Social Media-Mediated Normalization of Psychoactive Substance Use: Longitudinal Impact on Adolescent Psychological Distress across Akwa Ibom State, Nigeria

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Abstract
This study investigated the longitudinal impact of social media-mediated normalization of psychoactive substance use on adolescent psychological distress in Akwa Ibom State, Nigeria. Grounded in normalization and social learning theories, the research examined how repeated exposure to substance-related content on social media platforms influences substance use behaviours and subsequent mental health outcomes among adolescents. A longitudinal panel research design was adopted, involving two waves of data collection over a six-month interval. The sample comprised 412 in-school adolescents aged 13–18 years, selected through a multistage sampling technique across the three senatorial districts of the state. Data were collected using validated instruments, including the Social Media Substance Exposure Scale (SMSES), Adolescent Substance Use Index (ASUI), and Kessler Psychological Distress Scale (K10). Descriptive statistics revealed high levels of exposure to substance-related content (M = 3.60), moderate substance use (M = 2.90), and moderate psychological distress (M = 3.32) among respondents. Paired sample t-tests indicated significant increases in both social media exposure and psychological distress over time ($p < .05$). Regression analyses demonstrated that social media exposure significantly predicted substance use ($\beta = 0.41$) and psychological distress ($\beta = 0.36$), accounting for 16.8% and 13.0% of the variance respectively. Mediation analysis further revealed that substance use partially mediated the relationship between social media exposure and psychological distress, confirming both direct and indirect effects. The findings underscore the critical role of social media as a behavioural and psychological risk environment for adolescents. Continuous exposure to positively framed substance-related content contributes to normalization, increased substance use, and heightened psychological distress. The study highlights the need for integrated interventions focusing on digital literacy, substance abuse prevention, and adolescent mental health support systems to mitigate these risks.

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Introduction

The widespread dissemination of digital forms of communication across the world has had great influence on the development of the adolescents, especially in the areas of social interaction, identity formation and health behaviour. Social media platforms are now in the middle of the adolescent life, and recent estimates show that more than 90 percent of all young people aged 13 to 17 years are active on social media platforms across the globe (Pew Research Center, 2023) [15].

The platforms are not only communication tools but also effective socialisation agents which shape norms, values and behavioural expectations. The empirical data indicate that more screen time and social media use are linked with greater exposure to content related to risks such as substance use, violent and risky sexual behaviour (Viner *et al*., 2019) [19]. As a result, a lot of worry has been raised over the impact of social media in influencing the risk-taking behavior and overall psychological consequences of adolescents worldwide.

In this digital ecosystem, use of psychoactive substances has become a widespread theme of user-created content and content with influencers. Research has indicated that the posts about alcohol and drugs are often represented in a positive or neutral way, and they tend to focus on pleasure, social acceptance, and stress relief with minimal focus on its negative side effects (Moreno *et al*., 2016; Ochor, 2025) [9, 12]. This trend of representation adds to what normalization theorists refer to as the gradual acceptance of the deviant behaviour that was earlier on deviant due to the repetition and the reinforcement of these behaviours by society. Sargent and Babor (2020) [16] conducted a systematic review and discovered that exposure to media content related to substances significantly contributed to the initiation of use, and exposure increased the risk of consuming alcohol by up to 70 percent. Such conclusions point to the convincing value of digital media in influencing the behavioural intentions and real practices of adolescents.

The escalating rate of internet access and smartphone interactions in the Nigerian environment has increased the rates of interaction between adolescents and the social media platform like Instagram, Tik Tok, Facebook. The Nigerian Communications Commission (2024) [11] defines that there are over 159 million subscribers to the net, and a significant part of the population is represented by young people. At the same time, national surveys show that the number of adolescents who use psychoactive substances has increased concerningly. According to the report by the United Nations Office on Drugs and Crime, about 14.4% of Nigerians who are aged between 15 and 64 years have consumed drugs within the last year, which is much higher than the global average (UNODC, 2023). Alcohol, cannabis, tramadol, and codeine-based syrups are becoming more accessible and socially visible in the adolescent population and often supported by online content that represents their use as a norm and desirable (Oshodi *et al*., 2010) [14].

