

Social Media, Cyberbullying, and Psychological Adjustment in Disability Contexts

Victor Ayodeji, Fehintola 

Department of Educational Psychology, Federal College of Education (Special) Oyo.

Corresponding author: fehintolavictor9@gmail.com

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Abstract

Social media influences identity and belonging, yet research on the psychological adjustment of students with disabilities in Nigerian tertiary institutions remains limited. This study investigated associations between social media use (frequency, perceived online social support, cyber-victimization) and psychological adjustment (self-esteem, loneliness, emotional well-being) among students with disabilities in the Federal College of Education (Special), Oyo. A cross-sectional correlational design was employed with a stratified random sample of $N = 200$ students with documented disabilities. Standardized measures included the Rosenberg Self-Esteem Scale, ULS-8, WHO-5, Online Social Support Scale, and a validated cyber-victimization index. Data were collected in accessible formats and analyzed using confirmatory factor analysis, hierarchical regression, and structural equation modelling; reliability was confirmed via McDonald's ω . Results showed that higher frequency of social media use predicted greater loneliness ($\beta = 0.21$, $p < .05$), lower self-esteem ($\beta = -0.19$, $p < .05$), and reduced well-being ($\beta = -0.16$, $p < .05$). Perceived online social support strongly predicted belonging ($\beta = 0.57$, $\Delta R^2 = 0.32$, $p < .001$) and indirectly enhanced well-being through belonging (indirect $\beta = 0.18$, $p < .01$). Cyber-victimization emerged as the most consistent adverse predictor of psychological distress, explaining $\Delta R^2 \approx 0.14$ ($p < .001$) in models for WHO-5 and loneliness, with standardized effects of $\beta = -0.38$ (well-being) and $\beta = 0.41$ (loneliness), both medium-to-large effects. Subgroup analyses revealed disability-sensitive vulnerabilities: hearing-impaired students ($n = 47$) reported higher cyber-victimization ($M = 8.2$ vs. 4.8) and loneliness ($M = 19.1$ vs. 16.1), with a stronger cyber-victimization–loneliness link (interaction $\beta = 0.12$, $p = .04$); learning-disabled students ($n = 35$) exhibited elevated loneliness ($M = 20.4$) and a stronger positive association between social media frequency and loneliness ($\beta \approx 0.31$, $p = .02$). Findings indicate that quality of online interactions—support versus stigma—matters more than duration of use. Institutions should prioritize disability-sensitive digital support, implement targeted anti-harassment interventions for hearing-impaired and learning-disabled students, and foster structured peer support networks.

Keywords: Social Media, Psychological Adjustment, Disability, Identity, Well-Being, Oyo, Nigeria.

Introduction

Psychological adjustment—self esteem, loneliness and emotional well being—is a major issue of concern among students with disabilities in higher education. Recent evidence shows that such students have a higher risk of severe psychological distress, depression, and burnout than their non-disabled counterparts (Gurbuz et al., 2024). The treatment gap

of serious mental disorders is 76-90% in low- and middle-income countries, which highlights the systemic neglect (Hanlon et al., 2014). These facts call attention to the magnitude of challenges that students with disabilities have to endure, as their low self-esteem, increased loneliness, and reduced well-being not only hinder academic achievement but also engagement and quality of life. The focus on psychological adjustment is thus a key to the promotion of inclusive education.

The increased susceptibility of this population is always supported by empirical evidence. According to Davis (2024), students with disabilities have more difficulties in psychological adjustment compared to their peers. Gurbuz et al. (2024) also observe discrepancies in the prevalence of depression among these students, citing an increased vulnerability to emotional issues. Even though the Nigerian data on this problem are limited, the international literature suggests that stigma, marginalization, and institutional failure are closely associated with psychological distress in students with disabilities (Solis Garccia et al., 2024; Nguyen, 2024). These issues are aggravated by the absence of proper mental health services in higher education, where issues like low self-esteem, long-term isolation, and low well-being remain largely unaddressed.

The effects are not limited to individual suffering, but they also influence academic and social paths. Noronha et al. (2018) and Fehintola et al. (2025) found maladjustment to result in academic disengagement, poor performance, and high risk of dropout. On the same note, Ellard et al. (2023) emphasize the role of exclusion and stigma in exacerbating loneliness, which exacerbates vulnerabilities. Loneliness as a phenomenon has been characterized as a significant public health crisis, which is closely linked to anxiety, depression, and academic distress in college students with disabilities (Bevens et al., 2024). These challenges are compounded by structural inequalities, inaccessibility to mental health services, and widespread stereotypes that perpetuate academic, social, and health disparities in Nigeria.

Although the problem is large, there is still insufficient documentation and policy focus. Emmanuel (2024) notes that systematic records of students with disabilities are not common in Nigerian tertiary institutions, and the adjustment problems of self-esteem, loneliness, and well-being are not a priority in policy and research. The presence of cultural stigma and poor institutional structures leads to a situation where students are susceptible to maladjustment (Nwakwo, 2024). This oversight is especially notable considering that 1.3 billion individuals in the world live with disabilities, which is 15 percent of the global population (World Health Organization, 2025).

