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Social Media Use Patterns and Mental Health Outcomes Among Sexual and Gender Minority University Students in Western Kenya: A Mixed Methods Study

Lydiah O. Amgechi, Edward Okaya, Manson Sichari & James Bill Ouda
Department of Educational Psychology
Masinde Muliro University of Science and Technology, Kenya
ORCiD: https://orcid.org/0000-0003-4255-6608
Email: *lamgechi@gmail.com*

***Abstract**: Social media has become an invaluable channel through which Sexual and Gender Minority (SGM) university students seek identity affirmation, social support and community belonging. However, these platforms may also expose users to cyberbullying, discrimination, hate speech and negative social comparison that adversely affect mental health outcomes. Despite increasing global attention and evidence, empirical research on this relationship in the Kenyan context remains limited. This study investigated the relationship between social media use patterns and mental health outcomes among Sexual and Gender Minority undergraduate students in universities in Western Kenya. The study employed a convergent parallel mixed-methods design. Quantitative data were collected from 142 SGM undergraduate students using a semi- structured questionnaire incorporating the Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7), and Perceived Stress Scale-10 (PSS-10). Qualitative data were obtained through focus group discussions. Quantitative data were analysed using descriptive and inferential statistics while qualitative were analysed thematically. Findings from both strands were integrated to provide a comprehensive understanding of participants' experiences. Through multiple linear regression, they demonstrated a significant relationship between social media use patterns and mental health outcomes among SGM students, with a dual effect of positive and negative outcomes. The study concludes that social media serves as both a protective resource and a psychological risk factor for SGM university students. It recommends that higher education institutions strengthen inclusive mental health services, foster safe and affirming digital environments and implement policies that protect SGM students from online discrimination and harassment.*

Keywords: Social media use, Mental health outcomes, Depression, Anxiety, Stress, University students, Western Kenya

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1. Introduction

Sexual and Gender Minority is an umbrella concept that defines individuals whose sexual orientation, gender identity or sex characteristics differ from the societal majority and includes individuals who identify as lesbian, gay, bisexual, transgender, queer and other diverse sexual orientations and gender identities (Suen, et al., 2020). Perceived as deviating from dominant societal norms, these populations are largely marginalized for their sexual orientation and gender identities (United Nations Development Programme, 2018). Consequently, they are particularly vulnerable to stigma, violence and discrimination because of their identities (Ewing, et al.,

2020; Mulavu, et al., 2023). Extant research has documented the experiences of homophobia and discrimination against this population through violation of human rights, physical attacks by mobs, sexual assault and rape and restricted access to essential social services and amenities including housing, education, health care and employment (Johnson, et al., 2021).

Violence against Sexual and Gender Minority populations is often used as a means of controlling or attempting to control their behaviour and self-expression (Ewing, et al., 2020). Intolerance towards their identities, behaviours and expression is particularly evident within heteronormative structural and institutional contexts, including cultural, religious and socio-political environments. Exposure to such stigma, discrimination and violence may contribute to elevated rates of adverse mental health outcomes among SGM individuals, including self-harm, stress, depression, anxiety, suicidal ideation and post-traumatic stress disorder (Berger, et al., 2022); a mental health condition that may develop following exposure to witnessing a traumatic or frightening event (Mayo Clinic, 2022). Research indicates that these populations experience disproportionately high rates of mental health challenges compared with their heterosexual and cisgender peers (Marchi, et al., 2025). These disparities are often elaborated by Minority Stress Theory, which aims at explaining the social, psychological and structural factors accounting for mental health inequalities of marginalized populations (Frost & Meyer, 2023).

Stressors encountered by SGM individuals have been found to be distinct from general stressors of life experienced by the wider population and thus greatly contribute to mental health disparities of this population (Dennis & Davis, 2025). According to Minority Stress Theory, these stressors are categorized as distal and proximal stressors. Distal stressors are considered objective and external, given that they happen outside a person but directly affect their well-being. These stressors include but are not limited to discrimination and stigma resulting from rejection, exclusion or violence informed by an individual's sexual orientation and/ or gender identity; legal and institution barriers, social marginalization and family rejection. On the other hand, proximal stressors are subjective, internalized and are a consequence of how individuals process and react to distal stressors. They include among others identity concealment, internalized stigma, hypervigilance and fear as well as mental health struggles (Fine, et al., 2025; Dennis& Davis, 2025).

The rapid growth of social media has revolutionized how people interact globally. Through its affordances, marginalized groups or individuals are able to access an alternative arena or space where they can connect with others who are like-minded and therefore experience a sense of belonging and affirmation as well as a supportive environment which is essential for their mental health and well-being (Ellison & Vitak, 2015; Ilieva, 2022). Research suggests that, for many SGM university students, and especially those living in socially restrictive or unsupportive environments, social media through its many platforms can provide relatively safe spaces for exploring and expressing identity, connecting with others who share similar experiences, accessing support and alleviating feelings of social isolation (Berger, et al., 2022; Hanckel, et al., 2019; Lucero, 2017).

However, social media use may also expose SGM individuals to harmful online experiences including cyberbullying, hate speech, discrimination, harassment, misinformation, victimization and potentially harmful social comparisons which may contribute to adverse psychological and mental health outcomes (Chan, 2022; Henderson, et al., 2022; Marshall-Seslar, 2022; McConnell, et al., 2017). Consequently, social media represents a duality, serving as both a protective factor and a potential risk factor for mental health, depending on the nature, intensity and quality of online engagement.

The interplay between social media use and minority stress can significantly shape the mental health outcomes of SGM individuals. Empirical evidence regarding this relationship remains mixed and context-dependent. Studies conducted predominantly in Western countries such as United States, Europe and Australia have demonstrated both the potential benefits and risks of digital engagement for SGM individuals. A systematic review of 26 studies by Berger, et al. (2022) found that social media can provide LGBTQ+ youth with opportunities to connect with peers and communities, explore and manage identities and obtain social support, with some evidence of positive associations with mental health and well-being. However, the review also identified negative experiences, including discrimination and victimization, and emphasized that the existing evidence base was limited by methodological weaknesses and a predominance of observational studies. Specific studies from the United States among young adults found that negative social media experiences were more common among LGB participants and were associated with greater depressive symptomatology (Escobar-Viera, et al., 2020). European evidence also demonstrates the dual nature of online experiences among SGM youth. For example, a study of transgender and gender-diverse adolescents in Germany found that participants used social media and the internet for exploration, expression and access to gender specific information, while simultaneously reporting experiences of online support by and cyberbullying (Hermann, et al., 2024).