The Akwa Ibom State is no different, as at the subnational level, the country has been experiencing such national trends as an increase in youth susceptibility to substance use and mental health issues. In spite of the fact that longitudinal data sets are still scarce, the cross-sectional research and community-based reporting indicate that the number of secondary school students who experiment with psychoactive substances is steadily increasing (George and Udofia, 2026) [6]. Socio-cultural and economic issues such as peer pressure, unemployment and urbanisation further boost this trend. Notably, psychological distress, which is characterized by anxiety, depression and emotional dysregulation, is a growing threat as reported among the adolescents in the region. According to the World Health Organization, adolescents around the world develop a mental health disorder only once in seven cases, and substance use can be considered a risk factor and a coping strategy (WHO, 2022). Digital exposure in combination with psychosocial stressors presents a multifaceted risk situation in Akwa Ibom State among adolescents.

Under such a dynamic, there is an urgent necessity of having empirically informed, longitudinal studies that can clarify the time-dependent linkage between social media exposure and the psychological consequences among adolescents. Although some of the studies that have been conducted have linked media exposure with substance use, a moderation on how these effects change over time and lead to chronic psychological distress has not been done. The proposed research will fill this gap by taking a longitudinal approach to research the role of repeated exposure to content related to use of substances within social media in normalized use and the ensuing effects on mental health in adolescents living in Akwa Ibom State. Placing the analysis in the framework of development and socio-cultural context, the study will offer the evidence-based information that may be utilized to direct the targeted intervention, policy-making, and future research.

Research Questions

The following research questions were formulated to guide the study:

1. What is the level of exposure to substance-related content on social media among adolescents in Akwa Ibom State?
2. To what extent does psychological distress among adolescents change over time?
3. What is the relationship between social media exposure to substance-related content and substance use among adolescents?
4. To what extent does social media exposure to substance-related content predict psychological distress among adolescents?
5. Does substance use mediate the relationship between social media exposure and psychological distress among adolescents?

Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

1. There is no significant increase in social media exposure to substance-related content among adolescents over time.
2. There is no significant increase in psychological distress among adolescents over time.
3. Social media exposure to substance-related content does not significantly predict substance use among adolescents.
4. Social media exposure to substance-related content does not significantly predict psychological distress among adolescents.
5. Substance use does not significantly mediate the relationship between social media exposure and psychological distress among adolescents.

Social Media and Behavioural Normalization

The normalization theory presents an informative theory explaining how frequent exposure to behaviours in social contexts, especially digital ecosystems, slowly changes the view of acceptability. In social media contexts (Instagram and Snapchat), peer-created content, endorsements of influencers, and recommendations by the algorithms all lead to heightened normalization. Empirical evidence shows that exposure to substance-related content is a significant shaper

of perceived social norm (particularly injunctive norm) in adolescents, which further predict substance use behaviours (Nesi *et al*., 2021) [10]. The sheer presence of such content, which is often supported by likes, comments and sharing tendencies, often make adolescents believe that the use of substances is socially acceptable and common. Moreover, it has been found that exposure to alcohol and drug-associated imagery decreases the perceived risk and augments the attitude towards use, thus leading to behavioural intention and experimentation (Moreno *et al*., 2016; Sargent and Babor, 2020) [9, 16]. Quantitative evidence indicates that teens who have high social media usage have by far larger odds of reporting substance use than those with lower usage showing the influential factor of digital platforms in shaping behavioural standards via repetition and reinforcement (Viner *et al*., 2019) [19].

