Technology and ITS Influences in Adolescence: A Literature Review

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Authors' contributions

This work was carried out in collaboration among all authors. Authors KSO, SLADS, ARFP and DPO designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors MGO, MAO and VMDOM managed the analyses of the study. Authors NB and ALLSO managed the literature searches. All authors read and approved the final manuscript.

Article Information

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ABSTRACT

Currently much has been discussed about the use of technologies and the impacts of the excessive use of them by adolescents. Current adolescence has been increasingly connected with the technological world, and consequently, behaviors that were previously not perceived or often recognized, are seen, for example, the development of technology-related addictions. Thus, the present study aims to discuss the consequences of the indiscriminate use of digital technologies by adolescents. This research is bibliographic, being developed from other studies already produced on the subject. The main results stand out: family conflicts resulting from distancing and lack of dialogue; the predominance of superficial relationships and false intimacy and the illusion that anything is possible; learning difficulties arising from internet dependence, anxiety disorders, and attention deficit.

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1. INTRODUCTION

Currently much has been discussed about the use of technologies and the impacts of the excessive use of them by adolescents. This raises a series of questions about its benefits or harms for social, cognitive, and affective development for individuals who make use of it [1].

Technology has numerous purposes, and some of them need to highlight the approach of people through communication, in which it becomes faster, and accessible for those who have the use [2].

Adolescence is a period of intense transformations and at this stage, these individuals are more vulnerable to health and disease conditions, and it is important to develop strategies to promote the health of these individuals [3]. Information and communication technologies can be important allies in this process, as they can make the contents presented more attractive [4].

The interest that adolescents have in technologies produce self motivations that have a positive impact on learning and their choices in their life trajectory. This refers to the need to incorporate them into the school environment, in the family and community context, and also to promote their health and prevent diseases [5].

On the other hand, current adolescence has been increasingly connected with the technological world, and consequently, behaviors that were previously not perceived or often recognized are seen [6]. In a world designed to communicate better and be able to be with others at a distance, it seems that more and more adolescents develop feelings of social anxiety when placed face to face with people [7].

Today it is common to observe that the development of technology-related addictions arises, some more common examples are; play excessively, participate in online gambling or develop social anxiety when technology does not serve as a mediator, as well as being connected on social networks most of the time, causing ai damage to the psychic state of them, such as social anxiety, which can harm and move away from the so-called "real world" where everyone has to live and relate to others [8].

Recently, the World Health Organization (WHO) inserted *gaming* addiction into the list of diseases classified as mental disorders. This fact exemplifies how much it is necessary to prioritize educational actions aimed at controlling the excessive use of electronics in the digital age [9].

Thus, the excessive use of digital technologies is a worrying factor for the cognitive, social, and affective development of adolescents, and may also bring consequences such as social isolation, lack of interest in studies, anxiety, attention disorders, and dependence. So much so that these problems were included in the DSM-V, given their importance to the scientific field [10].

Thus, it can be seen that there is a great need to research the influences of technology on social, cognitive, and affective development in the adolescent's life. It should be emphasized that addressing the facilities and difficulties encountered by the virtual world can help to understand the harmful effects of excessive use of the Internet, which can also lead to the investigation of the main emotional and social problems faced by adolescents.

Thus, several scholars are addressing how excessive use of these technologies affects adolescents in a social, affective, and cognitive way. Thus, the present study aims to discuss the consequences of the indiscriminate use of digital technologies by adolescents. This research is bibliographic, being developed from other studies already produced on the subject.

2. METHODOLOGY

The study is bibliographical research, with qualitative data analysis, formed especially by scientific articles. To this end, we searched scientific articles indexed in the web of science database, PubMed, Google Scholar, Scientific Electronic Library *Online* (SCIELO), Virtual Health Library (VHL), CAPES journals, searched from the keywords: Adolescent and technology.

3. RESULTS

3.1 Adolescence

Adolescence is the transition period between childhood and adulthood, characterized by the impulses of physical, mental, emotional, sexual, and social development and by the individual's

efforts to achieve the objectives related to the cultural expectations of the society in which he lives [11]. This phase begins with the bodily changes of puberty and ends when the individual consolidates his growth and personality, progressively obtaining his economic independence, in addition to integration into his social group [12].

The phase of adolescence is marked by the awareness of a new space in the world. At this stage the individual develops the prerequisites of his physiological growth: mental maturity and social responsibility, the new reality that presents itself, produces in adolescents a confusion of concepts, and loses certain references. The search for the "i" in others, in an attempt to obtain an identity for their "*self*" [13].