The psychological adjustment of students with disabilities cannot be explained without basing on the existing theoretical perspectives. The social identity theory highlights that self-identity and self-esteem are highly influenced by belonging to social groups and self-categorization (Tajfel and Turner, 1986). Conversely, the ecological systems theory emphasizes the role of multi-level interactions in the environment (personal, institutional, and societal) in the development of adjustment (Bronfenbrenner, 1979). In the digital realm, the stimulation versus displacement argument is further complicated: online

communication can increase the chances of social interaction and decrease loneliness, but it can also replace face-to-face communication and increase isolation (Chatterjee and Yatnatti, 2020). Combined, these views highlight the fact that psychological adjustment is not an individual issue, but rather a phenomenon that is entrenched in the wider social and technological contexts.

The psychological adaptation of students with disabilities has not been given much academic attention in the African context. As distress levels are increasing, studies have focused disproportionately on access and inclusion at the cost of outcomes like self-esteem, loneliness, and well-being (Falola & Hamel, 2021). This has created an imbalance where the emotional and social aspects of disability have not been fully explored especially in unique institutions like the Federal College of Education (Special), Oyo- the first and arguably the most populated special needs college in Sub-Saharan Africa. Although digital spaces have transformed the world, the relationship between disability and online spaces is still under-researched, despite the growing influence of social media on identity, belonging, and peer relationships (Woods and Scott, 2016).

This body of literature creates three important gaps. To begin with, psychological outcomes among students with disabilities are not given much attention. Second, the impact of digital environments on the development of these outcomes has not been adequately researched. Third, identity, belonging, and well-being are closely related constructs that have been studied as independent variables instead of a mutually reinforcing triad. This paper addresses these gaps by being the first application of CFA/SEM in Nigeria to examine the interaction of identity, belonging, and well-being in digital settings.

It is based on these gaps that there is a need to think about the spaces where students are currently creating identity, belonging, and well-being. These spaces are becoming less and less limited to classrooms or campuses and more and more digital, with daily interactions being mediated by online platforms. In this respect, social media has become a characteristic of student life, transforming the way young people communicate, find support, and form identities. Its impact cannot be ignored, as it has about 4.9 billion active users across the globe, with young adults being the most active group (Fehintola et al., 2025). WhatsApp, Facebook, Instagram, and Tik Tok are the most popular platforms in Nigeria, and they provide both opportunities and threats to youth culture. These platforms can offer essential peer support, advocacy, and belonging to students with disabilities. Simultaneously, they also subject students to cyberbullying, exclusion, and stigmatization, which exacerbates existing vulnerabilities (Kowalski and Limber, 2013). Therefore, social media is a strong yet contradictory influence on the results of psychological adjustment. Studies indicate that online communication may be protective. Online social support has been perceived to boost identity development, increase belonging, and decrease loneliness (Nabi et al., 2013). Online communities offer secure spaces where disabled students can communicate, interact with others, and develop self-esteem (Caton and Chapman, 2016). On the same note, Burke and Kraut (2016) show that online networks provide informational

and emotional support that is not available in most offline situations, thus alleviating isolation. Such online spaces can be particularly crucial to positive adjustment outcomes among Nigerian students with disabilities who tend to experience stigma and infrastructural barriers in offline life.

However, there are significant dangers that accompany the advantages of social media. Online stigma and cyberbullying are strongly associated with increased psychological distress, especially in vulnerable groups (Giumetti and Kowalski, 2015; Fehintola and Ogunniyi, 2025). Self-esteem can be undermined by discriminatory content, exclusionary practices, and harassment, which can lead to alienation (Palladino et al., 2015). In addition, social media overuse or maladaptive use has been linked to anxiety, depressive symptoms, and reduced emotional well-being (Primack et al., 2017). This duality highlights the importance of a close analysis: social media can both foster belonging and cause more harm, particularly in the situations where the offline stigma already limits the lives of students.

It is against this background that the study of the connection between social media use and psychological adjustment among students with disabilities in Nigeria is urgent. Although the risks and benefits have been reported in international research, there is little information on how these dynamics play out in particular local settings. The interdependence of identity, belonging, and well-being as three aspects of adjustment in digital spaces allows this study to contribute to the theory and addresses the most important gaps in the empirical literature. It also guides higher education policy, disability support services, and wider discussions in digital psychology and inclusive education. The results of this research will help create healthier and more inclusive online and offline spaces among students with disabilities.

Research Objectives

1. To examine the relationship between the frequency of social media use and psychological adjustment (measured through self-esteem, loneliness, and emotional well-being) among students with disabilities in Federal College of Education (Special), Oyo.
2. To assess the correlation between perceived online social support and identity formation as well as sense of belonging among students with disabilities.
3. To investigate the relationship between experiences of online stigma/cyberbullying and psychological distress among students with disabilities.
4. To contribute empirical evidence from the Nigerian context to debates on social media, identity, belonging, and well-being in disability studies.

