

Excessive social media use and suicide in adolescents: Worst side of the coin

Uso excessivo de mídias sociais e suicídio em adolescentes: O pior lado da moeda

Uso excesivo de las redes sociales y suicidio en adolescentes: La peor cara de la moneda

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Abstract

In recent years, a significant increase in suicide cases among adolescents has been seen. At the same time, social networks use has grown, especially among the younger population. This review examined the association of excessive social media use and suicide among adolescents. A bibliographic search of articles, published between 2019 and 2023, was conducted in Pubmed and Science Direct databases using the descriptors “(Social media) AND (suicide) AND (adolescents)” and 26 eligible articles were included. The present study observed that even though social networks facilitates adolescents' access to psychological help, excessive use is related to an increase in psychiatric comorbidities and can influence suicide through various mechanisms such as cyberbullying, cybervictimization, stimulation of self-mutilation and the publication of videos or images depicting lethal means of suicide.

Keywords: Adolescence; Internet use; Suicidal ideations.

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Resumo

Nos últimos anos, observou-se um aumento significativo nos casos de suicídio entre adolescentes. Ao mesmo tempo, o uso das redes sociais tem crescido, principalmente entre a população mais jovem. Esta revisão examinou a associação de uso excessivo de mídia social e suicídio entre adolescentes. Uma pesquisa bibliográfica de artigos, publicados entre 2019 e 2023, foi realizada nas bases de dados Pubmed e Science Direct usando os descritores “(Social media) AND (suicide) AND (adolescents)” e 26 artigos elegíveis foram incluídos. O presente estudo observou que, embora as redes sociais facilitem o acesso dos adolescentes à ajuda psicológica, o uso excessivo está relacionado ao aumento de comorbidades psiquiátricas e pode influenciar o suicídio por meio de vários mecanismos, como cyberbullying, cibervitimização, estímulo à automutilação e publicação de vídeos ou imagens retratando meios letais de suicídio.

Palavras-chave: Adolescência; Uso da internet; Ideações suicidas.

Resumen

En los últimos años se ha observado un aumento significativo de los casos de suicidio entre los adolescentes. Al mismo tiempo, ha aumentado el uso de las redes sociales, especialmente entre la población más joven. Esta revisión examinó la asociación del uso excesivo de las redes sociales y el suicidio entre los adolescentes. Se realizó una búsqueda bibliográfica de artículos, publicados entre 2019 y 2023, en las bases de datos Pubmed y Science Direct utilizando los descriptores "(Social media) AND (suicide) AND (adolescents)" y se incluyeron 26 artículos elegibles. El presente estudio observó que, aunque las redes sociales facilitan el acceso de los adolescentes a la ayuda psicológica, su uso excesivo se relaciona con un aumento de las comorbilidades psiquiátricas y puede influir en el suicidio a través de diversos mecanismos, como el ciberacoso, la cibervictimización, la estimulación de la automutilación y la publicación de vídeos o imágenes que representan medios letales de suicidio.

Palabras clave: Adolescencia; Uso de internet; Ideaciones suicidas.

1. Introduction

Social media, important communication tools for social interaction, have become increasingly used by individuals who interact with each other, presenting their identities, albeit in formation, online (Berryman et al., 2018). Digital and interactive platforms, blogs, forums, connecting sites, and socialization apps (Vidal et al., 2020), such as Facebook, YouTube, Snapchat, Instagram (Müller et al., 2016), Twitter (Marchant et al., 2017), and TikTok (Basch et al., 2022), allow the exchange of messages (Vidal et al., 2020) in a fast way, through internet connectivity (Marchant et al., 2017), attracting a growing number of users, especially among the younger population (Müller et al., 2016).

In recent years, the internet has consolidated and there has been a significant growth in its use, including as a tool for health treatments. However, it can also be used by hidden groups, which are supported by their negative ideations, resulting in a competition among users, as well as being a favorable environment for sharing adverse information, which can affect individuals who are already vulnerable to changing their habits, triggering suicidal ideations that result in suicidal behavior (Marchant et al., 2017).

