Student suicide: can artificial intelligence predict the worst ?

MENTAL HEALTH – Suicide is the other monster whose shadow hangs over 15-24 year olds, the population most at risk and greatly affected by the disarray linked to successive confinements and curfews.

How to avoid and anticipate these increased suicidal risks? A study published in the journal *Scientific reports* this Tuesday, June 15 provides some elements of a solution. Conducted with 5,066 students, between 2013 and 2019, it analyzes 70 parameters from questionnaires completed by young people.

"We wanted to see which were the most predictive", explains to *HuffPost*, Christophe Tzourio, professor of epidemiology at the University of Bordeaux, practitioner at the Bordeaux University Hospital and director of the Bordeaux Population Health research center. "We counted 4, which had true prediction values."

"These are suicidal thoughts, self-esteem, depression and anxiety," said Mélissa Macalli, a doctoral student in epidemiology and lead author of the study, with Marie Navarro.

"Random forests" to improve care

"Attention, emphasizes Christophe Tourzio, we are not at the individual prediction. Just because a student will have these 4 high risk parameters does not mean that we can tell if he or she will commit suicide. These 4 parameters will mainly be used to develop questionnaires that can then be distributed to first year students, where they are most prone to depression and anxiety. This will allow us to determine broad overall categories of fragile students. And to refer those who have been identified as particularly at risk to support services. "

"The advantage of this unprecedented study, says Mélissa Macalli, is that it used a new statistical model in mental health: random forests. Classic models cannot integrate more than 70 parameters, nor take into account the potential interactions between them. Random forests are commonly used for prediction in all areas. But among the students, we are the first to do it. And that has given us encouraging results. "

Among the 4 reflective parameters, self-esteem surprised the researchers. "We were surprised to find self-esteem among the criteria, because during discussions with psychiatrists, this parameter was not stated as a main vector of suicidal thoughts. Our work has borne fruit, since we were able to isolate this parameter and realize how much it was indicative of psychological distress. "

Student distress on the rise

The psychological distress of students is said to be on the rise. While it is still difficult to obtain precise data on the risk in question, we already know that after the first confinement, a study conducted by the National Resource and Resilience Center (CN2R) reported that 11, 4% of the 70,000 students surveyed have had suicidal thoughts in the past 12 months.

In July 2020, 16% of students surveyed, in the survey "The life of a confined student" of the National Observatory of Student Life (OVE), felt "so discouraged that nothing could cheer them up" and 50% of them said they suffered from loneliness or isolation during confinement.

Initially wanted by Emmanuel Macron for before the summer, the foundations of psychiatry and mental health are postponed to "next September" so that "the preparatory work" continues "throughout the summer", announced this Tuesday the Ministry of Health.

See also on *Le HuffPost: What more will the French test concert bring compared to others already organized in Europe?*

Student suicide artificial intelligence predict worst