However, much of the empirical evidence on social media use and the mental health of SGM populations has emerged from the Western and high –income countries, where

sociocultural, legal and institutional contexts surrounding sexual and gender diversity differ substantially from those in many African contexts. In Sub-Saharan African, research on SGM populations has largely focused on stigma, discrimination, violence, HIV prevention and access to healthcare, with comparatively limited attention to the role of social media in shaping mental health outcomes. This becomes an important gap because SGM individuals in many African contexts navigate social environments characterized by persistent stigma, discrimination, criminalization of same-sex relationship in some countries and limited access to affirming mental health and psychosocial services. Within such contexts, social media may assume a particularly complex role, potentially providing alternative spaces for identity expression, community connection and social support while simultaneously exposing users to online harassment, discrimination and minority stress. Understanding this dual role requires context-specific research that considers the distinctive social and cultural environments in which SGM individuals use digital platforms.

The Kenyan context provides an important setting for examining these dynamics. SGM populations in Kenya experience pervasive legal, sociocultural and structural discrimination and research has documented substantial exposure to violence and other minority stressors. In Western Kenya, for example, a study of SGM adults found out that experiences of SGM-based violence were associated with significantly higher levels of depressive and post-traumatic stress symptoms, highlighting the mental health consequences of stigma and violence in the region (Harper, et al., 2021; Jauregui, et al.,2021). Findings from these studies underscore the importance of examining mental health among SGM populations within the Kenyan context. However, extant research in Kenya has basically focused on offline experiences of stigma, discrimination, violence and social support with limited empirical focus on how social media use may relate to depression, anxiety and perceived stress among SGM university students. This gap is particularly important among undergraduate students, for whom social media constitutes an integral part of everyday social interaction, identity expression, information seeking and community building. Investigating the relationship between social media use and mental health among SGM undergraduate students in universities in Western Kenya may therefore provide important insights into how digital contexts intersect with minority stress and psychological well-being in a context where both offline and online experiences may influence students' mental health.

It is against this background that the current study examined the relationship between social media use and mental health outcomes among SGM undergraduate students in universities in Western Kenya. Specifically, the study assessed the relationship between social media use and three dimensions of mental health, that is, depression, anxiety and perceived stress. Using a convergent parallel mixed-methods design, the study integrated quantitative evidence on social media use and mental health outcomes with qualitative accounts of participants' experiences to provide a more comprehensive understanding of the ways in which digital engagement may shape psychological well-being among SGM university students. By situating the analysis within Minority Stress Theory and Affordance Theory, the study sought to shed light on how the social and technological environments in which SGM students interact may jointly influence their mental health.

2. Literature Review

Studies indicate a complex relationship between social media and mental health resulting to both positive and negative effects (Ajewumi, et al., 2024). Extant research links social media use to mental health issues among users; for example, a narrative review by Chochol et al. (2023) indicated that the type of social media platform used, duration of time spent and frequency had correlations with anxiety and depression; noting that increased time on social media correlated with higher levels of anxiety. Similarly, a study conducted among adolescents and young adults in the US, suggested a connection between digital media and mental health crisis (Twenge et al., 2018). In their study, prevalence of mental health issues such as depression, suicidal ideation, anxiety, self-harm, loneliness and suicide attempts increased with the onset of the years 2010s. This increase in prevalence was attributed to its concurrence with the increase in smartphone use and digital media consumption. The study also noted that this influence on mental health could have been as a result of mechanisms which include displacement of time spent in in-person social interactions, disruption of in-person social interactions, interference with quality of sleep time, cyberbullying, harmful online environments and information about self-harm.

Contrary to these findings, a study conducted on social media and mental health of adolescents in the UK, suggested that social media use was beneficial to the participants. O'Reilly (2020) noted that social media was used by the participants to protect their mental health through the connectivity it facilitated between participants and their peers as well as their support networks. This was seen as important in averting the onset of mental health conditions and also for being pro-psychological well-being. This connectivity was also instrumental in lessening isolation, refining social skills (especially for those diagnosed with mental health conditions) and also a provision for consistent communication. Social media was also employed by the participants as a strategy to lessen

stress and as a distraction from scenarios and events they considered negative to them.

A growing body of literature emphasizes problematic social media use rather than usage frequency alone. For instance, a study by Vogel et al. (2021) focused on how problematic use of social media impacts the mental health outcomes Sexual and Gender Minority young adults and presented mixed findings on the same. It operationalized problematic social media use as a phenomenon that occurs when susceptible users experience gratifications such as relief of stress or positive disposition from engaging with social media. The gratifications in turn enhance social media use to extremes that can yield negative consequences. Findings associated problematic social media use with depressive symptoms. SGM users who frequented and spent more time on social media experienced depressive symptoms through mechanisms such as fear of missing out (FOMO). On the other hand, social media provided a temporary refuge when participants experienced depression hence the frequent browsing. To explain this phenomenon, depressive symptoms were attributed to internalized stigma of participants as a result of their identities and which consequently made them vulnerable to problematic use of social media. Problematic use of social media was thus assessed as both a contributory element to depressive symptoms as well as the result of depressive symptoms.

Combined together, the above literature supports a dual and context-dependent interpretation of social media effects. Positive outcomes are achieved more likely when engagement on social media platforms facilitates social support, identity affirmation and access to inclusive communities. On the flip side, negative outcomes appear more likely when engagement involves discrimination, harassment, compulsive use or persistent social comparison. Variations across studies may partly reflect methodological differences, including different measures of social media use, mental health indicators and participant characteristics. This evidence thus suggests that social media is neither inherently protective nor inherently harmful. Rather, mental health outcomes emerge through interactions among individual vulnerabilities, patterns of use and digital environments.

