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YOUTUBE AND PSYCHOPATHOLOGY: A LITERATURE REVIEW

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YouTube is the most popular video-sharing website on the Internet, and it has become one of the world's most popular social media, attracting over one billion users every month. Social media provides many advantages in delivering knowledge, such as low cost, convenience, and global outreach. In terms of public health, YouTube can be used to provide health campaigns to the broader public. This literature review aims to analyze the way people perceive psychopathologies shown in YouTube videos to promote a healthy and fair divulgation of these sensitive topics. The study opens with an introduction regarding YouTube, its usage, and users; an analysis of academic papers reporting various syndromes and mental illnesses follows; finally, some future directions regarding the appropriate usage of YouTube by professionals and parents will be proposed, to prevent the compulsive usage of this social network.

Keywords: YouTube; Psychopathology; Social network; Mental illness.

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This is a literature review on the way researchers analyze the connection between YouTube and some of the most relevant psychopathologies, such as autism spectrum disorder, Tourette syndrome, schizophrenia, dementia, generalized anxiety disorder, and posttraumatic stress disorder. The main aim of this literature review was to rely on different theories regarding the appropriate usage of the YouTube social network as an educational tool for everyone: parents, health professionals, and adolescents. To anyone with an Internet connection, YouTube provides free and easy access to millions of videos on any topic, including healthcare. Considering that the number of the people seeking information on health online is constantly increasing, it is assumed that videos could be a useful and widely used channel to provide health information via a popular website (Pant et al., 2012). On the other hand, if the content of the information presented is not valid and reliable, it could mislead the viewers and potentially sustain the stigma related to a psychological disorder (Lo et al., 2010). It is therefore important to know how YouTube videos present mental illness, thus cultivating perceptions about highly stigmatizing disorders (Wahl, 2004).

The current paper is organized as follows: first, YouTube origins and functions are explained. This introduction aims to illustrate how YouTube works and its evolution in past, present, and future directions. Then, an analysis of the professional content and the danger of a compulsive YouTube practice (with a description of some users' addictive behaviors) will be provided. Second, the empirical and academic studies addressing the various psychopathologies, explained and illustrated on YouTube by professional or naive YouTube users (usually called "YouTubers"), are briefly summarized. Studies are presented as composed of three main parts: description of the psychopathology, method, results and discussion. Finally, based on the results found in the scientific literature, a conclusive overview and some advice regarding risks versus useful YouTube usage by professionals are presented. Avenues for future directions in this field are also proposed.

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INTRODUCTION

This paper starts with a description of YouTube from the very beginning to its present widespread usage. An important step will be the analysis of compulsive YouTube usage among young people and students. Another significant point will be the analysis of *e-health*, a new way to provide health-related education via the Internet (Lal & Adair, 2014).

YouTube is often used by Millennials, children born from 1980 to about 2000 also known as Generation-Y, or the Net Generation. According to Twenge (2019), over the past decade, adolescents and young adults have spent an increasing amount of time using digital media (including social media, electronic games, texting, and Internet sites) and electronic devices (including smartphones, tablets, and computers). The amount of time teens spent online doubled between 2006 and 2016. The generation born since 1995, known as *iGen*, was the first to reach adolescence when smartphones were common (Twenge, 2017); iGens are the most technologically-savvy generational group so far, with those in Western cultures being educated completely in the age of personal computers and electronic gadgets. They are relaxed and confident with all forms of technology: mobile phones, personal digital assistants (PDAs), computers, dedicated game machines, and many more. They use the Internet for research and extensively for their school work; they use SMS and instant messaging to stay in touch and chat with friends; they use emails and instant messaging to contact teachers and peers; they tend to prefer the Internet over the telephone (Oblinger, 2003). People from this generation are also ambitious and optimistic about the future (Jones et al., 2007).

What is YouTube?

