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Health effects of using modern technological technologies opportunities and challenges

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Introduction:

We can see that, over the course of the last 20 years, cutting-edge technology has significantly impacted our world. Many individuals benefit from it: technology corporations frequently create new technological processes, which are then used as the foundation for expert engineers to renovate contemporary technical programs, apps, and equipment. People's quality of life is impacted by the use of these technologies.

The knowledge and information society cannot exist without technologies. The information society is bringing us significant new technology advancements in a variety of professional fields, and by raising people's standard of living, it is influencing health promotion.

A contemporary phenomenon brought about by the Covid-19 pandemic is our continual access to the virtual world through contemporary technologies, which supposed to simplify our daily activities. To be honest, not everyone feels comfortable in the increasingly virtual world of schools, education, training, health, and employment.

Both children and adults can be negatively impacted by excessive and appropriate use of contemporary technology on a daily basis. Children are particularly vulnerable because they are constantly observing their surroundings and naturally want to try new things out. Even grownups are frequently enthralled with modern technology—some out of need, others voluntarily.

The numerous recent technological breakthroughs present a distinct set of obstacles for parents raising children in today's world. The impact that technology has on our lives and the lives of our children cannot be denied. Almost every home has some form of technology in it; 96% of

Americans own a TV, and 94% of kids between the ages of 3 and 18 have access to the internet via a computer or smartphone. A 2019 Common Sense Media national survey found that 53% of kids have smartphones by the time they turn eleven. As a result, it's critical that parents monitor their children's use of technology and consider all possible consequences.

Information and communication technologies, in reality, make it possible to process and alter data, and in the majority of industrialised nations, they are quickly emerging as a strategically innovative component for health promotion and education. The emergence of new health education technology is offering vital support and information that is extremely crucial. These modifications have an impact on health education. It has progressively integrated ICT and the Internet into health services and education that benefit not only medical professionals but also individuals and society at large. Technology offers a plethora of opportunities. These include electronic health records and health portals, telemedicine, tele-ICU, and health information networks. By helping us identify, diagnose, prevent, monitor, and treat illnesses, as well as manage our lifestyles and enhance our wellness and quality of life, these services help to improve and promote health.

- Application of Technology

  Technology has advanced significantly in the areas of computer programmes, software development, and online learning resources that teachers and students can use in the classroom. Numerous studies have demonstrated that the 1:1 classroom setting promotes favourable outcomes for instructors and students and increases students' independence and responsibility (Higgins & BuShell, 2018). Higgins & BuShell's (2018) survey of 207 high school students did not address the drawbacks of integrating technology into the classroom, even though this might be true in some situations. According to research by Schwarz & Zhu (2015), merely using technology in the classroom does not boost student

engagement. Teachers need to set high standards for the work that their pupils do in the classroom. Students' degree of satisfaction, motivation, bravery, and involvement in the course will all improve if they start to satisfy those expectations. When trying to improve their classes to increase student engagement, teachers cannot concentrate solely on the technology. In actuality, educators are finding it challenging to stay up to date with the rapid advancements in educational technology. In the US, most schools are either 1:1 with a tech gadget already, or are striving towards it. Surprising findings emerged from a survey conducted by Vu, Fredrickson & Gaskill (2019) among fifteen schools that were in the process of putting the 1:1 programme into practice. Out of the fifteen schools, just two offered professional development or training to their instructors prior to initiating the 1:1 programme. It was entirely optional for the two schools that provided instructors with informational training. It is rather improbable that all of the teachers in the schools that were surveyed were proficient in using the technology that was being incorporated into their classrooms. It is extremely difficult for instructors to successfully incorporate the new technologies into their classes and guarantee student interest and understanding due to their lack of experience.

The perceptions and discrepancies regarding computer-based intervention methods utilised for middle school struggling readers among students, teachers, and administrators were examined by Kelli (2019). Kelli (2019) discovered that while there are a lot of new, beneficial programmes accessible to help difficult children, teachers could not be properly utilising these intervention tools, which makes them ineffective. Without the necessary training, teachers frequently utilise these kinds of resources as a "break" from their lessons while the student keeps working on the reading intervention programme on their own.

Regretfully, schools still depend on interventions that don't meet the needs of struggling teenage readers (Kelli, 2019). Teachers must receive training on when and how to properly integrate these technologies into their courses in order to maximise student learning and make them effective.

