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Digital dementia and its impact on human cognitive and emotional functioning

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Abstract

Digital dementia is a term coined by Spitzer and associated with a decline in mental abilities in memory, attention, and thinking by people who overuse new technologies. The aim of the study was to analyse the scientific literature in the field of new technology on digital dementia and its impact on human cognitive and emotional functioning. The study was based on a content analysis of current articles on Google Scholar on the topic of digital dementia. The negative phenomena associated with digital dementia and their impact on human cognitive and emotional functioning were presented. It is shown that inappropriate use of social media can be a risk factor and a source of mental health problems. A more important contemporary problem is not escaping from modern technology, but rather the rational ability to use it.

Keywords: Cognitive and emotional functioning; digital dementia; new technologies; social media; mobile devices;

Introduction

There is no doubt that the use of social media and apps can be an enjoyable pastime for people of all ages. The risk of excessive or problematic use of them carries negative health and social consequences, including the problem of addiction. As Spitzer [1] notes, people openly declare that they cannot imagine functioning without them in their daily lives. For some people, this can be a source of the onset of emotional and cognitive disorders, such as depressive states, attentional or memory problems [1]. According to Lange et al. [2], many adolescents devote too much of their free time to entertainment in the virtual world. Polish youth take advantage of it for an average of 4 hours and 50 minutes per day. This constitutes a risk factor for the individual's adequate cognitive [1] and emotional [3] functioning. The two components, in mutual interaction, form a complete picture of the definition of the phenomenon referred to as digital dementia [1]. Most users are likely to be unaware of the

negative consequences of excessive use of social media or apps. Therefore, this article reviews the literature on digital dementia and highlights phenomena with negative realities for modern humans.

The purpose of the paper

The aim of this study was to analyse the scientific literature in the field of new technology on digital dementia and its impact on human cognitive and emotional functioning.

Material and Methods

Research was conducted using the latest articles by Google Scholar on digital dementia.

A description of the state of knowledge

The term “digital dementia” has gained its greatest popularity through Manfred Spitzer, a prominent German psychiatrist and neuroscientist. The author of the book “Digital Dementia. How we are depriving ourselves and our children of reason” [1], has set himself the goal of making people aware of the long-term consequences of inappropriate use of new technologies and social media. Spitzer equates dementia with a decline in mental capacity. A person who reports worrying symptoms in terms of impaired memory, attention, and thinking and, at the same time, excessive use of modern virtual community technologies, has probably already “fallen into this disease”. We can surmise that her nerve cells began to die before she recognised her characteristic disease symptoms. As Spitzer [1] has pointed out, in such a situation, it is more a question of a person's so-called cognitive reserves, which they can draw on when their mental potential is diminishing. The richer a sick person's cognitive reserves are, the later he or she will begin to notice his or her mental degradation. The rate of disease progression, according to Spitzer [1], is determined by the degree of cognitive brain development before cognitive decline begins.

Dementia co-occurs in many cases of brain impairment. According to Manwel at al. [4] excessive screen time during brain development will increase the risk of Alzheimer's disease and related dementias in adulthood. In addition to impairment at the cognitive level, the occurrence of emotional dysfunction is also negatively affected [5]. There are problems in communicating with the environment, low levels of motivation, or lack of problem-solving skills.

Phenomena associated with digital dementia

Problematic use of social media (PSMU-Passive Social Media Use)

The first well-known phenomenon is passive social media use [5]. A study by Bányai at al. [6] revealed that problematic social media use affects almost 5% of Hungarian students. The results of other studies [7, 8] show that those affected by PSMU are more likely to feel anxious or experience emotional difficulties. A positive correlation between PSMU and depressive symptoms has also been reported. This means that people who use social media excessively are more likely to experience symptoms of depression [9].

Digitrosis

The second term is “digitrosis” [10], which describes a human psychological state in which the digital world begins to take precedence over the analogue world. Such a state can be equated with illness. According to C. Graf [10], “digitrosis” can be positive or negative. Its positive aspect occurs when new technology is used to enhance specific knowledge, while its

negative component reflects the trend towards using social media to 'kill boredom'. In the latter situation, in terms of the human psyche, it can only be pathological [10].

An example of pathological behaviour in the context of man-technology is, for example, "Internet Addiction Disorder" (IAD), which degrades a person's cognitive and emotional functioning. According to the World Health Organisation [11], the abuse of the Internet, as well as of new technologies, is not a disorder but a pathological behaviour. However, it should be noted that it can be part of another disorder, such as computer game addiction.

FOMO

Another concept is fear of missing out (FOMO), or fear of missing out. In recent years, this phenomenon has been the subject of an increasing number of empirical studies [12]. The term was first coined in 2010 [13], at a time when the online community was growing rapidly [14]. From the beginning, FOMO has been described in the media as an anxiety-inducing construct [13]. In the literature, it is defined as a cognitive anxiety of an obsessive nature about what we may be missing out on [12]. As a result, compulsions, i.e., specific behavioural strategies, e.g., compulsive checking of social media, are introduced to give vent to one's anxiety [12].