These processes of normalization are further supported by socio-cultural forces and aspirational identity by the youths in the Nigerian context. On social media websites like Tik Tok and Facebook, local celebrities and influencers often show alcohol, smoking, and drug use as a status of wealth, relaxation, and modernism. These representations fail to depict the adverse health and social impacts linked to substance use and hence distort the actual picture, which may be adopted by adolescents. Nigerian research studies indicate that exposure to media content that is related to substances is a strong predictor of attitudinal inclinations toward drug use and predisposes adolescents to experimenting with drugs (Eze, 2023) [5]. Also, content-curation algorithms enhance recurring exposure to comparable content, which leads to what has been termed as a perceived norm effect wherein adolescents inflate the extent and acceptability of substance use among their peers (Nesi *et al*., 2021) [10]. In the long run, this cumulative exposure will lead to a loss of boundaries between deviant and acceptable behaviours, undermining the efficacy of traditional prevention messages and making one susceptible to substance use. This is especially worrisome in areas like Akwa Ibom State, where the level of social media accessibility overlays with the inability to control it, and young people become increasingly vulnerable to the use of psychoactive substances.

Psychological Distress in Adolescence

Adolescent psychological distress is a multidimensional phenomenon comprising both the symptoms of anxiety, depression, emotional dysregulation, and loss of self-esteem, and usually appears at a critical stage of development, characterized by identity formation and increased social sensitivity. Adolescent mental health issues have become particularly problematic in all parts of the world, and the World Health Organization estimates that one in seven adolescents has a mental disorder, which places mental health disorders as one of the major causes of illness and disability in this age category (WHO, 2022). Imaturation of the nervous system, the impact that peer influence has on adolescents, and the exposure of adolescents to a complex social demand make them especially susceptible to psychological distress. Empirical studies also indicate that psychological distress predicts and causes risky behaviours such as substance use, and a reciprocal relationship occurs between the two, resulting in more severe mental health outcomes in the long term (Kessler *et al*., 2002; Viner *et al*., 2019) [19]. The emotional instability and maladaptive coping styles tend to develop more easily in situations where adolescents are exposed to competing pressures by family, peers, and societal expectations, which further predispose them to distress (George and Udofia, 2026) [6].

The increase in the intensity of psychological distress can be seen as a result of social media, with such processes as compulsive use, cyberbullying, and upward social comparison being increasingly noticeable. Instagram and Tik Tok are among the platforms that contribute to the fact that in the environment they create adolescents are constantly exposed to curated and idealised images of their peers and influencers and usually developed feelings of inadequacy and low self-worth. Researchers have discovered that teens that spend over three hours daily on social media are much more likely to acquire poor mental health results, such as depression and anxiety symptoms (Twenge *et al*., 2018) [17]. Moreover, the issue of cyberbullying, which is supported by anonymity and unrestricted connectivity, has been closely linked to heightened levels of psychological distress, suicidal ideation, and emotional distress (Keles *et al*., 2020) [7]. The addiction to social media makes these problems even more serious as it interferes with the sleeping schedule, decreases the face-to-face communication, and supports the negative mental patterns. Altogether, these conditions form a psychosocial situation, where adolescents are constantly subjected to stress factors that affect the emotional state negatively, which makes it necessary to implement specific measures aimed at reducing the negative effect of digital activity on mental health.

Materials and Methods

Research Design

This research design was longitudinal panel research design and it examined how variables of interest varied over time and were causally related. The design adopted two waves of data collection and a time interval of six months, which enabled analyzing both stability and change of social media exposure, substance use and psychological distress among adolescents. The longitudinal designs tend to be quite appropriate in determining trends of development and determining precedence of time, which makes the cause-and-effect inferences stronger as opposed to cross sectional designs. The study was also in a position to identify dynamic interactions between exposure to substance-related content and future results in psychology by measuring the same participants on two time points (Time 1 and Time 2).

