Deaths tied to viral videos inspire prevention research

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Laura Whitlock, Kapil Chalil Madathil and Heidi Zinzow (left to right), all of Clemson University, are conducting research that could help researchers better understand why social media challenges go viral and what can be done to keep youths from harming themselves. Credit: Craig Mahaffey/Clemson University

Deaths that have been tied to social media challenges are capturing the attention of Clemson University researchers who want to begin

developing new ways of protecting adolescents and young adults from harming themselves.

A new study will draw from interviews with youths who range in age from 13-25 and participated in two viral self-harm challenges, including one that involves a series of tasks that ends with suicide. Researchers will also analyze publicly available data from Facebook, Instagram, Reddit, Twitter and YouTube.

It's the latest attempt to blunt the impact of viral videos that may seem fun to teens but have become a nightmare for parents. Some challenges have encouraged participants to eat laundry detergent, set themselves on fire and stay awake for 48 hours.

While no official count is kept, several deaths around the world have been tied to the challenges, including at least one in South Carolina. Some of the deaths were accidental, while others were suicides.

The College of Engineering, Computing and Applied Sciences is not naming the challenges in accordance with safe-messaging guidelines aimed at preventing the challenges from spreading.

Kapil Chalil Madathil, an assistant professor of industrial engineering, is leading the research as principal investigator. The National Science Foundation is funding the project through its program EArly-concept Grants for Exploratory Research.

"This will be the first empirical study to descriptively and critically analyze the content and potential harm posed by social media challenges, as well as identifying the characteristics that may contribute to their viral spread," Chalil Madathil said.

The project could lead to more research and ultimately to new ways of

preventing suicides, particularly the clusters of suicides that crop up when teens start imitating what they see others doing.

Laura Whitlock, an assistant professor of psychology at Clemson, said previous research has shown that certain messages about suicide and self-harm increase the risk of other people engaging in the same behavior through social modeling.

"We want to investigate, 'How dangerous are the messages about these challenges from that perspective?'" Whitlock said. "We also want to look at what characteristics about these messages cause them to spread virally. The ultimate aim would be to develop future ways to inoculate or prevent these sort of phenomenon in the future."

Heidi Zinzow, an associate professor and licensed clinical psychologist, said that self-harm and suicide rates rise when self-harm and suicide are glamorized or portrayed in the media in great detail.

That's especially true for vulnerable individuals who are exposed to those messages, she said.

"We have reason to believe a similar phenomenon can occur through these social media challenges," Zinzow said. "This is another permutation of behavioral contagion that's novel and can spread a lot faster. It's potentially very dangerous and an important area to investigate."

Social media sites have begun offering help. Searches for self-harm challenges on Twitter, Reddit and YouTube bring up the phone number for The National Suicide Prevention Lifeline. The same search on Facebook and Instagram results in offers to help and, with a few clicks, the lifeline number.

But more can be done, researchers said.

"There are interventions happening at the local level," Chalil Madathil said. "The efficacy of these interventions has not been studied. So we can develop mathematical models that could identify the efficacy of the interventions and see what their impact is going to be over time. That's something we're planning to pursue based upon the initial findings from this pilot study."

Further interventions could include algorithms that help identify excessively harmful messages and a renewed emphasis on adhering to safe-messaging guidelines.

The National Suicide Prevention Lifeline is 1-800-273-8255. Another important resource for those who need help is the National Crisis Text Line at 741741, researchers said.

Chalil Madathil said the team decided to begin the project after noticing several instances of self-harm caused from participating in such challenges

In the first phase of the study, the group from Clemson will collaborate with researchers at Amrita Vishwa Vidyapeetham School of Medicine in Kerala, India. They will interview youths who participated in a self-harm challenge to better understand risk factors and why they decided to engage in the challenge.

"While this population of social media users is outside the United States, we believe it is still highly valuable to conduct these interviews in India because it is rare to have access to a targeted population of people who have engaged in such high risk behaviors," Chalil Madathil said.

Researchers are also looking for participants in the United States.

If the challenge participant has committed suicide or is too distraught to be interviewed, researchers plan to interview the person's family. A critical response protocol will be followed for participants who express significant distress or suicidal ideation.

In the second phase of the study, researchers will analyze 250 posts from the five social media sites. They will look at a range of factors, including the type of message, such as whether it encouraged or discouraged the challenge.

Researchers will also consider the type of media content, demographics of those posting the message and those referenced in the message. They will also look at how many views, likes and shares posts get.

Pamela Wisniewski, an assistant professor of computer science at the University of Central Florida, is a co-principal investigator in the research. Her expertise is in the field of human-computer Interaction and adolescent online safety.

"It is imperative that we begin to study the occurrence and effects of potentially harmful viral social media challenges, so that we know how best to design socio-technical interventions to protect teens and young adults from these online threats," Wisniewski said.

"Until we have a better idea of how these challenges manifest and whom is engaging in these challenges, we do not know how to improve interface designs or develop computational approaches to combat these risks. This is a first and necessary step to addressing an important societal problem."

Also serving as co-principal investigator is Meera Narasimhan, who is special advisor to the University of South Carolina president for health innovations and economic development and professor and chairwoman

in the Department of Neuropsychiatry and Behavioral Sciences at the USC School of Medicine.

"Online challenges provide the player with an alternative reality that is not their own wherein they have to interact with a virtual environment to progress through the challenge," she said. "They have the potential to become powerful tools that can be used to change the way we think and potentially result in mental health issues like depression, suicidal behavior, and being bullied."

Krishnashree Achuthan, who heads the Cybersecurity Systems and Networks center at Amrita Vishwa Vidyapeetham, said that "these studies will also provide directions to development of socio-technical solutions with the goal of preventing addictive behaviors to social media usage."

Provided by Clemson University