Social Media Usage and the Development of Eating Disorders among Secondary School Adolescents in Ikeja, Lagos

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ABSTRACT

Eating disorders has been argued and characterized to been more prevalent in "developed" countries because of their beauty standard emphasis on thinness, it has been proposed that these "developed" countries with a higher prevalence of eating disorders shape developing countries into the development of eating disorders. The main objective of this research is to assess social media usage and the development of eating disorders among secondary school adolescents in Ikeja, Lagos using a cross-sectional study design and 232 respondents were selected for the study. Majority of the respondents (69.0%) were female and 31.0% were male of respondents. Less than average of the respondents (34.1%) were 15 years of age, while 4.7% were 18 years of age. More than average of the respondents (51.7%) Public Secondary School while the least percentage (48.3%) were in Private Secondary School. Majority of the respondents had normal Body Mass Index (70.3%), 20.3% were overweight, 9.5% obese and 0.4% underweight. Almost all the respondents (93.5%) use social media platforms above 30mins and 6.5% used social media platforms below 30mins while more than quarter of the respondents use Whatsapp (46.6%), Tiktok (27.2%) and Snapchat (28.9%) 5 or more times a day. 54 respondents (23.3%) scored positive (scored ≥ 20) on the EAT-26 thus representing the prevalence rate of eating disorder. There is significant relationship between social media usage and awareness of the calorie content of the food (p=0.01).
Key words= Eating Disorders, Adolescents, social media

INTRODUCTION

Eating disorders has been argued and characterized to been more prevalent in "developed" countries because of their beauty standard emphasis on thinness, therefore it has been proposed that these "developed" countries with a higher prevalence of eating disorders shape developing countries into the development of eating disorders (1). It has however been suggested that there is a growing prevalence of eating

disorders in developing countries even though it is still much lower than the developed countries (2). With Nigeria's rising westernization, the possibility of such disorders spreading among adolescents is now becoming a growing concern and has become a public health issue because of its psychological and physical health implications. Nigeria is a country rich in culture, accommodating women and men of various sizes and shapes, and appreciating them for who they are on the inside (3). Traditional media, including TV and magazine ads, had a tendency of portraying ideals of body perfection that can fuel worries about body image and eating disorders (4).

Newer media forms, especially social media platforms, are now beginning to receive attention as a potential source of similar negative influence as traditional mass media. Social media is a crucial part of modern life, and it can have a big impact on how people think and act (5). Students today are constantly exposed to social media platforms; they use desktop computers, laptops, tablets, and smartphones to actively engage in social media platforms for chatting, blogging, content sharing, and online learning (6). However, as social media becomes more widespread, experts are beginning to look at the potential effects of these new media formats on body image (4).

MATERIAL AND METHOD

A descriptive cross-sectional survey designed were carried out to assess social media usage and the development of eating disorders among Adolescent students, male and female aged 13-18 years old in secondary schools in Ikeja Local Government. A multistage random sampling technique was employed in selecting representative respondents from the secondary schools in Ikeja, Lagos. The first stage involved a random selection of 3 private secondary schools and 3 public secondary schools in the Ikeja community of Lagos State. The second stage involved a random selection of students from both Junior (JSS) and Senior Secondary Schools (SSS). Student were given the questionnaires in their classrooms during their breaks.

Sample Size Determination

Sampling size was determined using the sample size formula for the single proportion (Scott Smith, 2013).

$$n = \frac{Z^2(p)(q)}{d^2}$$

Where Z is the Z score value 95% confidence interval (cl) = 1.96

n= Minimum sample size

z= 1.96

d is the precision (0.05)

p= 31.5% (Prevalence of eating disorders in Nigeria) (6)

q= 1-p

$$n = \frac{1.96^2 (0.315) (0.859)}{(0.05)^2} = 416$$

To cater for attrition, 10% extra will be added.

10% extra

0.1x416

=42

Therefore, total sample size =458

51% response rate were used for this study= 232

Data Analysis

Data was analysed using Statistical Package for Social Sciences (SPSS) software program version 20.0. The WHO Antroplus software was used to calculate the Body Mass Index (BMI) for age. Food consumption score was used to determine the consumption pattern of the respondents. Eating Disorder Score was used to determine the prevalence of eating disorder of the respondents. Descriptive statistics such as frequency and percentage. The level of significance was measured at $p<0.02$ to assess the relationship between Social Media Usage and Eating Disorders.

