

Cyberbullying perpetration among Youths in a Nigerian Public University

Cyberbullying among Youths

Ajayi PO¹[ID](#), Amu EO¹[ID](#), Solomon OO¹[ID](#), Ipinnimo TN²[ID](#), Adeosun MO¹[ID](#)

¹Department of Community Medicine, Faculty of Clinical Sciences, Ekiti State University, Ado-Ekiti, Ekiti State, Nigeria

²Department of Community Medicine Federal Teaching Hospital, Ido-Ekiti, Ekiti State, Nigeria

Submitted: 17th June 2024

Accepted: 3rd February 2025

Published: 30th June 2025

[ID](#): Orcid ID

Abstract

Objectives: The study aims to investigate the prevalence and determinants of cyberbullying perpetrators among youths at Ekiti State University, Ado-Ekiti, Ekiti State, Nigeria.

Methodology: An institutional-based, cross-sectional study was conducted at Ekiti State University, Ado-Ekiti, sampling a total of 400 undergraduate students. A pretested, semi-structured, interview-administered questionnaire was adapted from the CDC cyberbullying questionnaire and other literature. All data collected were analyzed using IBM SPSS version 25. Multilevel data analysis was conducted with a clear progression from univariate, and bivariate to multivariate analysis, with the p-value set at $P < 0.05$.

Result: The prevalence of cyber-perpetrators, cyber-victims and cyber-bystanders in the last three months was 37 (9.6%), 111 (28.9%) and 145 (37.8%) respectively. The three factors that were significant predictors associated with cyberbullying perpetrators among the youths include; the use of the internet on their phones (OR:1.93, 95%CL:(0.21-0.93); $p=0.042$), "expectation from my social cycle that I bully via the internet or mobile phone cyberbullying" (OR:4.07, 95%CL:(1.70-9.73); $p=0.002$) and intention to bully someone via the internet or mobile phone (in the next three months) (OR: 25.24, 95%CL(2.02-314.85); $p=0.17$).

Conclusion: The prevalence of cyberbullying perpetration is low among the youths in Ekiti State. The predictors of cyberbullying perpetration were the use of the Internet on their phones, expectation from my social cycle that I bully via the Internet or mobile phone and the intention to bully someone via the Internet or mobile phone (in the next three months). A well-tailored health promotion intervention about cyberbullying among the youth in Ekiti is needed.

Keywords: Cyberbullying, Prevalence, Determinants, Nigerian Public University, Youths

Plain English Summary

Cyberbullying is a rapidly evolving and growing public health problem which is spreading into developing countries due to the increased access to online facilities. The prevalence of cyber-perpetrators, cyber-victims and cyber-bystanders in the last three months was 37 (9.6%), 111 (28.9%) and 145 (37.8%) respectively. The three factors that were significant predictors associated with cyberbullying perpetrators among the youths include the use of the internet on their phones, expectation from my social cycle that I bully via the internet or mobile phone cyberbullying and intention to bully someone via the internet or mobile phone.

Correspondence:

Ajayi, Paul O

Department of Community Medicine, Faculty of Clinical Sciences,
Ekiti State University, Ado-Ekiti,
Ekiti State, Nigeria

+2348034892087, paulajayi123@gmail.com

Background

Cyberbullying is a rapidly evolving and growing public health problem with increasing prevalence in developed countries and spreading into developing countries due to increased access to online facilities (1, 2, 3). Unlike traditional bullying, which has been known to be in person involving face-to-face or person-to-person interaction, cyberbullying occurs even without face-to-face interaction or contact or in an anonymous state (4, 5, 6). Cyberbullying is an interpersonal, aggressive, repeated behaviour whose purpose is to harm a victim through information and communication technologies (7). It can take many forms (flaming, cyberstalking, online harassment, ousting and exclusion) (8) and be delivered through almost any means of electronic communication like digital devices on social media, online forums, chats or gaming rooms (6, 9).

Youth are individuals between the ages of 15 and 24 years old (10). They use the internet more and consider it a vital aspect of their daily lives and functionality (communication, entertainment and work tools) (11). Over the years, technological advancement (the use of the internet, digital devices and social media) has created a digital space which tremendously increased social interaction and relations. Youth have increased the use of cyberspace with its attendant benefits and problems (11).

The phenomenon of cyberbullying is a well-established public health issue that affects the youth; its prevalence has increased over the years (12). Globally, there is massive variation in the prevalence of cyberbullying across the different countries of the world (based on different definitions, target populations and measurements) (4, 6, 12). The prevalence of cyberbullying victimisation and cyberbullying perpetration ranges from 14.6% to 52.2% and 6.3% to 32%, respectively (4). In another study cyber victimisation fell within a wide range of 5% to 72% while for cyber perpetration, they range from 4% to 33% (12).

