

ORIGINAL RESEARCH ARTICLE

Is there a relationship between social media user intensity and mental well-being? An exploratory study

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Abstract

Social media addiction has become a subject of concern, with significant consequences for mental well-being. This study assesses the relationship between abnormal social media usage and mental health outcomes like stress, anxiety, and depression. This study employed graphs to visually analyze the correlation between levels of user intensity and mental health indicators. The graphical representations reveal a strong connectivity between increased social media engagement and heightened mental health challenges. The findings underscore the need for targeted policies to enhance balanced social media usage to ameliorate its disastrous influences on mental well-being. This study provides invaluable insights for policymakers, mental health professionals, and educators in addressing the mental health risks connected with over-use of social media (*Afr J Reprod Health 2025; 29 [4]: 167-180*)

Keywords: mental health, social media usage, depression, stress

Résumé

L'addiction aux réseaux sociaux est devenue un sujet de préoccupation, avec des conséquences importantes sur le bien-être mental. Cette étude évalue le lien entre une utilisation anormale des réseaux sociaux et des problèmes de santé mentale tels que le stress, l'anxiété et la dépression. Elle a utilisé des graphiques pour analyser visuellement la corrélation entre l'intensité d'utilisation et les indicateurs de santé mentale. Les représentations graphiques révèlent un lien étroit entre une utilisation accrue des réseaux sociaux et l'aggravation des problèmes de santé mentale. Les résultats soulignent la nécessité de politiques ciblées pour favoriser une utilisation équilibrée des réseaux sociaux et atténuer leurs effets néfastes sur le bien-être mental. Cette étude fournit des informations précieuses aux décideurs politiques, aux professionnels de la santé mentale et aux éducateurs pour lutter contre les risques pour la santé mentale liés à la surutilisation des réseaux sociaux. (*Afr J Reprod Health 2025; 29 [4]: 167-180*).

Mots-clés: santé mentale, utilisation des réseaux sociaux, dépression, stress

Introduction

means of communication, sharing of information and interacting with one and others. Platforms like Facebook, Twitter, Instagram and TikTok have billions of users globally, offering unprecedented connectivity and access to the global community.¹ Meanwhile, as social media's influence continues to expand, its aftermath influence on mental health and overall well-being becomes subject of concern to scholars and policymakers. The nexus between social media usage and mental well-being is complex and complicated. On the one hand, these platforms provide valuable platforms for self-

expression, community building and access to support networks.² They permit individuals to establish connections with peers and family despite long distances, discover like-minded individuals, and engage in meaningful discussions on various topics. For many, social media serves as a source of entertainment, inspiration and even education³. On the other hand, unpleasant usage of social media has been connected to a series of mental health issues, such as low self-esteem, anxiety, loneliness, and depression⁴. The continuous observation of carefully curated highlight reels of others' lives can result into feelings of low self-esteem and social comparison.⁵ The anxiety of losing out could

motivate compulsive checking behavior, while the pressure to sustain a perfect online display could be emotionally draining.⁶ In addition, the addictive system of social media space, designed for maximization of user engagement, can bring about a decline in productivity, reduced face-to-face interactions, and sleep disturbances.⁷ The dispersal of misinformation, online harassment, and cyberbullying further complicate the landscape, potentially exacerbating mental health challenges for vulnerable individuals.⁸

As researchers explore deeper into how social media is connected with mental well-being, they are uncovering nuanced relationships that depend on various factors like personality traits, age, and patterns of use. For instance, studies suggest that passive consumption of content may be more detrimental to mental health than active engagement and content creation.⁹ The impact also varies across different age groups, with adolescents and young adults potentially being more susceptible to disastrous effects.¹⁰ The growing awareness of these issues has sparked discussions about digital well-being and responsible social media use. Tech companies are increasingly being called upon to implement features that promote healthier online behaviors, such as screen time management tools and content warnings.¹¹⁻¹³ Meanwhile, mental health professionals are developing strategies to help individuals navigate the digital space in such a manner that supports rather than undermines their well-being.¹⁴⁻¹⁶

As the world continues to contend with the influence of social media in our lives, it becomes clear that a balanced approach is necessary. Recognizing both the benefits and potential dangers of these platforms can help users make informed decisions about their online engagement. Developing digital literacy skills, practicing mindful usage, and maintaining a wholesome balance between offline and online activities are pertinent steps regarding harnessing the positive benefits of social media while ameliorating its disastrous impacts on mental health¹⁷⁻²⁰. This study expands the frontiers of knowledge by investigating the different scenarios in which social media influences mental well-being, examine the latest research findings and consider strategies for

promoting a healthier relationship with these powerful digital tools.

Methods

The study utilizes data obtained from reputable sources, such as Our World in Data and Statista²¹ which provide reliable and current information on global social media trends and mental health indicators. These platforms are widely recognized for their contributions to public access to statistical data on various topics, including technology use and health outcomes.^{21,22}

The study relied on data from Our World in Data and Statista²¹, two leading platforms that provide access to statistical insights on various topics, including social media trends, internet usage and mental health statistics. Our World in Data²¹ provided historical and cross-sectional data on mental health trends (e.g., depression, anxiety) and digital penetration across different countries. This platform has been instrumental in tracking societal trends over time.^{21,22}

On the other hand, Statista contributed figures on the daily time spent on social media, active users across various platforms, and other metrics that reflect addiction patterns, such as compulsive usage and behavioral impacts²². It also offered data on demographics, breaking down usage by age group, gender, and region. We engaged social media usage which refers to metrics such as the average time spent on social media platforms, the frequency of use and the number of social media platforms accessed per user²². Furthermore, we focused on social media addiction, defined as using recognized criteria such as compulsive checking of platforms, inability to reduce usage, and the experience of withdrawal symptoms²².

We focused on how these indicators impact mental health which was measured through self-reported indicators such as anxiety, depression, and stress levels, which are commonly assessed using tools like the GAD-7 and PHQ-9.²² Data included information on age, gender, and geographic location to enable analysis of how social media usage impacts different populations²². The descriptive statistics, involving summarizing the

data to understand general trends in social media use and mental health outcomes. The data was analysed using trend analysis. This comprises time series data on social media usage and mental health outcomes to identify changes over time. This helped to understand how the growing prevalence of social media use has influenced mental health trends²². The data were visually represented using various graphs, including bar charts. These figures helped illustrate key relationships and trends, offering a clearer interpretation of the statistical findings^{22,23}.

