Original Research Article

Social media and sexual behavior: a study of undergraduate students in a public university in Imo state, South east Nigeria.

Abstract

Objective: To determine the effect of social media use on sexual behaviors among undergraduate students in public universities in Imo State, Nigeria.

Materials and methods: This descriptive cross-sectional study employed multistage sampling technique.in selecting 300 undergraduates. Data on social media use and sexual behaviors were collected with self- administered semi-structured questionnaire and analysed using statistical package for social sciences version 22.0. Chi-square test was used to identify statistically significant associations between variables. A p value of ≤ 0.05 was considered significant.

Results: The mean age of respondents was 22.13± 4.26 years, while 252(84%) were youths (ages 15 to 25 years). The mean age at sexual initiation was 18.25± 3.67 years. There was 100% awareness of social media, 170 (56.67%) heard about it from friends, while the commonest reasons cited for its use is 213 (71.0%) solving school assignments, while the favorite platforms cited was 102 (91.9%) Facebook. There were statistically significant associations between ever had sex and gender and between use of social media and [the sexually active (p=0.001); type of sexual acts practiced (p=0.000) and number of sexual partners (p=0.000)] respectively.

Conclusions: This study found an association between ever had sex and gender, as well as between use of social media for sexually explicit content and some risky sexual behavior. We recommend that measures such as correct sexuality education should be instituted for

these students to help in curbing such use of social media and so minimize risky sexual behaviors and their attendant consequences.

Key words: undergraduate students, Imo Nigeria, social media, sexual behavior.

1. Introduction

Human sexual behavior refers to the manner in which humans experience and express their sexuality (1). While sexuality is a multidimensional concept which encompasses sexual meanings, identities, desire, orientations, and pleasure as well as types of sexual partnerships and sexual acts (2). People indulge in a variety of sexual acts, either done alone (e.g., masturbation) or with other individuals of same or opposite gender (e.g., penetrative sexual intercourse, non-penetrative sexual outercourse or genital contact such as mutual masturbation, oral sex etc.) in varying patterns of frequency, for series of reasons (1).

Whatever the reasons for sexual escapades, of public health concern are sexual risk behaviors which are sexual activities that pose a potential risk of sexually transmitted infections (STIs) including human immune deficiency virus (HIV) and unplanned pregnancies (3). Such behaviors include: unprotected sexual intercourse, coerced sexual intercourse, transactional sexual acts and multiple sexual partnerships. Early age at sexual debut with its attendant social and public health problems is also a concern (4, 5, 6). According to a study conducted in Sub-Saharan Africa, nearly 60% of young women and 45% of young men have had sexual debut prior to their 18th birthday (7). Another study conducted in Debre Markos University Ethiopia, reported that among those who had initiated sex, 64.7% of them had their sexual debut between the ages of 16 and 19 years (8).

In Nigeria and elsewhere, factors such as socio-demographic characteristics, peer pressure, substance abuse, child labor, poverty, reproductive and sexual health knowledge, as well as inadequate parental supervision, diminishing traditional, cultural and religious influences on premarital sexual behavior, have been identified as having led young people to risky sexual behavior (9, 10, 11). However, the high rates of pregnancy most of them unintentional, STIs (including HIV) and unsafe abortions among youths in Nigeria (12), as well as the social, economic, and other public health consequences indicate the need to know more and do more to address risky sexual acts among them. One route is through the identification of additional contributors to this behavior that have been understudied, factors that put youths at risk and levers that can be used in preventive interventions.

Adolescents and youths constitute a significant number of university undergraduate students in Nigeria (13). Their relative independence and lifestyle within these institutions predispose them to poor reproductive health choices and behaviors. One key source of the risky behaviors among them is exposure to social media which has sexually explicit contents such as pornography and sex movies (9, 14). According to most theories of media effects, the influence of media depends largely on the content. Emerging evidence also suggests that social media affects sexual behavior of adolescents and youths (13, 15, 16, 17, 18). Social media or social networking is a work of advancement in technology. Social networking sites are virtual communities where users can create public profiles, interact with real life friends and other people based on shared interests via sexual text, photos, and videos (19). These sites include: Facebook, Whatsapp, Twitter, 2go, Friend-Ster, MySpace, etc. (20).