Population and Sample

The population under study was the in-school teenage population in the public secondary schools of the Akwa Ibom State in Nigeria. The sampling technique applied in selecting a sample of 412 students between 13 and 18 years of age was a multistage sampling method to make the sample representative. During the first phase the state was divided into three senatorial districts (Uyo, Ikot Ekpene and Eket). The second stage involved the use of a random sampling method in the selection of the schools within the individual districts. The systematic sampling in the last step was applied to the selection of the participants in the selected schools according to the class registers. This allowed sampling bias to be reduced and the generalisability of findings to be increased. The sample size was deemed sufficient, to conduct longitudinal and multivariate statistical tests, which satisfy the recommended values of regression and mediation tests.

Instruments

Three psychometrically validated and standardised data collection instruments were used to ensure data were collected based on the context of the study. Social Media Substance Exposure Scale (SMSES) was a 12-item scale assessing frequency of exposure to substance-related content on different social media platforms and rated on a 5-point Likert scale where 1- Never and 5-Very Often were the range scores. The scale recorded a high internal consistency of Cronbach alpha at 0.88. The Adolescent Substance Use Index (ASUI) evaluated both the rate and nature of the psychoactive drugs used by the respondents such as alcohol, cannabis and prescription drugs; it had a coefficient of reliability of 0.84. Kessler Psychological Distress Scale (K10), a popular screening instrument of the depressive symptoms and anxiety, was used to measure psychological distress, and it had excellent reliability (= 0.90). Data collection instruments used were pilot-tested with a similar population before data was collected to ensure that the instrument was clear and culturally relevant and reliable in the Nigerian context.

Procedure

Two phases were used to collect the data. Time 1 (baseline) was the time when the participants were asked to answer the survey instruments under supervised classroom conditions, to ensure the standardised administration. The participants were again evaluated at Time 2 (follow-up) after six months using the same measures to monitor the change with time. Attrition was minimised through keeping in touch with the schools involved and through tracking the participants through anonymised codification mechanisms. The study was ethically approved by the appropriate institutional review board and the school authorities were contacted to give permission. Participants gave informed consent, and in cases of need, parents or guardians. Strict secrecy and anonymity were ensured in the study and the participants were urged that they could pull out at any point without being penalized.

Data Analysis

Data analysis entailed the use of relevant statistical procedures based on the study objectives and hypotheses. The descriptive statistics, such as means and standard deviations, were employed to present the distribution of the key variables. Paired sample t-tests were used to determine the differences in social media exposure and psychological distress in Time 1 and Time 2. The relationships between variables were analyzed using Pearson product-moment correlation analysis to determine the strength and direction of relationships between variables. To establish the predictive effect of exposure in social media on substance use and psychological distress, when baseline measures are considered, hierarchical multiple regression was used. In order to test the mediating effect of the use of substance, mediation analysis was conducted through the method of Baron and Kenny (1986) [4] with additional significance testing of the indirect effects. All the hypotheses were examined at the level of significance of 0.05.

Result

The demographic characteristics of the respondents were analyzed using descriptive statistics, including frequency counts and percentages, to provide a clear profile of the sample drawn from secondary schools across the three senatorial districts of Akwa Ibom State. The analysis reflects the distribution of participants based on age, gender, class level, school location, and social media usage, thereby establishing the representativeness and suitability of the sample for the study.

Table 1: Age Distribution of Respondents (N = 412)

Age Group (Years)	Frequency (f)	Percentage (%)
13–14	100	24.3
15–17	241	58.5
18	71	17.2
Total	412	100.0

Age distribution of the respondents ranged from 13 to 18 years, consistent with the targeted adolescent population. The data indicated that the majority of participants fell within the mid-adolescent age bracket of 15–17 years, accounting for approximately 58.5% of the sample, while younger adolescents (13–14 years) constituted 24.3%, and older adolescents (18 years) represented 17.2%. This distribution suggests adequate coverage of early, middle, and late adolescence, thereby enhancing the developmental relevance of the findings

Table 2: Gender Distribution of Respondents (N = 412)

Gender	Frequency (f)	Percentage (%)
Male	205	49.8
Female	207	50.2
Total	412	100.0

In terms of gender, the sample was relatively balanced, with 205 respondents (49.8%) identified as male and 207 respondents (50.2%) identified as female. This near-equal representation minimises gender bias and allows for generalisable inferences across both sexes.

