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The impact of social media on self-esteem during COVID-19

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Abstract

The outbreak of coronavirus disease 2019 (COVID-19) generated a global health crisis, resulting in people facing a distressing and unexpected situation. The risk of contamination and the experience of social distancing changed people's behaviors and impacted individual feelings, habits, and relationships. Uncertainty about the timeline of the growing pandemic, Isolation, and restrictions due to quarantine worsened feelings of anxiety and loneliness among both older and younger populations. Moreover, the loss of one's usual routine and reduced social contacts may cause boredom, frustration, and isolation, which can generate high levels of distress in individuals increasing the risk of mental disorders, such as anxiety, mood, addiction, and thought disorders. During the COVID-19 lockdown, there was a steep increase in social media usage as individuals were confined to their homes, which paved the way for many harmful effects on their mental health. Due to this wide popularity, many researchers are inspired to conduct several studies on excessive social media usage and its impact on our lives. One such prominent research area is the impact of social media on self-esteem. By reviewing different studies, it is evident that one gets a boost in their self-esteem when they get positive responses to their actions (posts, stories, etc.) on social media, on the other hand, as one gets exposed to other's highlighted episodes of life (promotion in job, vacations) they have a fundamental drive to compare these with their normal episodes (daily hassles, work routines, academic assignments) in their lives. This tendency called "upward comparisons" frequently occurs among social media users, especially among adolescents eventually leading to low self-esteem.

Keywords: Self-esteem; Social media; COVID-19 pandemic; Mental health

1. Introduction

The internet is one of the most widespread services in the world, and its user base is constantly increasing [1].It is easily accessible, relatively cheap, and highly desirable. Computers and smartphones are the most commonly used devices to access the internet, serving as the primary gateways to social media. The prevalence of social media among adults, adolescents, and children also opens the possibility of forming digital relationships with other users. It is often said that those who do not have social media profiles are invisible, at least in the digital space. It is difficult to escape the impression that some have even gone a step further and transferred their real, physical lives to online reality (in other words, their online social activity is much higher than their offline lives). The COVID-19 pandemic and the resulting global lockdown were likely to intensify this trend. Despite the need to maintain close relationships with others, people were forced to remain home and limit their physical interaction with people outside of their closest family circle. In a study by[2], the researchers reported that the biggest changes in their lives since the start of the COVID-19 pandemic are staying at home, losing school, more sadness, more anxiety, and homeschooling. Missing their friends and school, being sad, and not being able to go outside were the factors that participants reported are making their lives harder during the COVID-19 pandemic.

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The use of social media and streaming sites, especially among adolescents, increased during the pandemic period [3]. Social media statistics have been reporting an average annual increase of 10% in the total number of users [4]. People around the globe rely on social media like Instagram, Twitter, WhatsApp, YouTube, Clubhouse, Snap Chat, etc. for various purposes like maintaining relationships, entertainment, art, career, and education. In 2020[5], over 3.6 billion people were using social media worldwide, a number expected to increase to approximately 4.41 billion in 2025. The typical user actively uses an average of 6.7 different social media platforms each month and spends an average of close to 2.5 hours a day on social media which implies how profoundly it influences the mental health of individuals. Research has found that compulsive internet use and gaming addiction were associated with higher levels of depression, anxiety, loneliness, escapism, and poorer sleep quality [6]. Even though the encouragement and support individuals receive gives them a boost in self-esteem, individuals face feelings of inferiority often. Since people only see the "highlighted reels" of others and compare them with their "normal reality", there is an increased chance for "upward comparison" that eventually leads to feelings of inadequacy, and feelings of inferiority among individuals contributing to low self-esteem [7]. *This paper sheds light on how excessive use of social media affects our level of self-esteem.*

2. Self-esteem

Self-esteem refers to a person's positive or negative evaluation of the self, the extent to which an individual views the self as worthwhile and competent [8]. Self-esteem refers to a person's overall sense of his or her value or worth. It can be considered a sort of measure of how much a person "values, approves of, appreciates, prizes, or likes him or herself [9]. According to [10], "Self-esteem is quite simply one's attitude toward oneself". He described it as a "favorable or unfavorable attitude toward the self. It is the evaluative aspect of the self-concept that corresponds with an overall view of the self as worthy or unworthy [11]. Self-esteem is the evaluative emotional component of the self-concept [12]. Self-esteem is defined as the subjective evaluation of self-worth or simply as having a favorable or unfavorable opinion about oneself [13]. It is also described as the sense of personal worth that one associates with oneself [14], and can be understood as self-love [15]. It is considered a relatively stable personality trait that varies between individuals [16]. Self-esteem can also be defined as a person's positive or negative self-evaluation or the degree to which they believe in their worth [11]. Various definitions of self-esteem shed light on different aspects of the concept. These attempts and dimensions of the definitions can be classified into three main areas