Ethical consideration

Ethical approval or consent to participate, not required, as the study made use of no human or animal subjects. The study made use of data from Our World in Data and Statista^{22,23}, which is publicly available online. Moreover, all findings were reported objectively, with no manipulation of the data to fit preconceived conclusions

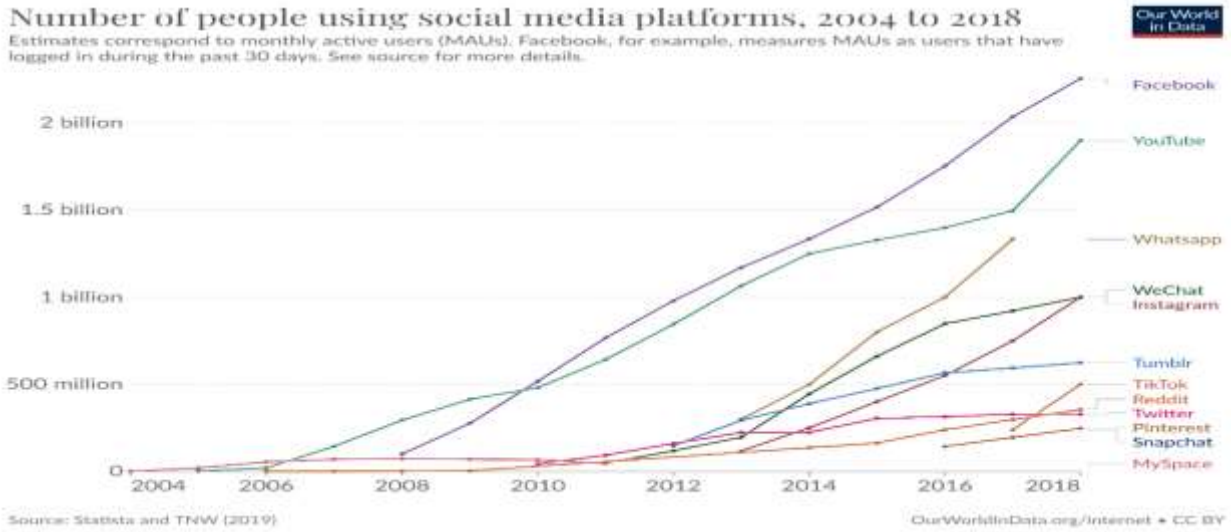
Results

The results are present in three different sub-themes. First it starts with the state of social media usage, which examines trends in social media engagement over time. Figure 1 shows the rise in social media users from 2004 to 2018. Figure 2 highlights changes in daily social media usage (minutes) between 2012 and 2023. Figure 3 breaks down average daily usage by age group and gender, offering insights into demographic differences. Furthermore, it presents the result on social media and mental health which explores how time spent on social media relates to mental well-being. Figure 4 presents data on social media and communication app usage, helping to analyze potential impacts on mental health. Lastly, it presents the results regarding handling anxiety and depression, which focuses on coping mechanisms and mental health impacts. Figure 5 illustrates global approaches to managing anxiety and depression. Figure 6 compares the estimated prevalence of mental illnesses with their actual burden, highlighting societal challenges.

The state of social media usage

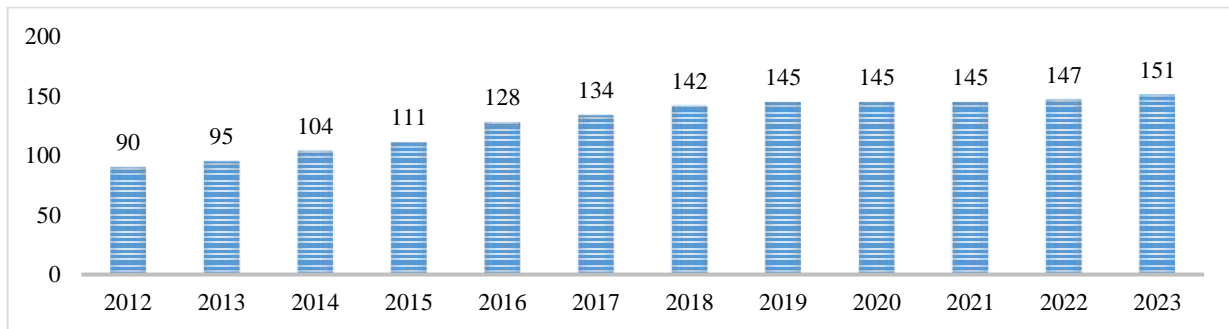
As presented in Figure 1, Facebook is the largest social media platform, accommodating 2.26 billion users, showing its extensive global reach. YouTube follows in second place with 1.9 billion users, reflecting the growing importance of video content in social media consumption. WhatsApp has 1.33 billion users, indicating the increasing role of messaging apps in the social media ecosystem. On the other hand, Instagram reports 1 billion users, which place proves increasing popularity of image-based networking.

Similarly, WeChat, with 1 billion users, remains a dominant player, particularly in China. TikTok has amassed 500 million users, showcasing its early growth trajectory in the short-form video content space. Other platforms such as Reddit (355 million users) and Twitter (329.5 million users) maintain substantial user bases, highlighting the continued relevance of text-based and discussion-focused social media. Additionally, Pinterest (246.5 million users) and Snapchat (238.65 million users) serve niche audiences, demonstrating the sustainability of specialized social media platforms. As presented in in Figure 2, it can be observed that there an upward trend in daily social media usage over the past decade. From 2012 to 2015, there was a consistent year-over-year increase, with average daily usage rising from 90 minutes in 2012 to 111 minutes in 2015, representing a 23.3% increase over four years. Between 2015 and 2018, the growth rate accelerated, with daily usage increasing to 128 minutes in 2016 (a 15.3% rise from the previous year) and reaching 142 minutes in 2018. From 2019 to 2021, daily usage plateaued at 145 minutes, indicating a period of stability with no significant change in usage. In 2022 and 2023, usage resumed its upward trend, increasing to 147 minutes in 2022 and 154 minutes in 2023. Over the entire period from 2012 to 2023, daily social media usage increased by 71.1%, from 90 minutes to 154 minutes. The fastest growth occurred between 2015 and 2016 (15.3%), while the slowest growth was observed from 2019 to 2021 (0% change). Figure 3 illustrates social media usage trends across different sex and age groups in 2023.