- Mental Health of Students

There is a clear relationship between kids' emotions, behaviours, and mental health and the quantity of screen time they spend each day. Students were forced to spend most of their waking hours in front of screens during the COVID-19 pandemic, which had a detrimental effect on their ability to engage socially and on time they could have spent participating in extracurricular activities like sports. Sixty-two percent of the 1500 mothers who participated in the poll reported seeing behavioural changes in their kids. According to Scarpellini et al. (2021) the most common symptoms reported were restlessness (69.1%), aggression (33.3%), and anxiety (34.2%). It is obvious that for kids to feel normal, they need to interact with other people. These kids had to completely reset their brains to accept a new way of life after being abruptly cut off from their friends, sports teams, and extracurricular activities. Many kids were unsure of how to react to these abrupt shifts. Children learn to manage best through unpleasant emotions and behaviours since they are still developing.

Mahmoodi, et al. (2018) did a study in Iran to look at the relationship between high school students' mental health and their excessive use of screens. Mahmoodi et al. (2018) employed a three-part survey with more than one thousand students to ascertain the relationship between general health, sociodemographic data, and technology addiction. The findings demonstrated that there was a connection between poor mental health and

excessive technology use. Overuse can lead to withdrawal, which can make technology unusable and generate emotions like stress, rage,and/or depression. Tolerance brought on by overuse may necessitate the purchase of more hardware, software, or usage hours. Overuse of technology can raise the risk of dishonesty, disagreements, low performance, social isolation, and exhaustion. Overuse may also be associated with anxiety, low self-esteem, chronic tension, depression, and a lack of impulse control (Mahmoodi, Nadrian, Shaghaghi, Jafarabadi, Ahmadi, & Saqqezi, 2018). Screen usage was also linked to negative effects on children's mental health under the age of eighteen, according to a 2017 literature review by Saunders & Vallance. Screen usage is favourably associated with depression and adversely associated with social behaviour, academic achievement, psychological well-being, and self-esteem. (Vallée & Saunders, 2017). Children lack the self-discipline necessary to restrict their technology use because they are exposed to technology at such a young age. They struggle to know how much screen time is appropriate and when to give it up. At that point, kids start to form negative habits. To prevent any of these detrimental mental, emotional, or behavioural effects in their children, parents must put time limits and restrictions on their use of technology.

Today's students can reach the entire globe. They can find anything on the internet, including anything they do not want to know. Keeping an eye on everything their kids are doing, watching, and researching on the computer may be quite difficult for parents. It is evident from these research that the longer someone uses a screen, the higher the probability that they are taking in harmful content. Yoo, Cho, and Cha (2014) looked at factors influencing mental health and internet addiction in Korea. In 2010, 74,980 middle and high school students in Korea participated in the Korea Youth Risk Behaviour Web-

Based Survey. According to Yoo, Cho, and Cha's responses, extended internet use is associated with an increased risk of suicidal thoughts, depression, subjective tension, low happiness, and problematic substance misuse (2014). Students frequently utilise the internet and technology as a means of "escape reality." Instead of helping people deal with their problems, using technology in an attempt to feel better frequently ends up diverting or numbing them. Sadly, students often feel inferior to others and alone because of how easy it is to reach the world through the internet.

- Physical Health of Students

Students' physical health is suffering as a result of the amount of screen time they spend, in addition to their mental health. Mowatt, Gordon, Santosh, and Jones (2018) conducted a study with over 400 undergraduate students to find out how common computer vision syndrome (CVS) is and what ergonomic methods are used. CVS has the potential to develop into a serious public health concern. CVS is a complicated eye and vision issue associated with computer use, according to the American Optometric Association. Currently, 60 million people worldwide are impacted by CVS (Mowatt, Gordon, Santosh, & Jones, 2018). Students participated in this study by recording any symptoms they had after using a computer or other electronic device for at least two hours. The most prevalent CVS symptoms in the study were shoulder discomfort, eye strain, neck pain, and eye burn. The least frequent symptoms were hazy vision, double vision, and dry eyes. According to Mowatt, Gordon, Santosh, and Jones (2018), the majority of students (40.3%) used a computer for more than six hours per day, 33.3% used a device for four to six hours per day, and only 5.6% spent less than two hours per day in front of a screen. It's astounding

how much time the majority of college students spend on a device. More than half of the pupils who responded to the survey looked at a screen for more than six hours. An average person spends sixteen hours a day awake. This indicates that they sit still and stare at a screen for more than one-third of the day. It makes sense that after engaging in excessive computer use, kids are exhibiting several symptoms of CVS. The age range of college students is 17 to 22. The approximate age of human development is 25 years old. Their brain growth may still be negatively impacted by the effects of displayed devices.