Besides, some studies (6, 12, 13) found factors such as age, male gender, educational status, online access and duration of time spent, proficiency in information computer technology (ICT) use, family characteristics, location of school (urban or rural area), traditionally bullied, e-cigarette use and previous history of being a cyber-victim, as being associated with cyberbullying perpetration (6, 12, 13). Protective factors identified in lowering the likelihood of cyberbullying include higher self-esteem, strong parent-child relationships and emotional intelligence, positive

school climate and residence in safer neighbourhoods (12).

It is worth noting that there is a paucity of studies in Ekiti state, Nigeria concerning cyberbullying and its associated factors among the youth (14). Hence, the study aimed to investigate the prevalence and determinants of cyberbullying perpetration among youths in Ekiti State University, Ado-Ekiti, Ekiti State, Nigeria.

Materials and Methods

Study Design and Location

This institutional-based, descriptive, cross-sectional study took place at Ekiti State University Ado-Ekiti, Ekiti State, Nigeria in May 2024. Ekiti State University, Ado-Ekiti, is a state-owned university established in 1982 (15) with a current population of about 25,000 students (23,000 undergraduates and 2000 postgraduate students) (15). The University offers various courses and programs that certify students with officially recognized degrees such as bachelor's degrees, master's degrees and doctorate degrees in several fields of study (15). The University undergraduate scheme has eight faculties and one college (having three additional faculties); in all, the faculties are; the Faculty of Engineering, Faculty of Education, Faculty of Law, Faculty of Agricultural Sciences, Faculty of Art, Faculty of Management Sciences and the College of Medicine which comprises of Faculty of Basic medical science, Faculty of Basic clinical science and Faculty of Clinical Science (A total of eleven faculties) (15). The University does not only provide educational facilities to the students, it also provides non-academic facilities such as sporting facilities, library, housing facilities, scholarships, financial aids and various exchange programs (16).

Participants, Sample Size Determination and Sampling Technique

The study population included all the youth aged ≥ 15 years and who are students of Ekiti State University, Ado-Ekiti who own or have had access to an electronic media (mobile phone, laptop, smart watches) in the last six months and who have internet access for at least one hour per week in the last six months. Postgraduate and undergraduate students with acute health conditions were excluded.

The sample size was determined using Fisher's formula for calculating single proportion sample size for $>10,000$ population.

$$N = \frac{Z^2 (pq)}{d^2}$$

Where N was the desired minimum sample size

Z was the standard normal deviates for 95% confidence interval = 1.96

p was the prevalence of cyberbullying from previous study = 67% (17) = 0.67

q was the complementary probability = $1-p = 1-0.67=0.33$

d was the measure of precision = 5% = 0.05, Therefore, $Z = 1.96$, $p = 0.67$, $q = 0.33$, $d = 0.05$.

Hence,

$$N = \frac{1.96^2(0.67 \times 0.33)}{0.05^2}$$

$$N = \frac{3.8416 \times 0.2211}{0.0025}$$

$N = 339.74 = 340$ approximately to the nearest units. Using a non-respondent rate of 10%, $10/100 \times 340 = 34$,

N (sample size) = $340 + 34 = 374$, approximated to 400.

A multistage sampling technique was used to select eligible respondents. In stage one, from the list of all the faculties obtained, four of the eleven faculties were selected using the simple random sampling method by balloting. In the second stage, a list of the departments in the selected faculties was obtained and two departments from each faculty were selected using a simple random sampling method by balloting (a total of eight departments were selected). In the third stage, all the levels in each chosen department were selected, and finally, the respondents from the selected department were selected using the systematic sampling method. Questionnaires were distributed equally across the selected levels. The list of students in each level served as the sample frame. The sample interval was obtained by dividing the total number of students in each level (sample frame) by the number of questionnaires that were allocated to that level (sample size). Using the sample interval that was obtained, the first participant was selected using the simple random technique of balloting. After that, subsequent respondents were selected using the pre-determined sampling interval till the sample size was attained.

Data Collection

The data collection was carried out using a pretested, semi-structured, interview-administered questionnaire, which was adapted from the Centers for Disease Control and Prevention (CDC) cyberbullying questionnaire and other literature (6, 18). The reliability test was found to be good (Cronbach's Alpha 0.88-0.94) (18). The prototype questionnaire contained 30 items made up of 17

items on socio-demographic characteristics, 7 questions on prevalence assessment, 4 items on the determinants, and 2 items on the effect of cyberbullying. Data was collected during school hours by eight trained research assistants and two supervisors.

Study Variables

Independent variables included; Socio-demographic (age, gender, ethnicity). Psychological characteristics (self-esteem, internalizing behaviours, empathy and aggression). Family and household factors (parenting, socioeconomic status and sibling relationships). School and peer factors such as school climate and peer relationships. Availability and use of technology. Dependent variables included the prevalence of cyberbullying (this used cyberbullying perpetrators' prevalence as a reference for cyberbullying prevalence).