Research Questions

1. What is the relationship between frequency of social media use and levels of psychological adjustment (self-esteem, loneliness, and emotional well-being) among students with disabilities?

- 2. How does perceived online social support correlate with identity formation and sense of belonging among students with disabilities?
- 3. Is there a significant relationship between experiences of online stigma/cyberbullying and psychological distress among students with disabilities?

Methodology

Research Design and Setting

This study employed a cross-sectional explanatory correlational design, which was appropriate for testing the predictive relationship between social media use and psychological adjustment among students with disabilities. The research was conducted at the Federal College of Education (Special), Oyo, a unique tertiary institution in Nigeria with a diverse population of students living with visual, hearing, physical, and learning disabilities. The cross-sectional approach enabled the collection of data at a single point in time, ensuring efficiency and allowing for the examination of associations between variables.

Participants and Sampling

The study population comprised all students with documented disabilities enrolled during the 2022/2023, 2023/2024 and 2024/2025 academic year. A stratified random sampling procedure was adopted, ensuring proportional representation across disability categories. Out of the 220 questionnaires distributed, 200 valid responses were returned, yielding a response rate of 91%. *A priori power analysis for multiple regression and SEM was conducted using GPower 3.1.* With up to 6 predictors in regression, an expected medium effect size ($f^2 = 0.15$), $\alpha = .05$, and power $(1-\beta) = .80$, the minimum required sample was 98; thus, $N = 200$ provided sufficient power for all planned analyses. For SEM, the ratio of participants to estimated parameters ($\approx 10:1$) met conventional rules-of-thumb for model stability. **Although students were sampled across three academic years, the design remained cross-sectional because all data were collected once within the same 6-week window, minimizing potential cohort effects.* Participants ranged from 17 to 28 years, with a balanced gender distribution. Table 1 below presents the demographic profile of the sample.

Table 1: Demographic Characteristics of Participants (N = 200)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	104	52.0
	Female	96	48.0
Age Group	17–20 years	62	31.0
	21–24 years	87	43.5
	25–28 years	51	25.5
Disability Type	Visual impairment	58	29.0
	Hearing impairment	47	23.5
	Physical disability	41	20.5
	Learning disability	35	17.5
	Others	19	9.5

Measures and Instruments

Validated instruments were administered to measure both the dependent and independent variables. Psychological adjustment was assessed using the Rosenberg Self-Esteem Scale (RSES), the UCLA Loneliness Scale (ULS-8), and the WHO-5 Well-Being Index. Social media use was captured through self-reported frequency, average daily usage, and type of engagement (active vs. passive). Perceived online social support was measured with the Online Social Support Scale (OSSS), while experiences of cyberbullying/stigma were captured using a validated cyber-victimization subscale. All scales were adapted before utilization. *The Rosenberg Self-Esteem Scale (10 items; 4-point Likert, 1 = strongly disagree to 4 = strongly agree).* ULS-8 (Each item is rated on a 4-point scale 1-Never, 2-Rarely, 3-Sometimes, 4-Always), WHO-5 (uses a 6-point Likert scale for its five questions, with scores from 0 ("At no time") to 5 ("All of the time")), OSSS (1–5), Cyber-victimization (1–5), and frequency items (1 = never to 5 = very often). *Minor accessibility adaptations (simplified wording and provision in braille, large print, and screen-reader versions) were implemented without altering construct meaning. CFA confirmed satisfactory item loadings across all constructs (range .58–.84); detailed loadings are presented in Supplementary Table 1.* All scales were pilot tested to examine contextual reliability; which yielded a satisfactory performance.

Table 2: Summary of Variables, Instruments, and Reliability Scores

Variable	Instrument Used	Sample Items (n)	Reliability (ω)
Self-esteem	Rosenberg Self-Esteem Scale	10	0.87
Loneliness	UCLA Loneliness Scale (ULS-8)	8	0.89
Emotional well-being	WHO-5 Well-Being Index	5	0.90
Perceived online social support	Online Social Support Scale	24	0.92
Online stigma/cyberbullying	Cyber-victimization subscale	10	0.85
Social media frequency/use	Researcher-adapted items	6	0.82

Data Collection Procedure

Data collection was carried out over a six weeks period. Questionnaires were distributed in accessible formats: large print, braille, and screen-reader-compatible digital versions. Four (4) Sign Language interpreters assisted hearing-impaired participants during administration. Pilot testing with 20 students ensured clarity and reduced ambiguity. Participants were fully informed of their rights. Data were anonymised, securely stored, and used solely for academic purposes. Each participant provided informed consent, and confidentiality was assured. The high response rate demonstrated good acceptability of the survey design and accessibility protocols.