- Self-esteem as a trait: Self-esteem is a relatively enduring characteristic and is explained in terms of feelings of affection and worth for oneself. In the case of individuals with low self-esteem, they identify themselves with frequent feelings of hatred, and inferiority [17].
- Self-Evaluations: When self-esteem is defined in terms of how the individual evaluates their abilities and attributes. Individuals with high self-esteem evaluate themselves with positive abilities and characteristics while those with low self-esteem underestimate their good qualities and abilities.
- Feelings of Self-Worth: Self-esteem is regarded as a momentary emotional state or as a consequence or outcome after a positive or negative situation [18] referred to self-esteem as feelings of self-worth, pride, and pleasure.

Our self-esteem is determined by many factors, including how well we view our performance and appearance, and how satisfied we are with our relationships with other people [19]. Individual characteristics, social environment, and society play a substantial role in the formation of self-esteem. According to researchers, individuals with a higher social comparison orientation reported poorer self-perception, lower self-esteem, and more negative feelings [20]. This trend was also noted by [21] and [7] who demonstrated the detrimental effects of social comparison on self-esteem. [21] also indicated that a higher level of social comparison was associated with more frequent Instagram use.

3. Social media

The term "social media" (SM) was first used in 1994 in a Tokyo online media environment, called Matisse [22]. It was in these early days of the commercial Internet that the first SM platforms were developed and launched. In this technological era, the number of social media platforms and the number of active social media users have increased significantly thereby being one of the most important applications of the Internet. It allows users to create electronic profiles for themselves, share about their lives and experiences, post pictures, maintain relationships, plan social events, meet new people, make observations of others' lives, fulfill belongingness needs, and express their beliefs, preferences, opinions, and emotions [23]. Globally, there are more than 3.8 billion social media users. Social media is an ever-evolving field, with new apps such as TikTok and Clubhouse coming out seemingly every year, joining the already established social networks like Facebook, YouTube, Twitter, and Instagram.

High social mobility caused by the common availability of the internet and computers, especially smartphones, translates into high social media activity. Over the last decade or so, various services have been created that allow forming relationships and keeping in touch with others, including Facebook, Foursquare, Google+, Instagram, LinkedIn, Pinterest, Reddit, Snapchat, Tumblr, Twitter, and YouTube. Social media usage has seen a dramatic increase in the last decade, which is confirmed by various sources. Ninety-seven percent of American adult's report using at least one such platform [24], and approximately 70% of Americans use social media [25]. These percentages are similar for Singaporeans [26]. Online self-presentation has become a part of young people's everyday activities [27]. This contributes to the steadily growing numbers of social media users; current estimates are that half of the global population is connected through social [28], which amounts to approximately 3.6 billion users in 2020. The user base is catalyzing tends expected to increase to 4.41 billion by 2025 [29].

4. Social media usage during the pandemic

The COVID-19 pandemic wreaked economic and social havoc, it has slowed down the economy and effectively frozen society. The outbreak of coronavirus disease 2019 (COVID-19) generated a global health crisis, that resulted in people facing a distressing and unexpected situation. The risk of contamination and the experience of social distancing changed people's behaviors and deeply impacted individual feelings, daily habits, and relationships. Uncertainty about the timeline of the growing pandemic strengthened people's fears [30],[31], stress, and confusion [32]. Isolation and restrictions due to quarantine worsened feelings of anxiety and loneliness among both older and younger populations [33]. Since the first weeks of COVID-19 diffusion, scholars worldwide have started to investigate how the pandemic has been impacting mental health [34], [35], [36] [37],[38]. Indeed, the loss of one's usual routine and reduced social contacts may cause boredom, frustration, and a sense of isolation, which can generate high levels of distress in individuals increasing the risk of mental disorders, such as anxiety, mood, addictive, and thought disorders ([39]. Being in the lockdown period of self-isolation and social distancing some consider social media for connecting each other and sometimes even venting out their emotions. This is exactly why some studies found a positive correlation between social media usage and mental well-being that included (a) enhanced interpersonal interaction at the individual level, (b) increased access to resources within the community, and (c) empowered social inclusion at the societal [40]. This same result can be found in, [41] study showed that those who used the internet for communication purposes had higher Quality of Life (QoL) [41]. Based on the Uses and Gratifications Theory, which is one of the approaches related to the use of social media, it is stated that individuals use social media to meet their needs such as being informed, knowing the social activities of their friends, and the desire to self-presentation, communicating and having fun [42],[43]. Another approach, social cognitive theory (SCT), determines the use of social media according to the expected outcomes that follow from consumption. This affects media consumption behavior and even turns into what determines more media consumption. Moreover, it was emphasized that the socio-cognitive mechanism affects the satisfaction perceptions obtained from social media consumption [44]. From this theoretical framework, especially during the pandemic period, it can be said that the expectations of people to meet their needs for getting information, interaction, etc. can increase their participation in social media and help individuals cope with the pandemic.