Table 3: Class Distribution of Respondents (N = 412)

Class	Frequency (f)	Percentage (%)
JSS1	60	14.6
JSS2	67	16.3
JSS3	72	17.5
SS1	74	18.0
SS2	71	17.2
SS3	68	16.4
Total	412	100.0

Regarding class level, respondents were distributed across junior and senior secondary classes: JSS1 (14.6%), JSS2 (16.3%), JSS3 (17.5%), SS1 (18.0%), SS2 (17.2%), and SS3 (16.4%). This even spread across academic levels ensures that perspectives from different stages of secondary education were adequately captured.

Table 4: School Location of Respondents (N = 412)

Location	Frequency (f)	Percentage (%)
Urban	228	55.3
Rural	184	44.7
Total	412	100.0

The analysis of school location revealed that 228 respondents (55.3%) were drawn from urban schools, while 184 respondents (44.7%) were from rural schools. This distribution reflects a reasonable balance between urban and rural contexts, allowing for contextual comparisons in exposure and behavioural outcomes.

Table 5: Social Media Usage Among Respondents (N = 412)

Response	Frequency (f)	Percentage (%)
Yes	374	90.8
No	38	9.2
Total	412	100.0

Social media usage was found to be highly prevalent among the respondents, with 374 participants (90.8%) reporting active use of social media, while only 38 respondents (9.2%) indicated non-use. This high level of engagement underscores the relevance of investigating social media as a key factor influencing adolescent behaviour and psychological outcomes.

Table 6: Descriptive Statistics for Social Media Substance Exposure Scale (SMSES) (N = 412)

S/N	Item	Mean (M)	Std. Deviation (SD)	Decision
1	I see posts showing people drinking alcohol	3.68	1.12	High Exposure
2	I see videos of people smoking cigarettes or cannabis	3.54	1.18	High Exposure
3	I see celebrities promoting alcohol or drugs	3.72	1.09	High Exposure
4	I see friends posting about substance use	3.41	1.21	Moderate Exposure
5	I see memes or jokes about drug use	3.60	1.15	High Exposure
6	I see content that makes substance use look fun	3.75	1.07	High Exposure
7	I see people using drugs at parties online	3.49	1.20	Moderate Exposure
8	I see influencers linking success with substance use	3.63	1.13	High Exposure
9	I see advertisements for alcohol or drugs	3.58	1.16	High Exposure
10	I see content encouraging substance use	3.44	1.19	Moderate Exposure
11	I see repeated posts about substance use trends	3.66	1.11	High Exposure
12	I see content that makes substance use seem normal	3.70	1.10	High Exposure
	Grand Mean	3.60	1.14	High Exposure

The results in Table 4.6 indicate that adolescents in Akwa Ibom State experience a high level of exposure to substance-related content on social media (Grand Mean = 3.60, SD = 1.14). Items relating to celebrity influence, portrayal of substance use as enjoyable, and normalization of drug use recorded the highest mean scores, suggesting that digital platforms frequently present substance use in a positive and socially acceptable manner. Moderate exposure was observed in peer-related and direct encouragement content, indicating that while peer influence exists, media-driven normalization is more dominant.

Table 7: Descriptive Statistics for Adolescent Substance Use Index (ASUI) (N = 412)

S/N	Substance Use Behaviour	Mean (M)	Std. Deviation (SD)	Decision
13	Alcohol consumption	3.21	1.26	Moderate Use
14	Cigarette smoking	2.68	1.34	Moderate Use
15	Cannabis use	2.54	1.31	Moderate Use
16	Use of tramadol or codeine	2.89	1.29	Moderate Use
17	Use of other drugs	2.37	1.22	Low Use
18	I use substances to feel good	3.05	1.28	Moderate Use
19	I use substances to cope with stress	3.12	1.25	Moderate Use
20	My friends influence my substance use	3.34	1.20	Moderate Influence
	Grand Mean	2.90	1.27	Moderate Use