Data Analysis

The questionnaires were sorted, coded and checked for errors and completeness. All data collected were analyzed using IBM SPSS software version 25.0. Multilevel data analysis was conducted with a clear progression from univariate, bivariate to multivariate. Univariate analysis of data was done using frequency tables, percentages and charts, while bivariate analysis was done using a cross-tabulation of the independent variables with the dependent variables using the Chi-square test. Binary logistic regression was used to identify the predictors of cyberbullying. The level of significance was set at p -value < 0.05 for both bivariate and multivariate analysis.

Result

A total of 400 questionnaires were administered, out of which 384 were recovered, representing a response rate of 96%.

Table 1 shows the socio-demographic characteristics of the respondents; just over half of the respondents were aged above 20 years 193 (50.3%), while 191 (49.7%) were ≤ 20 years, with the mean age \pm standard deviation of the respondents as 21 ± 2 years. More than half of the respondents were male, 250 (65.1%), while the majority of the respondents were Christians 351 (91.4%) and Yoruba ethnicity 372 (96.9%). The respondents were spread across the faculties and levels with more students coming from the Faculty of Science and 300level respectively.

Table 1: Socio-demographic characteristics of the respondents.

| Variable (n=384) | Frequency | Per cent |
|----------------------------------|---------------|----------|
| Age (as at last birthday) | | |
| ≤20 Years | 191 | 49.7 |
| >20 Years | 193 | 50.3 |
| Mean ± SD | 21 ± 2 | |
| Gender | | |
| Male | 250 | 65.1 |
| Female | 134 | 34.9 |
| Religion | | |
| Christianity | 351 | 91.4 |
| Islam | 32 | 8.3 |
| Traditional | 1 | 0.3 |
| Ethnicity | | |
| Yoruba | 372 | 96.9 |
| Hausa | 1 | 0.3 |
| Igbo | 9 | 2.3 |
| Others | 2 | 0.5 |
| Faculty | | |
| Agric. Science | 98 | 25.5 |
| Basic Medical | 88 | 22.9 |
| Science | 109 | 28.4 |
| Social Science | 89 | 23.2 |
| Level | | |
| 100L | 94 | 24.5 |
| 200L | 91 | 23.7 |
| 300L | 108 | 28.1 |
| 400L | 91 | 23.7 |

Table 2 shows the prevalence of cyberbullying among youth in Ekiti State University, Ado Ekiti, Ekiti State. It shows the number of Cyber Perpetrators in the last three months was 37

(9.6%), the number of Cyber-Victims in the last three months was 111 (28.9%), and the number of Cyber-bystanders in the last three months was 145 (37.8%).

Table 2: Prevalence of cyberbullying among youth in Ekiti State University, Ado Ekiti, Ekiti State

| Variable(n=384) | Frequency | Per cent |
|---|-----------|----------|
| Cyber Perpetrator in the last three months | | |
| No | 347 | 90.4 |
| Yes | 37 | 9.6 |
| Cyber-Victim in the last three months | | |
| No | 273 | 71.1 |
| Yes | 111 | 28.9 |
| Cyber-bystander in the last three months | | |
| No | 239 | 62.2 |

Yes 145 37.8

Table 3 shows the association between socio-demographic factors and cyberbullying perpetrators among the youths in the university.

Among all the variables the only significant factor of them all was religion (p=0.007).

Table 3: Association between socio-demographic factors and Cyberbullying perpetrators among Youth in Ekiti State University, Ado Ekiti, Ekiti State

| Variable (n=384) | No | Yes | X ² | P value |
|------------------|-----------|----------|----------------|---------------|
| Age Group | | | | |
| ≤20 Years | 171(89.5) | 20(10.5) | 0.305 | 0.581 |
| >20 Years | 176(91.2) | 17(8.8) | | |
| Gender | | | | |
| Male | 225(90.0) | 25(10.0) | 0.109 | 0.741 |
| Female | 122(91.0) | 12(9.0) | | |
| Religion | | | | |
| Christianity | 319(90.9) | 33(9.1) | 9.788 | 0.007* |
| Islam | 28(87.5) | 4(12.5) | | |
| Traditional | 0(0.00) | 1(100.0) | | |
| Ethnicity | | | | |
| Yoruba | 337(90.6) | 35(9.4) | 1.979 | 0.577 |
| Hausa | 1(100.0) | 0(0.00) | | |
| Igbo | 7(77.8) | 2(22.2) | | |
| Others | 2(100.0) | 0(0.00) | | |
| Faculty | | | | |
| Agric. Science | 90(91.8) | 8(8.2) | 4.587 | 0.205 |
| Basic Medical | 75(85.2) | 13(14.8) | | |
| Science | 98(89.9) | 11(10.1) | | |
| Social Science | 84(94.4) | 5(5.6) | | |
| Level | | | | |
| 100L | 87(92.6) | 7(7.4) | 0.801 | 0.849 |
| 200L | 82(90.1) | 9(9.9) | | |
| 300L | 96(88.9) | 12(11.1) | | |
| 400L | 82(90.1) | 9(9.9) | | |

Table 4 shows an association between family factors, and cyberbullying perpetrators among youths in the university. Only the highest level of education of the father (p=0.049) and the highest

level of education of the mother (p=0.050) were statistically significant, while others were statistically insignificant.