Suicidal ideations (SI), a broad term that describes a range of desires, contemplations, and concerns about death and suicide (Harmer et al., 2022), are strong lethal predictors that can result in various negative consequences such as hospitalization, injury, and restriction of freedom (Klonsky et al., 2016). Globally, suicide is considered the fifteenth leading cause of death - according to the World Health Organization (WHO) 2014 - entailing the death of over 800,000 people each year, and suicidal behavior is a worldwide cause of disability and death (Klonsky et al., 2016).

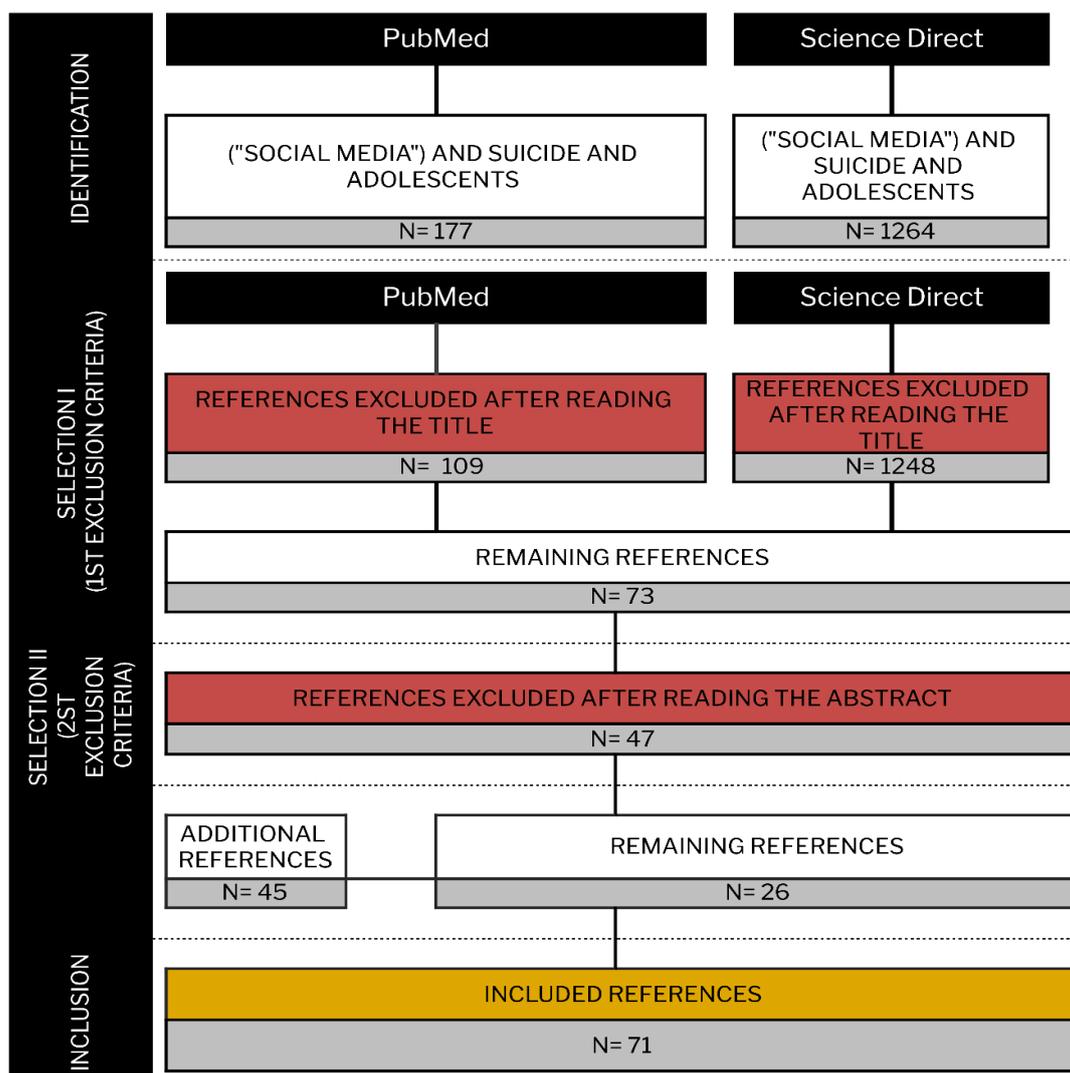
Consequently, surfing the Internet for too long is associated with serious repercussions for mental health, and can result in the emergence of suicidal ideation, in addition to affecting the social and emotional development of individuals (Kirmayer et al., 2013). Several phenomena have been reported relating social media use to decreased interpersonal relationships outside the virtual environment (Kraut et al., 1998), social media addiction behaviors (Anderson et al., 2017), excessive increase in social comparison (Guernsey et al., 2014), and the contagion effect due to increased exposure to suicide reports (Bell et al., 2014). In this context, the link of social media-related factors and the development of negative behaviors such as self-harm and suicidal ideation is alarming, as the information accessed can negatively impact the lives of thousands of young people (Sedgwick et al., 2019). In recent years, parent advocates and policy makers have expressed concern about the potential negative impact of social media use; however, there is still no consensus as to whether this effect actually exists (Berryman et al., 2018).