But, a worrisome and vicious cycle between loneliness and excessive Internet use has been evidenced with a bidirectional (i.e., reciprocal) relationship especially observed between loneliness and problematic social networking site use, particularly in late adolescents and adults.

A cross-sectional study conducted on a sample of 4827 people in China assessed the prevalence of mental health problems and examined their association with social media exposure during the time of the pandemic. This study found that 82.0% of participants were frequently exposed to social media, and frequently SME associated high odds of anxiety and CDA. It has been stated that during the pandemic period, the use of the internet and social media has increased to meet the needs of individuals to learn more about COVID-19, and individuals are negatively affected by it [45]. The reason is that social media is regarded to have the potential to spread misinformation and rumors, provoke fear and promote erroneous behavioral actions [46]. The abundance of uncertain and false information during the pandemic has been reported to cause information overload and increased anxiety among individuals [47]. In previous studies [48];[49];[50] long-term social media use is associated with chronic stress, low emotional stability, depression, decreased life satisfaction, and low psychological well-being, and it has also been stated that it can turn into an addiction [51]. In the pandemic of COVID-19, it was stated that long-term isolation has the danger of causing technology-related disorders because of the increase in technology-based activities [52].

[53] explored the association between problematic social media use, psychological distress, and insomnia during COVID-19 and found that problematic social media use was significantly associated with psychological distress both directly and indirectly. The indirect effects were fear of COVID-19 and COVID-19 misunderstanding. Problematic social media use was significantly associated with insomnia both directly and indirectly. The indirect effect was through fear

of COVID-19 but not COVID-19 misunderstanding. The study concluded that, due to the pressure of the COVID-19 outbreak, individuals are highly likely to develop psychological distress and insomnia.

Another study [54], explored the impact of social media use on college students' mental health during the COVID-19 pandemic and found that social media use has increased among almost all cohorts during the COVID-19 era, but college students have been especially affected. [41] found that users' age appears to be the differentiating factor between the possible consequences of internet use: negative in adolescents and positive in late adulthood. [55] conducted a study on a sample of 512 Chinese college students to investigate the associations of COVID-19-related social media use with mental health outcomes Results indicated that a higher level of social media use was associated with worse mental health. [56] examined how social media use is associated with risk perception and social distancing as preventive behavior, which in turn can elicit negative emotions. The researchers concluded that social media use directly and indirectly impacts people's negative emotions through risk perception and social distancing.

5. Social media and its impact on self-esteem

A study conducted on the students of IoBM and Facebook, a popular social networking site, implies that approximately 88% of people engage in making social comparisons on Facebook, and out of the 88%, 98% of the comparisons are upward social comparisons and hence proves that a strong relationship exists between social media and self-esteem. One hour spent on Facebook daily results in a 5.574 decrease in the self-esteem score of an individual [57]. Studies on social media usage have also concluded two distinctive types in the usage of social media, 'Self-oriented use' and 'other-oriented use'. Self-oriented use consists of posting photos, updates, original posts, updates, and photos, and on the other hand, Other-oriented use consists of merely liking or commenting on others' posts and pictures. Individuals with other-oriented approaches are often identified with low self-esteem due to the continuous exposure to "ideal self-presentation of others" that paves the way to more frequent upward comparisons [58]. [7] explored the impact of temporary exposure to social media profiles on state self-esteem and relative self-evaluations. The findings were that participants' state self-esteem and relative self-evaluations were lower when the target person's profile contained upward comparison information (eg; a higher standard life, healthy habits) than when the target person's profile contained downward comparison information (e.g., a low activity social network, unhealthy habits). Likewise, social comparisons may result in a belief that external conditions or socially approved benchmarks are more important than internal and personal traits. When a person perceives their inherent characteristics to be less important for gaining social recognition, the sense of self-esteem will be lowered [59]. According to the study by [7], participants who scored higher in social comparison orientation experienced lower self-esteem and poorer self-perception balance. Additionally, the self-reported self-esteem level was lower for those who thought that their friends on social media led better lives [60]. People on social media often exhibit a tendency to select and exaggerate positive life scenarios [61]. Unfortunately, according to researchers, girls are unable to recognize and distinguish real bodies from digitally altered ones. In manipulated images, thinness and body proportions are unnatural, and flawless skin and faces appear to be the "norm" of online beauty [62]. Thus, social comparisons with peers' idealized photos on social media/Instagram may contribute to body dissatisfaction [63],[64].[65]. Recently, some researchers [66],[67] have found that 'selfie' viewing leads to social comparisons and the internalization of beauty ideals, which contributes to increased body image concerns among girls and causes digitized dysmorphia [68]. Digitized dysmorphia of the female body can be described as the discrepancy between the ideal feminine beauty standards imposed by social media and the actual appearance of women. Digitized dysmorphia can be observed by examining pictures posted online. Certain attributes that are deemed unappealing are altered, "fixing" the online appearance of a person using various applications, such as Photoshop [69]. Another study [70] showed that addictive use of social media had a negative association with self-esteem and satisfaction with life and also concluded that self-esteem mediated the effect of social media addiction on satisfaction with life. Since social networking sites are most popular among adolescents, an increased positive correlation between low self-esteem and social media addiction is evident. Adolescents with increased exposure to social media experienced poorer sleep quality, lower self-esteem, and higher levels of anxiety and depression. These findings contribute to the evidence that social media use is related to various aspects of well-being in adolescents.