RESULTS AND DISCUSSION

The Personal and Socio-demographic Characteristics of Respondents are shown in Table 1. Majority of the respondents (69.0%) were female and 31.0% were male of respondents were. Less than average of the respondents (34.1%) were 15 years of age, 27.6% 16 years of age, 12.9% were 14 years of age, 11.6% were 13 years of age, 9.1% were 17 years of age, while 4.7% were 18 years of age. More than average of the respondents (55.6%)

were Yoruba, 31% were Igbo, and 12.1% were from other ethnic groups, while 1.3% were Hausa. Majority of the respondents (79.7%) were from Christianity while 20.3% were from the Islamic religion. More than average of the respondents (51.7%) were in SSS3, 25.4% were in SSS2, 17.2% were SSS1, 2.6% were in JSS3, 1.7% were in JSS2, while the least percentage (1.3%) were in JSS1. More than average of the respondents (51.7%) Public Secondary School while the least percentage (48.3%) were in Private Secondary School. For the father's occupation, more than average of the respondents (58.6%) were self-employed, 22.8% of the respondents' fathers were civil servants, 10.8% of the respondents' fathers were unavailable, while the least percentage 5.6% of the respondents' fathers were unemployed. For the mother's occupation, majority of the respondents (63.4%) were self-employed, 22.8% of the respondents' mothers were civil servants, 7.3% of the respondents' fathers were unavailable, while the least percentage (6.5%) of the respondents were unemployed.

Table 1: Personal and Socio-demographic Characteristics of Respondents

Variable	Frequency (232)	Percentage (%)
Sex		
Male	72	31.0
Female	160	69.0
Age		
13	27	11.6
14	30	12.9
15	79	34.1
16	64	27.6
17	21	9.1
18	11	4.7
Ethnic Group		
Yoruba	129	55.6
Igbo	72	31.0
Hausa	3	1.3
Others	28	12.1
Religion		
Christianity	185	79.7
Islam	47	20.3
Traditional	0	0
Others	0	0
Grade Level		

JSS1	3	1.3
JSS2	4	1.7
JSS3	6	2.6
SSS1	40	17.2
SSS2	59	25.4
SSS3	120	51.7
Secondary School		
Private	112	48.3
Public	120	51.7
Father's Occupation		
Unavailable	25	10.8
Civil servant	58	25.0
Unemployed	13	5.6
Mother's Occupation		
Unavailable	17	7.3
Civil servant	53	22.8
Unemployed	15	6.5

The Body Mass Index (BMI) for age of the respondents that took part in this research are displayed in figure 1, majority of the respondents (70.3%) of the respondents were normal, 20.3% were overweight, 9.5% were obese 0.4% were underweight. Finding agrees with (7, 3) that females were more likely to have eating disorders due to concerns about their appearance and looks and also that characteristics of bulimia nervosa and binge eating disorder can be associated with being overweight or obese which can lead to abnormal eating or weight control methods and in present times, obesity in adolescents is becoming prevalent therefore could increase the risk of developing eating disorders (8, 9).
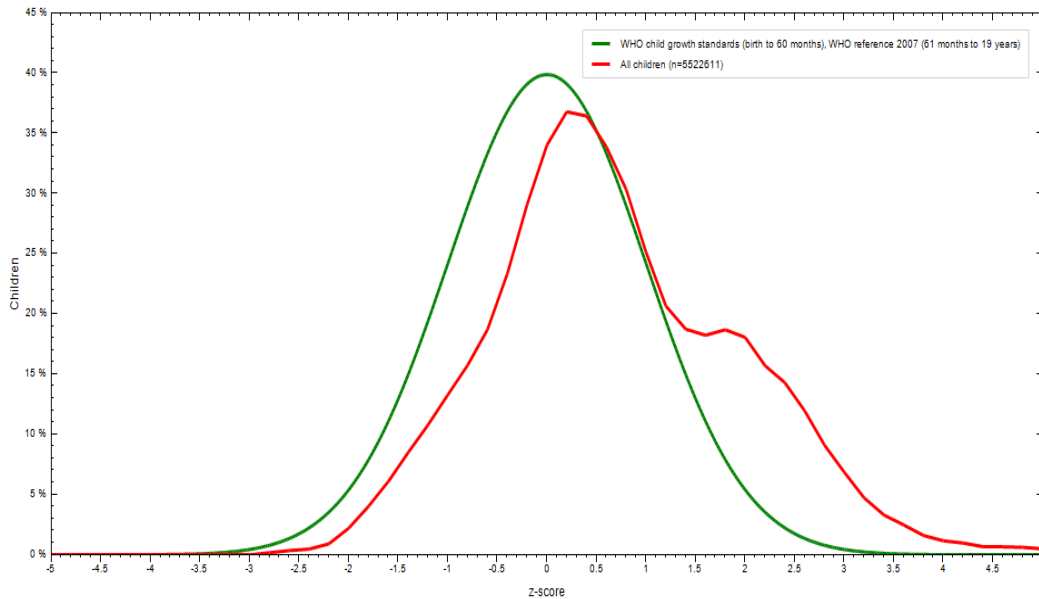
Figure 1: Graph representing the Body Mass Index (BMI) for Age of the respondents