Evidence from African contexts reinforces the relevance of minority stress processes. For instance, Mulavu et al. (2023) documented experiences of stigma, discrimination, rejection and victimization among SGM individuals in Zambia, with consequences including depression, psychological distress and suicidal ideation. Social media was identified as one context in which prejudice could be experienced. Similarly, Harper et al. (2021) reported substantial levels of depressive symptoms, PTSD and psychological distress among SGM populations in Western Kenya. While these studies provide valuable contextual evidence, neither specifically examines how different forms of social media engagement influence mental health among SGM university students. This gap is important because university students are intensive users of digital technologies and may encounter unique combinations of offline and online minority stressors.

Several other gaps evident in the literature include the limited representation of SGM university students despite facing developmental, educational and identity-related challenges that may shape digital engagement. Another gap is that African evidence also remains limited, particularly regarding mechanisms through which online experiences influence depression, anxiety and perceived stress. There is also limited Kenyan-specific research examining social media engagement and mental health among SGM university students. The present study addresses these gaps by examining patterns of social media use and their relationship to mental health outcomes among SGM undergraduate students in Western Kenya.

3. Methodology

This study employed convergent parallel mixed methods design. This research design entails concurrent or simultaneous collection of both qualitative and quantitative data in a single phase, analysing the data separately and then comparing the results to gauge whether they converge, diverge or complement each other (Edmonds & Kennedy, 2017; Creswell & Creswell, 2018). It was conducted in selected universities in Western Kenya. The region hosts diverse public and private institutions and provides a relevant context for examining identity development among SGM students within varying sociocultural environments.

The primary target of the study comprised SGM undergraduate students. These identities included, but were not limited to, lesbian, gay, bisexual, transgender, intersex, queer or other identities that are non-cisgender and non-heterosexual. Due to the sensitive nature of sexual orientation and gender identity and absence of official university records identifying students as SGM, a comprehensive sampling frame for this population was unavailable. Therefore, the exact number of SGM students within the selected universities could not be established. However, based on estimates provided by NYARWEK NGO; a community based organization that offers support and advocacy services to LGBTQ+ individuals in the region, approximately 200 SGM students were believed to be accessible for participation in the study. The estimate served as the accessible target population for the study.

Snowball sampling was employed to recruit SGM undergraduate students. It is a non-probability sampling technique well suited for reaching hidden or marginalized populations (Mohsin, 2016). It involves recruiting

participants through interconnected networks or chains where initial subjects are identified based on a study's criteria; after which they are invited to recommend additional individuals from the same population who may also serve as participants in the sample (Sarker & AL-Muaalemi, 2022). This approach was considered appropriate for this study because SGM undergraduate students constitute a hidden population, largely due to stigma, privacy concerns, and the sensitive nature of sexual and gender identity disclosure, which makes it difficult to establish a formal sampling frame. Initial participants who met the study inclusion criteria were identified through networks associated with NYARWEK NGO. These initial participants were then requested to refer other eligible participants within their social networks, allowing the researcher to progressively recruit additional respondents. The process progressed until no substantial new referrals were obtained. This technique enabled access to participants who might otherwise have been difficult to identify and recruit through conventional sampling methods. It was also considered the most feasible and ethically appropriate method for accessing the target population while protecting participant safety and confidentiality.

Census sampling was used to select the participating universities. Census sampling involves including all elements or units within a defined population in a study (Cantwell, 2008). The study therefore included all the 10 universities in Western Kenya. By so doing, the researcher aimed to capture a broad representation of the experiences of SGM students across the different higher education environments within the region.

For data collection, a semi-structured questionnaire was administered for quantitative data. The questionnaire comprised predominantly closed-ended items designed to generate standardized data on participants' social media use patterns and mental health outcomes, while allowing limited open-ended responses where appropriate. The questionnaire had 2 main sections; the first section was useful in collecting demographic information with details such as age, gender identity, sexual orientation, the year of study and university affiliation. This data was significant in describing the sample and identifying patterns across the demographic units. The second section contained adapted scale for social media use patterns and standardized psychometric tools that assessed mental health outcomes of the participants. A Patient Health Questionnaire (PHQ-9) modified for use with SGM populations was used to assess depression as a result of engaging with social media. This instrument was developed by Robert L. Spitzer, Janet B. W. Williams and Kurt Kroenke in 1999, for the purpose of diagnosing and determining the severity of depression (Spitzer, et al., 2001). PHQ-9 contains 9 items that correspond to Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR) criteria for depression (American Psychiatric Association, 2022). This tool is validated for screening, diagnosing, monitoring and measuring the severity of depression. It is commonly used for clinical and research purposes and can be used as a self-report measure or administered by doctors. Scoring for this tool ranges from 0 to 27 indicating levels of depression from minimal to severe. Adapted for this study, it contained questions such as; "I have little interest or pleasure in doing things", "I feel down, depressed, or hopeless", among others.

The second psychometric tool was the Perceived Stress Scale (PSS-10) developed by Cohen, Kamarck & Mermelstein in 1983 and was used to assess the degree to which situations in participants' lives are evaluated as being stressful (Baik, et al., 2019; Cohen, et al., 1983). PSS-10 which is most commonly used to assess levels of stress in young people and adults contains 10 items that assess general stress that is not specific to any one domain. The scale has high reliability and validity across different populations. Responses utilize a 5-point Likert scale scoring 0= Never, 1= Almost Never, 2= Sometimes, 3= Fairly Often, 4=Very Often.

The third psychometric tool was the Generalized Anxiety Disorder-7 scale (GAD-7) which was used to assess anxiety disorders among university SGM students. It is a 7- item self-report questionnaire that has been designed to screen for and measure the severity of generalized anxiety disorder (Casares, et al., 2024; Kroenke, et al., 2001). This tool was developed by Splitzer, Kroenke, Williams, and Lowe in 2006 for primary care but is presently utilized in community and academic research. The 7 items on the tool interrogate how often a respondent has been bothered by a specific anxiety-related problem over the past two weeks. For example, "I have been worrying too much about different things."

