ORIGINAL ARTICLE

Mental Health Effects of Social Media Use Among Undergraduate Students of the College of Medical Sciences, University of Maiduguri

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ABSTRACT

Background: Social media refers to any internet-based platform or service (such as Facebook, WhatsApp, and Twitter) that enables individuals to interact verbally and nonverbally. Evidence suggests a direct relationship between social media usage and impaired mental health, including depression, anxiety, loneliness, and narcissism. **Objective**: The main objective was to determine the mental health effects of social media use among undergraduate students of the College of Medical Sciences, University of Maiduguri. **Methods:** A descriptive cross-sectional study design was employed with a sample size of 400 students. A multistage sampling technique was utilised to select the respondents, and a self-administered questionnaire with socio-demographic questions to obtain information on demographic and social media characteristics and general health questions (GHQ-12) was used to screen for psychological distress. The data were analysed using descriptive statistics and a Chi-square test, with a level of statistical significance set at $p < 0.05$. **Results:** Four hundred respondents completed the questionnaire. Of these, 43.5% were aged between 21 and 25 years, with a mean age of 23.4+2.2. More than half (55.5%) were male. Most respondents (60.8%) were aware of the effects of social media on mental health. WhatsApp (63.5%) was identified as the most frequently used social media platform. It was found that (34.3%) had psychological distress. Both age and academic level were significantly associated with mental health status. **Conclusion:** The study revealed a high prevalence of psychological distress, highlighting the significant mental health challenges faced by this demographic. Therefore, students should be encouraged to promote a balanced use of these platforms.

Key words: Social Media, Mental Health, College Undergraduate, Students, University of Maiduguri.

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Introduction

In the 21st century, social media has emerged as a ubiquitous force, permeating nearly every facet of human life. From bustling metropolises to remote rural communities, the allure of instant connection, boundless information, and global interaction has captivated billions. Among the most ardent adopters of this digital revolution are undergraduate students, a demographic cohort navigating the critical transition from adolescence to adulthood amidst the ever-evolving landscape of social media.[1] For undergraduates, social media platforms such as Facebook, Instagram, WhatsApp, Twitter, and TikTok have become integral tools for communication, socialisation, information-seeking, and self-expression.[2] They offer unprecedented opportunities to connect with peers, family members, and broader communities, transcending geographical boundaries and fostering a sense of belonging. However, this

seemingly utopian digital landscape is not without its shadows. As social media's influence has expanded, so too have concerns regarding its potential impact on mental health.[3] A growing body of research suggests a complex and often precarious relationship between social media usage and psychological well-being, particularly among young adults.[4]

Undergraduates, who are already vulnerable to mental health challenges due to academic pressures, social adjustments, financial constraints, and identity exploration, may be especially susceptible to the adverse effects of excessive or problematic social media use.[5,6] This constant connectivity can also lead to information overload, anxiety, and a sense of being overwhelmed. The curated nature of social media profiles often presents an idealised reality, fostering social comparison and feelings of inadequacy among users. Studies have shown that exposure to unrealistic portrayals of success, happiness, and physical attractiveness on social media can contribute to body image dissatisfaction, low self-esteem, and symptoms of depression and anxiety.[6] Furthermore, the addictive nature of social media platforms, with their carefully designed algorithms and reward systems, can lead to excessive use and dependence. Students may spend countless hours scrolling through feeds, neglecting academic responsibilities, social interactions, and self-care activities.[7] This can result in sleep disturbances, reduced academic performance, and a decline in overall well-being.[4] In Nigeria, these challenges may be further compounded by socio-economic factors, political instability, and limited access to mental health resources. The stigma associated with mental illness can also prevent students from seeking help and support, leading to a cycle of silence and suffering.[8–11] The relationship between social media usage and mental health is not a simple one. While excessive or problematic use can have detrimental effects, social media also offers potential benefits for mental well-being.[12] Social media further provides several advantages for undergraduates, serving as a tool for connection, communication, and access to information, which is especially relevant considering undergraduates are already vulnerable to mental health challenges.[13–16] This study will contribute to a deeper understanding of the complex interplay between social media usage and mental well-being among undergraduates in a unique and under-researched setting, ultimately informing strategies to promote positive mental health in the digital age. By examining the nuances of this association, this research aims to contribute to a deeper understanding of how social media impacts undergraduates' mental well-being and identify strategies for promoting positive mental health in the digital age. This study, therefore, aims to assess the mental health effects of social media use among undergraduate students of the College of Medical Sciences, University of Maiduguri.