YouTube is a video-sharing platform that allows people to upload content onto a personalized channel, which lists videos of their choosing — that others created. YouTube features comment threads on the channel and videos that you can manage and a counter that allows you to keep track of who is watching your videos. YouTube is the third most trafficked website in the world, with over a billion unique visitors each month! It is incomparable to any other platform for hosting and sharing video content. It can be easily integrated with other social media platforms. With YouTube, people can engage with various communities — from a content creation standpoint — in ways that are not possible with Facebook, Twitter, and Google+ while having also a powerful social impact. YouTube channels allow for a great deal of customization and provide opportunities to set your imprinting across platforms. Finally, YouTube provides a powerful analytics tool for all users. It is therefore easy to track the number of views you are receiving, which videos generate the greatest engagement, and which countries or demographics contribute the most to your view count.

YouTube is a Google property, so you need a Google account to sign up for a YouTube account. Once you do so, you simply go to YouTube and sign in with your Google credentials. You will be guided through the process of setting up your channel. You can customize the type of activity you share, the layout of your channel, what type of content you want to display, and your channel's title, artwork, and icons. You can also subscribe to features and comments on the videos placed on other channels. So, you can easily interact with other organizations with which you may share interests or audiences.

YouTube History

YouTube was originally launched on February 14 2005 in San Mateo (California) by Jawed Karin, Steve Chen, and Chad Hurley, former PayPal employees. Hurley and Chen had originally conceived

YouTube as a video version of an online dating service and had been influenced by the website "Hot or Not." Then the difficulty in finding enough dating videos led to a change of plans, with the site founders deciding to accept uploads of any type of video (Dredge, 2016). The idea worked exceptionally well: YouTube has become the prevalent platform for online videos worldwide.

Initially, YouTube was only an entertainment tool but, during over time, it has also presented scholarly debates related to politics, economics, and cultures of the new media. Given the slow process of traditional academic publishing, the number of studies dedicated to describing and critically understanding YouTube texts, practices, and politics is still small, but it is gradually increasing. At the same time, since its beginning, scholars from a wide range of disciplines have found YouTube a useful source of examples and case studies (Burgess, 2011). Online videos existed long before YouTube appeared. However, uploading, managing, sharing, and watching videos was complicated, due to the lack of an easy-to-use interconnected platform. YouTube and the new generation of video-sharing sites have overcome these problems. They are also known as user-generated content (UGC) sites, in which the users are participatory and creative. The systems allow content providers to upload videos effortlessly and to label uploaded videos with related keywords. YouTubers can easily share videos by mailing links or inserting them into blogs. They can also evaluate and publish observations on videos, adding new social aspects. Therefore, popular videos can grow rapidly. The social network existing on YouTube additionally allows new communities and new groups, because videos are no longer independent from each other, and at the same time allowing access to new users. This has significantly contributed to the success of YouTube.

YouTube and Psychiatry

Gordon and colleagues (2015) authored a stimulating study. They searched YouTube for the keyword "psychiatry" to understand the mediatic representation of this subject on the Internet. They selected 100 videos that could be divided into positive, negative, and neutral according to their representation of psychiatry. The results of this descriptive analysis is that in July 2015 most of the videos gave a negative image of psychiatry, and had a high number of views and long watch time. Overall, videos were coded by two reviewers into negative (51%), positive (20%), and neutral (29%) categories. Subsequent replications of the same analysis underlined the same pattern. This study highlights that the image of psychiatry provided by YouTube is mostly negative. Positive videos cover the benefits of research in psychiatry, advance in cure, and also comprise an anti-stigma video. Neutral videos were largely educational, including a cartoon explaining the role of neurotransmitter involved in a pathology. But, most importantly, the majority of videos were negative; also, the replications of the categorizations of psychiatry confirmed this is a constant element. Why is the representation of psychiatry on YouTube negative? This image of psychiatry obviously derives from the fact that anyone can upload content and explain pathologies without accurate fact-checking or peer review, mandatory in the scientific literature (Whitley, 2012). Also, this online anti-psychiatry message may be the consequence of a long-standing society skepticism toward psychiatry. However, it is unclear whether information proposed by online sites influences health-related attitudes and behaviors, even though Internet websites are becoming gradually an influencing source of health information. Allegedly, more cultivated viewers appear relatively resistant to inaccurate messages on YouTube, even when the information is defined as scientific (Vance et al., 2009).

