

FILTERING REALITY: THE IMPACT OF PATTERNS OF INSTAGRAM'S USE ON PSYCHO-SOCIAL WELL-BEING OF UNDERGRADUATE STUDENTS AT BOMET UNIVERSITY COLLEGE

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Abstract

In the age of digital connectivity, Instagram has evolved into a dynamic social media platform, seamlessly blending visual content with interpersonal interactions. The research recognizes the far-reaching impact of Instagram across diverse domains such as education, health, business and e-commerce, entertainment and media, non-profit endeavors, and social causes, and the role of the platform as a visual-centric space for crafting and sharing realities. However, the phenomenon of "Filtering Reality" through Instagram's curation tools prompted a systematic exploration to address a gap specifically focusing on the impact of patterns of Instagram's use on psychosocial well-being among undergraduate students at Bomet University College. The research questions were addressed through a systematic review of relevant literature, including how frequency, duration, and types of content engagement in specific patterns of Instagram use impact student's psycho-social well-being. The paper addressed ways the curated online personas resulting from distinct patterns of Instagram use contribute to the formation or alteration of self-perception, social relationships, and emotional well-being. To provide a conceptual lens the study employed the Uses and Gratifications Theory (UGT) concerned with what individuals derive from using a medium and how they use it. The methodology adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) where a systematic search of Web of Science and Scopus identified 356 records, from which 85 manuscripts were selected after screening titles and abstracts, focusing on the relationship between Instagram use and mental health indicators. Snowballing was then conducted, yielding 20 additional articles, resulting in a total of 77 manuscripts included in the review, examining the association between Instagram usage patterns and mental health, as well as key psychosocial variables contributing to this association. The study holds significance for both academic and practical domains, offering insights that can inform interventions, policies, and educational strategies to promote a healthier online environment for students. Acknowledging the scope and limitations inherent in any research endeavor, the paper concludes by highlighting avenues for future research; exploration of positive effects, and cultural variations in Instagram use particularly focusing on the undergraduate demographic.

Keywords: *Instagram, patterns, psychosocial well-being, undergraduate students*

Introduction

Concept of Psychosocial Well-being

Psychosocial well-being considers both psychological and social dimensions, collectively shaping an individual's mental, social, and emotional state (Keyes, 2002; Ryff, 1989). It extends beyond the mere absence of mental illness, embracing positive elements like life satisfaction, positive emotions, and a sense of purpose (Diener, 1984; Ryan & Deci, 2001). The research delves into an exploration of how specific patterns of Instagram usage may influence the psychosocial well-being of undergraduate students at the university. This understanding becomes particularly vital in the digital age, where social media platforms significantly influence social interactions and mental health outcomes (Primack et al., 2017; Twenge & Campbell, 2018).

Evolution of Instagram in the Digital Era

In the contemporary age of digital connectivity, social media platforms have revolutionized global communication, transforming the way individuals interact and engage with the world across various aspects of life (Kaplan and Haenlein, 2010; Nouri et al., 2022). Projections

indicate approximately 4.41 billion individuals worldwide will be using social media by 2025 (Statista, 2021). Social media has played a transformative role in shaping daily routines, influencing how friendships are formed, communicating, availing and offering services, promoting products, accessing and sharing news, and participating in political endeavors (Greenwood and Gopal, 2015; Kapoor et al., 2018; Rejeb, A., Rejeb, K., Abdollahi, A., & Treiblmaier, H. 2022).

Among these social media platforms, Instagram, launched in 2010, has emerged as a prominent player. Functioning as a photo and video-sharing platform, Instagram has rapidly gained popularity, boasting an impressive one billion monthly active users who spend an average of 30 minutes per day on the platform (Zara, 2021; Statista, 2021; Anderson and Jiang, 2018) and 500 million daily active users (Dean, 2021; Hu, Y., Manikonda, L., & Kambhampati, S., 2014). Instagram's unique appeal lies in its focus on visual content, primarily images and videos, complemented by textual captions. Users can interact with shared content through actions such as liking, sharing, or commenting, fostering a dynamic and interactive community (Turner & Lefevre, 2017). This platform has transcended traditional communication to offer users an experience, that encompasses both personal expression and engagement with a global audience.

Academics explore a diverse range of perspectives regarding the utilization of Instagram, delving into fields such as business, management, and marketing, as well as its application across various industries like tourism and food (Apiraksattayakul et al., 2017; Phua et al., 2020; Yilmazdoğan et al., 2021). Another area of investigation involves examining the psychological dimensions of Instagram users, encompassing aspects such as loneliness, happiness, anxiety, communication, and various personality traits (Mackson et al., 2019; Ponnusamy et al., 2020). Furthermore, scholars have directed their attention to the social and health-related issues affecting Instagram users, such as social comparison, addictions, and suicidal ideation (Barron et al., 2021). The transformative impact of Instagram on healthcare is a subject of study, exploring how the platform facilitates changes in this sector (Boulos et al., 2016; Wong et al., 2019; Yakar et al., 2020). Research has delved into security and privacy concerns arising from Instagram use, with ongoing investigations examining these aspects (Choi and Sung, 2018; Han et al., 2018; Soumelidou and Tsohou, 2019). As Instagram continues to shape the digital landscape, understanding its dynamics becomes crucial. This introduction sets the stage for exploration into how specific patterns of Instagram use may impact the psychosocial well-being of undergraduate students.

