



Epidemiological Alert Intoxications due to chemical substances associated with social media challenges

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In recent months, there has been a significant increase in intoxications associated with the ingestion or inhalation of chemical substances related to challenges posted on social media that encourage the consumption of these substances for recreational or other purposes, mainly among adolescents. The Pan American Health Organization / World Health Organization (PAHO/WHO) recommends Member States to implement mechanisms to detect intoxications due to substances related to challenges on social media and to promote prevention and awareness strategies to reduce the risks associated with these practices.

Summary of the situation

In 2021-2022, the World Health Organization (WHO) conducted a Health Behavior in School-aged Children (HBSC) study, which surveyed approximately 280,000 minors aged 11, 13, and 15 years old in 44 countries in Europe (40 countries), central Asia (three countries), and the Americas Region (one country) (1). According to data from this study, more than one in ten adolescents (11%) reported signs of inappropriate use of social media¹, which included difficulties in controlling their compulsive use, distress when their use is restricted, and/or when they are not online. A difference was observed regarding inappropriate use, with a higher proportion among females (13%) compared to males (9%) (1). These social media behaviors have been linked to a range of consequences including social isolation, addictive behavioral patterns, and physical health problems (1, 2).

In recent months, there has been an increase in the participation of young people in so-called "challenges" on social media that, in some cases, are related to dangerous health practices. Some of these challenges encourage young people to ingest or inhale chemical substances, such as medicines (over-the-counter or without medical prescription), cosmetic products (containing solvents as propellant agents), or household products (aerosols, solvents, paints, cleaners). These challenges seek to generate euphoria or social validation through "likes" and followers, representing a serious health risk for those who participate in them (3).

The lack of digital literacy and social pressure in the virtual environment has exacerbated this situation, highlighting the urgent need to implement effective prevention and surveillance strategies (2).

According to a 2024 analysis using data from the United States National Poison Data System (U.S. NPDS), the most common practices associated with online challenges include the

¹ The study considered traditional social networking sites, instant messaging applications, and other interactive social applications.

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ingestion of detergent capsules, cinnamon, nutmeg, and diphenhydramine, which can occur in the contexts of both misuse and suicide attempts. Of the 2,169 cases included in the analysis, 45% showed moderate health effects and 6.4% severe effects. In addition, it has been observed that suicide attempts related to these challenges tend to increase one to two months after peaks in online searches, indicating a critical window for public health intervention (3).

Notably, according to the study, the 10 to 12-year age group had the largest increase in intoxications following peaks in online searches compared to other age groups. According to this study, many important developmental changes occur during this period of life, coinciding with increased access to social media, with the average age at which children receive their first cell phone recently cited as 11.6 years (3).

The harm associated with the use of chemical substances, in the short or long term, depends on the interaction of multiple factors, including the type of substance and the form of consumption, the personal, physical and psychological characteristics of the consumer, and also the social context in which consumption occurs (4, 5).

Some health impacts related to exposure to chemical substances are mentioned below (4):

- Conditions during pregnancy and child development: Low birth weight, prematurity, congenital malformations, neurological deficits, and intellectual disabilities.
- Respiratory system effects: Asthma, chronic obstructive pulmonary disease (COPD), respiratory infections, reduced lung function, and exacerbation of diseases.
- Cardiovascular effects: Ischemic heart disease and stroke.
- Impact on mental health and neurological effects: Suicides and neurological disorders such as Parkinson's disease related to the use of pesticides, and other behavioral and mental disorders.
- Exposure to carcinogens and environmental pollutants: Related to occupational carcinogens, air pollution, and secondhand smoke.
- Unintentional poisonings: Deaths from substances such as pesticides, solvents, and carbon monoxide.

Guidance to Member States

PAHO/WHO recommends that Member States reinforce surveillance for intoxications, especially among young people, by implementing monitoring strategies on social media and developing awareness and prevention campaigns to mitigate the impact of these challenges on the mental and physical health of adolescents.

A coordinated and collaborative response by the health community is essential to prevent these hazards, especially among children and adolescents (1, 2).

Surveillance and monitoring

To strengthen the response capacity to chemical intoxications related to social media challenges, it is essential to establish effective surveillance and monitoring strategies, such as the following (1):

- Strengthen surveillance systems and Toxicological Information and Counseling Centers to detect and report incidents of chemical intoxication, especially among young people.
- Implement monitoring programs on social media to identify trends or challenges that encourage dangerous behavior.
- Develop early warning mechanisms based on the observation of peaks in internet searches, which would allow for the detection of patterns for social media challenges related to hazardous substances.

Diagnosis and clinical management

Treatment for affected individuals includes immediate medical care to stabilize physical symptoms and psychological follow-up to address dependence and possible related mental health problems. Education about the risks and restricting access to these products in contexts of abuse are key prevention measures (1, 2).

To ensure adequate clinical management of cases in the acute intoxication phase, it is recommended to:

- Ensure that medical personnel are trained in the rapid identification and proper treatment of chemical poisonings.
- Provide clear guidelines for emergency response units to handle severe cases, including the use of antidotes when necessary and supportive care measures.
- Improve mental health services to provide confidential and accessible care to young people affected by inappropriate use of social media or substances.

Prevention and education

To address the risks associated with online social media challenges involving hazardous substances, it is essential to implement prevention and education strategies (1, 2). These actions should include:

- Awareness campaigns targeting adolescents and parents about the risks of participating in online challenges involving harmful substances.
- Education of health professionals to recognize symptoms of intoxication related to these trends and report cases in a timely manner.
- Promotion of specific interventions, adapted to age, gender, and cultural context, focused on developing digital literacy skills and fostering healthy online behaviors.
- Implementation of school programs that address the responsible use of social media, online safety, critical thinking, and healthy habits related to the use of technology.

Community and family involvement

Community and family involvement is fundamental to prevent the risks of inappropriate use of social media, promoting digital literacy and dialogue about the risks (1, 2). This includes actions such as:

- Engaging schools and community organizations in prevention efforts, promoting digital literacy and responsible internet use.
- Encouraging families to maintain open communication with children and adolescents about the use of social media and the associated risks.
- Fostering family, school, and community dialogues on digital wellness, reducing stigma, and increasing awareness of online risks and challenges.
- Training educators and health care providers to provide effective support in digital education and the prevention of risky behaviors in social media.

Institutional actions for the governmental and private sectors

Institutional actions are key to ensure the protection of young people in the digital environment, promoting the accountability of platforms and strengthening public policies that regulate their use (1, 2). These include:

- Promoting accountability of digital platforms and ensuring compliance with age restrictions and regulations that encourage responsible design of digital tools for youth.
- Collaborating with local and regional authorities to strengthen public policies that protect adolescents in digital environments.
- Strengthening and disseminating the work of the Toxicological Information and Counseling Centers.

References

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