Future studies should examine and quantify the misinformation through evidence-based content mapping compared to the academic literature. YouTube users tend to choose videos based on their interests

rather than on the popularity of the videos (the number of views). Hence, it would be interesting to study the content of the most relevant YouTube videos based on specific questions rather than their popularity (Bellon-Harn et al., 2020).

It is unclear whether the information disseminated through social media platforms influences the viewers' health-related attitudes and behaviors. YouTube has a crucial role in circulating information around the world, often on matters of health; but, in case of inaccuracy, not everyone can recognize it (Gordon et al., 2015; Hayanga & Kaiser, 2008). It seems that the most educated audience is not influenced by this type of inaccurate material (Robichaud et al., 2012). In the future, it would be important to increase the awareness of young and vulnerable people about the ambiguity of online information and the risks related to its use (Hayanga & Kaiser, 2008).

Studies on Psychopathology

In this section, seven major psychopathologies will be analyzed in the way they are shown on YouTube. These mental disorders will be explained based on the academic articles published. At first, the mental disorder is explained with a DSM definition, then the relevant academic papers will be described by method, results, and discussion.

Depression

Depression is a grave mental illness characterized by constant sad mood, lack of interest or pleasure for all activities, insomnia, lack of energy and resources, feelings of self-depreciation, and recurring thoughts of death and suicide (DSM-5). Gaus et al. (2021) confirm that about 20% of teens (adolescents) seek information about depression online by looking for related YouTube videos.

It is important to examine how depression is presented to the public because these presentations may shape beliefs about depression, and how people respond to, cope with, and define it (Devendorf et al., 2020). The analysis of YouTube videos evidences that: 1) depression is commonly determined by biological or environmental factors; 2) depression is usually considered chronic; 3) people experiencing depression may have many episodes; 4) depression is usually alleviated with drugs and/or psychotherapy. Millions of individuals watch and share these YouTube public presentations (see also Gaus et al., 2021).

Tourette Syndrome

According to the DSM-5, Tourette's may be diagnosed when a person exhibits both multiple motor and one or more vocal tics, not necessarily concurrent, over one year. The onset must have occurred before the age of 18 and cannot be attributed to the effects of another condition. Hence, other medical conditions that include tics or tic-like movements — such as autism — must be ruled out before conferring a Tourette's diagnosis (American Psychiatric Association, 2013).

Fat and colleagues (2012) conducted a study to determine the general perception of Tourette syndrome. The top 20 videos for each of the following search terms *Tourette's*, *Tourette's syndrome*, *Tourette syndrome*, and *tics* were selected. Results of videos were chosen by relevance, as provided by YouTube. The videos were divided into "amateur" versus "professional." The total number of views and comments for each

video was recorded, then the top 10 comments for each video were graded as "sympathetic," "neutral," or "derogatory." Twenty percent of videos selected by valence depicted Tourette syndrome as neutral, 59% positive, and the remaining as negative.

Tourette syndrome patients appearing in the videos were of varying ages, both genders, and of different racial backgrounds. Videos included extracts from TV shows, Hollywood movies, documentaries, home videos displaying tics, and interviews with health professionals. Both types of videos, amateur versus professional, could be divided into videos that had been made to inform and those that aimed to entertain. While professionally-made videos tended to focus on disease description and clinical facts, some were excerpting from movies in which Tourette syndrome was parodied for ironic effect. Amateur videos included only parodies. Some were home videos of patients exhibiting tics. Although admirable examples of Tourette syndrome are available on YouTube, the popularity of negative representations has the power to reinforce existing stigma in society.

