Internet and Media Addiction in Children and Adolescents

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Abstract

Technology addiction is an issue currently up for debate in fields of psychology/psychiatry and behavioral health. Contention arises from the fact that the DSM-5 has yet to label such behavior as a disorder, despite current research indicating that this is an addictive syndrome, albeit a behavioral one and not a substance abuse disorder. Children and adolescents experience adverse effects from heavy screen use such as lack of academic success, lack of development of social skills and competency, lower levels of activity as part of a sedentary lifestyle, and obsession and withdrawal symptoms. Some predictors for these issues are the comorbid presence of disorders such as lack of impulse control, or ADHD, which are correlated with a lack of executive function. Parental involvement and recreational activities are two important factors that can control the negative outcomes that children and adolescents may experience with heavy screen and media use.

Introduction

It has long been argued by concerned mothers and social commentators that television, video games, and media rot our minds and create less productive members of society. As a society, we have to consider whether these concerns are warranted. Now, as media outlets and entertainment sources via tablets, phones, and computers are increasingly ubiquitous, it is important for research to inform standard practices surrounding safe screen use, and to provide insight into the potential effects of heavy screen and media use. Young children and adolescents are particularly important populations to consider, as they experience these stimuli at younger ages than past generations. At crucial stages in development, children learn to regulate behaviors, focus attention, and interact positively with others in order to become socially, physically, and mentally healthy. It should be determined whether frequent interaction with screens, social media, and online gaming are a significant hindrance to this process. There has been an increasing field of study that looks into the side effects of screen obsession; the associated behavioral disorder has been coined internet addiction (IA). Various age groups have been studied, including young children: 0-36 months, older children: 7-12, and teenagers: 13-18. Additionally, there have been studies that have determined that individuals with developmental disabilities or other behavioral issues such as Attention Deficit/Hyperactivity Disorder (ADHD) are especially vulnerable to maladaptive, or obsessive behaviors regarding heavy internet use. This paper focuses mainly on the criterion and definitions falling under the study of internet addiction, determinants/correlatives of high volume use of media for both young children and adolescents, side effects/symptoms of the purported internet addiction. It is the responsibility of

healthcare professionals and policy makers to become engaged in this increasingly prevalent field of research, and to address these issues through evidence-based solutions. Aerobic exercise and emphasis on early intervention are key to reducing negative effects of multimedia use.

Definitions and Criteria for Internet Addiction:

While addiction often connotes the presence of a chemical or substance which an individual builds dependence and tolerance to, Internet addiction is more aptly considered a behavioral addiction. It is important to note that internet and media use is not categorized as a harmful substance/source because it is possible to use the internet productively. Instead, internet use is a "behavior with addictive potential"(Yau & Potenza, 2015). Various phone applications or online activities lead to instant gratification. This type of pleasure seeking behavior has a biological basis, reinforced by the release of neurotransmitters such as dopamine (Dreifus, 2017). Those with a maladaptive behavioral pattern continually seek out and obsess over this in lieu of completing priorities (Yau & Potenza, 2015).

Current research is somewhat inconclusive about IA being diagnosable, though it is still a relevant issue in academia and medical/psychiatric journals. Currently, internet gaming disorder and internet addiction are recognized as warranting greater reseach insights by the DSM-5 psychiatric manual (Van Rooij & Prause, 2015). This article by Van Rooij and Prause is useful to the research into internet addiction because it presents a meta-analytical critique of some of the diagnostic tools such as the Young Internet Addiction Test, Griffith's component model, and the proposed diagnostic criteria in a 2010 article by Tao, et al. These criteria include "feeling a loss of control over Internet use; ensuing psychological, social, or professional conflict or problems; and preoccupation when not using the Internet" (Rooij and Prause, 2015).

Their criticism is relevant and recent, and drew from models commonly cited on the issue of pathological internet consumption, therefore addressing the way in which models of behavioral diagnosis are shifting within this field. They make an effort to discern whether a diagnosis is warranted in the case of the "behavioral syndrome" of excessive internet use. It is fairly comprehensive in identifying criteria, and synthesizing the common traits of internet addiction tests, which the authors do not discredit altogether. The critique is useful to health care professionals, such as psychiatrists and behavioral health specialists. These people would take particular interest in this article because it makes the assertion that there is not enough basis of evidence to actually categorize internet addiction as a disorder, but simply as a maladaptive behavioral problem. The analysis is important because it emphasizes that while the criteria point to a problem with internet use, it is crucial to evaluate individual differences that lend themselves toward susceptibility to such heavy internet use.

