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Technology Use on Children Brain, Cognition and Well-Being

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Abstract

If a child is significantly retarded in his psychomotor development we suspect subnormal intelligence and speak of mental retardation. Several degree of mental retardation is seen. In very mild case there may be only minimal brain damage giving rise to slight delay only and less than optimal intelligence may only become obvious in school. Minimal brain damage, hardly recognized, but probably much more frequent than severe damage may be a much bigger burden to the society. Since there is no treatment of the cause in moderate retardation habit training, eating, walking, and putting on cloths.

Keywords: Intelligence; Spasticity symptoms, Mental development, Physical development, Digital devices

Introduction

In mild retardation special attention in schools or ideally special school can of value. For any degree of mental retardation parents should be supported. Cerebral palsy is a syndrome, a combination of symptoms. It is a term used for all permanent, no-progressive, generalized brain damage in children irrespective of the cause. Usually some degree of spasticity symptoms are combined with mental retardation, but sometimes the mental retardation is minimal or even absent. Down's syndrome is a chromosomal abnormality involving an extra chromosome characterized by a typical physical appearance and mental handicap. Defects or complete absence of the thyroid gland with insufficient production thyroid hormone causes severe retardation of physical and mental development of the child, sometimes known as cretinism [1]. Earl detection and proper treatment can provide a normal life. The onset can be insidious with loss of appetite, weight loss, abdominal cramps, vomiting, emotional disturbance and lassitude. Polyuria and polydipsia in young children are symptoms to make you think of diabetes mellitus which is not uncommon and is often overlooked. Children in the twenty first century are avid users of technology-more so than generations past [2]. This rise in use has led to much attention on the consequences of technology use, and how this impacts children's brains and their socio-emotional, cognitive and physical development. Much of the research in these fields, especially brain-based research, is in its infancy [3]. Furthermore, it often shows very small correlations between technology use and child outcomes; whether technology causes these outcomes is unclear, and small effect sizes bring questions about real-life implications for children. Despite these issues, policy-makers in various countries have set guidelines for technology use in children, which are often restriction-focused. Technology use is on the rise in other age groups as well, not just adolescents [4].

Methodology

Research suggests that pre-schoolers become familiar with digital devices before they are exposed to books. International trends are pointing to increases in use and younger ages of first access. In response to this increase, over recent years there has been a proliferation of research exploring potential linkages between emotional mental health outcomes and technology use in children, although the knowledge base specifically regarding how children under the age of 8 use technology is relatively sparse [5]. In any case, most of the available research is correlational, shows small effect sizes, and the underlying mechanisms of these outcomes are unclear. Despite these limitations, research of this nature is often cited or used as a guiding force in swaying public opinion and policy regarding issues around children and technology [6]. Given the ubiquity of technology in today's society and the importance of this issue for policy and practice, it is essential to understand the impacts of technology use on the developing brains and bodies of children in the twenty first century in order to guide policy delineating safe and effective use [7]. Parents and guardians should be discerning when it comes to guidelines and research, while governments and groups with policy influence should be cautious of prescribing policy without exploring the evidence base in a holistic and thorough nature. This paper serves to explore the current research base, examining the potential impact this could have on future guidelines and national policy implementation [8].

Discussion

In recent years, research has focused more on psychological aspects of technology use, with less known about physiological outcomes. It is a newer phenomenon that there has been more emphasis on brain and body-based implications of technology use in children and adults. In order to understand more holistically the implications of screen time on children, it is essential to explore the available research in order to uncover trends, gaps and future directions for this work to take. Parents and guardians, as well as education and child health professionals, may be uncertain as to how to structure children's screen time and how this should factor into their daily lives, as well as how to interpret the latest literature on these topics [9]. There is thus a need for coherent guidelines on the matter. In order to make effective and evidence-based guidelines, the most recent and rigorous social science research should be complemented with evidence from the biological sciences as well to get a more holistic picture [10]. It is important to note, as scholars have done in recent years that effects of technology may depend on factors such as the type of technology being used and its purpose. Children might use computers during class time, cell phones to keep in contact with friends, a tablet to do school work in the evening and then will

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watch an hour television with their families to unwind. This can account to many hours over the course of the day. Therefore it is important to understand how and why children use technology and with which tools, when evaluating these guidelines and to determine whether limits are useful and how these should be set [11]. Some recommendations, such as those from the French Academy of Sciences, are more nuanced, avoiding quantitative guidelines in terms of number of hours of screen time, and focus more on qualitative elements. For example, passive and prolonged exposure of children to television without an interactive and instructive human presence is not advisable, and the potential benefits of toddlers using touch screens and educational benefits for children are explored [12]. The updated AAP guidelines, and many of the above-mentioned national guidelines, claim to be supported by literature exploring different health and developmental concerns in childhood and adolescence. Some claims, linking posture or body weight outcomes to screen time, draw from quite a robust evidence base. However these guidelines sometimes cite contested findings from the cognitive science literature, and tend to not cite brain function and development as part of the rationale [13]. This is due in part to a lack of empirical results in terms of technology and the brain, as well as the difficulty in linking structural and physiological findings to observable behavioural or cognitive outcome measures. Nevertheless, this is an important field to explore, especially as children's brains are more malleable than those of adults in response to experience. Pulling evidence from these domains may help in developing more holistic guidelines and help avoid being terrified by shock headlines telling us that technology is rewiring children's brains. Parents and guardians can be uncertain regarding the impact of technology use on the development of children, thus having access to up to date and evidence-based guidelines are critically important. The Royal College of Paediatrics and Child Health published a guide for clinicians and parents to help manage children's screen time, which is the first of its kind in the United Kingdom [14]. The Royal College of Paediatrics and Child Health reached similar conclusions as will be outlined subsequently in this paper, namely that there is not enough evidence confirming that screen time in and of itself is harmful to child health at any age. Therefore, the guidelines avoid recommending age-based limits for screen use, and focus on aspects of child well-being such as online safety and access to inappropriate content. It is recommended that families negotiate screen time with children, based on the needs of the child as well as which screens are in use and how they may or may not displace other health-related behaviours or social activities. The guide finishes with a set of recommendations regarding how families can reduce screen time, if they feel the need to do so [15]. This includes protecting sleep displacement via screen use, prioritising face-to-face interaction and being cognisant of parental media use, as children tend to learn by example.

There are the age-old adages suggesting that watching too much TV can rot your brain, or turn children's eyes square. In this sense, the tendency to publish models of restriction might miss some of the nuances in the emerging literature base.

Problematic or excessive use of technology may be dictated by whether the use interferes with normal daily functions and is difficult to control, rather than based on the absolute quantity of exposure.

Placing limits on sedentary screen time seems reasonable; however arbitrary limits on overall screen time might not take into account the nuances in terms of use of screens in childhood and adolescence.

Conclusion

Furthermore, the research base in terms of well-being and biological outcomes is quite speculative and exploratory for the most part. Development in these fields is needed and will be aided by an increase in longitudinal research, randomised controlled trials and reproducible findings in large samples.

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Conflict of Interest

None

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