Thus, the study of Fat and colleagues (2012) has addressed the topic of Tourette syndrome public perception through anonymous comments on related videos posted online. Videos that portrayed Tourette syndrome in a positive light were associated with fewer views and comments while negative videos had more views and comments. An example of these negatively rated videos is one series depicting a middle-aged man identified as "Tourette's Guy." The most frequently viewed and commented video was indeed "Tourette's Guy-Best of" with more than 13 million views and 35,000 comments. In one of these videos, "Danny," a guy ostensibly suffering from Tourette syndrome, is seen drinking alcohol while swearing at the camera (although no obvious motor tics are noted in any of the videos).

Obviously, videos in which Tourette syndrome was portrayed negatively were associated with more negative comments whereas videos with positive portrayals contained more positive and neutral comments. Not surprisingly, this highlights the lack of hostile or defensive attitude toward negative portrayals of Tourette syndrome. In the end, this study shows that while some excellent clinical examples of Tourette syndrome are available on YouTube, many videos not only reflect existing stigma but can reinforce misconceptions of the disease through negative representations. The misrepresentation of Tourette syndrome in popular media highlights the need for better public education on this condition and prevents physicians from recommending YouTube as a source of information on Tourette syndrome (Fat et al., 2012).

Posttraumatic Stress Disorder (PTSD)

Psychiatry.org (the American Psychiatric Association website, 2020) defines posttraumatic stress disorder (PTSD) as "a psychiatric disorder that can occur in people who have experienced or witnessed traumatic events, such as natural disasters, serious accidents, terrorist acts, war/combat, rape or other violent personal assaults." Salzmann-Erikson and Hiçdurmaz (2017) add: "PTSD can be very challenging for individuals who suffer from this psychiatric disability, because of the presence of recurrent, involuntary, intrusive, and distressing memories; the avoidance of trauma-related cues; emotional numbing; and simultaneous chronic physiological arousal (Hackmann et al., 2004; Shepherd & Wild, 2014)" (p. 2).

PTSD, also known in the past as "shell shock" or "combat fatigue," because it was studied mostly in World War soldiers, is a psychiatric disorder that cause strong, distressing thoughts, and feelings related to a traumatic experience (flashbacks, nightmares, sadness, fear, or anger), that persist after the end of the traumatic event (American Psychiatric Association, 2020). Exposure to traumatic events can be direct or indirect and leads people to avoid what reminds them of the trauma (people or places).

PTSD affects approximately 3.5% of U.S. adults, and an estimated one in 11 people will be diagnosed with PTSD in their lifetime. Women are twice than men to experience PTSD (American Psychiatric Association, 2013).

Salzmann-Erikson and Hiçdurmaz (2017) wrote an article on how suffering from PTSD has an impact and imposes restrictions on several levels, not least regarding social situations. Using data collected from YouTube comments, videos, forums, and blogs, the authors reconstructed how PTSD victims communicate and discuss their daily problems, also to highlight the positive use social media can have on managing problems and the narrative that is made of this. Five categories cover the findings: structure of the narrative, narrating the trauma, restrictions in life, strategies in everyday living, and online interaction. The fundamental role of the narrative is to overcome the stigma that often accompanies those who suffer from this condition, the use of the media facilitates the verbalization of the problem, which encourages serenity in self-care. Furthermore, these online sharing spaces not only help to trace other people who are in the same situation, but also to share useful strategies for overcoming problems, as well as giving hope of rehabilitation to patients.

Schizophrenia

According to the DSM-5, schizophrenia is a chronic brain disorder that affects less than 1% of the U.S. population. Symptoms can include delusions, hallucinations, trouble with thinking and concentration, and lack of motivation. However, with psychological treatment, most symptoms can greatly ameliorate. Schizophrenia is a very complex disease. Most people with schizophrenia are not dangerous or violent. They also are not homeless, nor do they live in hospitals. Most people with schizophrenia live with family, in group homes, or on their own. Research has shown that schizophrenia affects men and women about equally but may have an earlier onset in males. Rates are similar around the world. People with schizophrenia are more likely to die younger than the general population, in part because of high rates of co-occurring medical conditions, such as heart disease and diabetes (American Psychiatric Association, 2013).