These common criteria for internet addiction parallel symptoms of impulse control disorder, which is a behavioral disorder identified by the DSM-5. A major component of this obsession and sense of the loss of control is impaired executive control, which is mainly a cognitive attentional function that has to do with decision-making, mindfulness and impulse control (Chamberlain, 2017). From here, it is important to look into the various comorbidities and individual differences of children that may lend themselves toward greater volume of time spent on the internet.

Comorbidities, Demographics, and Effects

While the conception IA throughout various studies is criticized as lacking evidence for diagnosis, many studies examine addictive internet behavior in its relation to comorbidities such as ADHD. The research article published in the Journal of Behavioral Addictions by Chou et al

(2017) provides recent insight into the individual differences and modifying factors that the criticism by Rooij and Prause (2015) calls for by carrying out their own study of 300 adolescent participants, and assessing comorbid factors with heavy internet use such as social skill deficits, and home environments. The study references approximately 50 other research papers from the past 20 years to analyze the issues and conclusions that past researchers have identified in studying internet addiction symptoms and addictive behavioral tendencies. They use the Chen Internet Addiction Scale (CIAS) to assess the severity of internet use, whether by online gaming, streaming services, or the like. One limiting factor is that the group studied was 86% male, and 14% female, potentially biasing results toward male behavioral tendency.

Comorbid Behavioral Issues

Social skills deficits were found to be a driving factor for isolation and greater internet use in children with behavioral issues such as ADHD (Chou et al., 2017). Some reasons for this are that they may seek social gratification online in a way that they do not receive on a personal basis either at school with peers or at home with family. They experience punishment and ostracism from friends and family, and the various online communities or games provide a refuge of sorts for these individuals. Individuals with ADHD/ADD experience issues using executive control, and inhibiting response to certain stimulus (Miller and Hinshaw, 2013). Pleasure seeking behavior is much easier to engage in than tasks that must be undertaken with greater difficulty and planning skills. If children are not able to develop these skills for whatever reason, they are more susceptible to the issues with controlling their behavior later on (ADDitude, 2017; Chou et al., 2017). Ultimately, Chou and colleagues call for more research into the ways in which early prevention and intervention can alleviate difficulties concerning deficits in social skills brought on by ADHD and internet preoccupation.

Demographics

Home and care environments were crucial in predicting screen use for young children about 0-36 months. In a study by Carson and Kuzik (2017) a mother's media use and habits such as leaving the TV on for extended periods of time were positively correlated to the sedentary behavior of young children, and also to the length of screen time, whether that was television, video games, or online activities. Additionally, maternal depression was a predictive factor in the screen time usage for children 0-36 months. If a mother/primary caregiver was unable to provide valuable interaction within a stimulating environment, screen time duration would increase (Duch, Fisher, Ensari, and Harrington, 2013). The role of maternal figures was also crucial in the Chou et al. study, which identified that moderators for social skill deficits in relation to internet addiction were correlated with low maternal socio-economic status. One suggestion as to why this was is that mothers could not actively engage in the media habits of their children if they were also burdened by economic factors, such as having to work long hours to provide income for the family. Also within these studies, children that were exposed to a screen for longer durations were typically members of an ethnic minority, such as in the case where 73% of toddlers with heavy screen use belonged to a minority (Duch, et al., 2013) and "toddlers from ethnic minority groups engaged in significantly more video game/computer use"(Carson and Kuzik, 2017).

Effects of Moderate to Heavy Screen Use

As previously discussed, sedentary behavior is one side effect of heavy screen use, because time spent on these activities takes away from recreation and play. This is especially pertinent for young children 3-10, as they are in the stages where they interact and construct an

understanding of the world. Lack of stimulation or activities have ramifications such that they may confuse norms of virtual reality with actual reality (Isenberg and Jalongo, 2014), or may choose to forego moderate to high levels of physical activity. Negative side effects for older children include lack of interest in offline socialization (Chamberlain, 2017) and social difficulty due to the ease of online interaction and social gratification(Chou et al., 2017), which is sought by older children and adolescents. Adverse consequences such as lack of academic motivation/successes and cognitive abilities were also correlated with populations of young children and adolescents that were heavily preoccupied with screens and media (Duch, et al., 2013). These propensities to stick to social media/online interaction put teens at more risk for developing insecurities and anxieties social relationships. For one thing, it has the potential to affect direct communicative skills. As kids are increasingly acclimated to the disconnected, screen/text interface of messaging with friends, they may not develop those skills necessary in face-to-face verbal communication(Ehmke, 2017). This could worsen as children increasingly are given access to such modes of communication at increasingly young ages.