Thus, since adolescents are major consumers of social media and adolescence is the most vulnerable period for the development of mental disorders, with high rates of suicidal behavior, this study aims to analyze the use of social media and the risk of suicide in adolescents.

2. Methods

This article presents a narrative literature review based on the analysis of scientific articles published from 2019 to 2023, in PubMed and Science Direct, about the social media use and suicide in adolescents. In the application of the first set of criteria, titles that did not mention the theme “social media use and suicide in adolescents” were excluded, as well as articles that were not included in the research period from 2019 to 2023 and articles that were not found in English. In the PubMed database, 68 articles were found through the keywords “(Social media) AND (suicide) AND (adolescents)”. Following the same criteria, in the Science Direct database, 16 articles were found through the keywords “(Social media) AND (suicide) AND (adolescents)”. The second set of criteria was applied, from which were excluded the abstracts that did not address the theme of Social media use and suicide in adolescents, which led to the exclusion of 47 articles. Among the remaining articles, 11 were in duplicate, comprising both the pubmed and science direct databases. In total, 26 articles originally in English (including book chapters, guidelines, reviews and case reports) remained (Figure 1).

Figure 1 - Articles addressing to social media and suicide in adolescents.



Source: Authors.

3. Discussion

Social Media, Screen Time and Mental Health

Several psychiatric disorders, such as depression, anxiety, social isolation, and self-harm have increased in adolescents in recent years, as have suicide rates among this population (Twenge et al., 2012; Ferguson et al., 2021). Such outcomes have been related to the creation of smartphones and the increasing use of screens and social media, even being proposed the denomination of a new mood disorder: digital depression (Ferguson et al., 2021; Ghaemi et al., 2020).

Excessive screen use leads to mental imbalance through mechanisms that include replacement of time spent in personal interactions or their interruption, negative interference with sleep time and quality, cyberbullying and contact with toxic online environments that encourage drug use and hyper sexualization, and access to information about self-injury (Twenge et al., 2012; Ghaemi et al., 2020). The frequent interaction in social media favors the decrease of self-esteem related to the physical body and how the young person conforms to the social norms of his generation imposed, and recurrently exposed, in such tools (Ghaemi et al., 2020).