These findings in Table 4.7 show that adolescents in Akwa Ibom State have moderate levels of substance use (Grand Mean = 2.90, SD = 1.27). Alcohol intake registered the best mean score indicating that it is the most commonly used drug by the respondents. The use of tramadol or codeine and cigarette smoking as well as cannabis was also moderate, which means that there is a worrying trend of multi-substance use. The role that emotional control and social processes play in substance use behaviour as reported by the moderate mean values was also evident in psychosocial factors including the use of substances to deal with stress and peer influence. The use of other unspecified drugs was however relatively low and this indicates that they may not be prevalent as compared to the common substances.

Table 8: Descriptive Statistics for Psychological Distress Scale (K10 Adapted) (N = 412)

S/N	Item	Mean (M)	Std. Deviation (SD)	Decision
21	I felt tired for no good reason	3.42	1.18	Moderate Distress
22	I felt nervous	3.36	1.21	Moderate Distress
23	I felt so nervous nothing could calm me down	3.18	1.25	Moderate Distress
24	I felt hopeless	3.27	1.23	Moderate Distress
25	I felt restless or fidgety	3.33	1.20	Moderate Distress
26	I felt so restless I could not sit still	3.15	1.26	Moderate Distress
27	I felt depressed	3.40	1.19	Moderate Distress
28	I felt that everything was an effort	3.38	1.17	Moderate Distress
29	I felt worthless	3.22	1.24	Moderate Distress
30	I felt emotionally unstable	3.45	1.16	Moderate Distress
	Grand Mean	3.32	1.21	Moderate Distress

Table 4.8 has shown that adolescents in Akwa Ibom State have a moderate level of psychological distress (Grand Mean = 3.32, SD = 1.21). Symptoms of emotional instability, exhaustion, and depressive feelings showed relatively high means scores, which proved that the respondents were under significant emotional and mental stress. There were no items that were rated as highly distressing, but the system of the overall similar moderate ratings by all indicators implies a widespread tendency of psychological vulnerability. Such trend could be linked to exposure to psychosocial stressors such as social media influences and the use of substances as studied in this paper.

Hypothesis 1

Social media exposure to substance-related content will significantly increase over time.

Table 9: Paired Sample t-test for Social Media Exposure (Time 1 vs Time 2)

Variable	Time	Mean (M)	SD	Mean Difference	t-value	df	p-value	Decision
Social Media Exposure	Time 1	2.91	0.88	0.56	8.72	411	0.000	Significant
	Time 2	3.47	0.92					

There was a significant increase in social media exposure from Time 1 to Time 2 ($t(411) = 8.72$, $p < .05$). Therefore, H_1 is accepted

Hypothesis 2

Psychological distress among adolescents will significantly increase over time.

Table 10: Paired Sample t-test for Psychological Distress (Time 1 vs Time 2)

Variable	Time	Mean (M)	SD	Mean Difference	t-value	df	p-value	Decision
Psychological Distress	Time 1	2.84	0.90	0.55	7.95	411	0.000	Significant
	Time 2	3.39	0.94					

Psychological distress significantly increased over time ($t(411) = 7.95$, $p < .05$). Thus, H_2 is accepted.

Hypothesis 3
Social media exposure will significantly predict substance use.

Table 11: Regression Analysis Predicting Substance Use from Social Media Exposure

Variable	B	SE	β	t	p-value
Constant	1.12	0.21	—	5.33	0.000
Social Media Exposure	0.48	0.05	0.41	9.60	0.000
Model Summary	**R**	**R^2**	**Adjusted R^2**	**F**	**p-value**
	0.41	0.168	0.166	92.16	0.000

Social media exposure significantly predicted substance use ($\beta = 0.41$, $p < .05$), explaining 16.8% of the variance. Therefore, H_3 is accepted.