Traditionally, the Nigerian society holds sexual expression as the exclusive preserve of the married and would excise with fervor any perceived or evident defection from the norm (17). Though the social media can serve as useful tool when employed as part of a sexual health intervention, exposure to sexually explicit content in the media, could contribute negatively to the sexual behaviors of adolescents and youths (9). Over the past few decades, there is increased explicit exposure of sexual materials in the media (21). Researchers have thus noted the need for provision of accurate and adequate sexual and reproductive health information for young persons to guide against what may be largely unintended effects of exposure to sexuality content in these media on the sexual attitude and behavior of these young persons (22).

Therefore, there is need to provide information for policy makers, governmental and non-governmental organisations working on adolescents and youths, as well as bridge the knowledge gap on the associations between social media and risky sexual behavior among them. It is against this backdrop that this study set out to determine the effect of social media use on risky sexual behaviors among undergraduate students in public universities in Imo State, Nigeria.

2. Methodology

2.1 Description of study area

This study was carried out in Imo State University Owerri located in Owerri Municipal, one of the three local government areas that constitute Owerri the Capital of Imo State in South East Nigeria. The local government area had an area of 8km^2 and a population of 127,213 as at the 2006 census (23). Owerri is a metropolitan city hosting several educational institutions ranging from the primary to the tertiary level. One of the tertiary educational institutions is the Imo state university, established in 1981 through Law No. 4 passed by the Imo State

House of Assembly, Owerri (24). This was amended by Edict 27 of 1985, another in 1986 and finally for the relocation by the Law No. 2 of 1992. The National Universities Commission also formally approved the re-establishment of the University in 1992 at the Lake Nwaebere Campus. In the 2014/2015 session, the state-owned university had a population of about 15,000 undergraduates with 11 faculties and 63 departments (24). A new Information Communication Technology Center has been constructed as well as a state-of-the-art digital library. There are no provisions for students 'accommodation within the university, so they live-in privately-owned hostels amongst the communities around the university.

2.2 Study design

The study design was a cross-sectional descriptive study conducted in April 2016 to June, 2016.

2.3 Study population

This comprises of undergraduate students of the Imo State University in Owerri

2.3.1 Inclusion criteria

Undergraduate students of the Imo State University in Owerri who consent to this study.

2.3.2 Exclusion criteria

Undergraduate students of the Imo State University in Owerri who were absent from school during the study period were excluded. .

2.4 Sample size determination

The sample size was determined using the Leslie Kish's formula for single proportions which stated (25): $n = Z^2pq/d^2$ where, Z = standard normal deviate set at 1.96 which corresponds to 95% confidence interval. p= proportion of a target population with a certain perception on the influence of social media use on their sexual behavior. In a study on sexual behaviour of undergraduates in Osogbo, 73.5% reported that social media use had bad influence on their

sexual behavior (13). q= complementary proportion (1-p) =1- 0.735 =0.265; d= level of precision usually set at 0.05 Sample size (n) = 1.962 x 0.735 x 0.265/0.05 = 299.3 Approximately 300 students

2.5 Sampling technique

Our study participants were selected using multistage sampling technique. In the first stage, stratified sampling technique was used to group the students into 11 faculties. In the second stage, out of the 11 faculties, 6 faculties (over 50%) were selected by simple random sampling using ballots. The third stage had two departments selected from each faculty using simple random sampling technique (except for law which has a single department). At least 25 participants per department were selected by simple random sampling technique using a table of random numbers with the departmental register serving as the sampling frame until 50 participants per faculty were enrolled. Designated places for collection per faculty were provided at ease and convenience of participants.