In this period of conflicts, uncertainties and anguish are that the author mentioned classifies as "identity crisis" [13] and it is in this turbulent phase that the adolescent is now stuck to the previous phase, childhood, now full of expectations about adulthood needs to make delicate decisions, because he is aware that the choice will have important consequences in the course of his life [14].

It is at this stage, therefore, that the subjects try to find their identity and feel many doubts, which leads them to act and think to draw plans and make decisions, to find their place in society. However, often, due to these needs, they present impactful reactions to the authorities in general, especially parents or guardians, since this is a stage in which the rules are usually questioned or denied [3].

In most countries, the concept of the majority from the legal point of view is established at the age of 18 years, but other criteria exist and remain, the progression of pubertal development, with marked differences between the sexes and between the various ethnic and social groups of a population, including nutritional status and family, environmental and contextual factors [2].

3.2 Digital Era and the Family

Society is now moving in what has been called the Digital Age. Computers occupy important and essential space in the current model of sociability that configures all sectors of society, commerce, politics, services, entertainment, information, relationships. The results of this process are evident, transformations that have changed the

social scene in the search for improvement and facilitation of the lives and practices of individuals, saving them time, shortening distances, overcoming borders, and overcoming socioeconomic challenges [3].

The human being, throughout his life, is influenced and influenced by his environment, creates family, professional and amicable bonds, thus generating his identity, seeking to distinguish what is right or wrong. However, their choices are made mainly on a family basis. In adolescence, it is that their choices are developed, seeking their space before the world [15].

The current concept of family is linked to affectivity as the main element; through relationships of affection, we develop the best capabilities, reactivate natural abilities, transform our personality and rectify our character traits that need to be realigned. Parents have to educate and raise their children without denying them the attention needed for personality formation [3].

The family is the first institution that makes the child a subject who has a history but who also builds a new story needs to be in the task of helping children become citizens. It is in the family that the child forms the concepts of himself, the world, and the place he occupies in the world. The family relationship will allow or not, a favorable self-concept, in addition to a personal judgment that the individual assumes before himself [16].

The medium has the responsibility of forming character, educating for the challenges of life, perpetuating ethical and moral values. Children mirroring parents and parents developing complicity with their children. The preparation for life, the formation of the person, the construction of being are the responsibilities of the family. This is the mother cell of society, where the necessary conflicts do not destroy the healthy environment [17].

The way these digital technologies were inserted in the family context has been changing the format that the family meets, evidencing that dialogue and participation in the lives of adolescents are very important [1].

Because adolescents are permanently interconnected in digital networks, the real distance between people, whether affective or

socially, becomes progressively present in the daily life of society. This social distancing is aggravated in the evolution of dynamics among human beings, being the main focus of the study of many researchers [9].

3.3 The Adolescence and Life in Real and Virtual Space

In the 21st century where technology is increasingly advanced, people acquire frequent diseases and psychological problems. Technology with automation processes leads people to assume a sedentary life since convenience, speed, and flexibility in acquiring information reduce people's effort to seek alternative sources of leisure, work, and study. In the cognitive field, this unregulated use can occur several pathologies related to the excess of unprocessed information [3].

It is in adolescence that social interaction expands, with participation in the different groups to which adolescents belong, such as school, sports, students, leisure, among others. However, it is not always so, what should be a relationship of affection and encounter with groups of the same interest, in some cases, is at the mercy of digital communication [8].

Barcelos [7] explains that the use of the Internet makes the adolescent able to make personal contacts outside this environment can not. However, these contacts are "superficial" and of "false intimacy", facilitating social distancing.

Adolescents, who establish a good social relationship, have more possibilities to build a good psychosocial development. However, the continuous use of the Internet causes them not to develop fully and may have difficulties in adulthood. In this sense, the unmoderated use of the internet can lead to a confusion of the real with the virtual [18].

However, when they disconnect, reality becomes distorted, as if the people around them were not part of their daily lives, due to the false impression of happiness provided by interactions in the virtual world [19].

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The time spent in online life has been causing some discussions and currents against the so-called uninterrupted hyperconnection, ranging from the hypothesis about the difference in the functioning of the brain of people who spend too much time on the Internet, passing through the discourses defense that argues that obsession and the of technology, causes psychiatric disorders in the world population [20].

A study on the excessive use of technology by adolescents pointed out that they can develop narcissistic characteristics, have antisocial behavior, aggressive tendencies, manias, sleep disorders, anxiety, depression, problems in written language and attention and learning disorders, these being one of the most common dysfunctions among these users [8].

Some authors advise that the internet generates the feeling of power everything, even ignoring limits of the real world since users can maintain anonymity, easy access to information, and the performance of different activities. Entering, as well as a stimulating factor to the narcissism of adolescents, who are trapped in the virtual world, having to be in contact with technology all the time [10,19,20].