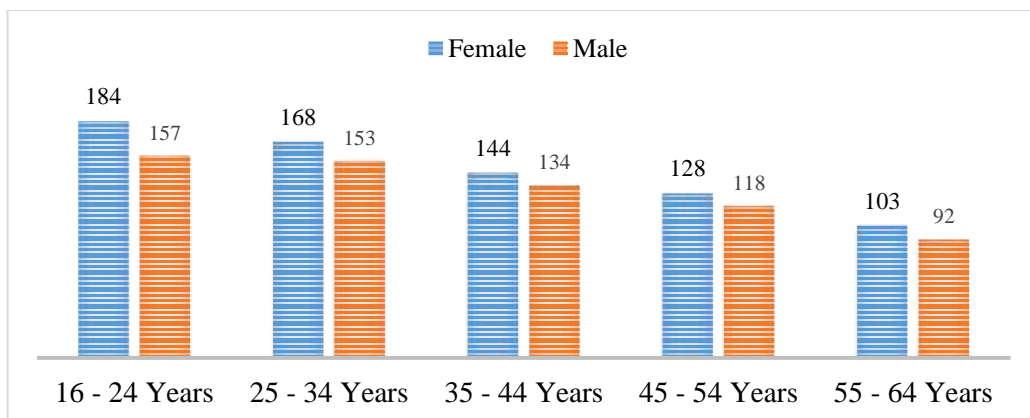
Source: Our word in Data²¹

Figure 1: Number of people using Social Media Platforms 2004-2018



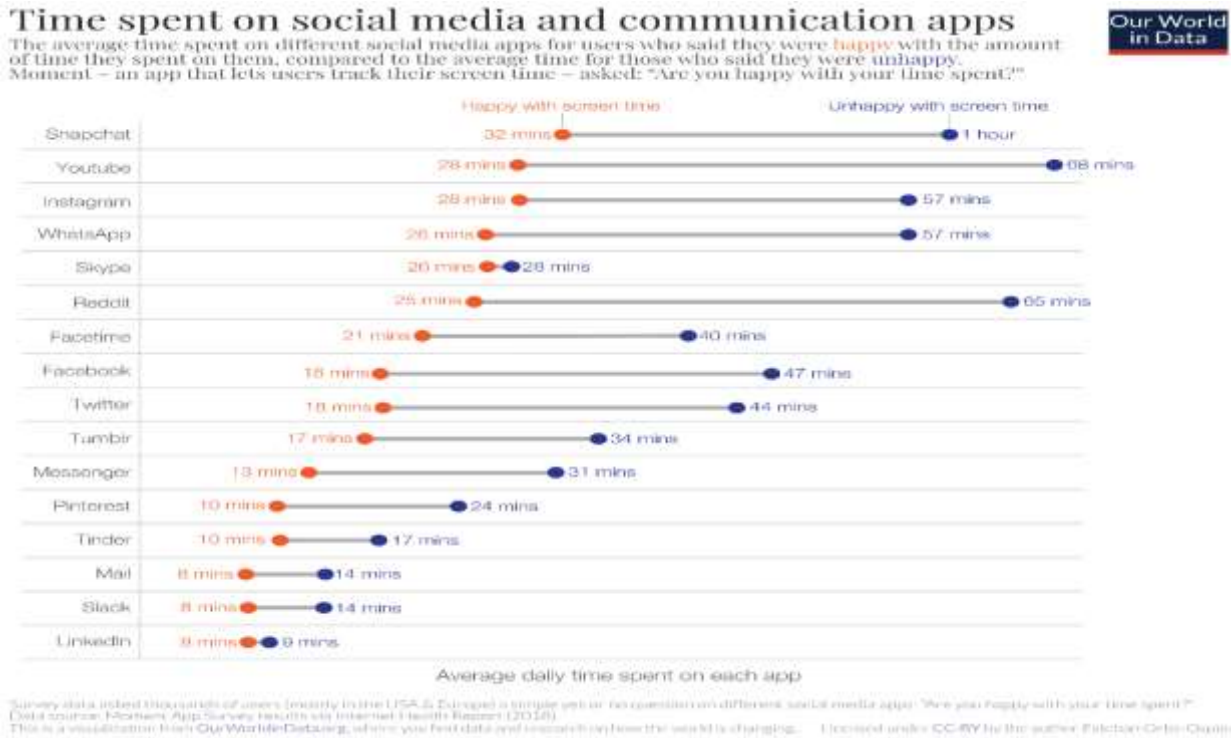
Source: Author’s using Statista report

Figure 2: Daily social media usage (minutes) 2012 – 2023



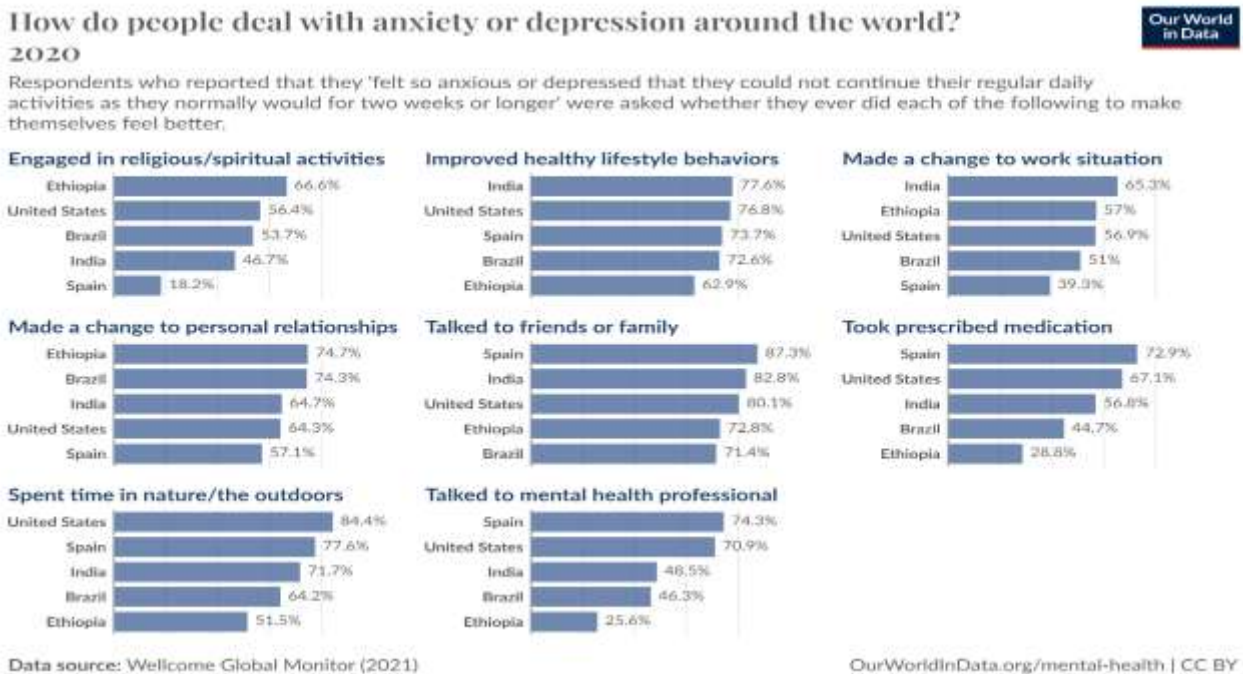
Source: Author’s using Statista report

Figure 3: Average time spent on social media per day by age group and gender



Source: Adopted from World In Data²¹

Figure 4: The amount of time spent on social media and communication apps



Source: Adopted from Wellcome Global Monitor in Our World in Data²³

Figure 5: How people deal with anxiety or depression around the world

The data indicates a consistent decline in social media use with age for both sexes. The youngest group (16-24 years) spends the most time, while the oldest group (55-64 years) spends the least. Across all age groups, females consistently spend more time on social media than males. The largest gender gap is observed in the youngest group, where females spend 27 minutes more per day than males (184 vs. 157 minutes). Although the gap decreases slightly in older age groups, it remains persistent.

The most significant drop in social media use occurs between the 16-24 and 25-34 age groups, particularly among females, who experience a 16-minute decline. This decrease may be linked to greater work and family responsibilities as individuals enter their late twenties and early thirties. The decline continues steadily across older age groups, with each subsequent group using social media approximately 20-25 minutes less per day than the previous one. This trend could reflect changing priorities, decreased free time, or a lower level of interest and familiarity with social media platforms among older individuals.