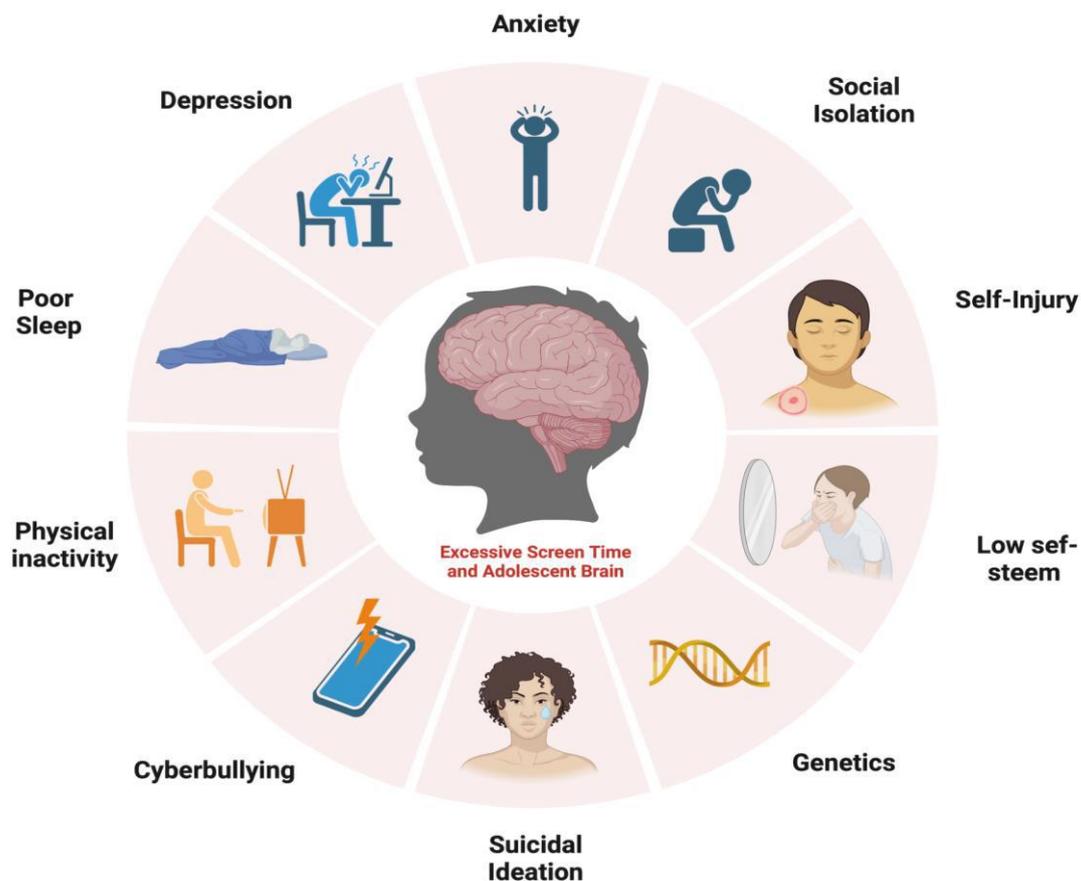
Even though the association between screen use (including television, video games, cell phones, and social media) and suicide risk is contradictory in the literature (Twenge et al., 2012; Ghaemi et al., 2020; Coyne et al., 2021; Twenge et al., 2020), its impact on young people's mental health is well substantiated. In both genders, frequent users of digital media are more likely to have mental health problems (Twenge et al., 2020, Twenge et al., 2019) and decreased use of social apps is associated with reduced depressive symptoms in students (Ghaemi et al., 2020).

There are also gender differences, with early and increased access to television, video games, social media, and entertainment apps being considered risky behavior for girls, while boys' mental health is more affected by the combination of video game use and bullying (Coyne et al., 2021). In general, mental health impairment in girls is more strongly associated with excessive screen and social media use (Coyne et al., 2021; Twenge et al., 2022).

Social media use in different age groups may generate varying psychiatric effects, as indicated by a 2019 study in which high school students showed higher psychiatric morbidity than those in elementary school. Such variation may be related to longer duration of illness or less parental supervision, leading to more toxic forms of use compared to younger ones (Shafi et al., 2019).

The practical recommendation for caregivers would be to delay access to screens and social media as much as possible and limit use to less than 2 hours per day. For adolescents who have anxiety disorders or depression, they should have access further restricted (up to 1 hour per day or total restriction) (Twenge et al., 2012; Ghaemi et al., 2020). This is because 2 hours/day seems to be the threshold at which screen use increases the risk of negative outcomes (Twenge et al., 2012; Coyne et al., 2021; Nesi et al., 2019) (Figure 2).