Treatment Recommendations

Despite the differing definitions of internet addiction and its implications, it is useful to consider treatments and preventative measures relevant to the field of behavioral health, since heavy media use broadly mimics behavioral disorders such as impulse control disorder(Chamberlain, 2017) and correlates with issues such as ADHD(Chou et al., 2017; Miller and Hinshaw, 2013). One compelling, and useful way to address the onset of such behavior at an early age is the integration of structured play and exercise time, especially given the evidence that low physical activity and sedentary lifestyle contribute to likelihood of heavy screen and media use. This can take place either at home, school, or in extracurricular programs.

Recommendations by the American Academy of Pediatrics (AAP) emphasize the parental role in monitoring and guiding appropriate media usage through a "Family Media Plan"(AAP, 2016). At home, "mindful media use" and parental guidance is crucial. It also is recommended that children 0-18 months have no screen interaction, and this may only increase to one hour from the ages of 2-5, and be limited to quality programming. This plan stresses the importance of engaged, proactive play time, away from a screen. Hands-on, face-to-face play is integral to a child's development because bodily-kinesthetic movement is necessary for neural connections to form within the developing brain; active experiences are crucial to holistic integration of learning. Because apps and online games are passive, and often do not require this kinesthetic or creative input, key cognitive developments might not be appropriately integrated (Isenberg & Jalongo, 2014). For this reason, the use of applications/online media is not completely justifiable as an educational opportunity, except in the case that it provides cognitive stimulation through action and input from the child, if the activities are developmentally/age appropriate, and preferably supervised by an adult, who may provide supplemental instruction. This is the first prevention method that ought to be employed by parents and caregivers in day care facilities, or at-home care. Healthcare professionals and public health officials should work to disseminate this information to new parents in order to set them up for good screen use habits.

For elementary school children, recreational activities are invaluable and should be developed with both the physical and mental health of young children kept in mind. Exercise for children can address issues with impulse control and improve executive function and attentional skills, which are key in behavioral issues that make children more susceptible to heavy internet use. The journal Pediatrics published an article by Kamijo, et al. in 2014 that presented evidence that a 9-month recreation program over the course of a school year was shown to effectively

improve cognitive capacity and executive control in children ages 7-9. The intervention group showed increased inhibition and use of attentional resources, as well as greater cognitive flexibility, which are functions of executive control. This resource is valuable in that it points to a way that internet/media abuse prevention may take place. It is known to many professionals in the health field that recreation and play are a useful tool in behavioral/recovery programs; the research provided by Kamijo et al. (2014) gives additional insight into the effectiveness of such programs to assist children that are susceptible to internet misuse. Though all children are subject to the content and overuse of media, it is the groups with pre-existing behavioral problems (Chou, 2017; Yau and Potenza, 2015; Miller and Hinshaw, 2013), lack of regulation of media use from parents (AAP, 2016), and ethnic minorities that are especially vulnerable. This research can be applied with these particular populations in mind, such as in areas with high concentration of minority individuals. Programs can be developed to enhance youth's ability to employ executive function, and to promote other healthy habits as well. Ideally, this would be integrated in PE or after school programs, on a preventative basis.

Conclusion

While a clear definition of internet addiction is still contentious, and criticisms exist for its consideration as a disorder, it ought to be addressed according to preventative behavioral intervention programs, given the susceptibility of young children and adolescents to the effects of stimulus from excessive online activity, whether perceived gratification, goal-oriented gaming, or the entertainment factors provide incentive for use. As a public health issue, positive online interactions ought to be promoted. Children and parents alike should continue to be notified of the adverse life and health consequences of online activity. Education of new parents, and family support is key in addressing this issue at the source of the problem, as children are

exposed to media on personal screens at such young ages. Research concerning individual differences and demographic factors is also warranted, to provide insights into specific population needs and services, perhaps beyond internet-oriented behavior, to determine the underlying causes and broaden definitions of behavioral addictions all together.

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