Instagram Usage Patterns: Unravelling Dynamics

Based on findings from the Pew Research Center (2019), the research underscores the increased attractiveness of social media platforms among adolescents and young adults in the United States of America. Notably, Instagram and Snapchat exhibit particularly high usage rates, with 67% and 62% of individuals aged 18 to 29 engaging with these platforms, respectively. Moreover, the investigation revealed that a substantial proportion of Instagram users within this age cohort, specifically 76%, access the site daily, with 60% doing so multiple times throughout the day. These usage patterns closely mirror those identified in the Centre's 2018 study (Andrew & Monica, 2019). In the UK, where 91% of 16–24-year-olds have at least one social media account, the average daily social media use is three hours (Salim, 2019). The GeoPoll Report (2023) and Statista (2021) reveal a steady rise in social media users in Africa, surpassing 384 million by 2022. Instagram stands out as the preferred

platform for visual content dissemination, with 54% active user engagement. Notably, 62% use Instagram for creative exploration and staying updated on trends, while 61% follow influencers and celebrities, and 59% actively participate by sharing their visual content (GeoPoll Report, 2023; Statista, 2021; Salim, 2019).

In 2019, research conducted by USIU-Africa highlighted the widespread prevalence of social media consumption in Kenya, with WhatsApp leading at 89%. Instagram secured its place with a 37.3% adoption rate, and age demographics revealed a shift in the most active group from 26-35 in 2019 to 21-25 in 2020. The usage pattern showed a predominance of males at 60.9%, who spent more time online than their female counterparts ((Wamuyu, 2020)). Regarding daily time allocation on social media, a substantial majority of Kenyan users dedicate more than one hour per day to various platforms. Specifically, 28% of users spend over two hours daily, with variations observed across platforms: 30% for WhatsApp, 21% for YouTube, 9% for Instagram, and 20% for Vimeo users. Additionally, a notable proportion of users surpassing the two-hour threshold includes 60% for WhatsApp, 46% for Facebook, 29% for YouTube, and 17% for Instagram. Surprisingly, LinkedIn, primarily used for professional purposes, records 43% of users spending less than thirty minutes daily (Mahmoudi, Yaakub, & Bakar, 2018). Noteworthy findings from the study revealed that the youth demographic, comprising 40.3% aged 21-25, dedicates a substantial amount of nocturnal hours to social media. In contrast, individuals in the 36-45 age group exhibit increased social media activity during morning hours (Wamuyu, 2020).

In the context of social media usage frequency in Kenya, a predominant trend emerges wherein the majority of users actively engage with multiple platforms daily. According to Mahmoodi, Yaakub, and Bakar (2018), WhatsApp leads with a staggering 91% of users accessing the platform daily, while 8% engage weekly, and 1% with lesser frequency. Facebook exhibits a daily usage rate of 77%, with 19% of users accessing it weekly, and 4% less frequently. YouTube maintains a daily visitation rate of 67%, accompanied by 28% of users utilizing the platform a few days a week, and 6% engaging less often. Twitter, with a daily engagement rate of 68%, witnesses the majority of users visiting daily, while 26% engage a few days a week, and 6% less frequently. Instagram mirrors these usage patterns, with 67% of users accessing it daily, 26% engaging a few days a week, and 6% utilizing it less frequently (Wamuyu, P.K., 2020). This breakdown provides an overview of the regularity of social media usage across different platforms within Kenya.

Researchers such as Wang and Wang (2019) have also examined Instagram, revealing a diverse spectrum of usage patterns ranging from passive scrolling to active engagement which accommodate individual motivations encompassing self-expression, creativity, social interaction, and information acquisition. The question arises: do these usage patterns significantly impact the psychosocial well-being of undergraduate students? The USIU-Africa 2019 report delves into the various motivations propelling social media engagement in Kenya, aligning with established patterns elucidated by Wang and Wang (2019). Six principal motivations were identified; information acquisition, entertainment, social interactions, personal identity, taking a mental break from work, and escaping societal realities. Instagram, the preference of 22.7% of Kenyan users, distinguishes itself by facilitating social interactions, with 25.7% of users seeking personal entertainment. Motivations related to personal identity constitute 15.7%, while 18.8% utilize the platform for information acquisition. Moreover, 8.4% use the avenue to escape societal realities, and

15.7% for a mental break from work. In information acquisition, 18.8% of users seek news, and knowledge through the platform (Wamuyu, 2020). The captivating influence of Instagram usage patterns and their impact on the psychosocial well-being of university students lacks comprehensive conceptualization, a knowledge gap this study addresses and bridges.

Objective of the Study

To explore the relationship between Instagram usage patterns and the psycho-social well-being of undergraduate students.

Research Questions

In what ways do Instagram usage patterns influence the psycho-social well-being of undergraduate students?