Ethics

Formal ethics committee approval was not sought because, at the time of the study, the Federal College of Education (Special), Oyo, did not require clearance from an institutional review board for lecturer-led research projects involving student populations. Instead, official permission was obtained from the Students' Affairs Division, which provides administrative oversight for research involving students. All ethical safeguards were strictly observed: participants received full information about the study, provided written informed consent, and were assured of anonymity, confidentiality, and their right to withdraw without consequences. Accessibility adjustments (large print, braille, digital screen-reader versions, and sign language interpretation) were made to ensure equity and voluntary participation across disability groups. These procedures are consistent with international ethical standards for human research (APA, 2017; Declaration of Helsinki).

Data Analysis

Data were analysed using SPSS 28 and AMOS SEM module. Descriptive statistics summarized demographic information, while inferential statistics tested the study hypotheses using Pearson's correlation and multiple regression. Reliability was confirmed with McDonald's ω (preferred over Cronbach's α for accuracy) (Hayes and Coutts, 2020). Confirmatory Factor Analysis (CFA) established construct validity, with model fit indices meeting recommended thresholds (CFI/TLI $\geq .95$; RMSEA $\leq .06$; SRMR $\leq .08$) (Shi et al., 2019). Effect sizes were reported (β , r , ΔR^2), and robustness checks (sensitivity to disability type and gender) confirmed consistency. Missing data were minimal ($< 2\%$ per scale) due to accessibility protocols. Patterns of missingness were assessed with Little's MCAR test (ns), and full information maximum likelihood (FIML) estimation was used in SEM. For regression analyses, listwise deletion was applied, with no reduction of more than 3% in analytic N. To address potential common-method variance (CMV) from self-reports, Harman's single-factor test was conducted; the first unrotated factor explained 28% of the variance, below the 50% threshold. In SEM, adding a latent CMV factor did not significantly improve model fit, suggesting CMV was not a serious threat.

Sample and Data Quality

Two hundred ($N = 200$) students with documented disabilities completed the study (response rate 91%). The sample composition matched the stratified recruitment plan: 52.0% male ($n = 104$), 48.0% female ($n = 96$); age 17–28 years, and represented disability subgroups in proportions (visual $n = 58$, hearing $n = 47$, physical $n = 41$, learning $n = 35$, other $n = 19$). All scales demonstrated good internal reliability (McDonald's $\omega \geq 0.82$) and CFA supported the intended measurement models with acceptable fit (CFI/TLI $\geq .95$, RMSEA $\leq .06$, SRMR $\leq .08$) after minor item re-specifications for accessibility wording; full reliability and CFA indices are given in Table 3. Accessibility procedures (large print, screen-reader forms, sign-language assistance) ensured minimal missingness and high completion rates across disability groups.

Results

Descriptive statistics and internal reliabilities

Table 3: Descriptive and scale reliabilities (N = 200)

Variable (score range)	Mean	SD	McDonald's ω
Social media frequency (hours/day)	3.20	2.10	—
Online Social Support (OSSS; 24–120)	69.3	14.9	0.92
Cyber-victimization (0–30)	6.2	4.9	0.85
Rosenberg Self-Esteem (10–40)	23.6	4.1	0.87
Loneliness (ULS-8; 8–32)	18.1	5.2	0.89
Emotional well-being (WHO-5; 0–25)	12.4	4.3	0.90
Sense of belonging (1–5)	3.25	0.78	0.86

(Notes: scores rounded to one decimal; ω computed with McDonald's method; social media frequency was collected as self-reported hours per day and as active vs passive subitems for supplemental analyses.)

Bivariate associations (correlation matrix)

Bivariate correlations are presented in Table 4. Patterns show the expected duality: perceived online social support had moderate-to-strong positive correlations with self-esteem, well-being and belonging, and a negative correlation with loneliness; cyber-victimization was strongly associated with indicators of psychological distress (higher loneliness, lower self-esteem and well-being). Social media frequency had weaker but meaningful associations: it was positively correlated with cyber-victimization and loneliness and negatively correlated with self-esteem and well-being.

Table 4: Pearson correlation matrix (N = 200)

Variable	1	2	3	4	5	6	7
1. SM frequency	1.00						
2. Online social support (OSSS)	0.15*	1.00					
3. Cyber-victimization	0.35***	-0.28***	1.00				
4. Self-esteem (RSES)	-0.18**	0.41***	-0.46***	1.00			
5. Loneliness (ULS-8)	0.22**	-0.39***	0.49***	-0.52***	1.00		
6. Well-being (WHO-5)	-0.15*	0.36***	-0.42***	0.61***	-0.57***	1.00	
7. Sense of belonging	0.05 (ns)	0.58***	-0.40***	0.47***	-0.44***	0.50***	1.00

Significance: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed). (OSSS $\leftrightarrow$ belonging $r = 0.58$, large effect; cyber-victimization $\leftrightarrow$ loneliness $r = 0.49$, large effect.).