Table 2 below shows the food consumption pattern of the respondents The responses were based on a Seven-Point Likert-Type Scale: Never, Once a day, 2-4 times a day, 5 or more a day, once a week, 2-4 times a week and 5 or more a week. Less than average of the respondents (25.9%) take fruits once a day, (22%) take fruits once a week, (17.2%) take fruits 2-4 times a week, (16.8%) take fruits 2-4 times a day, (9.9%) take fruits 5 or more times a week, (4.7%) never take fruits and (3.4%) take fruits 5 or more times a day.

Less than average of the respondents (22.8%) take dark green leafy vegetables once a day, (22%) take green leafy vegetables once a week, (21.1%) never take green leafy vegetables, (18.1%) take green leafy vegetables 2-4 times a week, (8.6%) take green leafy vegetables 2-4 times a day, (4.7%) take green leafy vegetables 5 or more times a week and (2.6%) take green leafy vegetables 5 or more times a day. Less than average of the respondents (25.9%) take other vegetables once a week, (21.6%) take other vegetables once a day, (17.2%) never take other vegetables, (14.2%) take other vegetables 2-4 times a week, (9.5%) take other vegetables 2-4 times a day, (6.9%) take roots and tubers 5 or more times a week and (4.7%) take other vegetables 5 or more times a day. Consumption of fruits and vegetables are usually lower in adolescents

than adults due to dislike in the taste of some fruits, practice of irregular fruits intake among family members, inadequate knowledge about the importance of fruits and vegetables, social status as stated by (10).

Table 2: Food Consumption Pattern of the respondents

Variables	Never	Once a day	times a day	2-5or more a day	Once a week	2-4 times a week	5 or more a week
Meat and meat products	13(5.6)	56(24.1)	49(21.1)	9(3.9)	18(7.8)	48(20.7)	39 (16.8)
Chicken and chicken product	25(10.8)	54(23.3)	29(12.5)	3 (1.3)	54(23.3)	33(14.2)	34 (14.7)
Fish	33(14.2)	69(29.7)	22 (9.5)	5(2.2)	37(15.9)	40(17.2)	26(11.2)
Tofu	184(79.3)	13(5.6)	5(2.2)	2(0.9)	13(5.6)	12(5.20)	3(1.3)
Fats and Oil	12 (5.2)	64 (27.6)	34 (14.7)	12 (5.2)	34(14.7)	35(15.1)	41(17.7)
Dark green leafy vegetables	49(21.1)	53 (22.8)	20(8.6)	6(2.6)	51(22.0)	42(18.1)	11(4.7)
Fruits	11(4.7)	60 (25.9)	39(16.8)	8(3.4)	51(22.0)	40(17.2)	23 (9.9)
Other vegetables	40(17.2)	50 (21.6)	22(9.5)	11(4.7)	60(25.9)	33(14.2)	16(6.9)
Sweets	8(3.4)	70(30.2)	40(17.2)	10(4.3)	26(11.2)	33(14.2)	45(19.4)

The Eating Attitude Test (EAT-26) and Eating Disorder Score of the respondent are shown in table 3 below, Less than average of the respondents (25.9%) are never aware of the calorie content of the foods that they eat, (22.8%) sometimes aware of the calorie content of the foods that they eat, (15.9%) rarely aware of the calorie content of the foods that they eat, (15.9%) rarely aware of the calorie content of the foods that they eat, (9.9%) often aware of the calorie content of the foods that they eat and (9.5%) usually aware of the calorie content of the foods that they eat. Majority of the respondents (76.7%) were negative and (23.3%) were positive for eating disorder. 23.3% scored positive (scored $\geq$ 20) on the EAT-26 representing the prevalence rate of eating disorder in this study which contradicts a previous study that reported prevalence rate of eating disorders among secondary school students of abnormal eating attitudes within the past 7 years was 31.5% which is higher than that of this research (6).