When it is examined from the perspective of social cognitive theory, observing the experiences of others, namely indirect learning, has an important role in the formation of expectations about social media use [71],[44]. When expectations are formulated by indirectly observing the behavior of others, this may cause individuals to have a tendency to social comparison on social media. Studies have emphasized [72],[7] that individuals who use social media can compare themselves with other individuals who are superior to themselves and it may lead to low self-esteem and negative self-evaluations and may reveal negative emotions.

Many researchers in media psychology have found that adolescents maintained stable positive self-esteem by appropriating their own behavior according to their role model's behavior. Thus, they carefully observe their media

idols in order to imitate that behavior. This imitation was studied by [73]and found that most of the users especially teenagers had their role models such as media celebrities, sportsmen, and micro-celebrity. Also, they used social media in searching for information about their role model and admired as well as imitated them, and even reached a transformation stage. [74] found that prolonged and intensive use of social media (including Instagram) is associated with lower levels of overall self-esteem (including identity integration and self-control components). The results confirm that prolonged/frequent use of social media can have a negative impact on self-esteem (including identity integration and self-control).

Researchers point to a negative association between the excessive use of social media and adolescents' evaluation of self-esteem [75]. With more time spent on social media, people are more likely to believe that others lead better lives, are happier, and are more successful, which negatively affects self-esteem [76]. More intensive and frequent use is linked to narcissistic traits, loneliness, anxiety, depression [77], and poor body image. Additionally, the consequent higher levels of social/online pressure to uphold specific, unrealistic standards of beauty lead adolescent boys and girls to edit and change their online appearance to attain these standards [68]. Furthermore, Instagram strongly influences the well-being of adolescents, especially young women, and is related to body image, body self-esteem, and awareness [78].

Few people believe in the authenticity of social media, yet many go to great lengths to get closer to unrealistic ideals. People compare themselves to others in terms of appearance, knowledge, or standard of living. The social comparison process is a common and well-known phenomenon [79] and, as such, significantly affects self-esteem. [80] conducted a study on the effects of social media sites on self-esteem. The results indicated that more frequent Facebook use and interaction would negatively affect self-esteem levels, females spend more time on Facebook than males, increased exposure on Facebook leads to lower body image satisfaction, and a greater drive for thinness and self-esteem influences Facebook interaction, and psychological well-being. More specifically, there is a relationship between the number of Facebook friends, overall Facebook usage, and self-esteem levels.

6. Conclusion

Human beings possess a fundamental drive to compare themselves with others that aids individuals in fulfilling affiliation needs, evaluating themselves, making decisions, being inspired, and regulating emotions and well-being. However, social media facilitates this self-comparison by providing a huge number of opportunities that users get exposed to "highlighted reels" of others frequently. Having a closer look at these studies, especially the studies on the impact of social media on our self-esteem, it is evident that other-oriented social media usage (liking, commenting, and sharing others' posts) paves the way to upward comparisons and results in low self-esteem among individuals. However, as social media is used by almost one-third of the population around the globe, it has become an inevitable part of our lives. Thus, it is not a solution to stay away from it completely. But, rather, awareness regarding the impact of social media on our self-esteem as well as regulating its usage, will help individuals to overcome the threat. The inclusion of these issues in the educational curriculum as well as conducting discussions in educational institutions would help in spreading awareness among the adolescent population, the most social media-addicted section in society.

