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Hazardous Gaming: Challenges in the Social Media Involving Children and Adolescents

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Abstract

Purpose of the Review Hazardous gaming has become a challenge on the social media for children and adolescents everywhere, causing fatalities and injuries. How to diagnose and prevent such risks has become another relevant task for pediatricians and psychologists and also for parents and educators.

Recent Findings The use of the information and communication technologies along with the ever-evolving new apps and video platforms offers new concerns on how to be safe online. Risky trends began to rise during 2021–2022. Latest update shows 1357 cases reported mainly in USA and 49 fatal or severely injured children and adolescents aged 7 to 18 years, in Brazil.

Summary How to better balance digital health risks and opportunities is a social responsibility for everyone. It is vital to block any dangerous type of videos in a safe way to end mental health problems, violence, injuries, fatalities, and the death toll during childhood and adolescence.

Keywords Hazardous gaming · Adolescence · Media environment · Internet users · Risk-taking behavior · Fatalities

Introduction

Children and adolescents are frequent Internet users. They have the right to information with true, clear, and understandable messages as well as healthy positive videos and images. Most importantly, they have the right to be safe and not to be exploited or threaten by violent contents or provocative and hazardous gaming videos. Smartphone access and Internet use by children and adolescents have grown exponentially over the past decade. Empathy, respect, and ethical considerations must be part of the technological strategies by design to avoid fatalities and injuries. It is vital for medical and mental health professionals to understand the health and behavioral implications of social media and videogames as a way to prevent violence and external causes of death. An international overview of hazardous gaming and its main consequences will be described in this paper.

Definition and WHO Criteria

The World Health Organization, WHO, recent International Classification of Diseases, ICD-11, describes different problems associated with health behavior and specifically hazardous gaming [1] as criteria **# Q E 22.**

Hazardous gaming refers to a pattern of gaming online or offline that appreciably increases the risk of harmful physical or mental health consequences to the individual or to others around this individual. For the purposes of this manuscript, hazardous gaming will refer to any form of play or challenge on the Internet or social media that presents potentially fatal harm. The increased risk with gaming may be from the following:

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- The frequency of gaming
- The amount of time spent on these activities or priorities
- Risky behaviors associated with gaming or its context
- The adverse consequences of gaming
- The combination of all of these above items

The pattern of gaming often persists in spite of the awareness of the increased risk of harm to the individual or others.

According to the previous International Classification of Diseases, ICD-10, the only code for hazardous games described by the WHO criteria as XX External Causes of Morbidity and Mortality [2] is classified as **#Y 34** for unspecified event of undetermined intention and **#Y 87.2** as sequelae of events of undetermined intention. There is also a code **#Y 93.85**, used as a billable specific code to indicate a diagnosis for reimbursement purposes in the USA, and it is referred to as an activity code for the Choking Games with three variants of its title [3], as criteria **# Y93.85.**

- **Y93.85** describes the circumstance causing an injury, not the nature of the injury. Applicable to as follows:
- Activity, blackout game
- Activity, fainting game
- Activity, pass out game

There has been some mixing and confusion about these terms and criteria, used by authors in different countries and medical associations around the world. Also, as it takes time until all documents and codes are updated and translated to the different idioms. Therefore, it is relevant to describe these frequent challenges and causes of morbidity and mortality among adolescents who use social media and the Internet in the present day.

Historical and Current Practices on the Internet and Social Media

Hazardous gaming has been a risk for youth between the ages 9–17 years old since before the appearance of the Internet and social media. It has been addressed in schools as frequent recreational activity disguised as a harmless play exchange. However, with the advent of the Internet and of the possibility of individual experiences through social and communication media apps, these hazardous games have been shared and spread like wildfire among adolescents. Also, the creation of video channels on easily accessed platforms has targeted the youth population by directing content toward specific developmental behavior traits, e.g., the acceptance of dares, curiosity, impulsivity, lack of self-esteem, and the demand to belong to a peer group. The emblematic shift of the perception of risk behavior as a symbol of popularity and entertainment promoted a new form of experiencing risk behaviors online, not only as a mere curiosity, but also as an adventure.