Table 4: Association between family factors Cyberbullying perpetrators among Youth in Ekiti State University, Ado Ekiti, Ekiti State

| Variable(n=384) | No | Yes | X ² | P value |
|---------------------------|-----------|---------|----------------|---------|
| Person living with | | | | |
| Both parents | 318(91.1) | 31(8.9) | 5.919 | 0.116 |
| Father only | 12(92.3) | 1(7.7) | | |

| | | | | |
|--|-----------|----------|-------|---------------|
| Mother only | 15(75.0) | 5(25.0) | | |
| Other Relation | 2(100.0) | 0(0.00) | | |
| Highest level of education of your father | | | | |
| Primary education | 1(100.0) | 0(0.00) | 6.039 | 0.049* |
| Secondary education | 6(66.7) | 3(33.3) | | |
| Tertiary education | 340(90.9) | 34(9.1) | | |
| Highest level of education of your mother | | | | |
| Secondary education | 1(50.0) | 1(50.0) | 3.769 | 0.050 |
| Tertiary education | 346(90.6) | 36(9.4) | | |
| Father's Occupation (Please specify job) | | | | |
| Govt. Employed | 157(87.7) | 22(12.3) | 4.63 | 0.201 |
| Private Employed | 76(96.2) | 3(3.8) | | |
| Retiree | 7(87.5) | 1(12.5) | | |
| Self Employed | 107(90.7) | 11(9.3) | | |
| Mother's Occupation (Please specify job) | | | | |
| Govt. Employed | 162(88.5) | 21(11.5) | 3.555 | 0.470 |
| Private Employed | 80(95.2) | 4(4.8) | | |
| Retiree | 3(100.0) | 0(0.00) | | |
| Self Employed | 101(89.4) | 12(10.6) | | |
| Unemployed | 1(100.0) | 0(0.00) | | |

Table 5 shows the association between technological factors and cyberbullying perpetrators among youths in Ekiti State. The only statistically significant factor was the location of

internet use (0.002), all other factors such as owning a mobile phone, and using of internet were statistically insignificant.

Table 5: Association between Technological factors and Cyberbullying perpetrators among Youth in Ekiti State University, Ado Ekiti, Ekiti State

| Variable(n=384) | No | Yes | X ² | p value |
|--|-----------|---------|----------------|---------------|
| Ownership/access to a mobile phone | | | | |
| Yes | 342(90.2) | 37(9.8) | 0.54 | 0.462 |
| No | 5(100.0) | 0(0.00) | | |
| Internet usage | | | | |
| Yes | 345(90.3) | 37(9.7) | 0.214 | 0.643 |
| No | 2(100.0) | 0(0.00) | | |
| If you use the Internet, the place of usage of the Internet | | | | |
| Schools' computer/laptop | 5(55.6) | 4(44.4) | 12.82 | 0.002* |
| On my phone | 339(91.1) | 35(8.9) | | |
| At a public cyber café | 1(100.0) | 0(0.00) | | |
| How often do you use the Internet? | | | | |
| Several hours a day | 322(90.2) | 37(9.8) | 0.544 | 0.909 |
| At least 1 hour every day | 18(90.0) | 2(10.0) | | |
| At least a few minutes every day | 4(100.0) | 0(0.00) | | |
| At least once every 2weeks | 1(100.0) | 0(0.00) | | |

Table 6 shows the relationship between school/peer factors and cyberbullying perpetrators among youths in Ekiti State. Factors such as believing it is normal to bully each other via the internet (p<0.001), there is a lot of bullying going on via the internet and that is just the way it is (p<0.001),

people in my social circle expect me to bully via the internet (p<0.001) and people that their friends encourage them to cyberbully (p= 0.032) were all statistically significant. All other factors such as participation in school cyberbullying were insignificant.

Table 6: Association between School/Peer Factors and Cyberbullying perpetrators among Youth in Ekiti State University, Ado Ekiti, Ekiti State