Limitation

The scope of the study was confined to analyzing Instagram usage patterns, focusing exclusively on this platform amidst various social networking sites. Furthermore, the research was constrained to examining the psychosocial well-being of undergraduate students

Literature Review

Instagram Usage Patterns and Mental Well-being

Instagram is a platform that provides various gratifications, including self-expression and entertainment, as discussed earlier (Wamuyu, P.K., 2020; Wang & Wang, 2019). However, research by Longobardi et al. (2020) and Engeln et al. (2020) has unveiled correlations between Instagram use and adverse outcomes, such as body dissatisfaction, low self-esteem, and compromised psychological well-being. Empirical evidence establishes a connection between the frequency and patterns of Instagram use and diverse mental health issues among both males and females, including negative mood, depressive symptoms, loneliness, and anxiety about appearance (Brown & Tiggemann, 2016; Lamp et al., 2019; Sherlock & Wagstaff, 2018).

Significantly, prolonged Instagram use has been linked to lower levels of mental well-being (Schmuck et al., 2019) and elevated scores on various psychological disorders, including eating disorders, depression, social anxiety, general anxiety, and problematic alcohol use (Ceballos et al., 2018; Griffiths et al., 2018; Yurdagül et al., 2019). It is noteworthy that some studies present divergent findings that social media use could be beneficial to the individual (Brailovskaia & Margraf, 2018; Vannucci et al., 2018; Gonzalez & Hancock, 2011). However, it is worth noting that Gonzalez and Hancock (2011) focused on Facebook.

The investigation conducted by Sherlock and Wagstaff (2019) emphasized that the frequency of Instagram use is linked to depressive symptoms, self-esteem, general and physical appearance anxiety, and body dissatisfaction. Moreover, their research illuminated that the association between Instagram use and each of these variables is contingent upon an individual's social comparison orientation. In the latter segment of their study, participants were exposed to diverse Instagram images related to beauty, fitness, travel, or a control condition with no images. The study found that beauty and fitness images significantly reduced participants' self-rated attractiveness, and the magnitude of this reduction correlated with heightened levels of anxiety, depressive symptoms, self-esteem issues, and increased

body dissatisfaction. Consequently, the findings suggest that excessive Instagram use may contribute to negative psychological outcomes and a diminished perception of one's appearance (Sherlock & Wagstaff, 2019).

The mere raw time spent on Instagram does not necessarily lead to unilateral harm, as indicated by Ophir, Y., Lipshits-Braziler, Y., & Rosenberg, H. (2019). It is how individuals engage with the application that significantly influences their mental health, underscoring the addictive nature of Instagram as a contributing factor to its problematic effects (Odgers & Jensen, 2020). Steinsbekk et al. (2021) further explored the psychological dimensions of social media, highlighting the relationship between digital imagery and self-perception. Their study delved into how carefully curated images can elicit both inspiration and discontent, shedding light on how the aesthetics of Instagram influence individuals' mental processes. In a separate investigation, Moon et al. (2016) discovered that Instagram users tend to experience higher levels of anxiety and depression compared to non-users, with excessive use contributing to negative psychological consequences.

Researchers have underscored that Instagram users engage in meticulous curation of personal photos, utilizing various filtering and editing tools to manage their self-presentation. Correlational studies have established a connection between Instagram use and various body image concerns (Cohen, Newton-John, & Slater, 2017; Fardouly, Diedrichs, Diedrichs, Vartanian, & Halliwell, 2015; Feltman & Szymanski, 2018; Hendrickse et al., 2017). Although longitudinal evidence is currently limited, initial experimental research has indicated that exposure to idealized Instagram images, including those depicting attractive peers and celebrities, adversely affects body image and subsequently mental well-being (Brown & Tiggemann, 2016; Brown & Tiggemann, 2020).

In the research conducted by Fardouly et al. (2020), it was determined that users of visually-focused social media platforms, including YouTube and Instagram, exhibited greater concerns regarding their body image compared to individuals who did not use social media (Moreton, L., & Greenfield, S., 2022). Additionally, Engeln et al. (2020) concluded that undergraduate women who utilized Instagram experienced higher levels of body dissatisfaction and increased negative effects when compared to those who used Facebook. Boursier, V., Gioia, F., & Griffiths, M. D. (2020), established that users with elevated levels of body surveillance and appearance anxiety were more inclined to post self-images on social media, seeking positive feedback from peers to enhance their confidence. Furthermore, Gioia et al. (2023) concluded that male adolescents were more likely than females to edit photos and alter their body image to achieve an ideal appearance for social media. This observation suggests that platforms centered around visual content, such as photo-based social media, might have more adverse effects on the mental well-being of users when contrasted with text-based platforms, aligning with the assumptions of the present study.

In a qualitative inquiry conducted by Chatzopoulou (2020), the involvement of young men in the Instagram fitness community was explored. The study revealed that individuals with lower self-esteem showed a heightened inclination to alter their bodies to align with the idealized physique portrayed on Instagram. Furthermore, users conveyed hesitancy in sharing self-images if they perceived their bodies as not meeting the proposed ideal (Chatzopoulou, 2020). Additionally, an association was found between the duration spent editing photos following exposure to images of slender women on Instagram and the desire to enhance one's

appearance beyond real-life standards implying an internalization of the thin ideal (Tiggemann, Anderberg, & Brown, 2020).