Despite the decline, even the 55-64 age group spends a substantial amount of time on social media daily (103 minutes for females and 92 minutes for males). This suggests that social media has become an integral part of daily life across all generations, not just among younger individuals. These findings highlight the need for further research into how social media impacts different life stages, particularly among younger individuals and females, who exhibit the highest usage. Understanding these patterns can inform policies and interventions to address the potential effects of social media on mental well-being across different demographics.

Social media and mental health

Figure 4 shows that users who report being unhappy with their social media and communication app usage tend to spend more time on these platforms than those who are happy with their usage. This trend is evident across most apps, with the largest differences observed for Snapchat, YouTube, Instagram, and WhatsApp.

Snapchat stands out as the app with the most significant gap in time spent. Happy users average 30 minutes, while unhappy users spend double that

time at 60 minutes. YouTube follows, with unhappy users spending 58 minutes compared to 28 minutes for happy users. Instagram and WhatsApp also show substantial gaps; unhappy users spend 57 minutes on Instagram compared to 28 minutes for happy users, while WhatsApp sees a difference of 26 minutes versus 57 minutes.

Other social media platforms, such as Facebook and Twitter, display moderate differences.

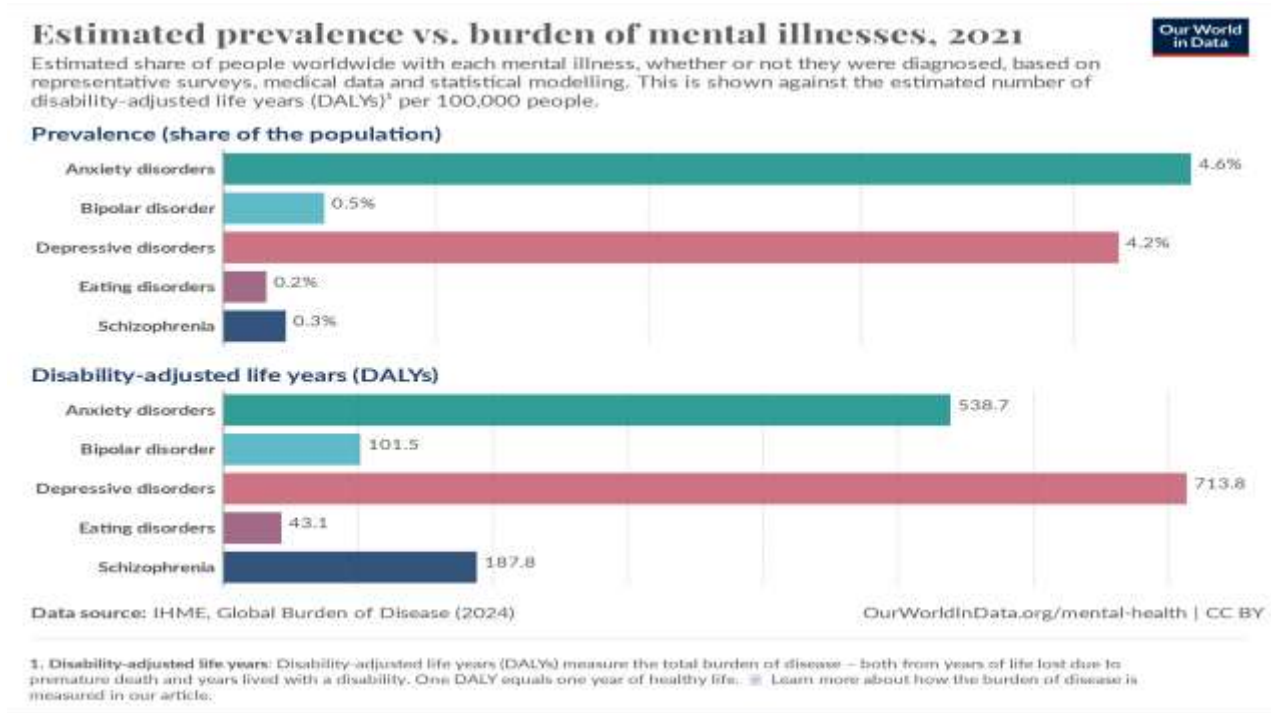
Unhappy users spend about twice as much time on these apps compared to happy users. This pattern suggests that excessive time on social media may contribute to dissatisfaction or that unhappy users find themselves spending more time on these platforms, possibly as a coping mechanism. Some apps, including Skype, LinkedIn, and Slack, show minimal differences in time spent between happy and unhappy users. Tinder also shows a relatively small gap, indicating that time spent on dating apps may not strongly correlate with user happiness in the same way as other social media platforms.

Handling anxiety and depression

The 2020 Wellcome Global Monitor survey highlights how people in different countries manage anxiety and depression when these conditions disrupt daily activities for at least two weeks. The data categorizes coping strategies into eight main areas, revealing significant cultural and socioeconomic variations.

Religious or spiritual activities are a primary coping mechanism in some countries. Ethiopia leads with 66.6% of respondents using this method, while Spain has the lowest rate at 18.2%. Lifestyle improvements, such as exercise and diet changes, are most common in India (77.6%), whereas Ethiopia records the lowest rate at 62.9%. Making work-related adjustments is another coping strategy, with India leading at 65.3%, while Spain reports the lowest rate at 39.3%. Changes in personal relationships are also notable, with Ethiopia (74.7%) and Brazil (74.3%) having the highest rates, whereas Spain has the lowest at 57.1%.

Talking to friends or family is a widely used strategy across all surveyed countries. Spain has the highest percentage of respondents relying on social support (87.3%), while Brazil records the



Source: Adopted from Our World in Data

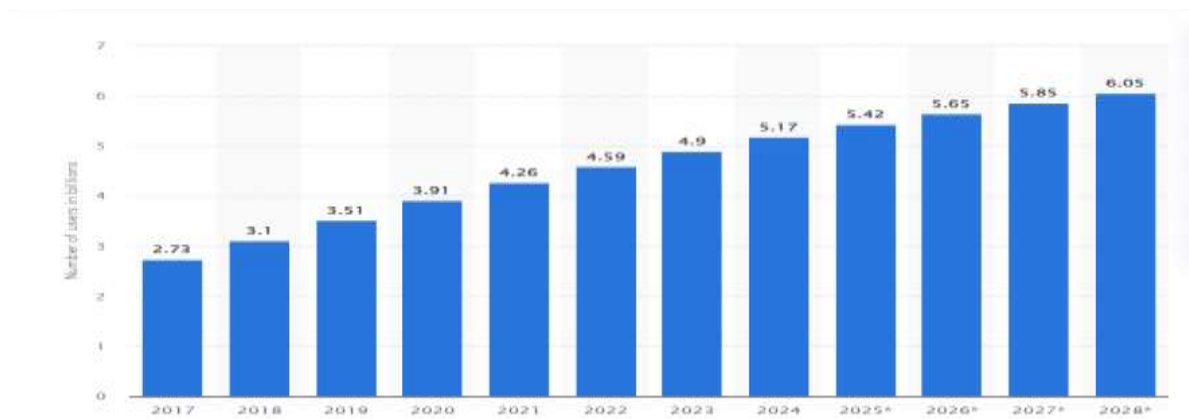
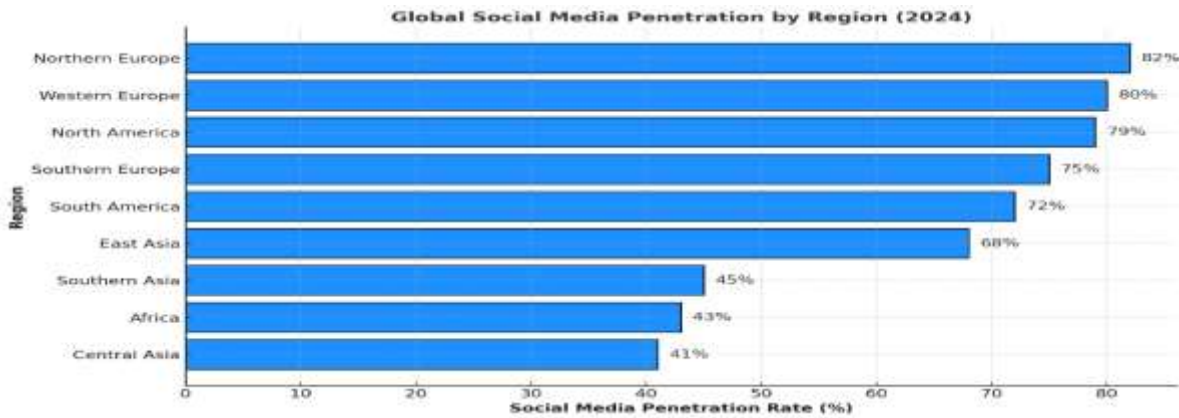
Figure 6: Estimated prevalence Vs burden of mental illness