Methods
Study Site
The university had one college of medical sciences, school of postgraduate studies and 12 faculties. The college, in 2018 began to operate the full collegiate system with 5 faculties: Allied Health Sciences, Basic Medical Sciences, Basic Clinical Sciences, Clinical Sciences and Dentistry.[17]

Study Design
A descriptive cross-sectional study was conducted among undergraduate students at the College of Medical Sciences, University of Maiduguri, Borno State, Nigeria.

Study Population
The study population consisted of undergraduates from the College of Medical Sciences. The inclusion criterion was consenting adult students, and the exclusion criterion was Students who had previous contacts with psychiatric services.

Sample Size Estimation
A minimum sample size of 340 was calculated with the Leslie Kish sample size formula,[18] with a deviation of 1.96 for a confidence interval, a margin of error of 0.05 and a psychologically distressed rate of 33.1% among undergraduates in a similar study in Nigeria.[19] The sample size was adjusted to 400 to correct for non-response.

Sampling Technique
A multi-staged sampling technique was employed to select the required number of respondents. At the first stage, simple random sampling by balloting was used to select three (3) of the five (5) college faculties. Thereafter, one (1) department from each of these three (3) faculties was selected also by balloting. In each department selected, simple random sampling was used to select a level (or more when a level cannot provide the number of students needed to be recruited from the department). Each selected level was visited before or after a lecture using the departmental level timetable to collect data. The respondents were

recruited from the selected departments using simple random sampling by balloting.

Data Collection

Data was collected using a structured self-administered questionnaire. The questions were structured according to the specific objectives of the study. Sections on the questionnaire include Socio-demographic data. Awareness of the effect of social media on mental health, types and usage patterns of social media, positive and negative effects, and a general health questionnaire (GHQ-12).

Ethical Consideration

Ethical approval was obtained from the University of Maiduguri Research and Ethics Committee (UMTH/REC/21/930). The study's goal was explained to the students in the classroom, and both written and verbal consent was sought from participants. Before proceeding with data collection, verbal permission was obtained from the heads of the chosen departments. Data obtained were entered and analysed using SPSS version 25.0. All analyses were carried out

Data analysis

The data were uploaded to Microsoft Excel, collated, cleaned, and analysed using the SPSS version 26 statistical software package (IBM SPSS). Data were expressed as proportions and presented in tables. A Chi-square test was employed to examine associations, with a p-value set at a 5% level of statistical significance (p-value set at 0.05).

Results

One hundred and sixty-five (41.2%) respondents were between the ages of 21-25 years, 222(55.5%) were male and 361 (90.3%), unmarried. (Table 1)

Table 1: Demographic characteristics of Respondents

Variable	Frequency (n-400)	Percentage (%)
Age group		
15-20	70	17.5
21-25	165	41.2
26-30	72	18.0
31-35	53	13.3
>35	40	10.0
Gender		
Males	222	55.5
Females	178	44.5
Tribe		
Kanuri	147	36.7
Shuwa	37	12.8
Fulani	48	9.2
Margi	48	12.0
Hausa	51	12.0
Others	69	17.3

Marital Status	39	9.8
Married	361	90.3
Unmarried		
Academic Level		
100	82	20.5
200	86	21.5
300	50	12.5
400	68	17.0
500	50	12.5
600	64	16.0

Characteristics of social media usage indicate that the most commonly subscribed sites are WhatsApp 254 (63.5%), Facebook, 114 (28.6%), and Instagram 15 (3.8%) users. The most common reasons for social media use include social communication 91, 22.8%), learning 83, 20.8%), and news 75, 18.8%). One-third, 133 (33.3%), and 109 (27.3%) users spend 1-3 and 4-5 hours on social media daily, respectively. (Table 2)