Compliance with ethical standards

Disclosure of conflict of interest

All authors declare that No conflict of interest in this work.

References

[1] Gumkowska A, Czarkowska M. Facebook, Twitter, Instagram, Pinterest: New study perspectives. 2017 Dec 12;(10).

[2] Ogata M, Guest C, Feldmeier ML, Lim YJ, Nabieva G, Pataki C, et al. 51.16 SOCIAL MEDIA USE AND IMPACT ON YOUTH DURING THE COVID-19 PANDEMIC: A NOVEL ELECTRONIC QUESTIONNAIRE TO ENGAGE YOUTH

ABOUT SOCIAL MEDIA USE. Journal of the American Academy of Child & Adolescent Psychiatry. 2020 Oct;59(10):S255–6.

[3]   Siste K, Hanafi E, Sen LT, Murtani BJ, Christian H, Limawan AP, et al. Implications of COVID-19 and Lockdown on Internet Addiction Among Adolescents: Data From a Developing Country. Frontiers in Psychiatry. 2021 May 12;12.

[4]   Hawi NS, Samaha M. The Relations among Social Media Addiction, Self-Esteem, and Life Satisfaction in University Students. Social Science Computer Review [Internet]. 2016 Aug 10;35(5):576–86. Available from: https://journals.sagepub.com/doi/abs/10.1177/0894439316660340

[5]   Statista. Number of social media users worldwide 2010-2021 [Internet]. Statista. www.statista.com; 2022. Available from: https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/

[6]   Fernandes B, Uzun B, Aydin C, Tan-Mansukhani R, Vallejo A, Saldaña-Gutierrez A, et al. Internet use during COVID-19 lockdown among young people in low- and middle-income countries: Role of psychological wellbeing. Addictive Behaviors Reports [Internet]. 2021 Dec 1;14:100379. Available from: https://www.sciencedirect.com/science/article/pii/S2352853221000420

[7]   Vogel EA, Rose JP, Roberts LR, Eckles K. Social comparison, social media, and self-esteem. Psychology of Popular Media Culture [Internet]. 2014 Oct;3(4):206–22.

[8]   Coopersmith S. The antecedents of self-esteem. Princeton. 1965.

[9]   Adler N, Stewart J. Self-esteem. Research network on socioeconomic status and health. 2004 Mar

[10]   Rosenberg M. Rosenberg self-esteem scale (RSE). Acceptance and commitment therapy. Measures package. 1965;61(52):18.

[11]   Leary M, Baumeister R. The nature and function of self-esteem: Sociometer theory. Advances in Experimental Social Psychology Volume 32. 2000;:1-62.

[12]   Heatherton TF, Wyland CL. Assessing self-esteem.

[13]   Minev M, Petrova B, Mineva K, Petkova M, Strebkova R. Self-esteem in adolescents. Trakia Journal of Science. 2018;16(2):114–8.

[14]   Campbell, W. K., Rudich, E. A., & Sedikides, C. (2002). Narcissism, Self-Esteem, and the Positivity of Self-Views: Two Portraits of Self-Love. Personality and Social Psychology Bulletin, 28(3), 358–368. https://doi.org/10.1177/0146167202286007

[15]   Branden N. The power of self-esteem: An important look at our most important psychological resource. Deerfield Beach, Florida: Health Communications; 1992. Mruk CJ. Defining Self-Esteem: An Often Overlooked Issue with Crucial Implications.

[16]   Baumeister RF. Understanding the inner nature of low self-esteem: Uncertain, fragile, protective, and conflicted. InSelf-esteem 1993 (pp. 201-218). Springer, Boston, MA.

[17]   Baumeister, R. F., Tice, D. M., & Hutton, D. G. (1989). Self-presentational motivations and personality differences in self-esteem. Journal of personality, 57(3), 547-579.

[18]   Brown JD, Dutton KA, Cook KE. From the top down: Self-esteem and self-evaluation. Cognition and emotion. 2001 Sep 1;15(5):615-31.

[19]   Tafarodi RW, Swann Jr WB. Self-linking and self-competence as dimensions of global self-esteem: initial validation of a measure. Journal of personality assessment. 1995 Oct 1;65(2):322-42.

[20]   Jang K, Park N, Song H. Social comparison on Facebook: Its antecedents and psychological outcomes. Computers in Human Behavior. 2016 Sep 1;62:147-54.

[21]   Jiang S, Ngien A. The effects of Instagram use, social comparison, and self-esteem on social anxiety: A survey study in Singapore. Social Media+ Society. 2020 May;6(2):2056305120912488.

