

Changes in suicide-related tweets before and during the COVID-19 pandemic in France: The importance of social media monitoring in public health prediction

Jeanne Jerpan ^a, Véronique Moriceau ^b, Alexandrine Salis ^a, Remy Klein ^a, François Olivier ^a, Juliette Salles ^{c,*}

(a) Department of Psychiatry, CHU de Toulouse, University Hospital of Toulouse, Fédération régionale de recherche en psychiatrie et santé mentale d'Occitanie, Toulouse, France

(b) IRIT, université de Toulouse, CNRS, Toulouse INP, UT3, Toulouse, France

(c) Department of Psychiatry, Infinity (Toulouse Institute for Infectious and Inflammatory Diseases), Inserm UMR1291, CNRS UMR5051, CHU de Toulouse, University Hospital of Toulouse, université Toulouse III, Toulouse, France

(*) Corresponding author. Department of Psychiatry, Toulouse Purpan University Hospital, Toulouse, France. E-mail address: juliette.salles@hotmail.fr (J. Salles).

Abstract

Introduction. – The COVID-19 pandemic impacted mental health, as demonstrated by numerous studies. In recent years, especially during the pandemic, the use of social networks, including Twitter, increased. This suggests that this media could help with mental health monitoring, as attested by previous studies.

Method. – We conducted a multidisciplinary study on French tweets that were posted between January 1, 2019, and December 31, 2021. We selected the tweets via the Twitter API (Application Programming Interface) using five keywords relating to suicide: want to die, suicidal ideation, commit suicide, suicidal, and suicide attempt. A word frequency analysis was performed, and the data were compared with the number of emergency visits for suicidal ideation before and during the COVID-19 pandemic as recorded by the French national suicide observatory.

Results. – We observed that 189,005 tweets were related to suicide in 2019, 261,993 in 2020 (+38.62% of that observed in 2019), and 301,177 in 2021 (+59.35% of that observed in 2019). We also observed an increase in the number of tweets containing control words in 2020 (+30.07% of that observed in 2019), but in 2021, the number almost fell back to the level of that in 2019 (+5.96% of that observed in 2019). Furthermore, the difference between both ratios (of suicide-related tweets and of tweets containing control words) was most significant during the third lockdown. The change in the number of suicide-related tweets followed a curve that overlapped with the change in the number of emergency visits following suicidal ideations, as reported by the French national suicide observatory. In conclusion, Twitter can be an adequate and reliable tool for screening for suicidal ideation in the general population.

No. of Pages 8

<https://doi.org/10.1016/j.encep.2023.09.006>