| Variable (n=384) | No | Yes | X ² | p value |
|--|-----------|----------|----------------|-------------------|
| Most of the people who are important to me (parents, guardians, teachers, and friends) would approve if I bullied someone via the internet or mobile phone. | | | | |
| No | 303(90.4) | 32(9.6) | 0.021 | 0.885 |
| Yes | 44(89.8) | 5(10.2) | | |
| It is normal for people to bully each other via the internet or mobile phone. | | | | |
| No | 313(93.2) | 23(6.8) | 24.034 | <0.001* |
| Yes | 34(70.8) | 14(29.2) | | |
| There is a lot of bullying going on via the internet and mobile phones, that's just the way it is. | | | | |
| No | 250(94.7) | 14(5.3) | 18.211 | <0.001* |
| Yes | 97(80.8) | 23(19.2) | | |
| It is expected from me by people in my social cycle that I bully via the internet or mobile phone. | | | | |
| No | 329(92.9) | 25(7.1) | 34.46 | <0.001* |
| Yes | 18(60.0) | 12(40.0) | | |
| Do your friends encourage you to cyberbully | | | | |
| Yes | 41(82.0) | 9(18.0) | 4.619 | 0.032* |
| No | 306(91.6) | 28(8.4) | | |
| Do they cyberbully in your school? | | | | |
| Yes | 219(91.3) | 21(8.8) | 0.576 | 0.448 |
| No | 128(88.9) | 16(11.1) | | |

Table 7 shows the relationship between technological factors, School/ Peer factors, psychological factors and Cyberbullying perpetrators among Youth at Ekiti State University, Ado Ekiti, Ekiti State. All factors were statistically significant.

Table 7: Association between psychological factors and Cyberbullying perpetrators among Youth in Ekiti State University, Ado Ekiti, Ekiti State

| Variable (n=384) | No | Yes | X ² | p value |
|--|-----------|----------|----------------|-------------------|
| It is easy for me to bully someone via the internet or mobile phone use. | | | | |
| No | 317(93.8) | 21(6.2) | 37.956 | <0.001* |
| Yes | 30(65.2) | 16(34.8) | | |
| I am confident that I can use a mobile phone and the internet very well to harass anyone I want | | | | |
| No | 326(92.4) | 27(7.6) | 19.821 | <0.001* |
| Yes | 21(67.7) | 10(32.3) | | |
| I expect that I will bully someone via the internet or mobile phone in the next three months. | | | | |
| No | 343(91.5) | 32(8.5) | 22.319 | <0.001* |

| | | | | |
|--|-----------|----------|--------|-------------------|
| Yes | 4(44.4) | 5(55.6) | | |
| I am planning to bully someone via the internet or mobile phone in the next three months. | | | | |
| No | 340(91.6) | 31(8.4) | 20.609 | <0.001* |
| Yes | 7(53.8) | 6(46.2) | | |
| There is a considerable chance that I will bully someone via the internet or mobile phone in the next three months. | | | | |
| No | 338(92.6) | 27(7.4) | 42.441 | <0.001* |
| Yes | 9(47.4) | 10(52.6) | | |
| I intend to bully someone via the internet or mobile phone in the next three months. | | | | |
| No | 345(91.8) | 31(8.2) | 40.091 | <0.001* |
| Yes | 2(25.0) | 6(75.0) | | |

Table 8 reveals the binary logistic regression analysis, only three factors were significant predictors associated with cyberbullying perpetrators among the youths and they include; the use of the internet on their phones, expectation from my social-cycle that I bully via the internet or mobile phone and intention to bully someone via the internet or mobile phone (in the next three months). Those respondents who use of internet on their phones were 93% more likely to perpetrate cyberbullying (OR:1.93, 95%CL:(0.21-0.93);

p=0.420). Those respondents who had expectations from their social cycle to bully via the internet or mobile phone were about four times more likely to perpetrate cyberbullying (OR:4.07, 95%CL: (1.70-9.73); p=0.002). Those respondents who had the intention to bully someone via the internet or mobile phone (in the next three months) were about 25 times more likely to perpetrate cyberbullying (OR: 25.24, 95%CL (2.02-314.85);p=0.17). (as shown in table 8).

Table 8: Binary logistic regression analysis of the predictors associated with Cyberbullying perpetrators among Youth in Ekiti State University, Ado Ekiti, Ekiti State

| Factors | Adjusted Odds Ratio (95% Confidence Interval) | p-Value |
|---|---|---------------|
| Religion | | |
| Christianity | 1 | |
| Islam | 2.39(0.66-14.02) | 0.156 |
| Traditional | 0.42(0.01-4.79) | 0.721 |
| Highest level of education of your father | | |
| Primary education | 1 | |
| Secondary education | 1.11(0.35-3.9) | 0.832 |
| Tertiary education | 2.42(0.32-22.7) | 0.451 |
| If you use the Internet, where do you usually use the Internet? | | |
| Schools' computer/laptop | 1 | |
| On my phone | 1.93(0.21-0.93) | 0.042* |
| At a public cyber café | 0.00(0.00) | 1.000 |
| It is normal for people to bully each other via the internet or mobile phone. | | |
| No | 1 | |
| Yes | 0.69(0.22-2.16) | 0.520 |
| There is a lot of bullying going on via the internet and mobile phones, that's just the way it is. | | |
| No | 1 | |
| Yes | 0.93(0.53-1.63) | 0.793 |
| It is expected from me by people in my social cycle that I bully via the internet or mobile phone. | | |
| No | 1 | |
| Yes | 4.07(1.70-9.73) | 0.002 |