To complement quantitative data, Focus Group Discussions were conducted to generate rich qualitative data regarding participant's experience with social media use and mental health outcomes. The discussions provided participants with an opportunity to share personal experiences, perceptions and perspectives in a supportive group environment. They were conducted in safe settings that assured participants' protection and privacy. The integration of these instruments enabled the study to capture both measurable patterns and in-depth contextual insights, thereby providing a more comprehensive understanding of social media and mental health outcomes among SGM undergraduate students.

Data collection process was conducted in a systematic, ethical and culturally sensitive manner in order to accommodate the unique needs and vulnerabilities of SGM students in university contexts. For the facilitation of data

collection, the researcher sought an introductory letter from the Directorate of Post Graduate Studies of Masinde Muliro University of Science and Technology that facilitated obtaining a research permit from the National Commission for Science Technology and Innovation (NACOSTI). Ethical clearance was also sought from MMUST Institutional and Ethics Review Committee. An engagement process with the local advocacy NGO, that is NYARWEK, was initiated in order to build trust and facilitate access to participants.

In order to ascertain the accuracy, credibility, and contextual relevance of the data collected in this study, rigorous quality assurance procedures were employed to all data collection instruments through a pilot study. This was inclusive of the standardized psychometric tools and custom-developed sections to measure social media use and mental health outcomes among SGM university students.

Psychometric tools used in this study, that is, PHQ-9, GAD-7, PSS-10, Brief COPE and MSPSS have well-documented construct validity from previously conducted research across many settings. Sections that were adapted and contained new items specific to local SGM social media experiences were subjected to factor analysis post-pilot in order to confirm alignment with theoretical constructs. Content validity was established through expert review. Reliability was assessed using Cronbach's alpha coefficients, with values exceeding the recommended threshold of .70, indicating acceptable internal consistency as presented in Table 1.

Table 1: Cronbach's Alpha for Internal Consistency of the Scales

Constructs	Number of items	Cronbach's Alpha
Patterns of Social Media Use	10	0.918
Patient Health Questionnaire (PHQ-9)	9	0.880
Generalized Anxiety Disorders (GAD-7)	7	0.894
Perceived Stress Scale (PSS-10)	10	0.794

Source Field Data (2026)

Trustworthiness of qualitative data was determined through four criteria namely; credibility, transferability, dependability and confirmability.

Data collected from the field were organized, cleaned, coded and analysed using the Statistical Package for Social Sciences (SPSS) version 26. For descriptive statistics from the structured items on the questionnaire, frequencies, percentages, mean and standard deviations were employed. Multiple linear regression was used to assess the predictive influence of social media use, that is, purpose of use, types of platforms used, frequency of use, duration of use and content engagement on each mental health outcome, that is, depression, anxiety and perceived stress scores. This enabled the examination of how various social media use patterns jointly and uniquely predicted continuous mental health outcomes. Qualitative data obtained from Focus Group Discussions (FGDs) were analysed by categorizing responses in respect to priority and strength for thematic analysis. The themes were then triangulated with quantitative findings in order to enrich interpretation.

Ethical considerations that guided the study included voluntary participation and a provision for the participants to withdraw if they wished to at any given point and time without any negative consequences. For FGDs, verbal and /or written consent was obtained. Confidentiality and anonymity were upheld in terms of strict data protection measures that safeguarded the personal information of participants. Avoidance of harm was facilitated by providing access to psychological support for participants who expressed distress during the study and also handling sensitive topics with care and respect. The researchers were mindful of potential impact on participants' mental health and were also sensitive to the vulnerable nature of this population, given its marginalization in the country.

4. Results and Discussion

4.1 Response Rate and Demographic Information

A total of 142 SGM undergraduate students participated in the study, representing a response rate of 71%. Demographic characteristics of participants indicated that majority (57.7%) were aged between 22-25 years, followed by those aged between 18-25 years (33.1%). Participants aged over 25 years comprised 9.2% of the sample. This is thus a clear indication that most respondents were within the typical undergraduate range. In terms of assigned sex at birth, the male gender represented the majority of the study participants (62.0%) while the female gender was at

38.0%. This suggests that participants assigned male at birth constituted a larger proportion of the study sample. Concerning the gender identity of participants based on their current SGM status, a higher proportion of participants identified as male (47%), followed by female (31%), transgender (10.7%), non-binary (9.9%) and others (1.4%) respectively. This distribution reflects the diversity of gender identities represented in the study sample. Data on sexual orientation of participants indicated that the largest proportion of participants identified as queer (24.6 %), followed by gay (23.9%) respectively. "Other" orientations came third (18.3 %), then bisexual (15.5 %) and lesbian (11.3%). Smaller proportions of respondents identified as pansexual (4.3%) and asexual (2.1%).

4.2 Descriptive Statistics

To establish the influence of social media use patterns on mental health outcomes, descriptive statistics for social media use patterns were analysed in terms of platform popularity, intensity of social media use, purpose and psychosocial functions of social media engagement among SGM students. Findings indicated that participants engaged with multiple platforms of social media, with most of them utilizing more than one platform. WhatsApp was the most popular and widely used social media platform at 73.2%, followed by TikTok (57.7%); an indication for a strong preference for short-form video-based content, Instagram (39.4%) and You Tube (37.3%); platforms that are largely visual in nature and Facebook (33.8%). A smaller proportion of the respondents used Twitter/X (14.1%). The least used platform was Tinder (5.6%) among the category of 'other' platforms. This is an indication that the respondents mostly engage with instant messaging and visually oriented platforms which are likely to have implications on their identity development.