Instagram Use and Social Well-being

In the intersection of psychological well-being and social connectivity, the literature review points out the intricate pathways through which Instagram use influences users' sense of belonging and community engagement. Findings reveal that while the platform has the potential to enhance feelings of connection, it can also amplify feelings of isolation, especially when engagement arises from a sense of obligation rather than genuine connection underscoring the diverse role of Instagram in shaping users' social landscapes (Park, N., Kee, K.F., & Valenzuela, S., 2009).

The pursuit of online popularity and engagement in social comparison on Instagram, as highlighted by Sherlock and Wagstaff (2019), correlates with heightened social anxiety, concerns about body image, and diminished self-esteem across various age groups. The visual-centric nature of Instagram creates opportunities for upward social comparisons, where individuals measure themselves against others perceived as superior. This may contribute to feelings of loneliness and reduced self-esteem, impacting social interactions (Sherlock & Wagstaff, 2019). Scholarly studies by Faelens et al. (2021) and Boursier et al. (2020) also underscored how this visual-centric aspect amplifies opportunities for social comparisons, shaping users' self-perceptions of others.

In the realm of the social landscape, Wamuyu, P. K. (2020), contended that online harassment poses a significant challenge affecting individuals, including high-profile personalities. In response, some individuals opt to deactivate their social media profiles as a means to evade harassment. Categorizations are "less severe" forms of online harassment, encompassing abusive behavior, offensive name-calling, impersonation, and purposeful embarrassment. A noteworthy percentage of social media users, particularly those aged 21-25 (40%) and 26-35 (32%) years old, have personally encountered these "less severe" forms of online harassment indicating a disproportionately high rate of online harassment among younger adults (Wamuyu, P. K. (2020).

The USIU 2019 report further classifies "more severe" types of online harassment, including physical threats, stalking, sustained harassment, and sexual harassment on social media, which often have distressing real-world consequences for victims (Kimotho, S. G., & Nyaga, R. N., 2016). social media users aged 21-25, 38.4% have personally experienced these "more severe" forms of online harassment, followed by 26–35-year-olds at 33.6%, 36–45-year-olds at 12.4%-, and 14–20-year-olds at 11% (Kimotho, S. G., & Nyaga, R. N., 2016). The use of pseudonyms for anonymity exacerbates this issue, leading to negative online behaviors, particularly against women. Perpetrators may engage in trolling, flaming, lurking, and deception, as the use of pseudonyms reduces accountability for the consequences of their actions (Wamuyu, P. K., 2020).

Notably, a report from the UK Royal Society for Public Health ranks Instagram as a concerning social media platform regarding the mental health and overall well-being of young individuals, placing it below YouTube, Snapchat, and Facebook (MacMillan, 2017). The report identified Instagram as the least favorable social media network for mental health and well-being based, on a survey of almost 1,500 teens and young adults. While the photo-

based platform received acknowledgment for facilitating self-expression and self-identity, it was also associated with elevated levels of anxiety, depression, bullying, and the "fear of missing out" (FOMO). It was imperative to assess Instagram's impact on psycho-social well-being, among the younger demographic, and get an understanding of how the platform's features and user behaviors can enhance and diminish users' sense of connection and belonging.

Theoretical Framework

The study was guided by the Uses and Gratifications Theory (UGT), developed in the early 1940s by Katz and Blumler (1974). UGT offers insights into individuals' motivations for selecting specific media, the underlying needs propelling its use, and the gratifications derived from consuming it (Yang et al., 2021). According to this theory, individuals actively seek gratification from their media consumption and consistently opt for media choices promising the most fulfilling outcomes. This theoretical framework delineates various needs that media can fulfill for individuals, including cognitive needs (knowledge, information, and facts), affective needs (emotional experiences, pleasure, and mood regulation), personal integrative needs (self-esteem and personal growth), social integrative needs (desire for social interaction), and tension-free needs (escapism and stress relief) (Katz and Blumler, 1974).

The applicability of UGT to this research is evident in the literature, where diverse motives for social media usage have been identified and supported by Pertegal et al. (2019) and in the earlier systematic exploration. While these motives are observed across various contexts, they are not exhaustive, as individuals may have other unique desired outcomes, context-specific. Additionally, researchers acknowledge that the salience of a motive may vary by platform, and distinct motives may emerge based on the affordances provided by platforms (Alhabash & Ma, 2017; Sheldon & Newman, 2019; Spiliotopoulos & Oakley, 2020). The significance of UGT to this study lies in its exploration of the dimensions of Instagram usage and its impact on the psychosocial well-being of university students, with a specific focus on their mental, emotional, and social aspects.