| | | |
|--|--------------------|--------------|
| Do your friends encourage you to cyberbully | | |
| Yes | 1 | |
| No | 0.98(0.48-2.03) | 0.962 |
| It is easy for me to bully someone via the internet or mobile phone use. | | |
| No | 1 | |
| Yes | 1.92(0.81-4.56) | 0.140 |
| I am confident that I can use the mobile phone and the internet very well to harass anyone I want | | |
| No | 1 | |
| Yes | 0.78(0.26-2.32) | 0.658 |
| I expect that I will bully someone via the internet or mobile phone in the next three months. | | |
| No | 1 | |
| Yes | 3.95(0.16-99.59) | 0.404 |
| I am planning to bully someone via the internet or mobile phone in the next three months. | | |
| No | 1 | |
| Yes | 1.04(0.10-10.54) | 0.795 |
| There is a considerable chance that I will bully someone via the internet or mobile phone in the next three months. | | |
| No | 1 | |
| Yes | 0.72(0.13-4.14) | 0.714 |
| I intend to bully someone via the internet or mobile phone in the next three months. | | |
| No | 1 | |
| Yes | 25.24(2.02-314.85) | 0.017 |

*Statistically significant

Discussion

In this study, we investigated the prevalence and determinants of cyberbullying among youths in a public university. It was observed that the majority of the respondents were aged above 20 years, with the mean age of the respondents being 21 years. The majority of the respondents were male, Christians, and of Yoruba ethnicity. A High proportion of the respondents were in 300-level and sciences faculty.

The prevalence of cyber-perpetrators, cyber-victims and cyber-bystanders (in the last three months) was 9.6%, 28.9% and 37.8% respectively. This might have occurred because there is a gradual increase in access to online facilities, especially among youth. This study result used the cyberbullying perpetrator as a reference for the cyberbullying prevalence. This study result is similar (using prevalence) to the study by Lee et al (6.3%), Beran et al (13.9%) and Rice et al (5%) (19, 20, 21) in Korea, Canada and the United States of America respectively. It is also similar in pattern, the prevalence of cyber-perpetrators is less than cyber-victims, and more males were involved in cyberbullying perpetration than females (19, 20, 21). The similarity may have occurred because the four studies were done using a cross-sectional

study design, the male population is generally more aggressive than females, and the perpetrators were able to victimize more than one person. However, the study results were in contrast to several other studies (2, 6, 12, 22), that showed a higher level of cyberbullying prevalence perpetration among the youths (18% to 46.3%). The difference may have resulted from differences in sample size, location of the study, and differences in study design.

The three predictors of cyberbullying perpetration in this study were the respondents' use of the internet on their phones, also the increasing expectation from my social-cycle that I bully via the internet and the intention to bully someone via the internet or mobile phone.

A higher proportion of the respondents practise cyberbullying perpetration, due to the regular use of their phones with internet access. This might have occurred because the longer the time an individual spends on the internet the more likely he will experience cyberbullying and may like to retaliate and subsequently pick up the habit of cyberbullying. Most youth use their phones for social networking, communication, chatting, leisure, and other private things. Hence, they spend a longer time, are exposed to various

degrees of cyberbullying and can equally learn how to bully others and remain anonymous to the victim(s). This study is similar to a study by Cerezo et al and Sivabalan et al (12, 23) which revealed that regular use and ownership of online/internet on the phone increases the risk of perpetuating cyberbullying in cyberspace(12, 23). In contrast to this study, a study by Al-Qaderi et al done in 2019 in the United Arab Emirates observed that there is no connection between cyberbullying and the respondent's use of the internet on his phone or other gadgets (24). The difference might be accounted for due to the difference in sample size, and study location (the United Arab Emirates is more developed) however, the study design is similar, and the age distribution of the respondents is equally similar.

A higher prevalence of cyberbullying perpetration was experienced among students whose peers (social cycle) expected them to bully via the internet or mobile phone. This is one effect of peer pressure, and because of the need to belong. It stimulates or motivates the youth to practice cyberbullying without restriction thinking, it is a well-acceptable behaviour. This is similar to a study in China which revealed that having social friends positively predicted both cyberbullying perpetration and victimization (25). They were 3.2 times more likely to perpetuate cyberbullying due to peer pressure (24). This study may be similar because they both used a cross-sectional study design, but the sampling technique was different and the sample size was larger. In addition, our study is similar to the study by Yang et al and Piccoli et al (26, 27) which showed that peer pressure directly predicted cyberbullying perpetration.