Concerning daily use and time spent on social media, a considerable proportion of respondents agreed that they use social media everyday (54.9%) and spend a significant amount of time (54.9%) on these platforms. The means of respondents who use social media every day and those who spend a significant amount of time on social media each day were 3.6 and 3.5 respectively. These findings suggest that social media forms an integral part of SGM students' daily routine. A small proportion of respondents (11.2%) reported strong disagreement, a clear indication that there was insignificant non-consumption within the sample. Overall, 84.2% of respondents reported moderate to high levels of social media use. Qualitative findings corroborated these results, with participants describing social media as an indispensable part of everyday life that provided opportunities for communication, entertainment, information seeking and connection with other SGM individuals. Participants also reported using multiple platforms simultaneously because each platform served distinct identity-related and social functions.

Mental health outcomes were measured using three constructs; that is, standardized psychometric tools that include Patient Health Questionnaire (PHQ-9) for depressive symptoms (measured using 9 items); Generalized Anxiety Disorder-7 (GAD-7) for anxiety symptoms (measured using 7 items), and Perceived Stress Scale (PSS-10) for perceived stress (measured using 10 items). The results on the depressive symptoms are presented in Table 2.

Table 2 Depressive Symptoms

Statement	Nearly everyday	More than half the day	Several days	Not at all	Mean
I have little interest or pleasure in doing things (including school work or online activities).	19 (13.4%)	25 (17.6%)	37 (26.1%)	61 (63.0%)	1.0
I have been feeling down, depressed, or hopeless (sad, discouraged, or without hope).	19 (13.4%)	32 (22.5%)	48 (33.8%)	43 (30.3%)	1.2
I have trouble falling/staying asleep, or sleeping too much.	21 (14.8%)	26 (18.3%)	45 (31.7%)	50 (35.2%)	1.1

I am always feeling tired or having little energy	30 (21.1%)	35 (24.6%)	31 (21.8%)	46 (32.4%)	1.3
I have poor appetite or I have been overeating	15 (10.6%)	39 (27.5%)	31 (21.8%)	57 (40.1%)	1.1
I have been feeling bad about myself—or that I am a failure.	17 (12.0%)	22 (15.5%)	41 (28.9%)	62 (43.7%)	1.0
I have trouble concentrating on things such as reading, assignments, or social media content	11 (7.7%)	28 (19.7%)	55 (38.7%)	48 (33.8%)	1.0
I have been moving/speaking so slowly or being fidgety/restless	27 (19.0%)	28 (19.7%)	43 (30.3%)	44 (31.0%)	1.3
I have thoughts that I would be better off dead or hurting myself (If yes, please alert the research assistant immediately for support.)	20 (14.1%)	27 (19.0%)	45 (31.7%)	50 (35.2%)	1.1

Source: Field Data (2026)

The Cronbach's Alpha for Patient Health Questionnaire (PHQ-9) was 0.88. From Table 1.1, the levels of depression were low with symptoms only manifesting for several days or not at all. For example, in response to having little interest or pleasure in doing things (including school work or online activities), most participants indicated not at all (63.0%). This reiterated in the cases of 'I have been feeling bad about self - or being a failure (43.7%), having poor appetite or over-eating (40.1%), having thoughts of being better off dead or hurting self (If yes, please alert the research assistant immediately for support (35.2%)- a counsellor from NYARWEK who worked with the research assistant intervened these cases) and having trouble falling/staying asleep, or sleeping too much (35.2%). In general, the results revealed a mean of between 1.0 and 1.3 on the scale 'Not all' to 'Nearly every day', meaning that the symptoms of depression only manifested for several days in most instances. However, all domains were not at very low levels. The feeling of 'Always being tired' or 'Having little energy' had at least 45.9% of the respondents indicating that it happened either nearly every day or more than half the days. Similarly, on the domain of 'Having been moving/speaking so slowly' or 'Being fidgety/restless' had at least 38.7% of the respondents indicating that it happened either nearly every day or more than half the days.

Overall, based on the nine items measuring depressive symptoms, majority of the respondents reported mild to moderate depression (88.7%) as presented in Table 3.

Table 3: Overall Depressive Symptoms

Depression	F	%
Severe	3	2.1
Moderate	50	35.2
Mild	76	53.5
No effect	13	9.2
Total	142	100.0

Mild depressive symptoms reported by participants suggest the presence of emotional distress among SGM students. Although these symptoms may not indicate clinically severe depression, they point to psychological vulnerabilities that could negatively affect academic performance, social relationships and overall well-being if appropriate support is not provided. On the other hand, symptoms indicate a more substantial level of psychological distress that may interfere with daily functioning. This finding suggests that a significant proportion of SGM students may be experiencing emotional challenges requiring psychosocial support and mental health interventions. Increasing PHQ-9 severity scores are associated with declining functional status and greater symptom-related difficulties (Kroenke, et al., 2001).

While severe depressive symptoms were not prevalent, a considerable proportion of SGM students experience significant psychological distress. This is in agreement with a study by Harper, et al. (2021), who noted significantly higher rates of depressive symptoms among SGM participants who were exposed to SGM- oriented violence. The findings are also in line with the Minority Stress perspectives, which posit that chronic exposure to stigma, discrimination, and identity-related stressors makes SGM individuals vulnerable to depressive symptomatology (Frost & Meyer, 2023). In environments where stigma remains prevalent, identity concealment stress and fear of discrimination (proximal stressors) are likely to aggravate depressive symptoms.

Generalized Anxiety Disorders (GAD-7) scale had a Cronbach's Alpha of 0.89. Findings revealed that most SGM students only suffer anxiety symptoms for several days (mean ranging from 1.1 to 1.4) as presented in Table 4.