lowest (71.4%). When it comes to prescribed medication, Spain leads at 72.9%, whereas Ethiopia has the lowest rate at 28.8%. Spending time outdoors to relieve stress is most common in the United States (84.4%), with Ethiopia reporting the lowest rate (51.5%). Seeking help from a mental health professional shows the highest rate in Spain (74.3%) and the lowest in Ethiopia (25.6%). Data in figure 6 presents the estimated prevalence and burden of mental illnesses worldwide in 2021. It compares the percentage of the global population affected by different mental disorders with the estimated disability-adjusted life years (DALYs) per 100,000 people. DALYs measure the total burden of a disease by combining years of life lost due to premature death and years lived with a disability. The result shows that anxiety disorders are the most prevalent mental illness, affecting 4.6% of the global population. Depressive disorders follow closely, impacting 4.2% of people worldwide. Bipolar disorder has a lower prevalence at 0.5%, while schizophrenia and eating disorders have the lowest prevalence rates at 0.3% and 0.2%, respectively.

Despite anxiety disorders being the most common, depressive disorders have the highest burden in terms of DALYs, accounting for 713.8 per 100,000 people. On the other hand, anxiety disorders follow with 538.7 DALYs, indicating a significant burden. Schizophrenia, though affecting only 0.3% of the population, has a substantial burden of 187.8 DALYs, reflecting its severe impact on daily functioning and life expectancy. Bipolar disorder accounts for 101.5 DALYs, showing that although it is less prevalent, its impact on affected individuals is considerable. Eating disorders, while the least common, still contribute 43.1 DALYs, emphasizing their serious consequences.

Trends and differences in social media use around the world

In 2024, social media penetration varies significantly across regions. Northern Europe (82%), Western Europe (80%), and North America (79%) have the highest adoption rates, driven by strong digital infrastructure and widespread internet



Source: Adopted from Statista²¹

Figure 7: Number of social media users worldwide from 2017 to 2028 (in billions)

access. Moderate penetration is observed in South America (72%) and East Asia (68%). South America’s growth is fuelled by mobile-first internet access, with WhatsApp, Facebook, and Instagram being dominant platforms. East Asia’s digital landscape is shaped by government restrictions, leading to the prominence of local platforms such as WeChat, QQ, and Weibo.

Lower penetration rates are seen in Central Asia (41%), Southern Asia (45%), and Africa (43%) due to economic and infrastructural limitations, including restricted internet access and lower smartphone usage. However, these regions are experiencing rapid growth with the expansion of affordable mobile internet and increasing smartphone adoption. Users in low-penetration regions often rely on low-data platforms like Facebook Lite and WhatsApp to navigate connectivity challenges. Despite disparities, social media continues to expand globally, with economic

and technological advancements driving adoption in emerging markets.

The figure presents data on the number of users over a period from 2017 to 2028, measured in billions. The values indicate a steady increase in the number of users each year. In 2017, the number of users was recorded at 2.73 billion. This figure increased to 3.1 billion in 2018. By 2019, the number of users had risen further to 3.51 billion.

The growth trend continued into 2020, with 3.91 billion users. In 2021, the number reached 4.26 billion, reflecting a consistent rise. The year 2022 saw another increase, bringing the total to 4.59 billion users. By 2023, the number of users grew to 4.9 billion. The upward trend extended into 2024, with the figure reaching 5.17 billion.

Future forecasts propose constant growth. In 2025, the expected number of users is 5.42 billion. The projection for 2026 is 5.65 billion, indicating further expansion. The number is forecasted to

reach 5.85 billion in 2027. By 2028, the projected user base is expected to rise to 6.05 billion, demonstrating a consistent increase over the years. This data shows an upward shift in user growth, with both past trends and future projections reflecting a steady increase in the number of users over time.

Discussion

Facebook's leading position with 2.26 billion users corroborates findings from Perrin and Anderson²⁴, who reported Facebook as the most widely used social media platform across most demographic groups. This dominance raised concerns about the platform's influence on social interactions and information dissemination. YouTube's strong second place (1.9 billion users) aligns with Hayes²⁵, who noted the rising importance of video content in social media engagement. They found that video-based platforms were associated with higher user engagement and time spent. WhatsApp's high user count (1.33 billion) supports the observations of Montag *et al.*²⁶, who discussed the blurring lines between social media and instant messaging. They highlighted the potential for increased social connectedness but also raised concerns about privacy and addiction.

Instagram's billion users reflect the trend towards visual content, as explored by Sheldon and Bryant²⁷. They found that Instagram use was motivated by factors such as surveillance/knowledge about others, documentation, coolness, and creativity, which could have both positive and negative implications for mental well-being. The strong presence of WeChat and Weibo reiterates the pertinence of cultural space in social media use, as discussed by Zhang and Pentina²⁸. They noted that cultural variables majorly influence social media adoption and usage patterns.

TikTok's rapid growth (500 million users) foreshadowed findings by Omar and Dequan²⁹, who later studied its addictive nature and impact on youth. They found that TikTok's design features could contribute to problematic usage patterns. The substantial user bases of platforms like Pinterest and Snapchat align with the concept of "polymedia" described by Madianou and Miller³⁰, where users

navigate multiple platforms for different purposes, potentially increasing overall screen time and social media engagement.

Kuss and Griffiths³¹ conducted a comprehensive review of social media addiction, finding that excessive use can lead to symptoms similar to substance-related addictions. The high user numbers across multiple platforms in 2018 suggest increased potential for addictive behavior. A meta-analysis by Huang³² found small but significant associations between social media use and indicators of well-being. Both positive and negative effects were observed, depending on usage patterns and individual factors. Przybylski *et al.*³³ linked FoMO to problematic social media use.