Also, a higher prevalence of cyberbullying perpetration was observed among respondents who had the intention to bully someone via the internet or mobile phone. This intention of cyberbullying must have developed from a level of awareness to knowledge to interest to a decision to action, however, it could have been modulated by other interactions (social cycle from school, peers and others). This finding of this study is similar to a study by Owoade et al (6, 28) which describes a higher chance of cyberbullying perpetration among respondents who had a high intention to perpetrate cyberbullying

Study limitation

Like other cross-sectional studies that seek previous information about the past experiences of an individual, it is prone to recall bias which was reduced by limiting the study to asking questions of events that are not beyond the last three months.

Conclusion

In conclusion, the study concludes that the prevalence of cyberbullying perpetration is low among the youths in Ekiti State. The predictors of cyberbullying perpetration were; the use of the internet on their phones, expectation from my social-cycle that I bully via the internet or mobile phone and the intention to bully someone via the internet or mobile phone (in the next three months). It is recommended that a well-tailored health promotion intervention about cyberbullying among the youth in Ekiti is needed, also there is need for organized behavioural change communication interventions to target the youth to increase the knowledge and capacity to manage peer pressure and psychological effect of exposure to cyberspace as this may be reducing its prevalence of cyberbullying among the vulnerable youth.

List of Abbreviations

CDC: Centers for Disease Control and Prevention

SPSS: Statistical Package for Social Sciences

OR: Odd ratio

ICT: Information Computer Technology

EKSUTH: Ekiti State University Teaching Hospital

Declarations

Ethical approval and consent to participate

We obtained ethical research clearance from ethical review committee of Ekiti State University teaching hospital (Protocol number: EKSUTH/A67/2024/05/005). We also obtained informed consent from all participants.

Consent for publication

All the authors gave consent for the publication of the work under the Creative Commons Attribution-Non-Commercial 4.0 license.

Availability of data and materials

The data and materials associated with this research will be made available by the corresponding author upon reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding

Nil.

Author contributions

APO, AEO, SOO, ITM, and AMO conceived and designed the study, including study selection, data analysis, and results interpretation. All authors

prepared and reviewed the manuscript; read and approved the manuscript.

Acknowledgement

Not applicable.

Reference

1. Deschamps R, McNutt K. Cyberbullying: What's the problem? Canadian Public Administration. 2016;59(1):45-71. <https://doi.org/10.1111/capa.12159>
2. Zhu C, Huang S, Evans R and Zhang W. Cyberbullying Among Adolescents and Children: A Comprehensive Review of the Global Situation, Risk Factors, and Preventive Measures. Front. Public Health,2021; 9:634909. <https://doi.org/10.3389/fpubh.2021.634909>
3. Bolanle Nofisat Akeusola social media and the Incidence of Cyberbullying in Nigeria: Implications for creating a safer online environment. International Journal of Government and Social Science.2023; 9(1):97-118. <https://doi.org/10.22373/jai.v9i1.3278>
4. Farooq S, Abdullatif M & Altheeb A. Prevalence of cyberbullying and associated factors among adolescents in Dubai schools: complex design survey – 2019, International Journal of Adolescence and Youth, 2023;28:1,2278648, <https://doi.org/10.1080/02673843.2023.2278648>
5. Gohal G, Alqassim A, Eltyeb E, Rayyani A, Hakami B, Al-Faqih A et al. Prevalence and related risks of cyberbullying and its effects on adolescents. BMC Psychiatry. 2023 Jan 14;23(1):39. <https://doi.org/10.1186/s12888-023-04542-0>
6. Owoade IA, Adeomi AA, Akinyemi PA, Owoade AF. Prevalence and Determinants of Cyberbullying Perpetration among Adolescents in Rural and Urban Secondary Schools in Osun State South-Western Nigeria. Journal of Community Medicine and Primary Health Care. 2023; 35 (1) 24-39. <https://dx.doi.org/10.4314/jcmphc.v35i1.3>
7. Rodríguez-Hidalgo AJ, Mero O, Solera E, Herrera-López M, Calmaestra J. Prevalence and psychosocial predictors of cyberaggression and cybervictimization in adolescents: A Spain-Ecuador transcultural study on cyberbullying. PLoS One. 2020;15(11):e0241288. <https://doi.org/10.1371/journal.pone.0241288>
8. Racheal N. Wanjohi. Forms of Cyberbullying in Relation To Self-Perceptions of Social Acceptance among High School Adolescents in Gilgil Sub-County, Kenya East African Scholars J Edu Humanit Lit, 2018;1(1): 22-29.
9. Samsudin EZ, Yaacob SS, Xin Wee C, Mat Ruzlin AN, Azzani M, Jamil AT, Muzaini K et al. Prevalence of cyberbullying victimisation and its association with family dysfunction, health behaviour and psychological distress among young adults in urban Selangor, Malaysia: a cross-sectional study. BMJ Open. 2023;15;13(11):e072801. <https://doi.org/10.1136/bmjopen-2023-072801>
10. Sonko I, Chung MH, Hou WH, Chen WT, Chang PC. Predictors of HIV testing among youth aged 15–24 years in The Gambia. PloS one. 2022;17(2):e0263720. <https://doi.org/10.1371/journal.pone.0263720>
11. Odora RJ and Matoti SN. The Nature and Prevalence of Cyber Bullying Behaviors among South African High School Learners Int J Edu Sci, 2015;10(3): 399-409. <https://doi.org/10.1080/09751122.2015.11890362>
12. Sivabalan TV, Ahmad Zaki R, Choo WY. The Prevalence of Cyberbullying And Its Associated Factors Among Young Adolescents In Penang, Malaysia JUMMEC 2020;23(Suppl 1):202-211.
13. Olasanmi OO, Agbaje YT, Adeyemi MO. Prevalence and Prevention Strategies of Cyberbullying among Nigerian Students Open Journal of Applied Sciences, 2020;10:351-363. <https://doi.org/10.4236/ojapps.2020.106026>
14. Olubode H, Akinyemi E, Omolayo B, Umoru T, Olawa B. Impact of Socio-demographic Factors on Cyber Addiction and Cyberbullying Among Adolescents in Nigeria. Indonesian Journal of Curriculum and Educational Technology Studies. 2023;11(1):28-38. <https://doi.org/10.15294/ijcets.v11i1.69363>
15. Ekiti State University – Home. Ekiti State University – Home; <https://eksu.edu.ng/>. [Accessed Sept 2022].
16. World University Rankings & Reviews. uniRank Ekiti State University, Ado Ekiti. Ranking & Review; <https://www.4icu.org/reviews/8088.htm> [Accessed Sept 2022].
17. Sumera S, Naurin FK, Saad Z. Prevalence of Cyberbullying victimization among Pakistani youths. Technology in Society 2021; 65: 101577. numberS0160791X2100052X <https://doi.org/10.1016/j.techsoc.2021.101577>