[22]   Aichner T, Grünfelder M, Maurer O, Jegeni D. Twenty-five years of social media: a review of social media applications and definitions from 1994 to 2019. Cyberpsychology, behavior, and social networking. 2021 Apr 1;24(4):215-22.

[23] Boyd DM, Ellison NB. Social network sites: Definition, history, and scholarship. Journal of computer-mediated Communication. 2007 Oct;13(1):210-30

[24] Anderson M, Jiang J. Teens, social media & technology 2018. Pew Research Center. 2018 May 31;31(2018):1673-89.

[25] Auxier B, Anderson M. Social media use in 2021. Pew Research Center. 2021 Apr 7;1:1-4

[26] Tan A. 10 Singaporeans use social media on mobile, double global average: survey. The Business Times. 2017

[27] Chua TH, Chang L. Follow me and like my beautiful selfies: Singapore teenage girls' engagement in self-presentation and peer comparison on social media. Computers in Human Behavior. 2016 Feb 1;55:190-7.

[28] Burnasheva R, Suh YG. The influence of social media usage, self-image congruity and self-esteem on conspicuous online consumption among millennials. Asia Pacific Journal of Marketing and Logistics. 2020 Nov 17.

[29] Number of worldwide social network users 2027 [Internet]. Statista. [cited 2022 Aug 1]. Available from: https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users

[30] Petropoulos F, Makridakis S. Forecasting the novel coronavirus COVID-19. PloS one. 2020 Mar 31;15(3):e0231236.

[31] Mian A, Khan S. Coronavirus: the spread of misinformation. BMC medicine. 2020 Dec;18(1):1-2.

[32] Kim B. Effects of social grooming on incivility in COVID-19. Cyberpsychol Behav Soc Netw [Internet]. 2020;23(8):519–25. Available from: http://dx.doi.org/10.1089/cyber.2020.0201

[33] Wiederhold BK. Social media use during social distancing. Cyberpsychol Behav Soc Netw [Internet]. 2020;23(5):275–6. Available from: http://dx.doi.org/10.1089/cyber.2020.29181.bkw

[34] Pennycook G, McPhetres J, Zhang Y, Lu JG, Rand DG. Fighting COVID-19 misinformation on social media: Experimental evidence for a scalable accuracy-nudge intervention. Psychol Sci [Internet]. 2020;31(7):770–80. Available from: http://dx.doi.org/10.1177/0956797620939054

[35] Thelwall M, Thelwall S. A thematic analysis of highly retweeted early COVID-19 tweets: consensus, information, dissent and lockdown life. Aslib Journal of Information Management [Internet]. 2020;72(6):945–62. Available from: http://dx.doi.org/10.1108/ajim-05-2020-0134

[36] Merchant RM, Lurie N. Social media and emergency preparedness in response to novel coronavirus. Jama. 2020 May 26;323(20):2011-2.

[37] Bastani P, Bahrami MA. COVID-19 related misinformation on social media: A qualitative study from Iran. J Med Internet Res [Internet]. 2020; Available from: http://dx.doi.org/10.2196/18932

[38] Elmer T, Mepham K, Stadtfeld C. Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. PLoS One [Internet]. 2020;15(7):e0236337. Available from: http://dx.doi.org/10.1371/journal.pone.0236337

[39] Depoux A, Martin S, Karafillakis E, Preet R, Wilder-Smith A, Larson H. The pandemic of social media panic travels faster than the COVID-19 outbreak. J Travel Med [Internet]. 2020;27(3). Available from: http://dx.doi.org/10.1093/jtm/taaa031

[40] Forsman AK, Nordmyr J. Psychosocial links between Internet use and mental health in later life: a systematic review of quantitative and qualitative evidence. Journal of Applied Gerontology. 2017 Dec;36(12):1471-518

[41] Wallinheimo A-S, Evans SL. More frequent internet use during the COVID-19 pandemic associates with enhanced Quality of Life and lower depression scores in middle-aged and older adults. Healthcare (Basel) [Internet]. 2021;9(4):393. Available from: http://dx.doi.org/10.3390/healthcare9040393

[42] Nadkarni A, Hofmann SG. Why do people use Facebook?. Personality and individual differences. 2012 Feb 1;52(3):243-9.

[43] Piwek L, Joinson A. "What do they snapchat about?" Patterns of use in time-limited instant messaging service. Computers in human behavior. 2016 Jan 1;54:358-67.