Figure 2 - Effects of excessive screen time exposure on the adolescent brain.



Source: Authors.

Social Media and Suicidal Ideation

Suicidal ideation is a fairly common behavior, with a lifetime prevalence of 10% of the general population (Nock et al., 2008, Hubers et al., 2018). Some studies report a strong association between suicidal ideation and completed suicide (Taiminen et al., 2001; McGirr et al., 2007; De Leo et al., 2013; Szlyk et al., 2021), since such suicidal thoughts and self-deletions can culminate in the actual suicide (Ribeiro et al., 2016). Many individuals, especially young people, expose their suicidal thoughts on social media, expressing their fears and anguish in an easily accessible environment, being able to manifest themselves anonymously or not. In this digital environment, several exchanges of experiences with suicidal content can occur, such as sharing photos of self-mutilation, besides planning their own suicide (Mérelle et al., 2017; Mokkenstorm et al., 2020).

Thus, social media involves a more direct contact with other people who do not always behave well in the context of the online world. However, the hypothesis that new forms of screen use and social media in particular may increase emotional problems, including suicidal ideation, may still be uncertain (Ferguson et al., 2021).

From this perspective, although social media has created a number of opportunities for individuals to gain social support on the web, it has the potential to negatively impact vulnerable individuals (Khasawneh et al., 2020). Direct exposure to suicidal behaviors and acts of self-injury through social media may increase suicidal ideation through imitation and modeling, especially in children and adolescents. Evidence suggests that suicidal behavior can be propagated through social contagion effects by normalizing and reinforcing media representations (Khasawneh et al., 2020). An example that matches the

risk factors for suicide is the "Blue Whale" game, propagated by social media, which has encouraged thousands of youth and adolescents to self-harm and commit suicide (Khasawneh et al., 2020).

However, although social media act as a means of negative influence regarding suicidal ideation, they can serve as a resource to assist individuals who are immersed in this cloud of self-injurious thoughts. In light of this, it is worth noting that many social networks have gained popularity in recent years with regard to help-seeking and the strong expression of distress among young people. In this context, it is notable the popularization of "Close Friends", a tool of the Instagram network, which contributes positively in this context, at the moment it demonstrates the importance of close friends for self-expression and inadequacy of peer support for suicidal adolescents. It is possible to cite the sharing of negative emotions, interaction and help-seeking as the main motivations for seeking this tool (Chen et al., 2022).

A narrative review by Candice and colleagues (Biernesser et al., 2020; Sampasa-Kanyinga et al., 2015) found that daily use of social networking sites (e.g., Facebook, Twitter, etc.) for two hours or more was observed in 25% of high school students in Ontario and was associated with a five times greater chance of suicidal ideation compared to youth who used social media for less than two hours daily. Ordinal logistic regression performed by Shafi and colleagues (2019) (Shafi et al., 2019) although not statistically significant, showed that youth who reported social media use had higher predicted odds of increased suicidal ideation and suicide risk than youth who reported not using social media, given fixed values of all other variables in the model (Shafi et al., 2021). Furthermore, a systematic review and meta-analysis by Nesi et al. (2021) (Nesi et al., 2021) found that problematic social media use is associated with suicidal ideation, with small and medium effect.

Furthermore, social media can influence suicidal tendency through several factors, from the use of web-based chat forums with posts that deal with self-injurious conduct to the dissemination of videos and graphic images that depict lethal means used in such behavior (Khasawneh et al., 2020). Moreover, another factor that can induce the idealization of suicidal thoughts and actions is cyberbullying. In this context, as the use of this media has become the norm, adolescents are vulnerable to this type of aggression for more hours, being identified as a mediator between social media use and mental state (Twenge et al., 2012). As well, cyberbullying-related increases in frustrated belonging and perceived overwhelm are linked to an increased risk of suicide among cyber victimized adolescents when mediated by depression (Mohd Fadhli et al., 2022).