Table 4: Generalized Anxiety Disorders (GAD-7)

Statement	Nearly everyday	More than half the day	Several days	Not at all	Mean
I have been feeling nervous, anxious or on edge (for example, worrying about how others view me online or in person).	25 (17.6%)	24 (16.9%)	40 (28.2%)	53 (37.3%)	1.1
I have not been able to stop or control worrying.	23 (16.2%)	27 (19.0%)	51 (35.9%)	41 (28.9%)	1.2
I have been worrying too much about different things (school, relationships, or social media).	33 (23.2	24 (16.9%)	52 (36.6%)	33 (23.2%)	1.4
I have trouble relaxing	20 (14.1%)	38 (26.8%)	46 (32.4%)	38 (26.8%)	1.3

I have been so restless that it's hard to sit still	26 (18.3%)	22 (15.5%)	57 (40.1%)	37 (26.1%)	1.3
I have become easily annoyed or irritable (for instance, after seeing or hearing upsetting things online).	18 (12.7%)	41 (28.9%)	44 (31.0%)	39 (27.5%)	1.3
I have been feeling afraid as if something awful might happen	29 (20.4%)	33 (23.2%)	47 (33.1%)	33 (23.2%)	1.4

However, not all domains reported low levels, for instance, 'I have been feeling afraid as if something awful might happen' (43.6%), 'Become easily annoyed or irritable (for instance, after seeing or hearing upsetting things online)' (41.6%), 'Having trouble relaxing' (40.9%), 'Worrying too much about different things (school, relationships, or social media)' (40.1%), registered a response ranging from more than half the days to nearly every day.

Overall, based on the seven items measuring anxiety symptoms, majority of the respondents, reported mild to moderate anxiety symptoms (83.1%) as presented in Table 5.

Table 5: Overall Anxiety Symptoms

General Anxiety Disorder	F	%
Severe	10	7.0
Moderate	49	34.5
Mild	69	48.6
No effect	14	9.9
Total	142	100.0

Results from the GAD-7 scale revealed that most respondents experienced anxiety symptoms for only several days, with 83.1% reporting mild to moderate anxiety levels. Moderate scores are generally considered indicative of clinically meaningful anxiety symptoms warranting further assessment (Johnson, et al., 2019). This pattern suggests that although anxiety is dominant, it may manifest as intermittent or situational rather than persistent severe anxiety for most respondents. However, even mild anxiety can significantly impair academic functioning, concentration, and social engagement (Russell & Fish, 2016). Anxiety symptoms may mirror ongoing vigilance, concealment stress, or fear of negative evaluation both offline and online. This aligns with Minority Stress Theory which highlights proximal stressors such as expectations of rejection and anticipation of discrimination as core stressors in SGM populations (Meyer, 2003). These stressors in turn exhibit a state of constant vigilance, causing individuals to remain cautious to possible stigma or harm in social contexts (Flentje, et al., 2025; Fumega & Stork, 2026). Furthermore, basing on Minority Stress Theory, distal or external stressors tend to encourage identity concealment, which subsequently contributes to internalized (proximal stress) and anxiety (Dennis& Davis, 2025).

Perceived Stress Scale (PSS-10) had a Cronbach's Alpha of 0.79. Results indicate that most SGM students suffer stress symptoms sometimes (mean ranging from 1.5 to 2.1) as presented in Table 6.

Table 6: Perceived Stress Scale

Statement	Very often	Fairly often	Sometimes	Almost never	Never	Mean
How often have you been upset because something happened unexpectedly (for example, an online post or message that disturbed you)?	31 (21.8%)	14 (9.9%)	56 (39.4%)	19 (13.4%)	22 (15.5%)	2.1
How often have you felt that you were unable to control the important things in your life (including your studies or online experiences)?	22 (15.5%)	30 (21.1%)	42 (29.6%)	38 (26.8%)	10 (7.0%)	2.1
How often have you felt nervous, stressed, or emotionally tense (for example, after something happened on social media or at campus)?	18 (12.7%)	29 (20.4%)	48 (33.8%)	26 (18.3%)	21 (14.8%)	2.0
*How often have you felt confident about handling personal or social challenges, including those related to your identity)?	35 (24.6%)	26 (18.3%)	42 (29.6%)	31 (21.8%)	8 (5.6%)	1.7
*How often have you felt that things were going your way (academically, socially, or online)?	35 (24.6%)	33 (23.2%)	52 (36.6%)	13 (9.2%)	9 (6.3%)	1.5
How often have you felt that you could not cope with everything you needed to do?	20 (14.1%)	24 (16.9%)	49 (34.5%)	34 (23.9%)	15 (10.6%)	2.0
*How often have you been able to control irritations or frustrations in your life (including online conflicts)?	33 (23.2%)	35 (24.6%)	42 (29.6%)	18 (12.7%)	14(9.9%)	1.6
*How often have you felt that you were managing things well (in life and on social media)?	21 (14.8%)	39 (27.5%)	59 (41.5%)	19 (13.4%)	4 (2.8%)	1.6
How often have you been angered by things outside your control (e.g., discrimination or hurtful online comments)?	22 (15.5%)	19 (13.4%)	62 (43.7%)	29 (20.4%)	10 (7.0%)	2.1
How often have you felt that your difficulties were piling	18 (12.7%)	20 (14.1%)	54 (38.0%)	31 (21.8%)	19 (13.4%)	1.9

up so high you could not overcome them (academically, socially, or emotionally)?	

However, in a number of domains, a considerable proportion of respondents reported perceived stress ranging from 'Fairly often' to 'Often'. These include 'Feeling upset because of something that happened unexpectedly' (31.7%), 'Feeling unable to control important things in life' (36.6%), and 'feeling nervous, stressed, or emotionally tense' (33.1%).

Overall, based on the ten items measuring perceived stress, majority of the respondents reported moderate stress (79.6%) as shown in Table 7.

Table 7: Overall Perceived Stress

Overall Perceived Stress	F	%
Severe	2	1.4
Moderate	111	79.6
Mild	26	18.3
No effect	1	0.7
Total	142	100.0

For perceived stress (PSS-10), majority of respondents indicated that they experience stress symptoms "sometimes", with most reporting moderate stress levels. Moderate levels of perceived stress indicate that participants evaluated their life circumstances as challenging and occasionally overwhelming. However, they may have possessed effective coping mechanisms and therefore in a position to generally manage present moderate health concerns (Ray, 2024). Persistent exposure to stress can increase the likelihood of adverse mental health outcomes, particularly anxiety and depression, and may negatively affect academic performance, interpersonal relationships and overall social well-being (McEwen, 2017). Moderate stress levels may reflect daily academic stress compounded by identity-related stressors. This is in line with Minority Stress Theory (Meyer, 2003), which posits that minority stressors are compounded with general life stressors and consequently impact mental health outcomes. These findings suggest that stress among SGM students may not exclusively originate from social media use but from a broader environmental spectrum including family expectations, academic demands, peer friendships or relationships as well as attitudes/stigma that emanate from the society.