Methodology

The search was conducted per the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Shamseer et al., 2015). Initially, a systematic search was performed on Web of Science and Scopus, two major databases in the fields of social psychology and clinical psychology. The goal was to identify relevant studies examining the relationship between (a) Instagram use and (b) indicators of mental, emotional, and social well-being. The search employed terms such as "Instagram" AND, OR "well-being" OR "mental health" OR "psychological health" OR "emotional health. "In the subsequent step, the researcher screened the reference lists of selected manuscripts, along with reviews and meta-analyses related to Instagram use and mental health identified initially (snowballing). Eligibility criteria included: (1) the study being reported in English and published in a peer-reviewed journal, and (2) the study containing (a) a measure reflecting the intensity or patterns of Instagram use, and (b) an indicator of mental health, and/or (c) a key psychosocial variable contributing to this relationship.

During the initial search phase, 356 records were identified via Web of Science and Scopus. After eliminating duplicates, the titles and abstracts of 220 records were screened for

eligibility. Full copies of 122 articles were read, resulting in the inclusion of 85 manuscripts focusing on the relationship between Instagram use and mental health. Subsequently, snowballing was conducted based on the reference lists of selected manuscripts, along with reviews and meta-analyses identified during the first step. Following the screening process, 20 additional articles were identified and subjected to evaluation based on their titles and abstracts, following the removal of duplicate entries. In total, after both phases of screening, a comprehensive systematic review encompassing 77 manuscripts was conducted. This review focused on investigating the impact of Instagram usage patterns on the psycho-social well-being of undergraduate students at Bomet University College, providing a thorough analysis of the topic.

Conclusion

The research sought to uncover specific insights into how the patterns of Instagram usage impact the psycho-social well-being of undergraduate students. This included understanding the diverse ways in which frequency, duration, content consumption, and interaction patterns on Instagram affect the mental, emotional, and social well-being of students. By exploring these aspects, the study aimed to contribute knowledge regarding the relationship between Instagram use and the psycho-social well-being of the undergraduate demographic, thereby providing valuable insights for interventions and strategies to promote healthier social media habits and overall psychosocial well-being.

Recommendations

Educational institutions should provide counseling services specifically tailored to address the psychological and social challenges associated with social media use, offering valuable support to students facing related issues. Social media platforms are encouraged to implement features that actively promote positive engagement and contribute to users' well-being and mental health professionals to enhance access to mental health resources within the digital space. Students are urged to cultivate self-awareness regarding their motives for using Instagram which involves reflecting on individual goals and being conscious of the potential impact of online activities on mental and emotional well-being. To advance understanding in this field, further research is recommended to investigate cultural variations in Instagram use patterns and their distinct impact on psycho-social well-being. Additionally, there is a need to delve into the positive effects and benefits of social media engagement among undergraduate students, acknowledging and studying the potential advantages beyond the identified challenges.

References

1. Alhabash, S., & Ma, M. (2017). A tale of four platforms: Motivations and uses of Facebook, Twitter, Instagram, and Snapchat among college students. *Social Media Society*, 3. <https://doi.org/10.1177/2056305117691544>
2. Anderson, M., & Jiang, J. (2018). Teens, social media & Technology. *Pew Research Center*. Retrieved from <https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018>
3. Apiraksattayakul, C., Papagiannidis, S., & Alamanos, E. (2017). Shopping via Instagram: The influence of perceptions of value, benefits, and risks on purchase intentions.

- International Journal of Online Marketing (IJOM)*, 7(4), 1-20. <https://doi.org/10.4018/IJOM.2017100101>
4. Barron, A. M., Krumrei-Mancuso, E. J., & Harriger, J. A. (2021). The effects of fitspiration and self-compassion Instagram posts on body image and self-compassion in men and women. *Body Image*, 37, 14-27. <https://doi.org/10.1016/j.bodyim.2021.01.003>
 5. Boursier, V., Gioia, F., & Griffiths, M. D. (2020). Selfie engagement on social media: Pathological narcissism, positive expectation, and body objectification - Which is more influential? *Addictive Behaviors Reports*, 11, 100263. <https://doi.org/10.1016/j.abrep.2020.100263>
 6. Boursier, V., Gioia, F., & Griffiths, M. D. (2020). Do selfie expectancies and social appearance anxiety predict adolescents' problematic social media use? *Computers in Human Behavior*, 110, 106395.
 7. Brailovskaia, J., & Margraf, J. (2018). What does media use reveal about personality and mental health? An exploratory investigation among German students. *PloS One*, 13(1), e0191810.
 8. Brown, Z., & Tiggemann, M. (2016). Attractive celebrity and peer images on Instagram: Effect on women's mood and body image. *Body Image*, 19, 37-43. <https://doi.org/10.1016/j.bodyim.2016.08.007>.
 9. Brown, Z., & Tiggemann, M. (2020). A picture is worth a thousand words: The effect of viewing celebrity Instagram images with disclaimer and body-captions on women's body image. *Body Image*, 33, 190-198. <https://doi.org/10.1016/j.bodyim.2020.03.003>.
 10. Carter, N. M., De La Cruz, J. J., & Wrench, J. S. (2017). Investigating the relationships among college students' satisfaction, addiction, needs, communication apprehension, motives, and uses & gratifications with Snapchat. *Computers in Human Behavior*, 75, 870-875. <https://doi.org/10.1016/j.chb.2017.05.003>
 11. Ceballos, N. A., Howard, K., Dailey, S., Sharma, S., & Grimes, T. (2018). Collegiate binge drinking and social media use among Hispanics and non-Hispanics. *Journal of Studies on Alcohol and Drugs*, 79(6), 868-875.
 12. Chatzopoulou, E. (2020). Instagram and body image: Motivation to conform to the 'Instabod' and consequences on young male wellbeing. *Journal of Consumer Affairs*. <https://doi.org/10.1111/joca.12329>
 13. Choi, M., & Choung, H. (2021). Mediated communication matters during the COVID-19 pandemic: The use of interpersonal and personal media and psychological well-being. *Journal of Social and Personal Relationships*, 38(8), 2397-2418.
 14. Dean, B. (2021). Instagram Demographic Statistics: How Many People Use Instagram in 2021? Analyzing Instagram user growth and usage patterns in 2020.
 15. Dekkers, R., Carey, L., & Langhorne, P. (2022). Introduction. In *Making Literature Reviews Work: A Multidisciplinary Guide to Systematic Approaches*. Springer. https://doi.org/10.1007/978-3-030-90025-0_1
 16. Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542-575.
 17. Engeln, R., Loach, R., Imundo, M. N., & Zola, A. (2020). Compared to Facebook, Instagram use causes more appearance comparison and lower body satisfaction in college women. *Body Image*, 34, 38-45. <https://doi.org/10.1016/j.bodyim.2020.04.007>
 18. Evans, J.R., & Mathur, A. (2018). The value of online surveys: a look back and a look ahead. *Internet Research*, 28(4), 854-887. <https://doi.org/10.1108/IntR-03-2018-0089>
 19. Faelens, L., Hoorelbeke, K., Cambier, R., van Put, J., Van de Putte, E., De Raedt, R., & Koster, E. H. W. (2021). The relationship between Instagram use and indicators of mental