"Shortly after the site opened on a limited ('beta') basis in May 2005, it was attracting some 30,000 visitors per day. By the time YouTube was officially launched on December 15, 2005, it was serving more than two million video views each day. By January 2006 that number had increased to more than 25 million views. The number of videos available at the site surpassed all expectations, with more than 20,000 new videos uploaded on a daily basis. By the summer of 2006, YouTube was serving more than 100 million videos per day, and the number of videos being uploaded to the site showed no sign of slowing down." [4]

The video-sharing YouTube platform was the first of its kind and continues to grow stronger after 17 years of being online. In May of 2022, the platform alone had 2 billion monthly active users (MAU) who watched over 5 billion videos per day. YouTubers upload about 720,000 h of fresh video content per day. Among those, the increase in content creation has placed some makers of dangerous challenges in the top 100 of the world's most viewed videos. In Brazil, some popular influencers have more than 12 million followers on YouTube and more than 3 million followers on Instagram. The targeting of youth audiences to engage in all kinds of hazardous content is not the only danger posed by these vídeo platforms. There is also a high chance of youth consumption of misinformation with a current international investigation as being part of a criminal scheme for the dissemination of fake News [5].

Starting in 2019, the rise of the platform TikTok led to an increase of billions of young users/consumers and uploads of videos worldwide, quickly becoming the new space for trends to circulate and a place for adolescents to gain fame, in the USA and Brazil, among other countries. The algorithm For You Page (FYP), particular to the app, pushes video content of the same theme to the user, targeting interests specific to the subject watching it. It is a cultural phenomenon among teenagers, with nearly 70% of American teens having an active TikTok account [6]. During the recent COVID pandemic with lockdowns and closing of schools, children and teens sought the TikTok platform as a way to continue social interaction in the world. As a result, former risky trends began to rise, and the increased number of fatal accidents which occurred in 2021 and 2022 has led to a series of lawsuits by Social Media Victims Law Center against Byte Dance/TikTok, in USA and around the world [7].

Moving from trends in apps of social media, we observe the annual increase in intentional and dangerous plays through the communication apps, such as WhatsApp, Telegram, and Discord, among the most popular. Hoax trends, starting with The Blue Whale, increased the popularity of these way of challenge and also playing games by the

subsequent creation of The Momo Hoax and The Galino Hoax. These are described as offering levels of challenges to a group of teens, usually followed by a threat in case the challenge is not accomplished. The last required challenge is an invitation to attempt and commit suicide [8].

It is literally impossible to determine where a video challenge or risk behavior idea first started in the digital world, and the naming or title of each challenge changes around in different countries and even from one community to another. Thus, it becomes extremely complex to prevent the dissemination of hazardous gaming. Some platforms have implemented instructional tools for parents and adolescents to have a safer experience. However, these tools are not commonly sought before the start of using this platform and/or viewing videos. Coupled with the fact that the social behavior necessary to protect children and teens is not yet integrated into the daily routine of parenting or into existing ways to monitor child usage of the Internet within the digital world. For most families, the search to fully understand a privately used tool still contains the visualization of the use of a communal screen as the home TV equipment.

Risk-taking behavior has to be understood from an ecological perspective [9] and also using biological and family models [10]. Adolescence is a period of risks and opportunities, and it does not occur in a vacuum. Cognitive, psychosocial, and biological changes that characterize the adolescent period occur within environmental, cultural, and family contexts which have become more superficial and accelerated by the Internet and the World Wide Web, www, with Wi-Fi connections more available for access almost everywhere [11•].

Research Updates in USA, Brazil, and Around the World

Erik's Cause, an American not-for-profit organization, founded in 2010 to study and prevent the Choking Games, collects worldwide data of both severely injured and fatal victims of suffocation activities performed by children and adolescents (7–18 years old). In the latest update, July 2022, the data show 1357 cases being reported to the organization. The vast majority of cases are located within the USA. These data are gathered from either (1) new reports and (2) individual family members reaching out to Erik's Cause to report an injury or death which is not reported in the News [12]

There are no public health databases to monitor and collect data related to these activities. In addition, there is no standardized way for law enforcement and medical forensic examiners to determine the cause of death with respect to these online gaming activities. As a result, it is widely believed that a majority of choking game deaths are misclassified as suicides, accidents, or external fatalities. Families are left to bear their grief in silence wondering what signs of potential suicide risks they may have missed when, in fact, they did not miss any signs because there were none: these teenagers were playing and/or viewing and/or distracting online, perhaps too distracted for long hours with other peers, and these were accidental or fatalities deaths, not suicides.

Some injuries like burns caused by the use of hot candles or cigarettes or aspiration pneumonia caused by aerosol deodorants or other self-inflicted lesions, self-cutting neck or arm lesions or past scars, suffocation spells, or faintings are rarely reported, even when evaluated as accidents in emergency rooms or private offices, as many families bear their grief in silence because of shock and shame and not understanding the adolescent "mirror" risk behavior learned and challenged online.