[44] LaRose R, Eastin MS. A social cognitive theory of internet uses and gratifications: Toward a new model of media attendance. Journal of Broadcasting Electronic Media [Internet]. 2004;48(3):358–77. Available from: http://dx.doi.org/10.1207/s15506878jobem4803_2

[45] Lai D, Wang D, Calvano J, Raja AS, He S. Addressing immediate public coronavirus (COVID-19) concerns through social media: Utilizing Reddit's AMA as a framework for Public Engagement with Science. PLoS One [Internet]. 2020;15(10):e0240326. Available from: http://dx.doi.org/10.1371/journal.pone.0240326

[46] Bradshaw S, Howard PN. The global disinformation order: 2019 global inventory of organised social media manipulation.

[47] Laato S, Islam AKMN, Islam MN, Whelan E. What drives unverified information sharing and cyberchondria during the COVID-19 pandemic? Eur J Inf Syst [Internet]. 2020;29(3):288–305. Available from: http://dx.doi.org/10.1080/0960085x.2020.1770632

[48] Verduyn P, Lee DS, Park J, Shablack H, Orvell A, Bayer J, et al. Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. J Exp Psychol Gen [Internet]. 2015;144(2):480–8. Available from: http://dx.doi.org/10.1037/xge0000057

[49] Huang C. Time spent on social network sites and psychological well-being: A meta-analysis. Cyberpsychol Behav Soc Netw [Internet]. 2017;20(6):346–54. Available from: http://dx.doi.org/10.1089/cyber.2016.0758

[50] Tromholt M. The Facebook experiment: Quitting Facebook leads to higher levels of well-being. Cyberpsychol Behav Soc Netw [Internet]. 2016;19(11):661–6. Available from: http://dx.doi.org/10.1089/cyber.2016.025

[51] Casale S, Rugai L, Fioravanti G. Exploring the role of positive metacognitions in explaining the association between the fear of missing out and social media addiction. Addict Behav [Internet]. 2018;85:83–7. Available from: http://dx.doi.org/10.1016/j.addbeh.2018.05.02

[52] King DL, Delfabbro PH, Billieux J, Potenza MN. Problematic online gaming and the COVID-19 pandemic. J Behav Addict [Internet]. 2020;9(2):184–6. Available from: http://dx.doi.org/10.1556/2006.2020.00016

[53] Lin C-Y, Broström A, Griffiths MD, Pakpour AH. Investigating mediated effects of fear of COVID-19 and COVID-19 misunderstanding in the association between problematic social media use, psychological distress, and insomnia. Internet Interv [Internet]. 2020;21(100345):100345. Available from: http://dx.doi.org/10.1016/j.invent.2020.100345

[54] Haddad JM, Macenski C, Mosier-Mills A, Hibara A, Kester K, Schneider M, et al. The impact of social media on college mental health during the COVID-19 pandemic: A multinational review of the existing literature. Curr Psychiatry Rep [Internet]. 2021;23(11):70. Available from: http://dx.doi.org/10.1007/s11920-021-01288-y

[55] Zhao N, Zhou G. Social media use and mental health during the COVID-19 pandemic: Moderator role of disaster stressor and mediator role of negative affect. Appl Psychol Health Well Being [Internet]. 2020;12(4):1019–38. Available from: http://dx.doi.org/10.1111/aphw.12226

[56] Oh S-H, Lee SY, Han C. The effects of social media use on preventive behaviors during infectious disease outbreaks: The mediating role of self-relevant emotions and public risk perception. Health Commun [Internet]. 2021;36(8):972–81. Available from: http://dx.doi.org/10.1080/10410236.2020.1724639

[57] Jan M, Soomro SA, Ahmad N. Impact of social media on self-esteem. Eur Sci J [Internet]. 2017;13(23):329. Available from: http://dx.doi.org/10.19044/esj.2017.v13n23p329

[58] Cingel DP, Carter MC, Krause H-V. Social media and self-esteem. Current Opinion in Psychology [Internet]. 2022;45(101304):101304. Available from: http://dx.doi.org/10.1016/j.copsyc.2022.101304

[59] White JB, Langer EJ, Yariv L, Welch JC IV. Frequent social comparisons and destructive emotions and behaviors: The dark side of social comparisons. J Adult Dev [Internet]. 2006;13(1):36–44. Available from: http://dx.doi.org/10.1007/s10804-006-9005-0

[60] Wang J-L, Wang H-Z, Gaskin J, Hawk S. 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. Front Psychol [Internet]. 2017;8:771. Available from: http://dx.doi.org/10.3389/fpsyg.2017.00771

[61] Lup K, Trub L, Rosenthal L. Instagram #instasad?: exploring associations among Instagram use, depressive symptoms, negative social comparison, and strangers followed. Cyberpsychology Behavior and Social Networking [Internet]. 2015;18(5):247–52. Available from: http://dx.doi.org/10.1089/cyber.2014.0560

[62] Meier EP. Social Networking Sites and Body Image in Adolescent Girls. 2013.