- health: A systematic review. *Computers in Human Behavior Reports*, 4, 100121. <https://doi.org/10.1016/j.chbr.2021.100121>
20. Gehad Mohamed Tawfik, Kadek Agus Surya Dila, Muawia Yousif Fadlelmola Mohamed, Dao Ngoc Hien Tam, Nguyen Dang Kien, Ali Mahmoud Ahmed & Nguyen Tien Huy (2019). A step-by-step guide for conducting a systematic review and meta-analysis with simulation data. *Tropical Medicine and Health*, 47, 46. <https://doi.org/10.1186/s41182-019-0165-6>
 21. GeoPoll Report. (2023). Social Media Usage Trends in Africa. <https://www.geopoll.com/blog/social-media-usage-trends-in-africa-geopoll-report/>
 22. Gioia, F., McLean, S., Griffiths, M. D., & Boursier, V. (2023). Adolescents' selfie-taking and selfie-editing: A revision of the photo manipulation scale and a moderated mediation model. *Current Psychology*, 42(5), 3460–3476. <https://doi.org/10.1007/s12144-021-01702-x>
 23. Gonzales, A. L., & Hancock, J. T. (2011). Mirror, Mirror on my Facebook Wall: Effects of Exposure to Facebook on Self-Esteem. *Cyberpsychology, Behavior, and Social Networking*, 14(1-2), 79-83. <http://dx.doi.org/10.1089/cyber.2009.0411>
 24. Greenwood, B. N., & Gopal, A. (2015). Tigerblood: Newspapers, blogs, and the founding of information technology firms. *Information Systems Research*, 26(4), 812-828.
 25. Han, K., Jung, H., Jang, J. Y., & Lee, D. (2018). Understanding users' privacy attitudes through subjective and objective assessments: An Instagram case study. *Computer*, 51(6), 18-28.
 26. Hu, Y., Manikonda, L., & Kambhampati, S. (2014, May). What we Instagram: A first analysis of Instagram photo content and user types. *Proceedings of the International AAAI Conference on Web and Social Media*, 8(1), 595-598.
 27. Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.
 28. Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of communication by the individual. In J. G. Blumler & E. Katz (Eds.), *The Uses of Mass Communications: Current Perspectives on Gratifications Research* (pp. 19–32). Sage.
 29. Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207–222.
 30. Kimotho, S. G., & Nyaga, R. N. (2016). Digitized Ethnic Hate Speech: Understanding the Effects of Digital Media Hate Speech on Citizen Journalism in Kenya. *Advances in Language and Literary Studies*, 7(3), 189-200. doi: 10.7575/aac.all
 31. Kircaburun, K., Yurdagül, C., Emirtekin, E., Wang, P., & Griffiths, M. D. (2021). Psychopathological consequences related to problematic Instagram use among adolescents: The mediating role of body image dissatisfaction and moderating role of gender. *International Journal of Mental Health and Addiction*, 19, 1385-1397.
 32. Lamp, S. J., Cugle, A., Silverman, A. L., Thomas, M. T., Liss, M., & Erchull, M. J. (2019). Picture Perfect: The Relationship Between Selfie Behaviors, Self-Objectification, and Depressive Symptoms. *Sex Roles*, 81(11–12), 704–712. <https://doi.org/10.1007/s11199-019-01025-z>
 33. Lien Faelens, Kristof Hoorelbeke, Ruben Cambier, Jill van Put, Eowyn Van de Putte, Rudi De Raedt, Ernst H.W. Koster (2021). The relationship between Instagram use and indicators of mental health: A systematic review. *Computers in Human Behavior Reports*, 4, 100121. <https://doi.org/10.1016/j.chbr.2021.100121>

