found that 21.9% of studied students exposed to sexual harassment. On contrary, Safaria et al. in Indonesia found that the most reported type of cyber bullying was harassment (45.1%) [23].

The present study illustrated that, from all studied students, more than one quarter (26%) of Facebook users were exposed to cyber bullying. This may be explained as Facebook platform was the most frequently used platform by these students (Figure 1). In accordance Al-Rahmi et al. in Malaysia found that more than half of Facebook users exposed to cyber bullying. Also Xantus et al. in USA reported that 63% of Facebook users experienced cyber bullying [24].

Regarding academic achievement of studied students, the current study findings showed the following pattern 2.2% excellent, 9% very good, 64.5% good and 15.8% acceptable. This may reflect the normal distribution of grades among school students. In agreement with these findings, Li et al. in Canada found that 9.8% had excellent, 37.5% had very well, 44.9% had well and 7.8% had acceptable grades [25].

The current study clarified that there was a highly statistically significant relationship between age and cyber bullying, as all young adolescents, aged 15 years or less were exposed to cyber bullying. This may be explained as, young adolescents are less experienced, more likely to make very personal information public and communicate with strangers online than older ones. These results are consistent with those of Smahel et al. results in which younger adolescents were more often involved in cyber bullying than older ones [26]. On contrary, Brack et al. in Australia found that there was no statistically significant relationship between age and exposure to CB, which means that exposure to cyber bullying, did not differ between adolescents at the lower or higher end of the age range. Also, results of Hellfeldt et al. in Sweden revealed that older adolescents were more exposed to cyber bullying [27].

The current study yielded that there was a statistically significant relationship between gender and exposure to CB, as females were more exposed to cyber bullying (71.4%) compared to males (28.6%) ($P < 0.001$). This may be due to the fact that girls' friendships are very much based on mutual sharing, thus girls share problems, personal information which in turn can be used against them and expose them to cyber bullying. Accordingly, Kapatzia et al. in Greece reported that

more girls than boys exposed to cyber bullying. Contradicting with this finding Brack et al. in Australia found that there was no significant relationship between gender and exposure to CB [28-30].

This study revealed that there was a highly statistically significant relationship between academic achievement and CB ($P < 0.001$). This may be explained as those who exposed to cyber bullying were under great emotional stress and unable to concentrate on their studies, and thus their academic achievement is adversely affected. This was in agreement with Yousef et al. in Michigan et al. in Iran who found that there was a statistically significant relationship between cyber bullying and academic achievement among studied participants [31,32]. Contradicting with these results, Peled et al. in Israel stated that the relationship between academic achievement and cyber bullying was not found [33].

In other words, the present study revealed that adolescent students with better grades were less likely to be exposed to CB, as more than half of studied students who get acceptable grades exposed to CB compared with none of those with excellent and very good grades. In agreement with these results Mitchell in USA found that students with better grades were less likely to be exposed to cyber bullying than students who had poorer grades [34]. On contrary to this finding, Huang et al. found no statistically significant relationship between academic achievement and CB among Taiwanese students, as there was no statistically significant difference between lower achieving and higher achieving Taiwanese students with respect to cyber bullying [35].

This study revealed that there was a statistically significant relationship between cyberbullying and knowledge level among studied students, as there was more than three quarters of those with unsatisfactory knowledge exposed to cyberbullying compared to less than one quarter of those with satisfactory knowledge ($P = 0.004$). This may be explained as increasing knowledge about cyberbullying improve students awareness about methods, types and social media platforms that can make them victims to cyberbullying and subsequently can avoid them.

Regarding predictors of cyberbullying, the current study clarified that academic achievement was a statistically significant negative predictor for CB among studied students. Since cyberbullying often hurt adolescents psychologically, the depressive effect of cyberbullying prevents students from excelling in their studies and consequently academic achievement [36].

This finding supports the finding of Mitchell in USA who found that academic achievement was a statistically significant negative predictor for CB among adolescent students. Mitchell found that students with higher grades were less likely to be exposed to CB than those with lower grades. Contradicting with this finding, Hemphill et al. in Australia found that academic achievement was not a predictor of cyber bullying [37-40].

Conclusion

In the light of current study ,more than one quarter of studied students adolescents in Aswan schools were exposed to cyber bullying, the most common forms of it were mockery and denigration, inconvenience and violation of privacy, insulation and threatening, exclusion and sexual harassment and binary regression analysis of the current study identified some factors that predict CB among studied students such as academic achievement, age, level of knowledge, gender, number of siblings& father's and mother's job. Besides, there was a statistically significant relationship between cyber bullying and academic achievement.

Recommendations

School based educational programs should be conducted to identify causes, consequences and prevention of cyber bullying behavior among adolescent students and subsequently enhanced their academic achievement. Collaborative systems should be established Policies in schools to inhibit cyber bullying behavior among adolescent students.

Intervention measures requiring on-going, systematic efforts on individual, school, and community levels and further research is needed on which components of anti-bullying programs constitute effective preventive and intervention measures.

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