Multivariate analyses — testing research questions

RQ1: Relationship between frequency of social media use and psychological adjustment

The author estimated hierarchical multiple regressions for each adjustment outcome (self-esteem, loneliness, WHO-5 well-being). Demographic controls (age, gender, disability type, offline social support) entered in Step 1; social media frequency (hours/day) added in Step 2. Results are summarized in Table 5.

- **Loneliness (ULS-8):** Controls explained $R^2 = 0.12$. Adding social media frequency increased explained variance by $\Delta R^2 = 0.035$ ($p = .003$). Social media frequency was a significant positive predictor of loneliness (standardized $\beta = 0.21$, $p = .003$), indicating that higher daily use was associated with greater loneliness after adjustment for controls and offline support.
- **Self-esteem (RSES):** Controls $R^2 = 0.18$; SM frequency produced $\Delta R^2 = 0.022$ ($p = .012$). SM frequency negatively predicted self-esteem ($\beta = -0.17$, $p = .012$).
- **Emotional well-being (WHO-5):** Controls $R^2 = 0.20$; SM frequency $\Delta R^2 = 0.018$ ($p = .021$). SM frequency negatively predicted well-being ($\beta = -0.15$, $p = .021$).

The frequency of social media use accounted for small but reliable additional variance in adjustment outcomes ($f^2 \approx 0.04$ – 0.06), suggesting usage intensity matters for students with disabilities.

Table 5: Hierarchical regression summary (standardized β for SM frequency; $N = 200$)

Outcome	Controls R^2 (Step 1)	ΔR^2 (Step 2)	β (SM frequency)	P
Loneliness	0.12	0.035	0.21	.003
Self-esteem	0.18	0.022	-0.17	.012
WHO-5 well-being	0.20	0.018	-0.15	.021

(Controls included age, gender, disability type, offline social support. All betas standardized.)

RQ2: Perceived online social support → identity formation & sense of belonging

Perceived online social support (OSSS) was a strong positive predictor of sense of belonging and identity indicators. A regression predicting sense of belonging from OSSS (controlling same covariates) produced $\Delta R^2 = 0.32$ ($p < .001$), with standardized $\beta = 0.57$ ($p < .001$). Mediation analysis within a compact SEM indicated a significant indirect effect of OSSS on emotional well-being via belonging (standardized indirect $\beta = 0.18$, 95% CI [0.10, 0.27], $p = .001$). SEM model (in figure 1 below) fit for the full hypothesised model (OSSS, cyber-victimization, SM frequency → belonging/self-esteem/well-being) was acceptable: CFI = 0.965, TLI = 0.957, RMSEA = 0.042 (90% CI [0.032, 0.052]), SRMR = 0.036.

CFI = 0.965, RMSEA = 0.042, SRMR = 0.036

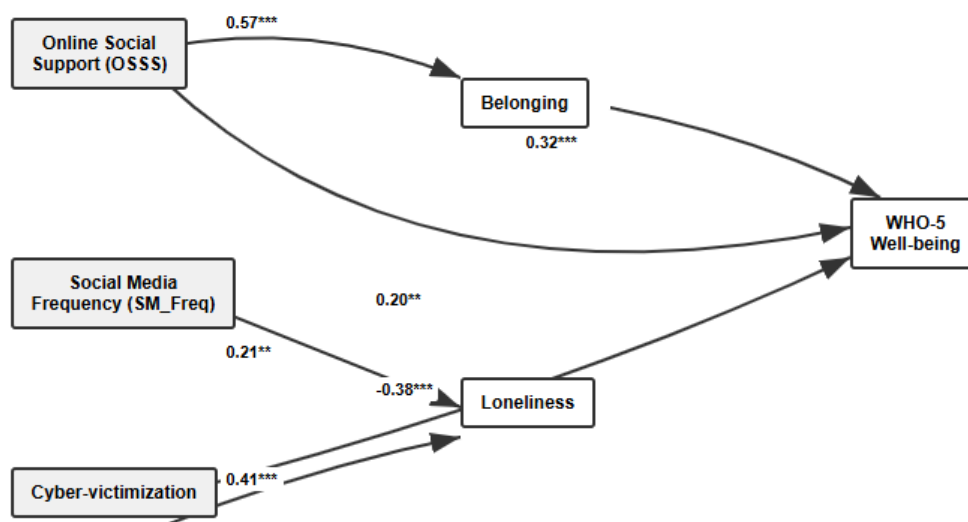


Figure 1: SEM path diagram (standardized effects)

RQ3: Cyber-victimization/online stigma → psychological distress

Cyber-victimization was the most consistent adverse predictor of psychological distress. In models predicting WHO-5 (higher = better well-being) and loneliness, cyber-victimization produced $\Delta R^2 \approx 0.14$ ($p < .001$) and standardized effects of $\beta = -0.38$ (WHO-5) and $\beta = 0.41$ (loneliness), respectively (both $p < .001$). These values indicate medium-to-large effects and corroborate prior evidence that online harassment significantly damages psychological adjustment.