34. Lin, Y. H., Chang, L. R., Lee, Y. H., Tseng, H. W., Kuo, T. B. J., & Chen, S. H. (2020). Drivers and Outcomes of Instagram Addiction: Psychological Well-being as Moderator. *Computers in Human Behavior*, *107*, 106294. <https://doi.org/10.1016/j.chb.2020.106294>.
35. Longobardi, C., Settanni, M., Fabris, M. A., & Marengo, D. (2020). Follow or be followed: Exploring the links between Instagram popularity, social media addiction, cyber victimization, and subjective happiness in Italian adolescents. *Children and Youth Services Review*, *113*, 104955.
36. Mackson, S. B., Brochu, P. M., Schneider, B. (2019). Instagram: Friend or Foe? The Application's Association with Psychological Well-Being. *New Media & Society*, *21*(10), 2160-2182. Available at: https://nsuworks.nova.edu/cps_facarticles/1826
37. MacMillan, A. (2017). Why Instagram Is the Worst Social Media for Mental Health. Retrieved from <https://time.com/4793331/instagram-social-media-mental->
38. Mahmoudi, A., Yaakub, M. R. & Bakar, A. A. (2018). New time-based model to identify the influential users in online social networks. *Data Technologies and Applications*, *52*, pp. 278-290
39. Meshi, D., Cotten, S. R., & Bender, A. R. (2020). Problematic social media use and perceived social isolation in older adults: A cross-sectional study. *Gerontology*, *66*(2), 160-168.
40. Moon, J. H., Lee, E., Lee, J.-A., Choi, T. R., & Sung, Y. (2016). The role of narcissism in self-promotion on Instagram. *Personality and Individual Differences*, *101*, 22-25. <https://doi.org/10.1016/j.paid.2016.05.042>
41. Moreton, L., & Greenfield, S. (2022). University students' views on the impact of Instagram on mental wellbeing: A qualitative study. *BMC Psychology*. 10.1186/s40359-022-00743-6
42. MurrayStuart, B., & McLeanSiân, A. (2018). The contribution of social media to body dissatisfaction, eating disorder symptoms, and anabolic steroid use among sexual minority men. *Cyberpsychology, Behavior, and Social Networking*.
43. Nouri, A., Haemmerli, J., Lavé, A., Vayssiere, P., Constantine, P., Al-Awadhi, A., ... & Schaller, K. (2022). The current state of social media utilization in neurosurgery amongst European Association of Neurosurgical Societies (EANS) member countries. *Acta Neurochirurgica*, 1-9.
44. Odgers, C. L., & Jensen, M. R. (2020). Annual Research Review: Adolescent mental health in the digital age: Facts, fears, and future directions. *Journal of Child Psychology and Psychiatry*, *61*(3), 336-348. <https://doi.org/10.1111/jcpp.13190>
45. Ophir, Y., Lipshits-Braziler, Y., & Rosenberg, H. (2019). New-media screen time is not (necessarily) linked to depression: Comments on Twenge, Joiner, Rogers, and Martin (2018). *Clinical Psychological Science*, *8*(2), 374-378. <https://doi.org/10.1177/2167702619849412>.
46. Park, N., Kee, K.F. and Valenzuela, S. (2009), "Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes", *Cyberpsychology and Behavior*, *12*(6), pp. 729-733
47. Pertegal, M.-N., Oliva, A., & Rodríguez-Meirinhos, A. (2019). Development and validation of the Scale of Motives for Using Social Networking Sites (SMU- SNS) for adolescents and youths. *PLoS ONE*, *14*(12), e0225781. <https://doi.org/10.1371/journal.pone.0225781>
48. Phua, J., Jin, S.V. & Kim, J.H. (2020). Pro-veganism on Instagram: Effects of user-generated content (UGC) types and content generator types in Instagram-based health