18. Hamburger ME, Basile KC, Vivolo AM. Measuring Bullying Victimization, Perpetration, and Bystander Experiences: A Compendium of Assessment Tools. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 2011. <https://doi.org/10.1037/e580662011-001>
19. Lee C. and Shin N. Prevalence of cyberbullying and predictors of cyberbullying perpetration among Korean adolescents. *Computers in human behavior*,2017; 68:352-358. <https://doi.org/10.1016/j.chb.2016.11.047>
20. Beran T, Mishna F, Mcinroy LB. and Shariff S. Children's Experiences of Cyberbullying: A Canadian National Study. *Children & Schools* 2015;37(4), 207-214. <https://doi.org/10.1093/cs/cdv024>
21. Rice E, Petering R, Rhoades H, Winetrobe H, Goldbach J, Plant A et al. Cyberbullying perpetration and victimization among middle-school students. *Am J Public Health*. 2015 ;105(3):e66-72. <https://doi.org/10.2105/AJPH.2014.302393>
22. Alrasheed N, Nishat S, Bin Shihah A, Alalwan A, Jradi H. Prevalence and Risk Factors of Cyberbullying and Its Association with Mental Health Among Adolescents in Saudi Arabia. *Cureus*. 2022;14(12):e32806. <https://doi.org/10.7759/cureus.32806>
23. Cerezo, F., Arnaiz, P., Gimenez, A. M., & Maquilón, J. J. (2016). Cyberaddiction behaviors and cyberbullying experiences among adolescents. *Annals of Psychology*,2016; 32(3), 761–769. <https://doi.org/10.6018/analesps.32.3.217461>
24. AlQaderi N, Banibella Abdelmagied Elamin A, Yasser Abdelraouf Abdelmonem K, Teir HJ, Andrade G. Phone addiction, cyberbullying, and mental health amongst young adults in the United Arab Emirates: a cross-sectional study. *BMC Psychol*. 2023 ;11(1):313. <https://doi.org/10.1186/s40359-023-01320-1>
25. Zhou L, Li C. Factors associated with cyberbullying among vocational students based on the ecological system model in an ethnic minority area. *Medicine* 2021;100:40(e27226). <https://doi.org/10.1097/MD.00000000000027226>
26. Yang J, Li S, Gao L, & Wang X. (2022). Longitudinal associations among peer pressure, moral disengagement and cyberbullying perpetration in adolescents. *Computers in Human Behavior*,2022; 137: 107420. <https://doi.org/10.1016/j.chb.2022.107420>
27. Piccoli V, Carnaghi A, Grassi, M, Stragà, M, & Bianchi M. Cyberbullying through the lens of social influence: Predicting cyberbullying perpetration from perceived peer-norm, cyberspace regulations and ingroup processes. *Computers in Human Behavior*, 2019; 102: 260-273. <https://doi.org/10.1016/j.chb.2019.09.001>
28. Pabian S, Vandebosch H. Using the theory of planned behavior to understand cyberbullying: The importance of beliefs for developing interventions. *European Journal of Developmental Psychology*. 2014; 11(4):463-477. <https://doi.org/10.1080/17405629.2013.858626>