In conclusion, based on the overall computed general mental health outcome from the three constructs; Patient Health Questionnaire (PHQ-9) for depressive symptoms (measured using 9 items), General Anxiety Disorder symptoms (GAD-7) for anxiety disorders (measured using 7 items), and Perceived Stress Scale (PSS-10) for perceived stress (measured using 10 items), majority of the respondents reported mild to moderate mental health outcomes (99.3%) as shown in Table 8.

Table 8: Overall Mental Health Outcomes

Overall Mental Health Outcomes	F	%
Severe	0	0.0
Moderate	71	50.0
Mild	70	49.3
No effect	1	0.7
Total	142	100.0

In an overall sense, majority of respondents reported mild to moderate mental health outcomes across depression, anxiety, and stress measures. While these findings indicate that severe symptomatology was less common in this sample, they nevertheless reflect clinically meaningful psychological distress requiring attention and support.

Qualitative data obtained from focus group discussions provided deeper insights into how different patterns of social media use influence the mental health outcomes of SGM students. The findings converged strongly with the quantitative results which showed that nearly all participants experienced some degree of mental health burden. Thematic analysis of the data generated key themes on passive versus active social media use, exposure to affirming versus harmful content and intensity and duration of social media use.

Participants reported being both passively and actively engaged on social media. Passive engagement involved scrolling without direct interaction while active engagement involved posting, commenting and interacting on the social media platforms. Passive consumption often exposed them to idealized portrayals of others' lives and identities, encouraging unhealthy social comparisons and reinforcing feelings of inadequacy. For example, participant SGM 009 (FGD 2) said:

"I am not yet out and therefore I conceal my identity a lot. This forces me to be very passive on most social media platforms where I have multiple pseudo accounts. I can at least follow all queer stuff online but I don't post, like or comment on anything, for the fear of being outed. My family and friends wouldn't like it if they learn of my SGM identity. Whenever I scroll on social media, following others and seeing what their lives are like, how they celebrate their identity and the support they get from others, I feel so down. I know deep down that I am not as good as they are. Passive engagement leaves me so devastated."

In contrast, active social media use, including posting, commenting, participating in online communities and direct messaging, was more often associated with emotional support, validation and reduced feelings of isolation. For instance, participant SGM 015 (FGD 3) explained:

"No man is an Island. Whenever you find an opportunity to express yourself, exploit it to the maximum, be it online or offline."

However, even active engagement was sometimes emotionally taxing, particularly when participants felt pressure to present themselves in socially acceptable ways. These findings help explain why mental health effects were widespread but largely remained within mild to moderate range rather than severe levels.

Linked to quantitative findings, these qualitative results help explain why there were higher levels of depression and anxiety among participants with frequent or unstructured social media use. They thus suggest that passive use patterns may be driving these outcomes, while active, socially engaging use may mitigate them.

On exposure to affirming versus harmful content, participants consistently described social media as a space containing both affirming and harmful content, with each exerting contrasting effects on mental wellbeing. Exposure to affirming content such as inclusive messaging, positive representation of SGM identities and supportive peer interactions was associated with feelings of belonging, reassurance and emotional comfort. These experiences appeared to buffer some of the negative psychological impacts of minority stress. On the other hand, frequent exposure to harmful content, including discriminatory messages, cyberbullying, invalidation and anti-SGM narratives, contributed to emotional distress, fear, sadness and internalized stigma.

Linked to quantitative findings, these results explain the variation in mental health outcomes (that is, the differing levels of anxiety, stress and depressive symptoms) observed. This can be attributed to differences in content exposure whereby, participants exposed to supportive environments reported better well-being, while those subjected to hostility reported higher levels of emotional and psychological distress.

On the intensity and duration of social media use, findings showed that the intensity and duration of social media use played an important role in shaping mental health outcomes. Participants who reported prolonged daily use or repeated checking of social media platforms described symptoms such as mental fatigue, disrupted sleep, emotional overwhelm, and difficulty disengaging from online experiences. Extended exposure appeared to amplify both positive and negative emotional experiences, often intensifying stress and anxiety over time. At the same time, some participants acknowledged relying heavily on social media as a coping mechanism, suggesting a complex relationship in which frequent use both supported and strained mental wellbeing. This helps explain the near absence of participants reporting no mental health effects (0.7%), indicating that social media has some measurable psychological impact on nearly all respondents.

Overall, the qualitative findings converge with the quantitative evidence by demonstrating that social media exerts a substantial but nuanced influence on mental health among SGM students. While social media offered

opportunities for connection and affirmation, patterns of passive use, exposure to harmful content and prolonged engagement contributed to widespread experiences of mild to moderate depression, anxiety and stress. This convergence highlights the dual role of social media as both a psychosocial resource and a source of emotional vulnerability.

4.3 Inferential Statistics

To establish the influence of social medial use on overall mental health outcomes, as guided by a null hypothesis that there that there is no significant relationship between social media use patterns and mental health outcomes of Sexual and Gender Minority students in universities in Western Kenya, initial analysis involved cross tabulating frequency of social media use against the three constructs and the overall mental health outcomes (Tables 9,10,11 and 12).