Both cyberbullying and victimization have been associated with adolescent suicidal ideation (Bonanno et al., 2013; Hinduja et al., 2010) and increased likelihood of suicide attempts (Bauman et al., 2013; Messias et al., 2014; Kim et al., 2020). On this, Sueki analyzed the association of suicide-related Twitter use with suicidal behavior (Sueki et al., 2015; Rossi et al., 2020). Using logistic regression, the study showed that tweeting "I want to die" and "I want to commit suicide" was significantly related to suicidal ideation and suicidal behavior. Thus, victimization due to cyberbullying predicted increased risk of suicidal behavior and other risk behaviors, such as unsafe sexual behavior and violent behavior, mediating the link between cyberbullying and suicidal behavior in high school students (Kim et al., 2020; Litwiller et al., 2013).

Social Media, Self-Mutilation and Suicide

In recent years, the socioemotional landscape of individuals has been reshaped by the widespread adoption of social media (Nesi et al., 2021; Hamilton et al., 2021; Hawton et al., 2020). Given the highly pervasive use of social media, it behooves us to understand the ways in which social media use intersects with mental health concerns (Nesi et al., 2021). Concomitantly with the increase in the use of such media, there has been a troubling increase in the prevalence of self-injurious thoughts and behaviors among youth (Nesi et al., 2021; Nesi et al., 2022).

Social media use is of great complexity, presenting several potential components, with regard to use, that may influence self-injurious thoughts and behaviors. According to studies, the risk of negative mental health impairments may be increased as a result of negative social media behaviors, such as viewing content related to self-harm themes, social

comparison, and excessive use, as well as negative experiences in this environment, such as cyberbullying or social exclusion (Sedgwick et al., 2019; Biernesser et al., 2020; Nesi et al., 2021; Hamm et al., 2015; Nesi et al., 2015). Previous research suggests that social media use may be linked to impulsivity, risky behaviors, self-injurious behavior, and suicidal tendencies (Nesi et al., 2021; Sueki et al., 2015; Brown et al., 2018). Adolescents have been observed to have an increased use of social media to communicate distress to peers in the midst of psychiatric crises (Shafi et al., 2021; Belfort et al., 2012), in addition to interference and influence from their own environment, such as self-harm groups on Facebook (Shafi et al., 2021; Zdanow et al., 2012) and the veneration and rationalization of self-harm on Instagram (Shafi et al., 2021; Moreno et al., 2016).

Although not all youth exposed to harmful digital experiences are negatively affected to the point of committing or risking deliberate self-injury (Biernesser et al., 2020; Vallance et al., 2014), youth who are more vulnerable to suicide, such as depressed youth, are more likely to be exposed to harmful content on social media, such as self-harm (Biernesser et al., 2020; Dyson et al., 2016). Furthermore, studies have shown that assiduous users manifest a higher likelihood of being unhappy, depressed, or exhibiting risk factors for suicide (Twenge et al., 2012; Twenge et al., 2019). However, in many cases, the literature shows that non-technology users are slightly worse off than non-assiduous users (those who use technology about 1 hour/day). This finding suggests that the problem is overuse and misuse, rather than the digital media itself (Twenge et al., 2012; Twenge et al., 2019; Baumeister et al., 1995).

With most adolescents carrying their own smartphones, there is a greater chance of exposure and access to content regarding self-harm, where such access can nurture contagious behavior and encouragement among adolescents to perform self-injurious behaviors (Twenge et al., 2012; Spiller et al., 2019). One can cite as an example the "blue whale" challenge where the "player" is instructed to commit a series of self-injurious actions, to repeatedly cut themselves and perform other dangerous tasks, resulting in an increased risk of suicide. Indeed, the repetition of self-harm and other dangerous tasks result in a normalization of feelings of fear regarding such dangerous behaviors (Lupariello et al., 2019; Hawton et al., 2015; Hawton et al., 2012).