Hypothesis 4
H_4: Social media exposure will significantly predict psychological distress.
Statistical Tool: Hierarchical Regression

Table 12: Regression Analysis Predicting Psychological Distress

Variable	B	SE	β	t	p-value
Constant	1.05	0.24	—	4.38	0.000
Social Media Exposure	0.42	0.06	0.36	7.80	0.000
Model Summary	**R**	**R^2**	**Adjusted R^2**	**F**	**p-value**
	0.36	0.130	0.128	60.84	0.000

Social media exposure significantly predicted psychological distress ($\beta = 0.36$, $p < .05$), accounting for 13.0% of the variance. Thus, H_4 is supported

Hypothesis 5
Substance use will significantly mediate the relationship between exposure and psychological distress.

Table 13: Mediation Analysis

Path	Relationship	β	p-value	Decision
Path a	Exposure → Substance Use	0.41	0.000	Significant
Path b	Substance Use → Psychological Distress	0.38	0.000	Significant
Path c	Exposure → Psychological Distress (Total Effect)	0.36	0.000	Significant
Path c'	Exposure → Psychological Distress (Direct Effect)	0.21	0.002	Reduced

Indirect Effect

Effect Type	Value	p-value	Decision
Indirect Effect (a × b)	0.16	0.001	Significant

Substance use significantly mediated the relationship between social media exposure and psychological distress. The reduction in the direct effect (from $\beta = 0.36$ to $\beta = 0.21$) indicates partial mediation. Therefore, H_5 is accepted.

Discussion of Findings

Level of exposure to substance-related content on social media among adolescents

This observation in this research indicated that the exposure to contents that relate to substances was high among the adolescents in Akwa Ibom State. This is concurrent with available empirical findings which state that the substance related imagery is over-saturated on the social media sites where such behaviours are usually shown in a positive light. Moreno *et al*. (2016) [9] stated that the information about alcohol related content in social media is often stated in a positive manner with little focus on the negative outcomes of alcohol consumption. On the same note, Nesi *et al*. (2021) [10]discovered that exposure to posts by peers on the use of substances by adolescents has a massive influence on perceived norms and a higher likelihood of indulging in such behaviour. The correspondence of the current work with the previous studies may be explained by the omnipresence of user-generated contents and algorithmic amplification, which secure the effectiveness of repetitive exposure. Nonetheless, other works indicate variations in exposure rates because of the moderating variables, including parental control and digital literacy (Viner *et al*., 2019) [19]. The exposure level that was found in this study could be hence a result of poor supervision and intense exposure to digital platforms by adolescents in Nigeria.

Extent to which psychological distress among adolescents change over time

The findings showed that there was a strong effect of the improvement of psychological distress over time which supported the concerns of the accruing effects of social media use on adolescent mental health. This can be supported by longitudinal evidence that shows that the higher teenagers use social media, the higher the rates of depression and anxiety (Twenge *et al*., 2018) [17]. In the same way, a systematic review carried out by Keles *et al*. (2020) [7] observed that there was a strong relationship between social media use and psychological distress, especially excessive or problematic use. The processes that could have contributed to the agreement include cyberbullying, sleep disruption and social comparison, which worsen with the increase of terms of exposure. Nonetheless, according to some studies, social media may also have a positive impact, including the promotion of the feeling of social support and connectedness (Viner *et al*., 2019) [19]. This difference in results might be attributed to the use of divergent patterns of usage with passive consumption and exposure to harmful material

(including substance use) which is more closely correlated to negative effects as it appears in the present research.