The widespread adoption of multiple platforms in 2018 might have exacerbated this phenomenon. Vogel *et al.*⁵ found that social comparison on social media, particularly on visually-oriented platforms like Instagram, could negatively impact self-esteem and mental well-being. However, Clark *et al.*³⁴ highlighted potential positive impacts of social media, including increased social capital and support, which could benefit mental health when used appropriately. The 2018 data provides a valuable snapshot of social media usage, setting the stage for more recent studies on its long-term impacts on mental well-being. Future research should focus on longitudinal studies to better understand these effects over time, as well as investigating how the evolving landscape of social media platforms influences user behavior and psychological outcomes.

The data shows a consistent increase in daily social media usage from 1 ½ hours in 2012 to 2 ½ hours in 2023. This trend aligns with findings from several studies. Pew Research Center³⁵ reported that social media usage among adults in the United States increased from 65% in 2015 to 72% in 2021. While our data focuses on time spent rather than adoption rates, both metrics indicate growing engagement with social media platforms. A study by Global Web Index³⁶ found that global social media usage rose from an average of 1 ½ hours per day in 2012 to 2 ½ hours in 2019, which closely mirrors our data for those years.

Data shows an upward shift in usage from 2019 to 2021, followed by an uptick in 2022 and 2023. This pattern can be contextualized with

recent research. The COVID-19 pandemic significantly impacted social media usage. A study by Nguyen *et al.*³⁷ found that social media use increased during the initial phases of the pandemic, which might explain the maintained high levels of usage in 2020 and 2021 in our data. The recent uptick in 2022 and 2023 could be related to the lingering effects of changed social habits post-pandemic. A study by Nabity-Grover *et al.*³⁸ suggested that increased reliance on social media during the pandemic might lead to sustained higher usage levels even after restrictions ease.

The significant increase in social media usage over the past decade raises important questions about its impact on mental wellbeing. A meta-analysis by Huang³² found a small but significant negative correlation between social media use and psychological well-being. Our data showing increased usage over time suggests that these negative effects could be amplified. However, Bekalu *et al.*² found that the relationship between social media use and mental health is complex. Their study suggested that routine social media use was associated with positive self-rated health, while emotional connection to social media was associated with increased psychological distress. The outward shift observed from 2019 to 2021 could reflect growing awareness of digital wellbeing. Lowry *et al.*³⁹ discussed the emergence of digital detox trends and increased use of screen time management tools during this period. Twenge and Martin⁴⁰ found that adolescents' social media use increased dramatically between 2009 and 2017, with potential negative impacts on mental health. Anderson and Jiang³⁵ reported that 95% of teens have access to a smartphone, and 45% say they are online almost constantly. This high level of engagement among younger users might be driving the overall increase we see in our data.

The continuing upward trend in social media usage, as shown in our data for 2022 and 2023, suggests that research on its impacts will remain crucial. Buda *et al.*⁴¹ proposed that future research should focus on developing interventions to promote healthy social media use, given its increasing prevalence in daily life. The long-term effects of sustained high levels of social media use, as indicated by our data, are still not fully understood and warrant further longitudinal studies.

The observed trend of decreasing social media usage with age aligns with findings from several prior studies. For instance, Pew Research Center³⁵ reported that younger adults are more likely to use social media platforms compared to older adults, with 84% of adults aged 18-29 using social media versus 45% of those 65 and older.

The gender disparity in social media usage across all age groups, with females spending more time than males, is consistent with previous research. A study by Thelwall⁴² found that women were more likely to use social networking sites and spent more time on them compared to men. This gender gap has persisted over time. The significant drop in usage between the 16-24 and 25-34 age groups could be explained by life stage transitions. Brandtzaeg⁴³ proposed a typology of social media users, suggesting that usage patterns change with life circumstances. The considerable time spent on social media even among older age groups (55-64 years) supports the findings of Leist⁴⁴, who noted that social media use among older adults has been increasing, potentially offering benefits for social connection and cognitive stimulation. However, the high usage among younger age groups generates concerns about potential disastrous impacts on mental well-being. Twenge and Campbell¹⁰ recorded associations between rise in social media usage and bigger rates of anxiety and depression among young adults and adolescents. Similarly, Kross *et al.*⁴⁵ reported that Facebook use predicted a continuous decrease in subjective well-being.

Furthermore, Wu *et al.*⁴⁶ and Wu *et al.*⁴⁷ demonstrated that users' ability to assess consistency across textual and visual content influences their response to information, supporting the idea that cognitive evaluation drives social media intensity. Similarly, Hao *et al.*⁴⁸⁻⁴⁹ highlighted how group identity and membership affect decision-making behaviours, suggesting that social belonging influences online interactions. Bao *et al.*⁵⁰ further showed that emotional reactions to social media content can be predicted through neural signals, aligning with the present study's observation that emotional factors shape user engagement.

Qiao *et al.*⁵¹ emphasised the importance of multi-sensory experiences in shaping user behaviours, which may also apply to how users

consume diverse media content online. Moreover, Pan and Xu⁵² found that human-machine conflict affects cognitive responses, relevant to users' reactions to conflicting online information. Li *et al.*⁵³ revealed that risk perception and psychological factors influence professional commitment, paralleling how perceived risks and emotional states affect social media use. Collectively, these studies affirm that social media engagement intensity is multi-dimensional, driven by cognitive, emotional, and social influences.

In summary, the rapid expansion of social media has implications for mental well-being. While it fosters global connectivity, information access, and digital opportunities, excessive use has been linked to anxiety, depression, and reduced self-esteem. The prevalence of short-form content and algorithm-driven engagement can lead to addictive behaviors, reduced attention spans, and sleep disturbances. Moreover, cyberbullying, misinformation, and unrealistic portrayals of life contribute to increased stress and social comparison issues, particularly among younger users.

As global adoption stabilises, platforms must prioritize user well-being by implementing healthier digital consumption habits, content moderation, and mental health awareness features. Governments and tech companies should also focus on digital literacy, responsible social media use, and online well-being initiatives to mitigate negative psychological effects while leveraging social media's benefits.

Strengths and weakness

This study gives invaluable insights into how excessive social media use impacts individuals' psychological health. As social media become unavoidable to daily life, especially among younger populations, concerns about their addictive nature and potential adverse effects on mental health are rising. This research is important for public health and policy discussions, addressing a global issue that affects millions of users.

One of the main strengths of such a study like this, is its relevance. Social media addiction is a modern phenomenon with widespread impacts, making this study timely and important. Understanding how it affects mental well-being can

lead to practical solutions, ranging from health interventions to education about healthy social media use. The study also contributes to a growing body of literature that influences mental health professionals, policy makers, and educators. Furthermore, impact is another strength of the study. The study uncovered patterns of behavior associated with social media use that contribute to issues such as anxiety, depression, and loneliness. Identifying these patterns have significant implications for public health campaigns and mental health treatment approaches.