According to Rosen [21], more people are becoming narcissistic, because they are dealing with tools that offer permanent mechanisms of exposure, besides being presenting themselves to the world as only caring about themselves. People are getting obsessed and compelled to constantly check the phone. The study showed that the population is getting depressed when they don't have wonderful things to show others on *Facebook.*[...] They are adolescents who suffer anxiety crises because they are without internet signal, students who lose the ability to concentrate, and even programmer who began to develop schizophrenia by living in *isolation,* interacting only via the web. Thus, adolescents in this digital age in constant relation to digital technologies run the risk of becoming dependent on permanent connection. This posture can cause various disorders, disorders, and addictions related to this virtual overdose [21].

3.4 Digital Dependency

With the increasing entry of digital technology into the daily life of the human being, new social

and behavioral problems arise. Given this scenario, easy and irrational access to technological means can lead to digital dependence [2].

Digital dependência is increasingly present in people's daily lives, especially in the experience of young people. Adolescents, as a social segment that is more susceptible to the transformations of digital technologies, inherit the ease of acquiring an addiction. Thus, technology becomes a factor of social isolation, which compromises the socialization capacity of adolescents, who can no longer distinguish reality from the virtual world [10].

Digital technologies can change the way people interact, inhibiting physical interaction, and causing a lot of touches. This can cause social problems, such as separation from social life, loneliness, and depression. As for adolescents, to fill the void left by social isolation, they cling to social networks, because they give the impression that they are never alone and unhappy, via virtual friends and information sharing [22].

Research reveals that there are dependent addicts on the internet who spend hours in front of the computer, participating in chat rooms, online games or even, surfing endlessly from page to page. Teenagers are exchanging socializing personal conversations for a virtual world in which they communicate through chats, instant messaging, blogs, online games, and social networks, sharing a new culture, in which interaction takes place only by electronic means [11,20].

In recent years, many parents have been concerned about their children's "problematic" use of the internet. The main complaints are social isolation and worsening school performance. Digital dependence disorder has two distinct characteristics: social disability and anxiety. Social inability is related to difficulties regarding face-to-face communication, either due to impairments inherent to verbalization and/or the decrease in the ability to recognize emotions present in nonverbal language, leading to a lower ability to interact and less bonding in face-to-face relationships [8].

The common treatments use techniques that promote cognitive restructuring and reeducation of the use and management of digital technologies, having as premises the reduction of the time spent connected (online) and the improvement of social relations, allowing an expansion of social networks outside digital technologies [21].

However, restructuring does not work for the training of subjects with dependence on digital technologies in expanding their skills in verbal and nonverbal communication, which could increase their assertiveness in recognizing facial expressions that reflect basic emotions [11].

4. CONCLUSION

During the stages of this research it was observed that because of the current scenario, contact with digital technologies is constant and intense in people's daily lives, especially in the group between 11 and 17 years of age. The information network is an extremely powerful feature. It transformed interpersonal communications, from families, from the insertion of radio and TV and, later, with the invention of the computer and the internet, mainly from the emergence of virtual social networks.

The relationship of approximation between family members was modified. This relationship constitutes the basis for a good cognitive, social and affective development of adolescents, which in this phase is of paramount importance to the affection and attention given by relatives, to generate an environment in which problems are treated openly and healthily, besides creating a favorable space for the construction of knowledge.

Even with all the announced benefits generated by digital technologies, it is evident the concern with social and behavioral problems, especially those that affect adolescents. This group is very influenceable, due to being more in contact with these technologies and finding themselves in an age of intense biological and psychological transformations.

It was evidenced that the excessive use of digital technologies causes several problems, such as social isolation, narcissism, depression, anxiety, dependence, etc. It was verified in the cognitive field that the excessive use of digital technologies can provoke several pathologies that are related to the excess of unprocessed information that ends up not generating knowledge.

From this study, it was possible to observe that digital technologies used consciously do not

cause problems for the subject. However, care must be taken not to be subordinate to the technological world. Thus, given what has been studied, it is up to the psychologist to try to develop strategies to guide parents or guardians and education professionals, to make decisions that will contribute to the social, cognitive, and emotional development of adolescents, giving importance to the construction of an environment more conducive to dialogue, both in the family space and in the school spacer. Also showing that the way forward is not prohibition, but the conscious use of these technologies. For, to have a healthy, social, and affective cognitive development, it is necessary to balance the relationship between virtual interaction and social interaction performed through playful and sports activities and affective bonds.

The contribution of the research consists of being a starting point for an introductory reading and giving support for future work because it is an exploratory study. In the 21st century, it is unlikely not to be in frequent contact with digital technologies. Therefore, it is necessary to give great importance to the theme discussed, aiming at other works in the area.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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