Nour et al. (2016) studied the accuracy of depictions of schizophrenia on YouTube and assessed the utility of these videos as educational tools for teaching medical students to recognize the clinical features of acute schizophrenia. YouTube presents videos with people exhibiting the signs and symptoms of acute schizophrenia. The main inclusion criterion was that a video claimed to show a presentation of acute schizophrenia. Eligible videos (cases were rated as to whether they contained enough information to make a diagnosis and to consent to a rating of psychopathological content) were independently rated by two consultant psychiatrists on diagnostic accuracy, psychopathology, and educational utility. The videos assessed were 4,200. They were based on predefined inclusion and exclusion criteria, by signs and symptoms, like persecutory delusions and passivity phenomena.

The symptom domains assessed overlap with the seven symptoms and signs that constitute the positive scale of the Positive and Negative Syndrome Scale (PANSS) for schizophrenia (delusions, conceptual disorganization, hallucinatory behavior, excitement, grandiosity, suspiciousness, and hostility), which is a standard scale used in research for assessment of psychotic symptoms in schizophrenia (Kay et al., 1987). Of 35 videos that met the eligibility and adequacy criteria, only 12 accurately depicted acute schizophrenia. Accurate videos were characterized by persecutory delusions, inappropriate affect, and negative symptoms. This study also showed that public sources of inaccurate information about psychiatric conditions may contribute to stigma and its negative effects on patients' quality of life and treatment and that portrayals of schizophrenia in popular media can influence public understanding of this condition (Diefenbach, 1997). Recently, it has

been argued that many YouTube videos that have implications in psychiatry are highly critical for the field (Gordon et al., 2015). But, more encouragingly, it is also true that appropriately selected video footage of patients with schizophrenia may be helpful in improving understanding and reducing stigma. Overall, schizophrenia videos on YouTube offer a distorted picture of this condition, namely, a puzzle of inaccurate and sometimes disconfirming information, so this diagnostic confusion is unhelpful for people (Nour et al., 2016).

Another study by Athanasopoulou and colleagues (2016) tried to investigate attitudes toward schizophrenia and people with schizophrenia presented in YouTube videos. Stereotypes and prejudice toward mental illness and people with mental illness result from misconceptions about the disorder and can lead to stigmatization of this group (Corrigan & Watson, 2002). The presence of stigma may discourage people with the diagnosis from seeking treatment (Vogel et al., 2007), impair the effectiveness of treatment (Warner, 2001), inhibit integration into society (Savrun et al., 2007), and add an economic problem for lost productivity and unemployment (Sharac et al., 2010).

Stigma related to schizophrenia is a worldwide phenomenon (Thompson et al., 2002). Athanasopoulou and colleagues (2016) analyzed 52 videos, corresponding to the keywords "schizophrenia" and "psychosis" in Finnish and Greek. Most of the videos tended to present schizophrenia in a negative way (83%); conversely, less than 17% presented schizophrenia positively or neutrally. Specifically, the most common negative attitude toward schizophrenia was dangerousness, while the most often identified positive attitude was objective, medically appropriate, beliefs. All attitudes identified were similarly present in the Finnish and Greek videos, without any significant difference. The Finnish videos tended to be mostly negative, like the Greek videos. Considering YouTube popularity, also in the countries examined here, this platform has the potential to influence the public's perceptions of schizophrenia. Dangerousness is the negative word that appears more frequently in both languages, suggesting that people with schizophrenia are supposed to be dangerous. For many years, this negative characteristic has been evident in various countries and different forms of media (Park et al., 2012). It appears that online videos also follow this negative representation of mental illness which could sustain stigma against schizophrenia (Corrigan, 2004).

Negative representations of schizophrenia are most likely to be accessed when searching YouTube for schizophrenia in Finnish and Greek. More research is needed to investigate to what extent, if any, YouTube viewers' attitudes and stereotypes are affected by the videos they watch (Athanasopoulou et al., 2016). Future research should also test the generalization of negative versus positive videos presented on YouTube in other countries.