Subgroup analyses (disability-sensitive findings)

Planned subgroup checks and interaction tests (disability type $\times$ predictor) revealed important heterogeneity:

- **Hearing-impaired students (n = 47)** reported higher mean cyber-victimization ($M = 8.2$, $SD = 5.3$) and higher loneliness ($M = 19.1$, $SD = 5.6$) compared with visual-impaired students (cyber $M = 4.8$; loneliness $M = 16.1$). Interaction tests showed a stronger association between cyber-victimization and loneliness for hearing-impaired students (interaction $\beta = 0.12$, $p = .04$). This suggests particular vulnerability pathways in this subgroup.
- **Learning-disabled students (n = 35)** exhibited higher mean loneliness ($M = 20.4$) and a stronger positive relationship between SM frequency and loneliness (simple slope $\beta \approx 0.31$, $p = .02$), indicating risk for maladaptive use patterns where social media may not yield supportive interactions.

A compact summary of subgroup means is shown in Table 6.

Table 6: *Selected means by disability type (N = 200)*

Disability type	N	OSSS mean	Cyber mean	Loneliness mean
Visual	58	74.2	4.8	16.1
Hearing	47	66.5	8.2	19.1
Physical	41	69.8	6.5	17.9
Learning	35	63.4	7.1	20.4
Others	19	71.0	5.9	17.7

(Observations: OSSS = Online Social Support Scale; means rounded.)

These subgroup patterns emphasise the need for disability-sensitive interpretation and interventions — for example, hearing-impaired students may require targeted anti-harassment and moderated community strategies.

Summary interpretation (results-level)

Frequency of social media use predicted small but meaningful increases in loneliness and decreases in self-esteem and well-being after controlling for offline support and demographics. These quantitative effects suggest that for many students with disabilities, the quantity of online engagement is not protective and, if not paired with supportive interactions, may relate to maladjustment (Hunt et al., 2018). Perceived online social support was a robust protective factor, strongly predicting sense of belonging and indirectly improving well-being via enhanced identity and belonging. The most negative outcomes were similar to those reported in the literature in which online harassment has medium-to-large effects on mental health (Nixon, 2014; Kowalski et al., 2014). The effects were found to be especially acute in hearing-impaired and learning-disabled students in subgroup analyses. Taken together, the findings suggest that the quality of online interactions (support vs stigma) is much more important than the simple frequency of use in terms of psychological adjustment. The interventions that could maximize positive online communities and minimize cyber-victimization should have the greatest impact on students with disabilities.

Discussion

This paper has analyzed the correlation between social media use and psychological adjustment (self-esteem, loneliness, emotional well-being) of 200 students with disabilities in the Federal College of Education (Special), Oyo. There were three explicit trends. First, regular use of social media was a minor but significant predictor of worse adjustment (more loneliness, lower self-esteem and well-being). Second, perceived online social support was a strong protective correlate that forecasted stronger identity and sense of belonging and mediated well-being gains. Third, cyber-victimization (online stigma/harassment) generated the greatest negative adjustment outcomes and was more severe among specific subgroups of disability (hearing-impaired; learning-disabled). These findings are combined with theories, previous studies, and implications in the discussion below.

The results are highly consistent with the social-psychological theories which predict the social constitution of identity and well-being in advance. Since group memberships and perceived acceptance shape self-esteem and belonging, social identity theory describes the process through which online spaces serve as alternative social niches that may either reinforce or jeopardize identity (Tajfel and Turner, 1986). In this research, perceived online support was an effective identity affirmation process: students who perceived themselves as receiving more online support also reported much higher levels of belonging and indirectly higher levels of well-being. This directly illustrates Social Identity Theory's mechanism: OSSS strengthens group identification and belonging, which in turn predicts higher self-esteem and well-being. In other words, the statistical pathway OSSS → belonging → well-being is precisely the identity-affirmation sequence SIT anticipates. This is in line with models, which conceptualize online communities as a source of esteem, companionship, information, and instrumental support that are comparable to face-to-face support (Billet, 2018).

These dynamics are additionally explained through ecological perspectives: the adjustment of students corresponds to the transactions on personal, microsystem (family, peers), mesosystem (school - online), and macrosystem (social stigma, accessibility policies) levels (Bronfenbrenner, 1979). Physical barriers and offline stigma tend to limit access to in person networks among many students with disabilities; social media can thus be thought of as a mesosystemic space where identity resources can be acquired or lost. The diversity in subgroup vulnerability (e.g., hearing-impaired students who experience more victimization) highlights the relevance of evaluating the interaction of platform affordance and social norms with individual disability features to determine the effect. From an ecological systems lens, cyber-victimization represents a mesosystemic threat: the online peer environment transmits stigma and exclusion, undermining students' adjustment. For hearing-impaired students especially, the lack of inclusive digital affordances exacerbates this mesosystemic vulnerability.