Table 2: Characteristics of social media usage

Variable	Frequency (n=400)	Percentage (%)
Frequently used Social media platform.		
Whatsapp	254	63.5
Facebook	114	28.6
Instagram	15	3.8
Twitter	11	2.7
Tiktok	6	1.4
Time spent daily on social media		
< 1 hour	78	19.5
1-3 hours	133	33.3
4-5 hours	109	27.2
>5 hours	80	20.0
Purpose of using social media		
Social communication	91	22.7
Learning	83	20.8
News	76	19.0
Making new friends	49	12.2
To pass the time	57	14.3
Marketing	44	11.0
Period of use of social media		

At any time	227	56.7
When happy	42	10.5
When bored	50	12.5
When less busy	81	20.5

One hundred and forty-three (60.8%) of respondents were aware of the impact of social media on mental health. One hundred and twenty-seven (52.3%) indicated a positive effect, while 40 (16.5%) reported both positive and negative effects. (Table 3)

Table 3: Awareness of the effect of Social Media

Variable	Frequency (n=400)	Percentage (%)
Does social media affect mental health?		
Yes	243	60.8
No	93	23.2
Don't known	64	16.0
It has a		
Positive effect	127	52.3
Negative effect	76	31.2
Both	40	16.5
Positive effects		
It improves knowledge and exposure.	49	20.0
It serves as a medium to access and disseminate information.	43	17.5
Easy access to religious and cultural content	60	24.5
It serves as a medium of advertisement	50	20.4
Others		
	43	17.6
Negative effects		
It causes anxiety and depression	37	13.6
It wastes and consumes time	44	16.2
It creates a distraction from studies	37	13.6
It spreads fake news easily	51	18.8
Addiction	34	12.5

Cyber threat medium	34	12.5	
Learning bad habits easily	35	12.9	
Others	33	12.4	

About one-third, 137 (34.3%), of the respondents have psychological distress. The GHQ-12 distribution for each of the items with "always been feeling unhappy and depressed", reported in 63 (15.8%) of the respondents, frequently been losing confidence in yourself" 104(26.0%%) and "frequently felt you couldn't overcome your difficulties" 82 (20.5%). (Table 4)

Table 4: Frequency distribution of GHQ-12 response

Variable	Always n(%)	Frequently n(%)	Sometimes n(%)	Never n (%)
Been able to concentrate well on what you're doing	69(17.3)	68(17.0)	139 (34.7)	124 (31.0)
Felt you were playing useful part in things	63(15.8)	74(18.5)	148(35.5)	121(30.3)
Felt capable of making decisions about things	57(14.2)	80(20.0)	153(38.3)	110(27.5)
Been able to enjoy your normal day-to-day activities	83(20.8)	54(13.5)	175(43.8)	88(22.0)
Been able to face up to your problem	90(22.5)	47(11.8)	175(43.8)	88(22.0)
Been feeling reasonably happy. All things considered	74(18.5)	63(15.8)	140(35.0)	123(30.8)
Lost much sleep over worry	48(12.0)	89(22.3)	90(22.3)	173(43.3)
Felt constantly under strain	25(6.3)	112 (28.0)	90(22.3)	173(43.3)
Felt you couldn't overcome your difficulties?	55(13.8)	82(20.5)	97(24.3)	166(41.5)

Been feeling unhappy and depressed?	63(15.8)	74(18.5)	108(27.0)	155(38.8)
Been losing confidence in yourself	33(8.3)	104(26.0)	80(20.0)	183(45.8)
Been thinking of yourself as a worthless person	39(9.8)	99(24.8)	82(20.5)	180(45.0)

About one-third, 137 (34.3%) of respondents have a score of 3 or higher, indicating the presence of psychological distress.
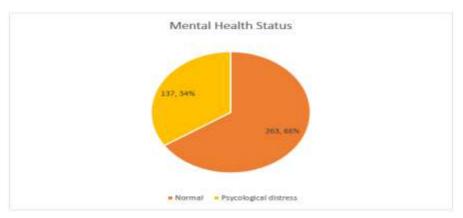

Figure 1: Mental Health Status of Respondents

The analysis shows a statistically significant association between psychological distress and age group (p< 0.001) and academic level of study(p<0.001). Gender and marital status were found not to be statistically significant associations with the psychological distress (p = 0.206 and p< 0.402, respectively. (Table 5)

Table 5: Relationship between psychological distress and selected sociodemographic characteristics