Dementia

For the National Institute on Aging (2017), dementia is the loss of operational cognition — thinking, remembering, and reasoning — and of the behavioral capabilities that interfere with daily life thoughts and activities. These functions include memory, language skills, visual perception, problem-solving, self-management, and the ability to focus and pay attention. Some people with dementia cannot control their emotions, and their personalities may change. Dementia ranges in severity from the minor stage, when it is just beginning to affect the person functioning, to the most rigorous stage, when the person depends completely on others for basic activities of living. Signs and symptoms of dementia come up when a healthy neuron (nerve cell) in the brain stops working, loses connections with other brain cells and finally dies. While everyone loses some neurons as age increases, people with dementia experience far greater loss."

Lam et al. (2017) conducted a study to examine how YouTube targets Chinese-speaking individuals who are in the high-risk age group of developing dementia (e.g., aged 55 and above). A board-certified psychiatrist was invited by a North American Chinese TV station for two educational talk shows, which covered topics about dementia background, management, and prevention. The recording was then uploaded to YouTube in the form of two videos of 25 minutes each. The recorded parameters included age and gender of viewers, number of views, watch time, and average view duration. In this research, data were collected by analyzing YouTube videos in two-time spans: Year 1 (January 2014-January 2015) and Year 2 (January 2015-January 2016). At Year 1, the YouTube videos recorded 4,333 views, with more female than male viewers. The videos had a total watch time of 26.55 minutes, and an average view duration of 6.13 minutes. The videos at Year 2 had more watch-time, as well as more views, by more people of similar ages to those of the target group (55 and above). Obviously, in workshops, reaching a specific target is easier, but with the help of YouTube as an e-health platform, you can reach a greater number of people, lower costs, and overcome national and gender diversity. Men and women are equally represented, and this has a positive outcome on the well-being of the population.

Because dementia is a geriatric condition with the onset later in an individual's life, YouTube will continue to gain prominence in both the education and care of older patients with dementia, along with providing psychoeducation support for their caregivers (Zheng & Woo, 2017).

Generalized Anxiety Disorder (GAD)

According to the DSM-5, generalized anxiety disorder (GAD) includes disproportionate worries that interfere with daily activities. This may be manifest itself through physical symptoms: agitation, anxiety, easy exhaustion, difficulties in concentrating, muscle tension, and difficulties in sleeping. Anxiety is a normal reaction to stress, and it may be beneficial in some situations. Indeed, it can alert us about dangers and help us to prepare ourselves to pay greater attention. Anxiety disorders differ from normal feelings of nervousness because they involve excessive fear or anxiety (American Psychiatric Association, 2013, 2020).

MacLean et al. (2017) authored a study to describe the content of the most popular YouTube videos on GAD. Videos with at least 50,000 views were coded for information regarding symptoms, treatments, and causes for GAD. Videos did not vary based on whether they were uploaded by consumers versus professionals or whether they focused on a personal experience. Thirty-seven videos specifically mentioned "generalized anxiety disorder." Associations with factors like popularity and focus on a personal experience were examined. Videos that focused on a personal experience were less likely to mention other psychological problems, but worries, panic attacks, and social anxiety were sometimes cited. Further, in many videos, individuals mentioned to participate at least at one pychological therapy or similar interventions; finally, only a few mentioned the causes of anxiety (like trauma or genetics).

Overall, research has suggested that the use of Internet support has increased patients' ability to cope with specific diagnoses, creating a feeling of virtual solidarity and a platform for sharing experiences (Seckin, 2013). This study highlights how YouTube has become a major setting for videos informative about psychopathologies, a bridge between the specialist and the patients (MacLean et al., 2017).

Autism Spectrum Disorder

Autism spectrum disorder (ASD) is a broad condition, where symptoms may differ for each individual, but, in general, they cause difficulties in social interaction, speech, and nonverbal communication. It

is a lifelong condition, but it does not always impede living independently, a productive and fulfilling life. The diagnosis is typically made around the age of 2-3 years, because of an impairment in skill-learning, with restricted and repetitive behaviors occurring often. ASD is three to four times more common in boys than in girls, where symptoms tend to be less observable (American Psychiatric Association, 2013, 2020).