Since peer behavior can be a strong predictor of participation and involvement of other adolescents to self-injurious behaviors (Villani et al., 2019; Baumgartner et al., 2011), the study by Villani et al (2019) (Villani et al., 2019) aimed to identify individual predictors of adolescents' beliefs about peer motivations to participation in a recent online self-harm challenge. Two main groups were identified, adolescents who attributed a central role to the desire to belong to a group and who did not see recruiters as a possible source of attraction, being the majority, and a second group who believed that their peers' motivations would be related to recruiters who compel peers (physically and/or mentally) to participate, drawing them into the game. In addition, possible individual characteristics that make adolescents more likely to attribute the desire to belong and their own desires to peers as the main factor, consist of higher levels of stress and greater submission and exposure to risky situations (Villani et al., 2019; Mikolajczak et al., 2009). The results, then, suggest that such adolescents are significantly more likely to be members of the "internal causality" class than the "external causality" class (Villani et al., 2019).

Social Media Addiction and Suicide

As previously specified, social media can be potentially harmful by normalizing suicidal behavior and trigger effects, and their frequent use is a risk factor that can amplify the incidence of suicide in young people [30]. In a study conducted in 2020, in which one of the objectives was to measure the prevalence of social media addiction among adolescents in Egypt and its psychiatric impact, it was found that adolescents identified with PIU (problematic internet use), had higher psychiatric comorbidities (Khalil et al., 2020). In line with this, there is a growing consensus that the decline in mental health in young people, may be linked to increased online time and excessive use of social media (Twenge et al., 2012). However, Hamilton and colleagues (2021) noted that too little social media time, and text messaging use may also represent a greater likelihood in

suicide planning, with these metrics being related to the greater presence of depressive symptoms and death wishes (Hamilton et al., 2021).

Although social media has created a number of opportunities for individuals to gain online support and social connection (Weinstein et al., 2021), such as using Instagram's 'Close Friends' feature to increase help-seeking and the release of negative emotions in a more private virtual environment (Chen et al., 2022) or serving as a powerful means of disseminating information, promoting a sense of social connection and mutual support (Hawton et al., 2020), it may have been a contributing factor to the significant increase in suicide rates among vulnerable adolescents over the past decade, with frequent exposure to videos and graphic images depicting and disseminating lethal suicidal methods (Hawton et al., 2020), cyberbullying (Mohd Fadhli et al., 2022; Kim et al., 2020), and peer pressure on forums and social networks for self-injurious behavior - such as the blue whale challenge - being the main influences that can lead to this type of behavior (Khasawneh et al., 2020).

The relationship of social media addiction and suicide is not well understood (Hamilton et al., 2021). However, using social media to report suicidal behaviors and exposing self-harm, are factors related to the high risk of committing suicide (Rossi et al., 2020; Seong et al., 2021). As well as abrupt withdrawal of the phone from adolescents with addictive patterns to the use of the device, also becomes a factor for risk of suicidal ideation (Nesi et al., 2022). It is noticeable the use of social media to get support, either in seeking help or for encouragement to commit self-harm and suicide (Rossi et al., 2020). However, further studies need to be conducted to determine if social media addiction is directly related to consummated suicide.

4. Conclusion

The present study demonstrated that social media use can impact both positively and negatively on the mental health of adolescents who are at risk for suicide. The impacts of screen and social media use on the mental health of young people is already well substantiated in the literature. We have observed that addiction to social media - and consequently to screens - can lead to mental imbalance and an increase in psychiatric comorbidities from interference with social relationships, sleep quality, and contact with toxic online environments. Because of this, it is recommended by experts to reduce the daily screen usage time to 2 hours.

In the relationship between social media, suicidal ideation, self-harm, and suicide we observed that, although social networks have created a number of opportunities for individuals to obtain support and can serve as a resource for assistance, they can also influence suicidal behavior through various factors, such as cyberbullying, cybervictimization, publications that deal with self-injurious conduct, and the dissemination of videos and graphic images depicting lethal means.

Therefore, although we have evidenced strong correlations between the use of social media and the incidence of suicide in adolescents, further studies are needed to evaluate this relationship in order to improve the understanding of the subject, and may help to reduce this behavior, whether in adolescents or individuals of other age groups.

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