Despite these strengths, the study face challenges. The study's reliance on secondary data limited its scope to the variables provided by the databases such as Our World in Data, making it difficult to explore areas not covered by the available datasets. Although the study covered global trends, there may have been cultural or regional nuances in social media use and mental health impacts that were not fully explored. Another weakness of the study is based on causality. The study used stylized facts which does not establish a direct causal link between social media addiction and mental health issues. Social media use may be a symptom of pre-existing mental health problems, rather than the cause.

Conclusion

This study examines the growing issue of social media addiction and its consequences on mental well-being, using graphical representations to illustrate the findings. The study focuses on understanding the extent of addiction, its impact on mental health, differences across platforms, and how factors like age and gender influence the addiction levels. The study begins by highlighting the widespread nature of social media addiction, particularly among younger age groups. Data suggests that a significant proportion of users, especially those in their teens and twenties, exhibit addictive behavior characterized by excessive time spent on social media, compulsive checking and difficulty in disconnecting from these platforms. The graphs display a rising trend in addiction levels over time, with the increase being more pronounced in the past few years due to the proliferation of mobile devices and continuous internet access. The study concludes that social media addiction is a

growing concern with significant implications for mental well-being. In summary, the study concludes that there could be an association between social media use and mental health, and further investigations are required to validate this.

Reference

- Kemp S. It's a Mean, Mean World: Social Media and Mean World Syndrome, 2023. <https://doi.org/10.15760/honors.1333>
- Bekalu MA, McCloud RF and Viswanath K. Association of social media use with social well-being, positive mental health, and self-rated health: disentangling routine use from emotional connection to use. *Health Education & Behavior*. 2019, 46(2_suppl):69S-80S. <https://doi.org/10.1177/1090198119863768>
- Naslund JA, Aschbrenner KA, McHugo GJ, Ünützer J, Marsch LA and Bartels SJ. Exploring opportunities to support mental health care using social media: A survey of social media users with mental illness. *Early intervention in psychiatry*. 2019, 13(3):405-13. <https://doi.org/10.1111/eip.12496>
- Kross E, Verduyn P, Sheppes G, Costello CK, Jonides J and Ybarra O. Social media and well-being: Pitfalls, progress, and next steps. *Trends in cognitive sciences*. 2021, 25(1):55-66. <https://doi.org/10.1016/j.tics.2020.10.005>
- Vogel EA, Rose JP, Roberts LR and Eckles K. Social comparison, social media, and self-esteem. *Psychology of popular media culture*. 2014, 3(4):206. <https://psycnet.apa.org/buy/2014-33471-001>
- Jakovljevic M, Liu Y, Cerda A, Simonyan M, Correia T, Mariita RM, Kumara AS, Garcia L, Krstic K, Osabohien R and Toan TK. The Global South political economy of health financing and spending landscape—history and presence. *Journal of medical economics*. 2021;24(sup1):25-33. <https://doi.org/10.1080/13696998.2021.2007691>
- Hou Y, Xiong D, Jiang T, Song L and Wang Q. Social media addiction: Its impact, mediation, and intervention. *Cyberpsychology: Journal of psychosocial research on cyberspace*. 2019;13(1). <https://doi.org/10.5817/CP2019-1-4>
- Viner RM, Gireesh A, Stiglic N, Hudson LD, Goddings AL, Ward JL and Nicholls DE, 2019. Roles of cyberbullying, sleep, and physical activity in mediating the effects of social media use on mental health and wellbeing among young people in England: a secondary analysis of longitudinal data. *The Lancet Child & Adolescent Health*, 3(10), pp.685-696. [https://doi.org/10.1016/S2352-4642\(19\)30186-5](https://doi.org/10.1016/S2352-4642(19)30186-5)
- Verduyn P, Ybarra O, Résibois M, Jonides J and Kross E. Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review*. 2017;11(1):274-302. <https://doi.org/10.1111/sipr.12033>
- Twenge JM and Campbell WK. Media use is linked to lower psychological well-being: Evidence from three datasets. *Psychiatric Quarterly*. 2019; 90:311-3. <https://doi.org/10.1007/s11126-019-09630-7>
- Andreassen CS. Online social network site addiction: A comprehensive review. *Current addiction reports*. 2015 Jun;2(2):175-84. <https://doi.org/10.1007/s40429-015-0056-9>
- Azuh DE, Osabohien R, Orbih M and Godwin A. Public health expenditure and under-five mortality in Nigeria: An overview for policy intervention. *Open Access Macedonian Journal of Medical Sciences*. 2020;8(E):353-62.
- Feng Y, Ahuru RR, Anser MK, Osabohien R, Ahmad M and Efegeber AH. Household economic wealth management and antenatal care utilization among business women in the reproductive-age. *African Journal of Reproductive Health*. 2021;25(6):143-54.
- O'reilly M, Dogra N, Whiteman N, Hughes J, Eruyar S and Reilly P. Is social media bad for mental health and wellbeing? Exploring the perspectives of adolescents. *Clinical child psychology and psychiatry*. 2018;23(4):601-13. <https://doi.org/10.1177/13591045187751>
- Nasir MH, Anser MK, Ahuru RR, Osabohien R, Ebiaku KC and Abbas S. A comparative study of the effect of health insurance on women's use of health facility delivery: Evidence from demographic health survey in Benin Republic. *African Journal of Reproductive Health*. 2022;26(6):104-15.
- Sui Y, Ahuru RR, Huang K, Anser MK and Osabohien R. Household socioeconomic status and antenatal care utilization among women in the reproductive-age. *Frontiers in public health*. 2022;9:724337. <https://doi.org/10.3389/fpubh.2021.724337>
- Ophir Y, Lipshits-Brazilier Y and Rosenberg H. New-media screen time is not (necessarily) linked to depression: Comments on Twenge, Joiner, Rogers, and Martin (2018). *Clinical Psychological Science*. 2020 Mar;8(2):374-8. <https://doi.org/10.1177/2167702619849>
- Osabohien R, Jaaffar AH, Akpa AF and Jakovljevic, M. (2024). Mobile money, medical cost anxiety and welfare of individuals within the reproductive age in Malaysia. *Humanities and Social Sciences Communications*. <https://doi.org/10.1057/s41599-024-02767-2>
- Sui Y, Ahuru RR, Huang K, Anser MK and Osabohien R. Household socioeconomic status and antenatal care utilization among women in the reproductive-age. *Frontiers in public health*. 2022;9:724337. <https://doi.org/10.3389/fpubh.2021.724337>
- Xu Y, Peng MYP, Ahuru RR, Anser MK, Osabohien R and Aziz A. (2022). Individual and community-level factors associated with non-institutional delivery of women of childbearing-age in Nigeria. *Humanities and Social Sciences Communications*, 9(1), 1-7. <https://doi.org/10.1057/s41599-022-01168-7>