2.6. Data collection technique

Data collection in this study was done using pre-tested, semi- structured questionnaires developed from review of relevant literatures. All questions were written in English language and pre-tested on similar set of respondents in Madonna University Elele, Nigeria. This was done, to check for the reliability, validity, appropriateness of format, wording and time needed to fill the questionnaire. Thereafter the instruments were reviewed by colleagues, necessary adjustments and corrections were affected before administering the questionnaire to the study participants.

The questionnaire is divided into four sections (A-D) to obtain data on A) the socio-demographic characteristics of the respondents; B) awareness, knowledge, and use of social media by respondents, C) sexual behavior of respondents, and D) relationship between use of social media and risky sexual behaviour of respondents..

To ensure data quality, training of data collection team and field monitoring of data collection were done. Timely availability of the study instruments, meeting of data collection team at the end of every day to share experiences and submit completed forms, and solving field problems were ensured.

2.7. Data management and analysis

The data were edited and entered into the computer. Data cleaning was done by carrying out range and consistency checks. Descriptive and analytical statistics of the data were carried out using statistical package for social sciences (SPSS) Windows version 22.0 (26). Tests of statistical significance were carried out using Chi square tests for proportions. A p value of < 0.05 was considered significant. Descriptive data were presented as simple frequencies and percentages.

2.8. Ethical consideration

Approval was obtained from the appropriate authorities in the institution of study. Written consent of the respondents was also solicited and obtained for the conduct and publication of this research study. Study participants were free to refuse or withdraw from the study at any time without any penalty. All authors hereby declare that the study has been examined and approved by the Department of Community Medicine Madonna University ethics committee, Elele, Nigeria and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

3. Results

Table 1 shows the socio- demographic characteristics of respondents. A total of 300 questionnaires were distributed, returned and were thus analysed giving a response rate of 100%. The mean, median and modal ages of respondents were 22.13± 4.26, 22.79± 4.26 and 22.67± 4.26 years respectively. Majority of them 252(84%) were youths of age range 15 to

25 years`, 187 (62.3%) were males, 283 (94.3%) were never married, while 296 (98.7%) were Christians.

Table 2 highlights the awareness, knowledge, and use of social media by respondents. The respondents reported a 100% awareness of social media. On the source from which respondents heard about social media, 170 (56.67%) were from friends, 88 (29.3%) from colleagues in schools, 51 (17.0%) from siblings and 37 (12.3%) from parents. The reasons cited for use of social media include: 213 (71.0%) in solving assignments, 182 (60.7%) in accessing news, 144 (48.0%) in accessing for emails, 106 (35.3%) for sports, 25 (8.3%) for watching sex movies and pornography. Among respondents, 111 (37.0%) accessed social media for information on sexuality and they sought for information such as: ninety five (85.6%) safe sex, 90 (81.1%) prevention of unwanted pregnancy, 55 (49.6%) flirting; while the favorite social media platforms cited include: one hundred and two (91.9%) Facebook, 68 (61.3%) WhatsApp, 42 (37.8%) Health Blogs, 38 (34.2%) IMO, 37 (33.3%) Online Sex forums.

Table 3 shows the ever-had sex among respondents. One hundred and two (34.0%) males have ever had sex, compared to 41 (13.7%) females. There was a statistically significant association between gender and ever had sex ($\chi 2=8.699$, $p=0.003$).

Table 4 summarizes the sexual behaviour of respondents. The modal age group, mean and median ages at sexual initiation were 16-20 years, 18.26 ± 3.67 and 18.33 ± 3.67 respectively. Eighty-one (56.7%) were sexually active. Of the 143 that ever-had sex, 64 (44.7%) engaged in penetrative sex; 57 (39.9%) used condoms, though 12 (21.1$) were consistent. One hundred and ten (76.9%) of them had multiple sex partners. Fifty (35.0%) had partners hooked up on social media, while 31 (21.7%) patronized commercial sex workers.