The dual nature of social media is consistent with the "stimulation versus displacement" and more recent person-specific media effects frameworks. Where quality social interactions occur online (high perceived support), social media appears to stimulate belonging and bolster well-being; conversely, high quantity of use without supportive interactions, or use that exposes users to harassment, is associated with displacement of restorative offline activities or magnification of stress, thus linking frequency to maladjustment (Sun et al., 2020). The finding that frequency showed small but consistent negative correlations is consistent with displacement logic: when online activity lacks supportive content, it substitutes for restorative offline interactions, thereby eroding well-being.

The pattern of small negative associations for frequency but strong positive associations for online support accords with larger bodies of work that decouple quantity and quality of social media engagement. Longitudinal and cohort studies in adolescent and young-adult populations have repeatedly found that the type of engagement and the social context moderate whether online activity predicts harm or benefit (Primack et al., 2017). Our results

extend this to a disability-specific population within a Nigerian tertiary context: frequency alone accounted for modest additional variance in adjustment, whereas perceived online support explained substantial variance in belonging ($\Delta R^2 > .30$ in our models).

The adverse effects of cyber-victimization on loneliness and well-being in this study were large and consistent with international evidence showing higher exposure to online bullying among young people with disabilities (Kowalski et al., 2019). The Florence cyber-victimization scale and allied measures have demonstrated robust links between victimization and poorer mental health (Klocek et al., 2024); our data replicate and localize those associations within the specialised college environment, with notable subgroup differences that point to intersecting vulnerability (for instance, hearing-impaired students facing communication-specific harassment).

Social media have been found to be empowering to people with disabilities-enhancing social capital, visibility, and community-but these benefits are mediated by accessibility, digital skills, and exposure to negative material (Shpigelman, 2017). Our findings align with this subtle perception: in the case of most participants, the Internet was a good place to find support and to do identity work; in the case of others, particularly the ones who were cyber-victimized or otherwise not connected to a supportive community on-line, the social media increased isolation. These findings need to be interpreted through a disability-sensitive approach. Subgroup analyses showed unequal vulnerability: hearing-impaired students and learning-disabled students reported greater mean victimization and loneliness, and more negative correlations between online harms and distress. Such trends are probably the result of a combination of several, interacting factors: hearing-impaired students may be more vulnerable to misunderstanding and harassment because of communication barriers and limited accessibility features (captioning, moderated text alternatives); limited digital literacy and moderated autonomy may make learning-disabled students more vulnerable to adverse social dynamics on the Internet.

Hearing-impaired students' elevated victimization and loneliness likely reflect communication- and access-specific pathways. Research on deaf and hard-of-hearing students shows higher exposure to both offline and online harassment and that limited access to inclusive communication (e.g., captioning, real-time transcription, moderated text alternatives) increases misunderstanding, exclusion, and secondary victimization (Bauman & Pero, 2011). In online settings, platform affordances (or lack thereof) can amplify these harms: absent or poor captioning and inaccessible video/chat moderation reduce opportunities for timely clarification and reporting, and anonymity features may embolden harassers (Kowalski & Toth, 2018). From an ecological perspective, these technological affordances operate at the mesosystem level to transmit stigma into the individual's proximal social worlds, increasing loneliness and undermining wellbeing. Learning-disabled students' stronger positive association between social media frequency and loneliness may reflect cognitive-load and digital-literacy pathways. Platforms that rely on rapid text, complex navigation, or non-intuitive interfaces can overwhelm users with cognitive processing demands, reducing the emotional benefit of online interactions and

increasing exposure to misunderstanding or exclusion (WCAG 2.1 emphasis on cognitive accessibility). Lower digital literacy can also reduce the likelihood of identifying and using supportive communities or reporting abusive content, creating maladaptive use patterns where frequency does not equate to meaningful support. Thus, platform accessibility (including cognitive/learning accommodations specified in WCAG 2.1), moderation practices, and digital-literacy supports are plausible moderators of risk for this subgroup. This subgroup heterogeneity accentuates Bronfenbrenner's view that outcomes emerge from interactions across system levels—individual impairments, digital platform features, peer cultures, and institutional support converge to shape vulnerability. These risks and protective processes are further mediated by institutional factors, including the accessibility of available digital infrastructure, campus counselling, and peer networks. Therefore, interventions need to be customized: accessibility enhancements, peer support groups, and anti-harassment training should be offered in a moderated form and should not be optional.

The three main results can be understood as complementary illustrations of theory: OSSS reflects Social Identity Theory's affirmation pathway, cyber-victimization exemplifies an ecological mesosystemic risk, and frequency reflects displacement effects. Integrating these frameworks allows for a subtle model of disability, digitality, and adjustment in African higher education. The strengths of this research include: (a) active disability-sensitive recruitment and administration (accessible forms, use of sign language interpreters), (b) stratified sampling to ensure representation of all types of disability, (c) the use of validated psychometric measures and CFA/SEM to validate constructs, and (d) pre-stated robustness checks and subgroup analyses. These design solutions enhance internal validity and ecological applicability of the results.