Variable	Mental Health Status		Total (%)	P value
	Normal n (%)	Psychological Distress n (%)		
Age group				
15-20	5(7.1)	65(92.9)	70(100)	
21-25	129 (8.2)	36(21.8)	165(100)	<0.001*
26-30	52 (72.2)	20(27.8)	72(100)	
31-35	44(83.0)	9(17.0)	53(100)	
<35	33(82.5)	7(17.5)	40(100)	
Gender				
Male	140(63.1)	82(36.9)	222(100)	0.206
Female	123(69.1)	55(30.9)	178(100)	

Marital Status				
Married	28(71.8)	11(28.3)	39(100)	0.402
Unmarried	235(65.1)	126(34.9)	361(100)	
Academic Level				
100	39(47.6)	43(52.4)	82(100)	
200	44(51.2)	42(48.8)	82(100)	
300	42(84.0)	8(16.0)	50(100)	<0.001*
400	51(75.0)	17(25.0)	68(100)	
500	36(72.0)	14(28.0)	50(100)	
600	51(79.7)	13(20.3)	64(100)	
Do you think social media has an impact on your mental health?				
Yes	161(66.3)	82 (33.7)	243(100)	0.654
No	63(67.7)	30(32.3)	93(100)	
Don't Know	39(60.9)	25(39.1)	649(100)	

*Statistically Significant

Discussion

This study aimed to assess the effect of social media on mental health and found that approximately 34.3% of respondents exhibited signs of psychological distress, as measured by the GHQ-12. This aligns with research conducted by Asibong et al. among undergraduates in southern Nigeria.[19] This prevalence underscores the vulnerability of this demographic, consistent with studies that highlight the pressures of academic life, social adjustments, and identity exploration as contributing factors.

The study identified WhatsApp 63.5%, Facebook 28.6%, and Instagram (3.8%) as the most commonly used platforms, with others including Twitter 2.7% and TikTok (1.4%). This finding aligns with research conducted by Orifah *et al.* at several selected universities in Nigeria.[2] However, it contrasts with a study conducted in Southern Nigeria by Ndubuaku *et al.,*[6] which indicated that Facebook was the most frequently used platform, surpassing WhatsApp by 2.6%. This discrepancy may be due to temporal shifts in platform popularity, which reflects global trends in which these platforms dominate student communication.

Approximately one-third (33.3%) of respondents reported spending 1 to 3 hours daily on social media, primarily using it for social communication (22.8%), learning (20.8%), and news consumption (18.8%). This aligns with a study by Al-Adwan et al. conducted in Jordan among undergraduates, which found that it enhances communication and ease learning.

Most respondents (60.8%) acknowledged the impact of social media on mental health, with (52.3%) perceiving positive effects, such as improved knowledge and exposure, while (16.5%) reported both positive and negative outcomes. This mirrors the findings of O'Reilly et al. in the United Kingdom, which highlighted social media's potential to enhance mental well-being through support networks and access to resources, it also noted risks like anxiety and depression.[12] The positive perceptions align with studies by Chandrasena and Ilankoon, who documented the benefits of social

media for academic collaboration and information dissemination.[14] Conversely, the adverse effects reported, such as time wastage (13.6%) and distraction from studies (12.5%), echo concerns raised by Ndubuaku *et al.* regarding social media addiction and its academic repercussions.[6]

The study found a statistically significant association between age, academic level, and mental health status ($p < 0.001$), with younger students, 15-20 years, and those in lower educational levels exhibiting higher distress levels. This aligns with research by Lattie *et al.*,[5] which identified transitional phases, such as early university years, as periods of heightened vulnerability. However, no significant associations were found for gender or marital status, contrasting with some studies by Mosharrafa et al among students in Bangladesh and Al-adwan et al that reported gender differences in social media's mental health impacts.[3,16] This discrepancy may reflect cultural or contextual variations in the study population.

Conclusion

The study found a high prevalence of psychological distress highlighting the significant mental health challenges faced by the demographics. The study further identified age and academic level as important factors associated with psychological distress, with younger and lower-level students being more vulnerable to distress.

In Nigeria, where mental health resources are limited and stigma persists, there is a pressing need for targeted interventions. Universities should promote digital literacy programmes, integrate mental health support services, and encourage balanced social media use to mitigate risks while harnessing their benefits.

Further research should investigate longitudinal trends and regional variations to better understand the evolving impact of social media on students' mental health.

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