Table 5 shows the relationship between use of social media and risky sexual behaviour of respondents. There were statistically significant associations between use of social media and [the sexually active ($\chi 2$=12.156, p=0.001); type of sexual acts practiced ($\chi 2$=24.724, p=0.000) and the number of sexual partners ($\chi 2$=12.987, p=0.000)] respectively. There were no statistically significant associations between use of social media and [ever had sex ($\chi 2$=3.587, p=0.053) and use of condoms ($\chi 2$=0.159, p=0.691)] respectively.

4. Discussion

This cross-sectional descriptive study determined the effects of social media use on sexual behavior among undergraduate students in a public university in Owerri, Imo State, Nigeria. The mean age of 22.13± 4.26 years is consistent with the 21.3 ± 2.8 years; reported by Imaledo and colleagues among university undergraduate students in Port Harcourt, South southern Nigeria (5) and the 23.6±2.99 reported among undergraduates in Osogbo metropolis, Southwestern Nigeria (13). Also, the proportion of about eight in every 10 within the age range of 15 to 25 years relative to the entire student population was even higher than the proportion of six in every 10 university undergraduate students reported by Asekun-Olarinmoye and others (13). These findings allude that university undergraduate students are predominantly late adolescents and youths.

All our respondents reported an awareness of social media, while more than half (56.67%) of them heard about social media from friends. This is similar to the findings of another study that showed a significant proportion of respondents becoming aware of social media through their friends as well (27). In addition, a cross-sectional institution-based survey reported that the school youths were often exposed to sexually explicit materials within their immediate environment through friends and family members (28).

About seven out of ten respondents studied cited solving assignments, as the primary reason for use of social media. This is also in keeping with the findings of another study that showed majority of students accessed the internet and social media for solving school assignments (27). Concerning the types of social media, 61.3% of those who accessed social media for information on sexuality primarily cited Facebook. This finding is in tandem with the finding in Osogbo, where 40% of their respondents cited Facebook as the site accessed primarily for sexually explicit content (13). Facebook is currently the most commonly used social networking site on the Internet, with half a billion current users (29).

In this study, there was a statistically significant association between ever had sex and gender, and more male students were found to engage in sexual acts than the females. This finding is consistent with that of a study in Ibadan, Southwestern Nigeria (3) and another in North-eastern Nigeria, where significantly more males (19%) than females (6%) had engaged in sexual activity ($p < 0.001$) (30). Explanations for these findings could be observed gender variations in social controls, such as parental supervision (31), and liberal attitude towards negative sexual outcomes (32). A study elsewhere, had revealed that boys are more expressive of sexual issues than their female counterparts (27).

Our study revealed that the mean age at sexual initiation was 18.26 ± 3.67. This finding is consistent with those reported in Port Harcourt Nigeria (5), in studies on factors shaping early age at sexual debut among adolescents and youths in Burkina Faso, Ghana, Malawi, and Uganda (7), as well as in another study conducted in Debre Markos University Ethiopia (8).

The index study showed that slightly above half of the ever had sex (56.7%) were sexually active (had engaged in sexual act during the past three months prior to the study), with a majority having indulged in risky sexual behaviors. This finding is in keeping with that reported in a study conducted in Cambodia though among high school students of age 14 to 20years, where 12.7% reported that they had sexual intercourse during the past three months

before the study as well as having indulged in risky sexual behaviors such as unprotected sexual intercourse (52.6%), multiple sexual partners (34.6%), etc. (33). The variation in percentages may be due to differences in methodologies such as study areas, study subjects, number of samples, sampling procedures and data collection techniques.

It is pertinent to note that (35.0%) of the ever had sex, had partners hooked up on social media. In addition, more than two in every ten of the ever had sex patronized commercial sex workers. This proportion is even higher than the (14.6%) reported elsewhere (13). Although our study did not enquire on school based counselling program, this finding calls for genuine efforts at establishing and or strengthening school based counselling program in order to alleviate the problems of students like those that practiced risky sexual behavior such as unprotected, oral and anal sex.