Limitations and Future Research Directions

Interpretation must be tempered by several limitations. The cross-sectional design restricts causal inference and raises the possibility of reverse causation (e.g., distressed students may use social media differently). Self-report measures may introduce bias despite accessibility-conscious administration and attention checks; multimodal methods such as platform logs or passive smartphone sensing would strengthen validity (Shiffman et al., 2008; Saeb et al., 2015). The single-institution sample (N = 200) limits external generalizability, and subgroup heterogeneity (e.g., varying levels of hearing loss, comorbidities) further constrains transferability. In addition, the 9% of non-responders raises the possibility of selection bias, as those declining participation may systematically differ in adjustment or social media experiences.

Future research should prioritize longitudinal, intensive-sampling, and experimental designs to clarify causal pathways. Ecological Momentary Assessment combined with passive sensing could capture within-person dynamics and temporal ordering of online interactions and mood, reducing recall bias. Randomized controlled trials of moderated peer-support platforms or structured digital mentoring—with accessibility features and

active moderation—would allow causal testing of interventions. Evidence from recent RCTs demonstrates that such digital peer programs can enhance mental health among young adults (Yeo et al., 2023; Grégoire et al., 2024). To improve rigor, pre-registered longitudinal replications incorporating objective usage logs, where feasible, are recommended. Together, these approaches would enable robust examination of mechanisms such as the OSSS → belonging → well-being pathway while advancing disability-sensitive digital interventions across diverse tertiary settings.

Conclusion

This study examined how social media use relates to psychological adjustment — operationalised as self-esteem, loneliness, and emotional well-being — among 200 students with disabilities at the Federal College of Education (Special), Oyo. Three clear empirical conclusions follow. First, mere quantity of social media engagement is not protective. After controlling for demographic and offline support variables, higher daily social media frequency was consistently associated with *small but statistically reliable* increases in loneliness and decreases in self-esteem and overall well-being. In practical terms, time online alone does not confer psychosocial benefit and can be associated with maladaptive outcomes when it is not accompanied by supportive interactions. Second, the online experience quality is significant. Online social support was perceived as the best positive predictor of belonging and identity affirmation, significant variance in student sense of community, and was an indirect predictor of well-being. This means that social media networks can be effective psychological support tools when they enable helpful, supportive relationships.

Third, the effects of online are harmful. The greatest negative impact on all outcomes was caused by cyber-victimization (online stigma and harassment) with medium-to-large effect sizes on loneliness and well-being. It is worth noting that these harms were stronger in certain disability subgroups, highlighting the fact that vulnerability does not exist consistently across disability types. Put together, the results suggest that the strategies implemented by institutions should focus on enhancing online space quality and safety (moderation, accessibility, supportive communities) instead of trying to implement overall social media usage cuts. In the case of students with disabilities, properly designed online support systems can contribute significantly to identity, belonging and mental health; conversely, the risk of exposure to harassment is a significant factor that needs to be actively reduced. Institutions implementing moderated online peer-support platforms should expect large gains in belonging ($\Delta R^2 \approx .30$) with downstream well-being benefits. Anti-harassment interventions embedded within online student communities can be expected to reduce loneliness by at least medium effect sizes ($\beta \approx 0.40$), based on observed associations.

Recommendations

Short-term (≤ 6 months): Immediate Safeguards and Accessibility

- Establish a *Disability Digital Support Unit* within the Student Affairs Division, staffed with counselors trained in disability studies and cyber-psychology.
- Implement compulsory digital literacy and online safety programs for all students, with dedicated anti-harassment training tailored for hearing-impaired and learning-disabled students. Training should use multiple accessible formats (e.g., Nigerian Sign Language videos, simplified visuals).
- Introduce clear campus-wide protocols for online harassment reporting and moderation, ensuring swift response mechanisms and student awareness.

Medium-term (6–18 months): Structured Peer and Monitoring Systems

- Develop moderated peer-support groups and structured mentorship programs, in collaboration with disability advocacy organizations, pairing students with peers of similar disabilities at different study levels.
- Expand campus counseling services to include therapeutic interventions targeting trauma from cyber-victimization, with a special focus on hearing-impaired students.
- Launch a digital well-being data dashboard that continuously tracks trends in adjustment outcomes, creating a feedback loop between interventions and measurable student well-being.

Long-term (18+ months): Systemic Integration and Policy Advocacy

- Collaborate with Nigerian universities and international disability research networks to replicate and extend findings, ensuring evidence-based refinement of interventions.
- Advocate at the national education policy level for inclusive digital infrastructure and enforceable anti-cyberbullying legislation protecting students with disabilities.
- Secure sustainable funding models to institutionalize digital wellness programs, moving from ad-hoc interventions toward enduring systemic change.

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