Facebook and Suicidal Behaviour

Contributor: Sheikh Shoib, Miyuru Chandradasa, Mahsa Nahidi, Tan Weiling Amanda, Sonia Khan, Fahimeh Saeed, Sarya Swed, Marianna Mazza, Marco Di Nicola, Giovanni Martinotti, Massimo Di Giannantonio, Aishatu Yusha'u Armiya'u, Domenico De Berardis

Facebook represents a new dimension for global information sharing. Suicidal behaviours and attempts are increasingly reported on Facebook. Facebook impacts on suicidal behaviours in different aspects. Announcing suicides through sharing notes or personal information may lead to the prediction of suicide but be harmful to the online audience. Live-streaming videos of suicide is another aspect that questions Facebook's ability to monitor shared contents that can negatively affect the audience. A positive impact is helping bereaved families to share feelings and seek support online, commemorating the lost person by sharing their photos. Moreover, it can provide real-world details of everyday user behaviours, which help predict suicide risk, primarily through novel machine-learning techniques, and provide early warning and valuable help to prevent it. It can also provide a timeline of the user's activities and state of mind before suicide. Social media can detect suicidal tendencies, support those seeking help, comfort family and friends with their grief, and provide insights via timelining the users' activities leading to their suicide. One of the limitations was the lack of quantitative studies evaluating preventative efforts on Facebook. The creators' commitment and the users' social responsibility will be required to create a mentally healthy Facebook environment.

Keywords: suicide attempt ; behaviour ; prevention ; Facebook

1. Introduction: Suicides and Social Media

Globally, 700,000 people die yearly by suicide, and 77% of these suicides occur in low and middle-income countries [1]. Suicides are frequently under-reported for various societal, economic, and political reasons; therefore, the actual number of suicides is believed to be significantly higher [2]. Early cases have been documented wherein users took to social media to post suicide notes, announce, or even broadcast their suicide attempts [3]. Social connectedness, school support, and family relationships are major protective factors against suicide. Further, the use of distractions, problem-solving skills, and high self-esteem reduced the risk of developing suicidal ideation [4]. Some risk factors in young people for suicide include lack of social support, imprisonment, poor life skills, family history, diagnosed mental disorders, adverse life events, abuse in childhood, academic stress, use of alcohol, and cyberbullying [5].

Today, social media has become a mainstay of communication, and out of the diverse options available, Facebook is the largest known platform, with close to three billion users [6]. Social media broadens the scope and content of human communication and allows for free expression and selective representation of undesirable behaviour [7]. An emerging trend in the last few years is announcing suicide on Facebook [8]. It is observed that young people who self-harm use the Internet frequently to express their distress, and there is a rising trend of people dying by suicide after posting on social media, which is found to have assortative patterns [9]. Certain users post their intent publicly on social media and then die by suicide, and a number of such cases have been reported [6].

According to studies, expressing suicidal intent via social media platforms might be seen as an unconventional means of seeking help, and this has encouraged researchers to look into harnessing the powers of social media to prevent suicides [10]. It is observed that users are keen to be helpful; however, they lack the knowledge required. Efforts focused on empowering social media users, such as forming rescue or support groups, would make for a convivial and welcoming online world [11][12][13]. Prevention of suicides by monitoring social media posts and analysing online behaviour would be possible [14]. Artificial intelligence-driven suicide prediction methods are tested and used that could improve the capacity to identify those at risk of self-harm and suicide, and, hopefully, could save lives [15].

2. Suicides and Facebook

Table 1. Announcing suicide on Facebook.

Authors	Article Type	Report	Key Points
Behera et al., 2020 [6] (NO_PRINTED_FORM)	Case presentation and discussion	A 32-year-old male who died by suicide was discovered hanging at his residence. The investigation found that he had uploaded a suicide note to Facebook. Images of the ligature and multiple messages regarding his intention were mentioned earlier on his account, and he had requested his online friends to support his family.	People share personal information more openly on Facebook. Posting about their suicide on social media gives the victim the chance to reach out to others without meeting or even knowing them. It may be possible for one of the Facebook contacts to offer support and intervene to prevent suicide.
Ahuja et al., 2014 [16]	Clinical case discussion	A patient was hospitalised after making an impulsive suicide attempt, and social media was used to identify the events leading up to the attempt. This evidence helped the patient gain more insight and agree to participate actively in treatment.	The timeline of social media posts can speculate the events before a person's suicide attempt enabling the identification of triggers. Social media platforms may be valuable in identifying and preventing suicide by screening users at considerable risk and providing online support.
Ruder et al., 2011 [3] (NO_PRINTED_FORM)	Case report	A case involving a suicide note on Facebook discussed potential consequences.	Suicide notes on social media may help prevent suicide as other users could intervene and extend support. The extent of copycat suicides on Facebook is unclear.
Soron, 2019 [17]	Case report	A 25-year-old female died by suicide by hanging in Bangladesh. Numerous posts on her Facebook were evidence of her deteriorating mental state and her suicidal ideation. Nevertheless, she was ridiculed and goaded by saying, "you should die", while others thought it was funny or frivolous.	There is increasing interest in finding how Facebook can be used for suicide prevention. For suicide prevention efforts to succeed, users' appropriate and active participation must be ensured.
Barrett et al., 2016 [18]	Cross-sectional study	Among 1435 non-fatal self-harm cases, 44 left a social media suicide note, and 71 left a paper suicide note. Clinical notes of clients presenting with self-harm to two emergency departments were searched for mentions of social media use. Risk factors were compared to clients who used paper notes.	It was observed that leaving suicide notes on social media was associated with younger age, substance use, and repeated non-suicidal self-injury. On the other hand, leaving a paper note correlated with higher suicidal intent and risk.
Islam et al., 2021 [8]	Case series	In Bangladesh, nine cases who expressed their intent on Facebook were studied. A series of reports in which victims died by suicide after sharing their distressed thoughts and emotions on Facebook posts or live-streaming. Most of the victims were adolescents and youth.	Adolescents and young adults frequently share their suicidal thoughts on social media rather than with their families or mental health professionals. Artificial intelligence and machine learning are recommended to screen potential suicidal content on social media.
Rossi and de Silva, 2020 [19]	Case report	A male patient presented to the emergency room after an intentional overdose following an altercation with his girlfriend. He had posted, "there is no coming back from this". There were thousands of views, with some viewers encouraging him and influencing his behaviour.	Social media provides a large audience and unrestricted reach for self-expression, encouraging people at risk of self-harm and suicide. The social media environment also normalises suicide and self-injury and may encourage competition between users to injure themselves more seriously.
Kailasam and Samuels, 2015 [20]	Case presentation and discussion	In the USA, two cases were presented who left suicide notes on Facebook before an attempt.	Social media could be recruited for early intervention. High-tech monitoring methods should be administrated for high-risk patients.