21. Our World in Data. (2024). Mental health and social media usage dataset. Retrieved from <https://ourworldindata.org/mental-health>
22. Statista. Social media addiction and usage statistics, 2023. Retrieved from <https://www.statista.com/social-media-addiction>
23. Wellcome Global Monitor: Mental health, 2020. Retrieved from <https://wellcome.org/reports/wellcome-global-monitor-mental-health/2020>
24. Perrin A and Anderson M. Share of US adults using social media, including Facebook, is mostly unchanged since 2018. <https://policycommons.net/artifacts/616832/share-of-us/1597525/>
25. Hayes D. Social media and mental health. *Children and Young People Now*. 2018;2018(11):16. <https://doi.org/10.12968/cypn.2018.11.16>
26. Montag C, Błaskiewicz K, Sariyska R, Lachmann B, Andone I, Trendafilov B, Eibes M and Markowitz A. Smartphone usage in the 21st century: who is active on WhatsApp?. *BMC research notes*. 2015;8:1-6. <https://doi.org/10.1186/s13104-015-1280-z>
27. Sheldon P and Bryant K. Instagram: Motives for its use and relationship to narcissism and contextual age. *Computers in human Behavior*. 2016; 58:89-97. <https://doi.org/10.1016/j.chb.2015.12.059>
28. Zhang L and Pentina I. Motivations and usage patterns of Weibo. *Cyberpsychology, Behavior, and Social Networking*. 2012, 15(6):312-7. <https://doi.org/10.1089/cyber.2011.06>
29. Omar B and Dequan W. Watch, share or create: The influence of personality traits and user motivation on TikTok mobile video usage. <https://www.learntechlib.org/p/216454/>
30. Madianou M and Miller D. Migration and new media: Transnational families and polymedia. Routledge; 2013. <https://doi.org/10.4324/9780203154236>
31. Kuss DJ and Griffiths MD. Social networking sites and addiction: Ten lessons learned. *International journal of environmental research and public health*. 2017 Mar;14(3):311. <https://doi.org/10.3390/ijerph14030311>
32. Huang C. Time spent on social network sites and psychological well-being: A meta-analysis. *Cyberpsychology, Behavior, and Social Networking*. 2017;20(6):346-54. <https://doi.org/10.1089/cyber.2016.0758>
33. Przybylski AK, Murayama K, DeHaan CR and Gladwell V. Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in human behavior*. 2013 Jul 1;29(4):1841-8. <https://doi.org/10.1016/j.chb.2013.02.014>
34. Clark JL, Algoe SB and Green MC. Social network sites and well-being: The role of social connection. *Current Directions in Psychological Science*. 2018, 27(1):32-7. <https://doi.org/10.1177/096372141773083>
35. Anderson M and Jiang J. Teens, Social Media & Technology 2018. Pew Research Center report. <https://apo.org.au/node/175701>
36. Global Web Index. Make social media listening a stronghold of your communications blueprint. 2018
37. La VP, Pham TH, Ho MT, Nguyen MH, P. Nguyen KL, Vuong TT, Nguyen HK, Tran T, Khuc Q, Ho MT and Vuong QH. Policy response, social media and science journalism for the sustainability of the public health system amid the COVID-19 outbreak: the Vietnam lessons. *Sustainability*. 2020;12(7):2931. <https://doi.org/10.3390/su12072931>
38. Nabity-Grover T, Cheung CM and Thatcher JB. How COVID-19 stole Christmas: How the pandemic shifted the calculus around social media Self-Disclosures. *Journal of Business Research*. 2023;154:113310. <https://doi.org/10.1016/j.jbusres.2022.113310>
39. Lowry M, Trivedi N, Boyd P, Julian A, Treviño M, Lama Y, Heley K and Perna F. Making decisions about health information on social media: a mouse-tracking study. *Cognitive Research: Principles and Implications*. 2022;7(1):68. <https://doi.org/10.1186/s41235-022-00414-5>
40. Twenge JM and Martin GN. Gender differences in associations between digital media use and psychological well-being: Evidence from three large datasets. *Journal of adolescence*. 2020 Feb 1;79:91-102. <https://doi.org/10.1016/j.adolescence.2019.12.018>
41. Buda G, Lukoševičiūtė J, Šalčiūnaitė L and Šmigelskas K. Possible effects of social media use on adolescent health behaviors and perceptions. *Psychological reports*. 2021, 124(3):1031-48. <https://doi.org/10.1177/003329412092>
42. Thelwall M. Social media analytics for YouTube comments: Potential and limitations. *International Journal of Social Research Methodology*. 2018 May 4;21(3):303-16. <https://doi.org/10.1080/13645579.2017.1381821>
43. Brandtzæg PB. Social networking sites: Their users and social implications—A longitudinal study. *Journal of computer-mediated communication*. 2012;17(4):467-88. <https://doi.org/10.1111/j.1083-6101.2012.01580.x>
44. Leist AK. Social media use of older adults: a mini-review. *Gerontology*. 2013;59(4):378-84. <https://doi.org/10.1159/000346818>
45. Kross E, Verduyn P, Sheppes G, Costello CK, Jonides J and Ybarra O. Social media and well-being: Pitfalls, progress, and next steps. *Trends in cognitive sciences*. 2021;25(1):55-66
46. Wu L, Liu P, Zhao Y, Wang P and Zhang Y. Human cognition-based consistency inference networks for multi-modal fake news detection. *IEEE Transactions on Knowledge and Data Engineering*. 2024;36(1):211-25. <https://doi.org/10.1109/TKDE.2023.3280555>
47. Wu L, Long Y, Gao C, Wang Z and Zhang Y. MFIR: Multimodal fusion and inconsistency reasoning for explainable fake news detection. *Information Fusion*. 2023; 100:101944.

- <https://doi.org/10.1016/j.inffus.2023.101944>
- 48.Hao S, Jiali P, Xiaomin Z, Xiaoqin W, Lina L, Xin Q and Qin L, 2023. Group identity modulates bidding behavior in repeated lottery contest: neural signatures from event-related potentials and electroencephalography oscillations. *Frontiers in Neuroscience*, 2023;17:1184601. <https://doi.org/10.3389/fnins.2023.1184601>
- 49.Hao S, Xin Q, Xiaomin Z, Jiali P, Xiaoqin W, Rong Y and Cenlin Z. Group membership modulates the hold-up problem: an event-related potentials and oscillations study. *Social Cognitive and Affective Neuroscience*. 2023;18(1). <https://doi.org/10.1093/scan/nsad071>
- 50.Bao C, Hu X, Zhang D and Lv Z, Chen J. Predicting moral elevation conveyed in danmaku comments using EEGs. *Cyborg and Bionic Systems*. 2023; 4: 0028. <https://doi.org/10.34133/cbsystems.0028>
- 51.Qiao G, Hou S, Chen Q, Xiang G and Prideaux B. Role of body in travel: Wheelchair users' experience from a multi-sensory perspective. *Journal of Travel Research*. 2024. <https://doi.org/10.1177/00472875241249391>
- 52.Pan Y and Xu J. Human-machine plan conflict and conflict resolution in a visual search task. *International Journal of Human-Computer Studies*. 2025; 193: 103377. <https://doi.org/10.1016/j.ijhcs.2024.103377>
- 53.Li J, Huang C, Yang Y, Liu J, Lin X and Pan J. How nursing students' risk perception affected their professional commitment during the COVID-19 pandemic: the mediating effects of negative emotions and moderating effects of psychological capital. *Humanities and Social Sciences Communications*. 2023;10(1):195.. <https://doi.org/10.1057/s41599-023-01719-6>