- marketing communication about veganism. *Online Information Review*. DOI 10.1108/OIR-06-2019-0213
49. Primack, B. A., Shensa, A., Sidani, J. E., Whaite, E. O., Lin, L. Y., Colditz, J. B., ... & Colditz, J. B. (2017). Social media use and perceived social isolation among young adults in the U.S. *American Journal of Preventive Medicine*, 53(1), 1–8.
50. Regmi, P. R., Waithaka, E., Paudyal, A., Simkhada, P., & van Teijlingen, E. (2016). Guide to the design and application of online questionnaire surveys. *Nepal Journal of Epidemiology*, 6(4), 640–644. <https://doi.org/10.3126/nje.v6>
51. Rejeb, A., Rejeb, K., Abdollahi, A., & Treiblmaier, H. (2022). The big picture on Instagram research: Insights from a bibliometric analysis. *Telematics and Informatics*, 73, 101876. <https://doi.org/10.1016/j.tele.2022.101876>.
52. Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52, 141–166.
53. Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069–1081.
54. Samet, A. (2020). Analyzing Instagram user growth and usage patterns in 2020. *Business Insider*. www.businessinsider.in/ad.
55. Schmuck, D., Karsay, K., Matthes, J., & Stevic, A. (2019). “Looking Up and Feeling Down”: The influence of mobile social networking site use on upward social comparison, self-esteem, and well-being of adult smartphone users. *Telematics and Informatics*, 42, 101240.
56. Shamseer, L., Moher, D., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., Stewart, L. A., & PRISMA-P Group (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ (Clinical research ed.)*, 350, g7647. <https://doi.org/10.1136/bmj.g7647>.
57. Sheldon, P., & Newman, M. (2019). Instagram and American teens: Understanding motives for its use and relationship to excessive reassurance-seeking and interpersonal rejection. *The Journal of Social Media in Society*, 8(1), 1–16. www.thejsms.org/tsmri/inde.
58. Sherlock, M., & Wagstaff, D. L. (2019). Exploring the relationship between the frequency of Instagram use, exposure to idealized images, and psychological well-being in women. *Psychology of Popular Media Culture*, 8(4), 482–490. <https://doi.org/10.1037/ppm0000182>.
59. Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics*, 9(1), 4-11.
60. Soumelidou, A., & Tsohou, A. (2020). Effects of privacy policy visualization on users’ information privacy awareness level: The case of Instagram. *Information Technology & People*, 33(2), 502-534.
61. Spiliotopoulos, T., & Oakley, I. (2020). An exploration of motives and behavior across Facebook and Twitter. *Journal of Systems and Information Technology*, 22(2), 201-222.
62. Statista. (2021). Number of Global Social Network Users 2017-2025.
63. Steinsbekk, S., Wichstrøm, L., Stenseng, F., Nesi, J., Hygen, B. W., & Skalická, V. (2021). The impact of social media use on appearance self-esteem from childhood to adolescence – A 3-wave community study. *Computers in Human Behavior*, 114, 106528. <https://doi.org/10.1016/j.chb.2020.106528>.

64. Tawfik, G. M., Dila, K. A. S., Mohamed, M. Y. F., et al. (2019). A step-by-step guide for conducting a systematic review and meta-analysis with simulation data. *Tropical Medicine and Health*, 47, 46. doi.org/10.1186/s41182-019-01.
65. Tiggemann, M., Anderberg, I., & Brown, Z. (2020). Uploading your best self: Selfie editing and body dissatisfaction. *Body image*, 33, 175–182. <https://doi.org/10.1016/j.bodyim.2020.03.002>.
66. Turner, P. G., & Lefevre, C. E. (2017). Instagram use is linked to increased symptoms of orthorexia nervosa. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*, 22(2), 277-284.
67. Twenge, J. M., & Campbell, W. K. (2018). Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study. *Preventive Medicine Reports*, 12, 271–283.
68. Yakar, F., Jacobs, R., & Agarwal, N. (2020). The current usage of Instagram in neurosurgery. *Interdisciplinary Neurosurgery*, 19, 100553.
69. Yang, C.-C., Holden, S., & Ariati, J. (2021). Social Media and Psychological Well-Being Among Youth: The Multidimensional Model of Social Media Use. *Clinical Child and Family Psychology Review*, 24. <https://doi.org/10.1007/s10567-021-00359-z>.
70. Yılmazdoğan, O. C., Doğan, R. Ş., & Altıntaş, E. (2021). The impact of the source credibility of Instagram influencers on travel intention: The mediating role of parasocial interaction. *Journal of Vacation Marketing*, 27(3), 299-313. <https://doi.org/10.1177/1356766721995973>.
71. YouGov. (2019). The most popular social networks in the UK. <https://yougov.co.uk/ratings/technology/popularity/social-networks/all>.
72. Yurdagül, C., Kircaburun, K., Emirtekin, E., Wang, P., & Griffiths, M. D. (2021). Psychopathological consequences related to problematic Instagram use among adolescents: The mediating role of body image dissatisfaction and moderating role of gender. *International Journal of Mental Health and Addiction*, 19, 1385-1397.
73. Wamuyu, P. K. (2020). The Kenya social media landscape: Trends and emerging narratives. <https://www.usiu.ac.ke/assets/file/SIMElab>.
74. Wang, J.-L., Wang, H.-Z., Gaskin, J., & Hawk, S. (2017). The mediating roles of upward social comparison and self-esteem and the moderating role of social comparison orientation in the association between social networking site usage and subjective well-being. *Frontiers in Psychology*, 8. <https://doi.org/10.3389/fpsyg.2017.00771>.
75. Wong, X. L., Liu, R. C., & Sebaratnam, D. F. (2019). The evolving role of Instagram in #medicine. *Internal Medicine Journal*, 49(10), 1329-1332.
76. Vannucci, A., & McCauley Ohannessian, C. (2019). Social media use subgroups differentially predict psychosocial well-being during early adolescence. *Journal of Youth and Adolescence*, 48, 1469-1493.
77. Zara, A. (2021). How can we minimize Instagram's harmful effects? Retrieved from <https://www.apa.org/monitor/2022/03/feature-minimize-instagram->.