More people sharing personal information openly on Facebook allows them a chance to reach out to others even without knowing them. There are several reports of reported suicides where a suicide note was shared on Facebook beforehand [3][6][16][18]. In emotionally distressful situations, it may be possible to offer support and prevent a potential suicide [21]. By analysing public posts and suicide notes, social media platforms should identify users at an elevated risk and provide online support [3][6][16]. Suicide notes found on Facebook were associated with a younger age, psychoactive substance use, and previous non-suicidal self-injury in the individual [18].

Further, young people could express and share their suicidal thoughts on social media more conveniently than with their families or professionals [8]. An unrestricted reach for self-expression was provided by Facebook and encouraged people

in distress to normalise self-harming behaviour, and some even competed with others to injure themselves more seriously [19][20]. Apart from the opportunity to express their distress, repetitive negative thinking, which is likely to be present in many in emotional distress, and addictive Facebook use are associated with suicidal ideation and suicidal behaviour. This may have led to a social–emotional environment invigorating potential harm directed at self [22].

Few studies have investigated the links between social media use, personality disorders, and traits [23][24]. For example, having more Facebook friends has been associated with mania, histrionic, and narcissistic personality disorder symptoms, and fewer symptoms of dysthymia and schizoid personality disorder [24]. Facebook users, compared to non-users, reportedly had higher self-esteem and narcissism levels [23]. These findings possibly underscore the crucial impacts of personality disorders and their traits on suicidal behaviours via social media.

People stream their suicide attempts live, and timely interventions with the support of the regional mental health teams are required to save lives [25]. At times, loved ones are left helpless by such incidents, and some have taken legal action against the social media platform [26]. Persons who live-streamed suicidal behaviour were mainly under 35 years of age, and a majority were male students resorting to hanging and poisoning to harm themselves [21]. The victims had experienced relationship conflicts and academic stressors, as seen by their most recent posts before harm, and it is shown that stress-management interventions through Facebook are beneficial for young people [27].

Memorial pages on Facebook have given a platform for loved ones to mourn the loss of a family member or even a fictional character due to suicide [28][29][30]. These pages contained long, detailed posts by loved ones and words suggesting they struggled with their losses [31]. Women experiencing a loss and grieving were more likely to be Facebook subscribers, and mental health messages would be able to offer psychological support [32]. Furthermore, research shows that many individuals use Internet forums and Facebook groups to grieve losses and find emotional support [28][29]. Despite many people seeking face-to-face professional support, they preferred informal support from online platforms such as Facebook. For many, Facebook allowed bereaved people to memorialise their loved ones and feel their ongoing virtual presence [3][16]. Individuals post on Facebook about their loss and grief to commemorate the deceased loved ones, mourn, and remember their special occasions, allowing them to vent their distress in a virtual environment [33][34].

Multi-task artificial neural network models analysing Facebook posts could predict suicide risk better than a single-task model [35]. This will facilitate building tools to predict suicide risk among users correctly and has successfully dealt with crises in inpatient settings [36]. Users on Facebook can anonymously post their distress, minimal suppression of emotional expression, and prevent interpersonal communication breakdowns [37][38]. Social media, such as Facebook, provides an opportunity to talk to others and provide emotional support. There are substantial benefits of social media in suicide prevention [39]. However, Facebook needs to adhere to suicide-reporting guidelines, as harmful content is frequently seen and should prevent the glorification of suicidal deaths [40][41]. In the future, Facebook has demonstrated efficacy and cost-efficiency in recruiting people for suicide prevention activities which could be used to develop far-reaching strategies [42]. Newer technologies, such as artificial intelligence and machine learning, will play a core role in future preventive strategies, and finding the correct balance between safety and ethics will be a significant challenge [43]. Facebook, indeed, needs an algorithm to detect and prevent suicide in action and to achieve this, machine learning classifiers need to be built, and many examples need to be fed into the system [44]. Various combinations of words impact on the classifier's confidence, and it scores the content based on previously confirmed cases of suicidal expression. The classifier scores are inserted into a random forest learning algorithm, a machine learning type specialising in numerical data [44].

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