Table 3: Eating Attitude Test (EAT-26) of the Respondents

Variables	Always	Usually	Often	Some Times	Rarely	Never	EAT Score <20 (Negative)	EAT Score ≥20 (Positive)
I am terrified about being overweight.	55(23.7)	21(9.1)	15(6.5)	52(22.4)	38(16.4)	51(22.0)		
Avoid eating when I am hungry	6(2.6)	13(5.6)	23(9.9)	55(23.7)	41(17.7)	94(40.5)		
Find myself preoccupied with food	16(6.9)	12(5.2)	40(17.2)	58(25.0)	50(21.6)	56(24.1)		
I have gone on eating binges where I feel that may not be able to stop.	10(4.3)	15(6.5)	27(11.6	26(11.2)	44(19.0)	110(47.4)		
Cut my food into smaller pieces.	33(14.2)	19(8.2)	21(9.1)	63(27.2)	51(22.0)	45(19.4)		
Aware of the calorie content of the foods I eat.	37(15.9)	22(9.5)	23(9.9)	53(22.8)	37(15.9)	60(25.9)	54(23.3)	178(76.7)
Particularly avoid food with high carbohydrate food content.	12(5.2)	11(4.7)	19(8.2)	48(20.7)	44(19.0)	98(42.2)		
Feel that others would prefer I ate more.	24(10.3)	11(4.7)	14(6.0)	37(15.9)	23(9.9)	123(53.0)		
Vomit after I have eaten	1(0.4)	6(2.6)	1(0.4)	24(10.3)	38(16.4)	162(69.8)		
Feel extremely guilty after eating.	6(2.6)	6(2.6)	8(3.4)	21(9.1)	22(9.5)	169(72.8)		
I am preoccupied with the desire to be thinner	24(10.3)	20(8.6)	13(5.6)	37(15.9)	28(12.1)	110(47.4)		
Think about burning up calories when I exercise.	48(20.7)	30(12.9)	20(8.6)	41(17.7)	35(15.1)	58(25)		

Other people think I am too thin always	36(15.5)	15(6.5)	17(7.3)	35(15.1)	25(10.8)	104(44.8)
I am preoccupied with the thought of having fat in my body	25(10.8)	18(7.8)	25(10.8)	38(16.4)	30(12.9)	96(41.4)
Take longer to eat my meals	53(22.8)	12(5.2)	21(9.1)	71(30.6)	20(8.6)	55(23.7)
Avoid food with sugar in them	6(2.6)	11(4.7)	13(5.6)	48(20.7)	46(19.8)	108(46.6)
Eat diet foods	68(29.3)	22(9.5)	16(6.9)	49(21.1)	28(12.1)	49(21.1)
Feel that food controls my life.	16(6.9)	8(3.4)	15(6.5)	16(6.9)	29(12.5)	148(63.8)
Display self-control over food	66(28.4)	28(12.0)	29(12.5)	47(20.3)	18(7.8)	44(19.0)
Feel that others pressure me to eat.	22(9.5)	13(5.6)	16(6.9)	38(16.4)	31(13.4)	112(48.3)
Give too much time and thought to food.	22(9.5)	18(7.8)	17(7.3)	50(21.6)	43(18.5)	82(35.3)
Feel uncomfortable after eating sweets	12(5.2)	12(5.2)	20(8.6)	55(23.7)	32(13.8)	101(43.5)
Engage in dieting behaviour.	29(12.5)	22(9.5)	26(11.2)	59(25.4)	37(15.9)	59(25.4)
Like my stomach to be empty.	12(5.2)	10(4.3)	11(4.7)	42(18.1)	38(16.4)	119(51.3)
I have the impulse to vomit after meals.	2(0.9)	4(1.7)	9(3.9)	29(12.5)	33(14.2)	155(66.8)
Enjoy trying new foods.	128(55.2)	25(10.8)	19(8.2)	37(15.9)	18(7.8)	5(2.2)

The Eating Behaviours of the respondents that took part in this research are shown in table 4. More than average of respondents (56.9%) have never gone on eating binges where they felt that they may not be able to stop, (16.8%) once a month or less gone on eating binges where they felt that they may not be able to stop, (9.1%) once a week gone on eating binges where they felt that they may not be able to stop, (6.0%) 2-3 times a month gone on eating binges where they felt that they may not be able to stop, (6.0%) once a day or more gone on eating binges where they felt that they may not be able to stop and (5.2%) 2-6 times a week gone on eating binges where they felt that they may not be able to stop. Frequent usage of social media platforms by adolescents can cause exposure to more images and messages that can present a risk for the development of eating concerns.