The index study found statistically significant associations between use of social media and [the sexually active (p=0.001); type of sexual acts practiced (p=0.000) and the number of sexual partners (p=0.000)] respectively. This finding is consistent with the findings of several studies which showed that social media had an influence on users' sexual behavior and especially to wrong sexual practices (13, 18, 30, 34). In a 2014 study on the sexual behaviors of undergraduates, about 73.5% opined that the social networking sites had a bad influence on undergraduates' sexual behavior, while the predictors of having multiple sexual partners, according to that study, is the frequency of internet use, with those who rarely use the internet, less likely to have multiple sexual partners (13). A study conducted in Leuven, Belgium, showed that adolescents who use sexually explicit websites frequently are five times more likely to have initiated sex. In this study, a positive relationship was also established between the use of sexually explicit websites and having initiated sex (35). Another study though population-based, carried out in Iran among males aged 15–18, also linked sexual experience with exposure to media (36). Our study found no statistically

significant association between use of social media and use of condoms (p=0.691). This is similar to the results of the study carried out by Braun-Courville and Rojas among adolescents attending a primary care clinic, where they found that exposure to Internet pornography was not related to condom use (37). Further studies are needed in this area.

5. Limitations and strength of the study: This study is based on self- reporting behaviors, and the data is therefore subject to reporting errors such as underreporting of some behaviors like oral and anal sex practices. Secondly, sexual behaviors such as age at sexual debut may be affected by recall bias. These biases however, would have been minimized by the self-administered nature of the survey, absence of teachers in the class and the anonymity entrenched in data collection. A major strength of this study is in the high response rate (100%) achieved.

6. Conclusions

This study examined use of social media among undergraduate students in a public university in Owerri, Imo State, Nigeria and found that their sexually explicit content contribute to risky sexual behavior among the respondents. There was also an association between ever had sex and gender, while more males were found to engage in sexual acts than the females. All respondents reported awareness of social media with source of information mostly via friends, while solving assignments was the primary reason for use of social media.

We therefore recommend that while access to social media via internet services be made available to students to encourage academic learning, measures should be put in place to ensure a level of control on viewing of sexually explicit contents. There is also need for an improved multi- sectoral approach in reproductive health education through formal comprehensive sex education, targeted behavior change counselling, peer education programs and school mini-media clubs.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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Tables

Table 1: Socio- demographic characteristics of respondents

Characteristics	Frequency N=300	Percentage (%)
Age(years)		
16-20	95	31.7
21-25	157	52.3
26-30	34	11.3
≥30	14	4.7
Mean age = 22.13± 4.26 years		
Median age = 22.79± 4.26 years		
Modal age = 22.67± 4.26 years		
Gender		
Male	187	62.3
Female	113	37.7
Marital status		
Never married	283	94.3
Currently married	12	4.0
Divorced/separated	5	1.7
Religion		
Christianity	296	98.7

No response	4	1.3
Ethnicity		
Ibo	283	94.3
Hausa.	3	1.0
Yoruba.	3	1.0
Others*	11	3.7

* Others- Edo, Ikwerre

Table 2: Awareness, knowledge, and use of social media by respondents.