[63] Brown Z, Tiggemann M. Attractive celebrity and peer images on Instagram: Effect on women's mood and body image. Body Image [Internet]. 2016;19:37–43. Available from: http://dx.doi.org/10.1016/j.bodyim.2016.08.007

[64] Fox J, Vendemia MA. Selective self-presentation and social comparison through photographs on social networking sites. Cyberpsychol Behav Soc Netw [Internet]. 2016;19(10):593–600. Available from: http://dx.doi.org/10.1089/cyber.2016.0248

[65] Kleemans M, Daalmans S, Carbaat I, Anschütz D. Picture perfect: The direct effect of manipulated Instagram photos on body image in adolescent girls. Media Psychol [Internet]. 2018;21(1):93–110. Available from: http://dx.doi.org/10.1080/15213269.2016.1257392

[66] Chang L, Li P, Loh RSM, Chua THH. A study of Singapore adolescent girls' selfie practices, peer appearance comparisons, and body esteem on Instagram. Body Image [Internet]. 2019;29:90–9. Available from: http://dx.doi.org/10.1016/j.bodyim.2019.03.005\

[67] Wang Y, Fardouly J, Vartanian LR, Lei L. Selfie-viewing and facial dissatisfaction among Chinese adolescents: A moderated mediation model of general attractiveness internalization and body appreciation. Body Image [Internet]. 2019;30:35–43. Available from: http://dx.doi.org/10.1016/j.bodyim.2019.05.001

[68] Verrastro V, Fontanesi L, Liga F, Cuzzocrea F, Gugliandolo MC. Fear the Instagram: beauty stereotypes, body image and Instagram use in a sample of male and female adolescents. Qwerty [Internet]. 2020;15(1). Available from: http://dx.doi.org/10.30557/qw000021

[69] Coy-Dibley I. "Digitized Dysmorphia" of the female body: the re/disfigurement of the image. Palgrave Commun [Internet]. 2016;2(1). Available from: http://dx.doi.org/10.1057/palcomms.2016.40

[70] Hawi NS, Samaha M. The Relations among Social Media Addiction, Self-Esteem, and Life Satisfaction in University Students. Social Science Computer Review [Internet]. 2016 Aug 10;35(5):576–86. Available from: https://journals.sagepub.com/doi/abs/10.1177/0894439316660340

[71] Bandura A. Social cognitive theory: An agentic perspective. Asian J Soc Psychol [Internet]. 1999;2(1):21–41. Available from: http://dx.doi.org/10.1111/1467-839x.00024

[72] Fox J, Moreland JJ. The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances. Computers in Human Behavior [Internet]. 2015;45:168–76. Available from: http://dx.doi.org/10.1016/j.chb.2014.11.083

[73] Putri L, Yanti S. Social Media Consumption and Adolescents' Role Model. International Conference on Media Studies (ICMS'17) 2017

[74] Staniewski M, Awruk K. The influence of Instagram on mental well-being and purchasing decisions in a pandemic. Technol Forecast Soc Change [Internet]. 2022;174(121287):121287. Available from: http://dx.doi.org/10.1016/j.techfore.2021.121287

[75] Andreassen CS, Pallesen S, Griffiths MD. The relationship between addictive use of social media, narcissism, and self-esteem: Findings from a large national survey. Addict Behav [Internet]. 2017;64:287–93. Available from: http://dx.doi.org/10.1016/j.addbeh.2016.03.006

[76] Stapleton P, Luiz G, Chatwin H. Generation validation: The role of social comparison in use of Instagram among emerging adults. Cyberpsychology, Behavior, and Social Networking. 2017 Mar 1;20(3):142-9.

[77] Pittman M, Reich B. Social media and loneliness: Why an Instagram picture may be worth more than a thousand Twitter words. Computers in Human Behavior [Internet]. 2016;62:155–67. Available from: http://dx.doi.org/10.1016/j.chb.2016.03.084

[78] Robinson L, Prichard I, Nikolaidis A, Drummond C, Drummond M, Tiggemann M. Idealised media images: The effect of fitspiration imagery on body satisfaction and exercise behaviour. Body Image [Internet]. 2017;22:65–71. Available from: http://dx.doi.org/10.1016/j.bodyim.2017.06.001

[79] Festinger L. A theory of social comparison processes. Hum Relat [Internet]. 1954;7(2):117–40. Available from: http://dx.doi.org/10.1177/001872675400700202

[80] Raymer, Kristine, "The effects of social media sites on self-esteem" (2015). Theses and Dissertations. 284