A doctoral research called "The choking game: a new craze among Brazilian children and young people: psychophysiological, behavioral and epidemiological characteristics of asphyxial games was completed by Juliana Guilheri, in 2017 [13•]. The researchers did a worldwide scientific literature review and collected data presenting alarming and aggravated information including on the age in which children are experimenting these practices. Sixty percent of children aged 9 to 17 years have tried any type of apneal games, and 50% of them have attempted to voluntary fainting. These alarming numbers are most likely due to disinformation as well as easy and free access to these videos on social media.

The informal data collected by the DimiCuida Institute [14], for all of Brazil between 2014 and 2022, shows that there are 49 reported cases of fatal or severely injured children and teens aged 7 to 18 years.

Brazil has also ongoing research called TIC-Kids-Online-Brazil/ICT Kids-Online survey, since 2012, carried out every year by the Brazilian Internet Steering Committee, Regional Center for Studies on the Development of the Information Society Cetic.br [15]. The main goal is to map out the digital environment, generating reliable and comparable indicators about the Internet access by children 9 to 17 years old and how they use the Internet. The survey aims to understand this public's perception about online experiences and safety in addition to outlining parental mediation practices relative to the Internet use. Recent 2021 data showed that 93% had access to the Internet, 78% were on the social networks, and 66% played games online. Fifty-two percent told that their parents knew what contents they were viewing on the screens, meaning that 48% of parents did not know at all what their children and teens were accessing online. Seventy-five percent told that they knew more about the Internet than their parents [15]. Sensitive topic data have been present on the Internet on the 2018 survey: 15% had

come in contact with content about ways to hurt oneself and 13% about how to commit suicide [8].

There is no doubt that these phenomena which are still being investigated by researchers can produce irreparable harm. However, they also teach us a lot about how to respond to challenges involving exposure to sensitive contents and understand their influences on the risk behavior of children and teens.

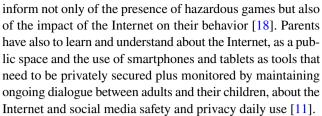## Evaluation and Diagnose of These Behaviors

In France, a group of educators and health researchers from the Association de Parents d´Enfants Accidentes per Strangulation (APEAS), which is supported by the Ministry of National Education, developed a tool for a comprehensive understanding of this matter along with health educational materials to prevent these challenges in schools and clinical settings [16].

The DimiCuida Institute [14], in Fortaleza, Brazil, has also developed a diagnostic tool, since 2014, based on national research and uses the French model as a reference basis to identify risky behavior in groups. These models were tested in different master's and doctoral research projects and offer strong evidence of effectiveness. The knowledge provided from this research has led to the characterization of patterns in behavior that can be identified as three types of hazardous behaviors among youth: (1) suffocation practices, (2) aggression practices, and (3) other provoking challenges, like the use of magic pills with unknown powder contents. Several observational Internet pieces of research done in the USA, France, and Brazil, described more than 100 ways of naming these challenges and found that even using criteria identification, many of these challenges overlap across these three typologies [14].

Some research work have been developed in Italy with 24 audio-taped focal groups with 296 adolescents, 13 to 18 years who use social networks. The goal of this research is to better understand some of the potential dangers and what are the gender differences. They reported the search for popularity and the sense of anonymity associated with violent and offensive behaviors. Behavioral reinforcement is manifested in the forms of likes and/or comments and the possibility of interaction directly or indirectly with a wider network of people outside one's peer group [17].

Prevention and Counseling

A major gap in prevention is the lack of knowledge and awareness of these types of online video hazardous challenges, starting within families and assertive communication between parents and their children and adolescents. Models of prevention show that parents and tutors need to be educated through consistently applied meetings in schools to

inform not only of the presence of hazardous games but also of the impact of the Internet on their behavior [18]. Parents have also to learn and understand about the Internet, as a public space and the use of smartphones and tablets as tools that need to be privately secured plus monitored by maintaining ongoing dialogue between adults and their children, about the Internet and social media safety and privacy daily use [11].

As with all other health educational themes, research highlights that schools are the key gathering area for the dissemination of information, as it is the physical area in which children can regularly gather. Therefore, schools must be supported in adopting and applying approved and tested prevention and educational programs for educators, families, and students on a regular periodic basis. These prevention programs must also include social and emotional competence and safety in the use of social media and other Internet tools and apps.