According to Burke et al. [15], FOMO is often associated with boredom and loneliness and leads to adverse emotional and social experiences. This is supported by research by Davey [16], who showed a negative relationship with mood, life satisfaction, and self-esteem, as well as with mindfulness.

Phubbing

The origins of the term can be traced to the two words "phone" and "snubbing". The phenomenon represents a situation in which a person ignores their interlocutor by blanketing themselves on, for example, performing various activities on their phone [17]. The term was used in a campaign led by Macquarie Dictionary to raise awareness of the growing trend of phone misuse in social interaction [18].

When explaining what phubbing is, it is important to consider the division of specific roles in a social relationship. Thus, a "phubber" is an individual who initiates phubbing through ostentatious behaviour by looking at his or her phone, taking various actions on it, and ignoring others around him or her. The individual who is victimised (ignored) in this interaction is called a "phubbee" [19].

Research by Ranie and Zickuhr [20] confirms that phubbing can contribute to negative emotions and worsen relationships with others. Adverse changes have also been reported to include lower satisfaction with social interactions [21], lower levels of trust in the interlocutor [22], a lack of a sense of closeness [23], worse mood [24], or even simple human jealousy [25].

Digital zombies

The term "digital zombie" was first used by Campbell from the University of Sydney in 2015 [26, 27]. It depicts a large segment of society that uses smartphones while walking, on which they focus all their attention without paying attention to their surroundings [27].

Cognitive and emotional functioning

As Spitzer [1] points out, cognitive impairment is the result of people developing new habits. Mindlessly browsing the Internet and "clicking" through page after page of social networking sites to "kill time" means that, at a certain point, people stop thinking critically based on what modern digital technology brings them. The virtual cloud remembers the

information taken by the user and, therefore, his or her brain misses out on things that it would seem to need sooner or later. As a result, the person works less reflexively and does not have to concentrate on remembering, for example, their date of birth or friends' phone numbers, since the technology does it for them. In this way, a person becomes dependent on technology. His or her competence in terms of attention, memory, and independent thinking skills decreases [1].

Another interesting example is the learned and perseverative mode of the day. As soon as he wakes up, he is told to grab his phone in order to browse social media or his favourite apps. It is important to note that this procedure is automated and yet mindless; the individual thus begins to reward his or her reward system through the readily available "dopamine". The lack of a learned process of self-regulation can make the aforementioned organic chemical compounds addictive, lazy, and therefore adversely affect the emotional state.

Inappropriate use of social media can be a risk factor and a source of mental health problems [3] or engaging in risky, antisocial, and unsafe behaviours [28]. One only needs to look at the impact of new digital technologies in creating body image perceptions, especially in the younger generation. Various forms of media, including online, social media, and others, transmit certain norms, impose a value system, socialise ideas, and create a social reality for those who use them [29]. An earlier study by Sanz et al. [30] had already recognised the very high participation of children and adolescents in the use of the latest digital technologies. Adults also spend a lot of time in the virtual world. According to Sanz et al. [30] and Shrum [31], the content presented often presents a distorted picture of reality and makes it difficult for many people to perceive the world in a real and objective way. The overuse of modern media has a negative impact on body satisfaction in many of its users. This causes them to develop anxiety, fear, frustration, anger, and even risky behaviour that threatens their health and life.

The dissonance between not having the body shape created by the media and having the body shape one has often contributes to the occurrence of eating disorders [32]. It is important to note that new technologies, including social media and apps, are deliberately programmed for individual user preferences. This keeps the user's attention and activity as high as possible [33]. As an example of consumer retention on a given platform, we can cite the use of a specific algorithm that prepares content in accordance with the interests and moods of the user [33] or the infinite scroll mechanism, thanks to which we can move to subsequent categories of products shown on websites. After all, we will never be able to "get to the end of the internet" [34].

The paradox of users of these media is that they seem to have some knowledge of the relationship with their health, cognitive and emotional functioning, yet all too often actively participate in them.

Summary

Dementia, in Spitzer's terms [1], is not just memory loss resulting from the overuse of new digital technologies, but more importantly, a diminished ability to think and make critical judgements. Innovative digital technologies evoke different emotions not only among younger generations. It should be noted that their excessive use can lead to the development of addiction. Many scientific publications on the phenomena described in this thesis point to the negative consequences of digital technologies on human cognitive and emotional functioning. However, it is worth emphasising that in the current reality, it will be difficult for us to escape from it. Kopczyński [26] poses the question: do we need to escape? And at the

same time, answers: not necessarily. It will therefore be important for us to find the right balance so that the use of “technological novelties” is not just an opportunity to escape into the virtual world and “switch off” rational thinking. Otherwise, we will be doomed to digital dementia.

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