Bellon-Harn and colleagues (2020) examined the content and the utility of the 100 most viewed YouTube videos related to the topic of "autism." Each video was categorized depending on the fact of whether it was uploaded by a professional, or originated by television, the Internet, or a naïve consumer. Moreover, videos were coded for type of information; in other words, each video was considered in terms of how valuable, informative, and useful it was to families. This initial work led to evaluating the understandability (ease of comprehension) and actionability (ease of comprehension of what needs to be done).

Results of the 100 videos evidence that only 24 were created by professionals; the other videos were produced by the other sources. Differences in the content emerged for the professional category: they discussed diagnosis and resources more frequently than those in the other categories. Overall, understandability and actionability scores were unfortunately low, although higher in the category of professionals.

On the basis of these results, families with children with autism rely on the Internet, by searching YouTube for videos created mostly by professionals. And, indeed, families consult the Internet to find information on adequate therapies and interventions (Grant et al., 2015), after a diagnosis of autism. But considering the low-quality content mainly in terms of actionability, future information placed on the Internet should remedy this deficiency, to provide more useful material for families involved in some way with autism. In other words, the strong role of Internet-based information (in this case, found in videos uploaded on YouTube) should motivate professionals to contribute to changing Internet-based videos to provide high-quality, easily understandable, and clear directions about interventions for autism patients and their families to answer the question "What next?" after a diagnosis of autism (Bellon-Harn et al., 2020).

General Discussion

Computer, tablet, and smart phones today are, and must be, used as new tools to promote education and collaboration between students and professionals (Zahn et al., 2014). Collaboration and sharing of even complex information are facilitated by the multimedia environment which is congenial to cooperation given its interactive and multivariate character. It also stimulates the cognitive abilities of the peers involved (Alby, 2007; Greeno & Engeström, 2014; Webb & Palincsar, 1996).

Aside from sharing information and explanations, peer interaction enhances other cognitive abilities such as the construction of sharing meanings and problem solving (Roschelle, 1992), or negotiation in conflict solving, as well as activating a deeper level of insight. Moreover, participation in peer interaction can facilitate the internalization of social processes and cultural practices (like talking in a new language or arguing in a discussion), as important individual skills (Webb & Palincsar, 1996).

YouTube, a valuable open information resource, is not risk-free. Among the negative aspects is low academic motivation that can arise from the compulsive use of YouTube, especially in users who tend to be anxious or with a low mood (i.e., neuroticism), or those who use the platform for entertainment and not for information (Klobas et al., 2018). This should be clear to teachers and encourage them to offer students more cross-sectional learning material to reduce interferences.

Another way in which teachers can stimulate self-control education is through sharing information on the compulsive use of platforms and proposing debates to increase children's self-awareness. To do this,

however, educators should also be prepared and constantly updated on the state of the art of research, as well as on the best methodologies to make the most of it.

The personality factors that lead the individual to excessive use of the media can also be mitigated thanks to social support networks, to be organized in schools, which underlines the importance of the psychologist in organizations. Social support programs for college adjustment include both peer support programs (Mattanah et al., 2010) and social media-based programs (DeAndrea et al., 2012).

Different personality factors might be associated with compulsive use of different Internet services and platforms. Caution should therefore be exercised in making assumptions about how personality traits are likely to affect compulsive use of other services and platforms. A systematic comparison of the effects of compulsive and problematic students' use of different platforms and their implications for academic motivation and performance would be a useful addition to the literature (Klobas et al., 2018).

In conclusion: families need information that answers the question "What next?" after they recognize various signs and symptoms in their child. The impact of Internet-based information on families of children with some mental condition may contribute to changes in the role of professionals. Professionals may need to provide support to increase their clients' e-health literacy and effective use of information, obtained from the Internet.

In order to incorporate Internet-based information into their practice, professionals need to be aware of the limits and the benefits of available video information. They are in a position to contribute to digital learning by generating high-quality information across diverse contexts (Bellon-Harn et al., 2020), such as diagnostic and treatment resources, that will be useful for every patient.

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