Relationship between social media exposure and substance use among adolescents

The researchers established that social media exposure has a strong positive correlation with substance use thus showing that the higher the exposure the higher the probability of substance use. Sargent and Babor (2020) [16] have supported this finding by reporting that alcohol marketing and media content are significant risk factors that increase the probability of underage drinking. On top of that, Nesi *et al*. (2021) [10] established that, owing to social media exposure on substance-related posts, adolescents tend to start and increase substance use behaviours. The contract can be justified by the social learning theory that assumes that people imitate the behaviours they see around them. Moreover, the perceived risk is minimized and behavioural acceptance is heightened through normalization processes. Nevertheless, a few studies carried out in developed settings have noted that trends in adolescent substance use were even, or decreasing, which implies that more comprehensive measures to promote population health can counteract these influences (Viner *et al*., 2019) [19]. The more pronounced association in this study is thus possible to be contextual such as weak regulatory environment and exposure to unfiltered content in Nigeria.

Extent to which social media exposure predict psychological distress among adolescents

The results showed that exposure to social media is a strong predictor of psychological distress and this has a direct effect that is associated with digital exposure on mental health. This aligns with the studies that indicated that factors related to social media, such as access to harmful or dangerous content, are also important predictors of depression and anxiety in adolescents (Keles *et al*., 2020) [7]. Another study conducted by Twenge *et al*. (2018) [17] also demonstrated that more screen time correlates with more symptoms of a depressive disorder and lower psychological well-being. The agreement can be greatly attributed to the cumulative psychological weight of the constant exposure to unrealistic lifestyles, peer comparison, and risk behaviours. However, other researchers note that protective variables, including resilience, family support, and positive online interactions, may help to alleviate such implication (Viner *et al*., 2019) [19]. It is likely that these protective mechanisms are inadequately developed or do not exist to a strongly predictive relationship as was observed in this study.

Intermediate role of substance use between exposure to social media and psychological distress.

The researchers found that the association between social media exposure and psychological disturbance is mediated significantly by substance use, thus, the mediation effect is partial. This observation is in line with the hypothesis of self-medication, which hypothesizes that people can also use the substance to cope with mental distress. Kessler *et al*. (2002) discovered that tendency towards substance use is closely linked with emotional distress and mental illnesses, especially in adolescents. Additionally, Viner *et al*. (2019) [19] reported substance use as behavioural pathways that mediate the relationship between social media exposure and poor mental health. This agreement can be explained by the duality of substance use being a coping mechanism and a risk factor contributing to the increase of psychological distress. Nonetheless, other studies present other possible mediators, including cyberbullying and social comparison, meaning that substance use is just one of the ways through which exposure to social media is related to mental health outcomes (Keles *et al*., 2020) [7]. The current research paper adds to the literature in the sense that it empirically validates the substance use as an important mediating factor in the context of the Nigerian setting.

Conclusion

This research paper presents a clinical report that continued exposure to social media content related to substances is an important factor in normalizing the use of psychoactive substances and increasing psychological disturbance among adolescents in The Akwa Ibom State. The longitudinal results indicate that additional exposure with time does not only predict greater rates of substance use but directly and indirectly (through substance use) worsens mental health difficulties. The findings emphasize that the digital influence, behavioural outcomes, and psychological well-being are linked to one another, and social media is a key environmental condition in the development of adolescents. As a result, both school and community-based interventions of digital literacy, behavioural control, and mental health should be combined to help tackle adolescent substance use and psychological distress.

Recommendations

1. Given the high level of exposure to substance-related content, schools and educational authorities should integrate structured digital literacy programmes into the curriculum.
2. In response to the observed increase in psychological distress over time, schools should establish accessible mental health support systems, including counselling units and peer-support programmes.
3. Considering the significant relationship between social media exposure and substance use, there is a need for comprehensive, school- and community-based substance abuse prevention initiatives.
4. Policymakers and regulatory agencies should strengthen oversight of substance-related content on social media platforms, particularly content targeting adolescents.
5. Given the mediating role of substance use in psychological distress, interventions should focus on equipping adolescents with adaptive coping strategies such as problem-solving skills, emotional regulation, and physical activity.

Conflict of Interest

The researcher declares that there is no conflict of interest regarding the publication of this study. The research was conducted independently, and no financial or personal relationships influenced the design, data collection, analysis, or interpretation of the findings. All sources of information used in this study have been duly acknowledged.

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