Table 4: Eating Behaviours of the Respondents

Variables	Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
Gone on eating binges where I feel that may not be able to stop?	132(56.9)	39(16.8)	14(6.0)	21(9.1)	12(5.2)	14(6.0)
Ever made yourself sick (vomited) to control your shape or weight?	185(79.7)	20(8.6)	6(2.6)	10(4.3)	4(1.7)	7(3.0)
Ever used laxatives, diet pills to control your weight or shape?	209(90.1)	12(5.2)	6(2.6)	1(0.4)	2(0.9)	2(0.9)
Ever exercised more than 60 minutes a day or to control your weight?	116(50.0)	29(12.5)	28(12.1)	22(9.5)	20(8.6)	17(7.3)

The different social media platforms of the respondents that took part in this study are displayed in **table 5.** Less than average of the respondents (46.6%) use Whatsapp 5 or more times a day, (13.8%) don't use this platform, (11.2%) use this platform 2-4 times a day, (9.1%) use Whatsapp 3-6 times a week, (8.6%) use Whatsapp 1-2 days a week, (6%) use Whatsapp about once a day and (4.7%) use Whatsapp less than once a week. Majority of the respondents (27.2%) use Tiktok 5 or more times a day, (24.1%) don't use this platform, (13.4%) use Tiktok 1-2 days a week, (12.1%) use Tiktok 2-4 times a day, (9.1%) use Tiktok 3-6 times a week, (7.8%) use Tiktok less than once a week and (6.5%) use Tiktok about once a day.

Less than average of the respondents (28.9%) use snapchat 5 or more times a day, (15.5%) don't use the snapchat platform, (14.2%) use snapchat 2-4 times a day, (12.5%) use snapchat 3-6 times a week, (9.9%) use snapchat about once a day, (9.5%) use snapchat 1-2 days a week, and (9.5%) use snapchat less than once a week. This agrees with (Cassidy *et al*, 2011) that students today are constantly exposed to social media platforms; they use desktop computers, laptops, tablets, and smartphones to actively engage in social media platforms for chatting, blogging, content sharing, and online learning. And some social media platforms, such as Snapchat, tiktok and whatsapp, are more visually-oriented, involving the sharing and viewing of pictures and videos (11).

Table 5: Different Social media Platforms of the Respondents

Variable	I don't use this platform	Less than once a week	1-2 days a week	3-6 days a week	About once a day	2-4 times a day	5 or more times a day
Whatsapp	32(13.8)	11(4.7)	20(8.6)	21(9.1)	14(6.0)	26(11.2)	108(46.6)
Facebook	107(46.1)	16(6.9)	17(7.3)	18(7.8)	10(4.3)	22(9.5)	42(18.1)
Youtube	42(18.1)	44(19.0)	13(5.6)	19(8.2)	28(12.1)	44(19.0)	42(18.1)
Instagram	90(38.8)	27(11.6)	21(9.1)	16(6.9)	19(8.2)	17(7.3)	42(18.1)
FB messenger	136(58.6)	21(9.1)	11(4.7)	9(3.9)	12(5.2)	16(6.9)	27(11.6)
Twitter	182(78.4)	18(7.8	7(3.0)	4(1.7)	4(1.7)	12(5.2)	5(2.2)
Telegram	139(59.9)	28(12.1)	20(8.6)	12(5.2)	14(6.0)	7(3.0)	12(5.2)
Tiktok	56(24.1)	18(7.8)	31(13.4)	21(9.1)	15(6.5)	28(12.1)	63(27.2)
LinkedIn	211(90.9)	12(5.2)	4(1.7)	2(0.9)	1(0.4)	2(0.9)	0(0)
Snapchat	36(15.5)	22(9.5)	22(9.5)	29(12.5)	23(9.9)	33(14.2)	67(28.9)

Table 6 shows the relationship between social media usage and eating disorder of the respondents. There is significant relationship between social media usage and awareness of the calorie content of the food (p=0.01).

Table 6: The Relationship between Social media Usage and Eating Disorder of the respondents

Variable	Social Media Usage
Am terrified about being overweight.	-0.118
Avoid eating when I am hungry.	0.086
Find myself preoccupied with food.	-0.084
Have gone on eating binges where I feel that I may not be able to stop.	-0.091
Cut my food into small pieces.	-0.029
Aware of the calorie content of foods that I eat.	-0.207**
Particularly avoid food with a high carbohydrate content (bread, rice, potatoes, etc.)	-0.109
Feel that others would prefer if I ate more.	0.027
Vomit after I have eaten.	0.117
Feel extremely guilty after eating.	0.054
Am preoccupied with a desire to be thinner.	-0.087
Think about burning up calories when I exercise.	0.016

CONCLUSION

The prevalence rate of eating disorder in this study is lower than a previous study that reported prevalence rate of eating disorders among secondary school students of abnormal eating attitudes. Students today are constantly exposed to social media platforms, frequent usage of these social media platforms by adolescents can cause exposure to more images and messages that can present a risk for the development of eating concerns.

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