An example of a successful program is Erik's Cause in USA, which has developed and effectively used a program to educate school children in recognizing the paths to dangerous games, consistent with neurological development. The method has been applied in several schools in USA, and it is re-focusing its program to help students understand the role of the internet and social media play in these online challenges and hazardous gaming. The program has been re-named as "Knowledge is Power – Navigating Social Media Challenges" [12].

Another major facilitator in the USA is the Family Online Safety Institute which offers a comprehensive array of tools for parents, families, children, and educators [19].

In Brazil, DimiCuida Institute [14] was organized with the mission of the prevention of the choking game after a 16-year-old boy lost his life practicing the fainting game in 2014. Nowadays, there have been research and studies involving qualified professionals directly connected to the areas of education, health, and security with prevention seminars and educational programs designed for children and adolescents. A comprehensive book, *There is danger in the Air/Tem perigo no ar*, for children aged 5 to 11 years was published, and it is available online [14].

There is also a national and international professional network for the exchange of information, documents, videos, and experiences with other institutions, like the Brazilian Pediatric Society [20] and an intersectoral network of specialists dealing with ethics, safety, health, and education for children and adolescents on the digital world called Rede ESSE Mundo Digital [21].

Recommendations

Alongside prevention programs adopted by schools and families, international public policies are necessary to moderate the growth and spreading of video contents, like

hazardous gaming, that are not appropriate for children and adolescents within their platforms. Consistency of laws and consequences for the digital world is a necessary force to maintain a healthy society, keep children safe, and safeguard the role of families to educate their children in a stable environment. Enforcement of laws and regulations over social media and Internet platforms will be a critical component needed to prevent the increase of mortality from hazardous gaming and enhance social care [22•]. Adolescents will need to learn not only their digital rights but also how to engage in responsible and ethical behavior on the Internet with everyone. They will also need to be educated regarding major risks, privacy, and how to be safe on the Internet, as survival and mental health skills.

Technologies and platforms have also their share in social responsibility with codes of conduct to block and to delete and remove hazardous video games with life risk and/or provocative contents. Each platform like YouTube or TikTok have different protection policies that have to be better implemented through artificial intelligence, filters, and proper trained screeners to block and delete dangerous vídeos. To denounce is always a first step for changes to take place. Protection of data, images, videos, or any kind of informations for everyone's safety is a golden rule for better adherence and online trafficking at the Internet public space. The more integrated and converging these multisectoral initiatives, the more effective the actions that seek to implement public policies aimed at promoting and ensuring the health and well-being of children and adolescents who experience their social development on digital platforms with increased intensity.

Opportunities for the realization of children's rights and their protection in the digital environment not only require a broad range of legislative, comprehensive policy and strategies, and allocation of resources for safety online, but also regularly updated data and research, independent monitoring by the technologies and social media platforms, and most importantly, the dissemination of information, awareness-raising, parental mediation, and training for special protection measures [23•, 24•].

Conclusions

Hazardous gaming videos on social media and Internet platforms have become more frequent and continue to expand around the globe. Combined with risk taking behaviors during adolescence, they cause fatalities and injuries. The exponential ratio of Internet access and billions of video daily uploads have increased the chances of danger. It also underscores the importance of social protection for children and adolescents with respect to online safety and prevention of risks. Attention and awareness is a key step not only for parents and school educators, but also for pediatricians, psychologists, and mental health professionals who work with children and adolescents in different communities.

It is also a public health challenge for health education among other offline and online risk topics, like the use of drugs and vaping, violence, cyberbullying, safety, respect, and tolerance against all kind of discriminations and hate. Children and adolescents must learn how to deal with peers in schools plus emotional and social capacity training to understand and prevent major behavioral risks on the Internet.

Therefore, it is imperative the generation of more research evidence to be more proactive in enacting both social protection rules and worldwide legal regulation across the digital world and social media platforms, so that these hazardous videos can be blocked and deleted on the Internet. Platforms have to adhere to Minor Safety protection and Community Guidelines have to be updated. The same paradoxical argument that Internet is un-regulatable, the cost of children's life is non-negotiable, all over the world.

Technology companies already have enough profits, resources, and professional expertise to block dangerous videos and apply algorithms, filters, and artificial intelligence to re-design the digital environment, as a universal health right for everyone. It just needs to be implemented. Children, adolescents, and families deserve to live and play, also online, while connected always in peace, never in grief.

Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

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