Variables	**Frequency N=300**	**Percentage (%)**

Have heard of Social media		
Yes	300	100.0
No	0	0.0
Total	300	100.0
Source of information on Social media*		
Friends	170	56.7
Colleagues	88	29.3
Siblings	51	17.0
Parents	37	12.3
Reasons for use of Social media*		
School assignments	213	71.0
News	182	60.7
Emails	144	48.0
Sex movies and pornography	111	37.0
Sports	106	35.3
Accesses Social media for information on sexuality		
Yes	111	37.0
No	189	63.0
Total	300	100.0
Type of sexuality information sought from Social media, (n=111)*		
Safe sex	95	85.6
Prevention of unwanted pregnancy	90	81.1
Flirting	55	49.6
Sex position	37	33.3
Sexual arousal	32	28.8
Favorite Social media for sexuality information, (n=111)*		
Facebook	102	91.9
WhatsApp	68	61.3
Health blogs	42	37.8
IMO	38	34.2
Online sex forum	37	33.3
Black berry messenger	20	18.0
Instagram	17	15.3
Twitter	15	13.5

* Multiple response

Table 3: The ever had sex among respondents

Ever had sex	Frequency/percentage %	Test statistic	p value

				χ^2	
Gender	Yes (%)	No (%)	Total (%)		
Male	102 (34.0)	85 (28.3)	187 (62.3)		
Female	41 (13.7)	72 (24.0)	113 (37.7)	8.699, df=1	0.003*
Total	143 (47.7)	157 (52.3)	300 (100.0)		

* Statistically significant association = $p \leq 0.05$

Table 4: Sexual behavior of respondents

Sexual behavioral characteristics	Frequency	Percentage (%)

Age at sexual initiation, (n=143)		
≤10	6	2.0
11-15	24	8.0
16-20	71	23.7
21-25	40	13.3
26-30	2	0.7
Mean age at sexual initiation mean 18.26±3.67 years		
Median age at sexual initiation =18.33±3.67 years		
Sexually active (had sex in≤ 3 months), (n=143)		
Yes	81	56.7
No.	62	43.3
Total	143	100.0
Type of sexual acts practiced, (n=143)		
Penetrative	64	44.8
Non penetrative	15	10.5
Not specific	64	44.8
Total	143	100.0
Type of sexual partner, (n=143)*		
Casual contact	86	60.2
Commercial sex worker	31	21.7
Partner met on social media	50	35.0
Boy/girlfriend	33	23.1
Number of sexual partners, (n=143)		
Single	33	23.1
Multiple	110	76.9
Total	143	100.0
Use condoms, (n=143)		
Yes	57	39.9
No	86	60.1
Total	143	100.0
Frequency of condom use, (n= 57)		
Consistently	12	21.1
Occasionally	35	61.4
No response	10	17.6
Total	57	100.0

Table 5: Relationship between use of social media and sexual behaviour of respondents.

Use of social media

Sexual behaviour	Yes (%)	No (%)	Total (%)	Test statistic χ^2	p value
Ever had sex, n=300					
Yes	45 (15.0)	98 (32.7)	143 (47.7)		
No	66 (22.0)	91 (30.3)	157 (52.3)	3.587, df=1	0.053
Total	111 (37.0)	189 (53.0)	300 (100.0)		
Sexually active, n=143					
Yes	40 (8.79)	41 (5.21)	81 (56.7)		
No	13 (12.67)	49 (13.00)	62 (43.3)	12.156, df=1	0.001
Total	53 (37.1)	90 (62.9)	143 (100.0)		
Type of sexual acts, (n=143)					
Penetrative	38 (26.6)	26 (18.2)	64 (44.8)		
Non penetrative	4 (2.8)	11 (7.7)	15 (10.4)		
Not specific	11 (7.7)	53 (34.3)	64 (44.8)	24.724, df=1	0.000
Total	53 (37.1)	90 (62.9)	143 (100.0)		
Number of sexual partners, (n=143)					
Single	21 (14.7)	12 (8.4)	33 (23.1)		
Multiple	32 (22.4)	78 (54.5)	110 (76.9)	12.987, df=1	0.000
Total	53 (37.1)	90 (62.9)	143 (100.0)		
Use of condoms, (n=143)					
Yes	20 (14.0)	37 (25.9)	57 (39.9)		
No	33 (23.1)	53 (37.0)	86 (60.1)	0.159, df=1	0.691
Total	53 (37.1)	90 (62.9)	143 (100.0)		