Table 9: Influence of Frequency of Media Use on Depressive Symptoms

Frequency	No effect	Mild Effect	Moderate effects	Severe Effect	Mean	SD
Several times daily	8 (13.6%)	31 (52.5%	18 (30.5%)	2 (3.4%)	1.5	0.8
Daily	3 (5.3%)	32 (56.1%)	21 (36.8%)	1 (1.8%)	1.8	0.8
Weekly	2 (10.5%)	9 (47.4%)	8 (42.1%)	0 (0.0%)	1.9	0.9
Rarely	0 (0.0%)	4 (57.1%)	3 (42.9%)	0 (0.0%)	1.3	0.6

Table 10: Influence of Frequency of Media Use on Anxiety Symptoms

Frequency	No effect	Mild Effect	Moderate effects	Severe Effect	Mean	SD
Several times daily	7 (11.9%)	28 (47.5%)	20 (33.8%)	4 (6.8%)	1.4	0.8
Daily	6 (10.5%)	29 (50.9%)	18 (31.6%)	4 (7.0%)	1.4	0.8
Weekly	1 (5.3%)	10 (52.6%)	6 (31.6%)	2 (10.5%)	1.5	0.8
Rarely	0 (0.0%)	2 (28.6%)	5 (71.4%)	0 (0.0%)	1.7	0.5

Table 11: Influence of Frequency of Media Use on Perceived Stress

Frequency	No effect	Mild Effect	Moderate effects	Severe Effect	Mean	SD
Several times daily	1 (1.7%)	12 (20.3%)	46 (78.0%)	0 (0.0%)	1.8	0.5
Daily	0 (0.0%)	14 (24.6%)	41 (71.9%)	2 (3.5%)	1.9	0.5
Weekly	0 (0.0%)	0 (0.0%)	19 (100.0%)	0 (0.0%)	2.0	0.0
Rarely	0 (0.0%)	0 (0.0%)	7 (100.0%)	0 (0.0%)	2.0	0.0

Table 12: Influence of Frequency of Media Use on Overall Mental Health Outcomes

Frequency	No effect	Mild Effect	Moderate effect	Severe Effect	Mean	SD
Several times daily	1 (1.7%)	30 (50.8%)	28 (47.5%)	0 (0.0%)	1.5	0.5
Daily	0 (0.0%)	29 (50.9%)	28 (49.1%)	0 (0.0%)	1.5	0.5
Weekly	0 (0.0%)	10 (52.6%)	9 (47.4%)	0 (0.0%)	1.5	0.5
Rarely	0 (0.0%)	1 (14.3%)	6 (85.7%)	0 (0.0%)	1.9	0.4

From the findings in Table 9, it is evident that except for rare use of social media, the frequency of social media use had mild to moderate effect on depressive symptoms (means ranging from 1.5 to 1.9). In terms of anxiety disorders, the results in Table10 reveal that while the use of social media on weekly basis or rarely had an average moderate effect (mean of 1.5 and 1.7) on anxiety disorders, the use of social media several times daily and daily (mean 1.4 respectively) had mild effect. On perceived stress, the findings in Table 11 show that all levels of the frequency of social media use (from rarely to several times daily) had moderate effect on perceived stress (mean ranging from 1.8 to 2.0).

To establish the relationship between patterns of social media use and mental health outcomes of SGM students in universities in Western Kenya, a multiple linear regression was performed based on the overall mental health outcomes as the dependent variable (outcome) and frequency of using social media, hours spent on social media and purpose of use of social media as the independent variables.

The F-ratio in the ANOVA Table 13 shows that the independent variables (frequency of using social media, hours spent on social media and purpose of use of social media) statistically significantly predicts the dependent variable (mental health outcomes), $F(3, 138) = 4.33$, $p < .0005$ (that is, the regression model is a good fit of the data).

Table 13: ANOVA Results

	Sum of Squares	Df	Mean Square	F	Sig
Regression	3.228	3	1.076	4.33	0.006
Residual	34.224	138	0.248		
Total	37.493	141			

The findings in Table 13 reveal that for every increased frequency on the use of social media there is an increase of 0.135 in the severity of mental health outcomes, as for hours spent on social media, there is an increase of 0.194 in the severity of mental health outcomes, while for purpose of use of social media, there is an increase of 0.056 in the severity of mental health outcomes as presented in Table 14.

Table 14: Estimated Coefficients

Model	Unstandardized coefficients		Standardized coefficients			95.0% Confidence interval for B	
	B	Std Error	Beta	T	Sig	Lower bound	Upper bound
Constant	0.515	0.312		1.648	0.102	-0.103	1.133
Frequency of using social media	0.135	0.054	0.222	2.487	0.014	0.028	0.242
Hours spent on social media	0.194	0.058	0.296	3.338	0.001	0.079	0.308
Purpose of use of social media	0.056	0.063	0.077	0.895	0.372	-0.068	0.180

The coefficients are statistically significant for frequency on the use of social media and hours spent on social media. Therefore, frequency on the use of social media and hours spent on social media are significant predictors of overall mental health outcomes of SGM students in universities in Western Kenya. The null hypothesis that there is no significant relationship between social media use patterns and mental health outcomes of Sexual and Gender Minority students in universities in Western Kenya is therefore rejected.

5. Conclusion and Recommendations

5.1 Conclusion

Based on the study's findings, majority of the respondents reported mild to moderate mental health outcomes across depression, anxiety and stress measures (PHQ-9, GAD-7 and PSS-10). This is an indication of relative resilience compared to severe clinical levels but still indicates a significant burden of psychological distress. The findings also showed that the frequency of social media use and hours spent on social media were significant predictors of overall mental health outcomes of SGM students in universities in Western Kenya. While social media offers emotional support and community belonging, it also exposes SGM students to homophobic encounters such as discrimination and cyberbullying, which may affect their mental health negatively.

5.2 Recommendations

Based on these findings, the study recommends that:

1. University counselling centres should develop SGM-sensitive mental health support services by training counsellors in affirmative and culturally responsive care. Mental health programming should include targeted interventions addressing identity-related stress, minority stress and healthy social media engagement.
2. Further, mental health practitioners should implement digital mental health literacy programs, equipping students with skills to manage harmful online interactions and reduce anxiety.
3. It is also recommended that institutions collaborate with student organizations to promote positive and affirming online content, reducing exposure to harmful narratives.
4. Future longitudinal studies are also recommended to establish causal relationships and evaluate interventions that promote positive online engagement.

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