One of the main reasons of most health issues is inadequate sleep. Research has demonstrated a clear link between the quantity of unbroken sleep one gets and the use of technology. Melton, Bigham, Bland, Bird, and Fairman (2014) administered a 28-item survey to more than 500 undergraduate students in order to investigate potential correlations between the use of technology and particular health variables. In comparison to those who averaged 9 or more hours of sleep, the participants who reported getting less than 6 hours of sleep also reported using technology for a large amount of time each week. The findings also revealed that participants who were obese used technology twice as much on average as the group as a whole. In 2014, Milton, Bigham, Bland, Bird, and Fairman. For general health and wellbeing, it's critical to maintain a healthy body weight and get enough sleep. Students are inadvertently endangering their developing bodies when their sleep habits are disrupted by text messaging, late-night studies, or an excessive amount of blue light radiation. There is less time spent being active the more time is spent idly staring at screens on devices. A high BMI in students is obviously something to be concerned about as they get bigger. In Saunders and Vallance's 2017 literature analysis, 33 longitudinal and 119 cross-sectional research looked at the connection between youth

screen use and obesity. They discovered that children were more likely to be overweight or obese if they spent more than two hours a day in front of a screen. In order to assist children in setting an appropriate screen time limit, educators and parents must be aware of these detrimental health implications.

- Modern Addictions

Over the past 20 years, there has been a considerable increase in the prevalence of modern addiction, which includes gambling, internet addiction, excessive TV viewing addiction, mobile phone addiction, workaholism, and shopolicism (Vasilescu et al., 2011).

The incapacity of an individual to exercise self-control over their Internet usage is known as internet addiction. It causes distress, worry, and a functional impairment in day-to-day functioning. People who use the Internet excessively have psychological and social challenges, particularly when doing job or studying. It is a non-substance, psychological addiction (Holdoš, 2013).

The MKCH-10 classifies disorders related to the use of technology and the Internet under the subcategory F.63.8, "other habits and impulse disorders," and under category F.63, "habits and impulse disorders" (Národné centrum zdravotníckych informácií, 2021). The World Health Organisation included IDC-11 addiction in online gaming in May 2019 (Kubíková, 2019).

When psychologists draw comparisons between Internet addiction and substance or alcohol addiction, they are uneasy and frightening. Studies on the subject of internet addiction (Greenfield, 1999; Morahan-Martin & Schumacker, 2000, 2003; Chou, 2004, Wang et al., 2003; Šmahel et al., 2009) reveal that the brain's functionality and state of

consciousness alter during an extended and uncontrollably "stay" on the internet. This eventually results in a loss of the capacity to learn and reflect deeply.

In 2015, Juraj Holdoš, Róbert Čurka, and colleagues found that 3% of youngsters in Slovakia were Internet reliant. Roblox, Overwatch, and Star Wars Battlefront are some of the most addictive games, according to Internet Matters, a nonprofit organisation. Within the PC community, the term refers to cyber addiction, specifically to the addiction to social media and PC gaming. We are also familiar with the idea of FOMO and the crippling anxiety of losing a cell phone. Addiction to news, which can cause an excessive amount of information overload from all the websites that are available, to sick search and share, to watching online videos, and to pornographic websites are still prevalent. Dočekal (2019).

The fear of being without a cell phone is known as nomophobia. An addict's life becomes completely dependent on their phone (Koníčková, 2020). According to Gerald M. Fenichel, Facebook has the ability to produce its own brand of addiction. Facebook's influence causes significant everyday tasks to be neglected. He also coined the phrase "FAD failure," which refers to the state in which an excessive amount of time spent on Facebook negatively impacts a person's health and overall well-being. A 350 million people are impacted.

- Negative Impacts

Children's capacity to focus, form healthy connections, and develop social skills can all be adversely impacted by technology.

Social skills: Children may not be developing their social skills to the fullest extent due to the increased usage of technology. More kids may become socially uncomfortable, reclusive, shy, or afraid of crowds as a result of this. They can be unable to interact

socially with adults or other kids. It takes practice to build social skills, and children have fewer opportunity to do so if technology gets in the way.

Relationships: Kids may become accustomed to being by themselves and lose interest in interacting with their parents or even friends offline, save on the internet. Their devices' virtual realities are frequently more alluring and enjoyable than the real world.

Health issues: Technology may have an impact on a child's growing brain and capacity for problem-solving. For example, instead of employing mental processes to work through an issue and discover a solution, the child may be dependent on a gadget to do it for them. Being indoors may also prevent you from exercising, which can lead to weight gain. Children who use electronics right before bed may experience worse quality sleep, which could negatively impact their immune systems and general well-being.

Focus: Since they depend on technology to pay attention for them, kids who use electronics a lot may find it harder to focus and have a shorter attention span. Teachers are choosing to create shorter lesson plans in order to accommodate pupils who are easily distracted. This is visible in the classroom.

Risks associated with browsing: Parents find it challenging to keep an eye on what their children are exposed to online, including improper content and encounters with strangers, due to the abundance of information available.

- Use of Digital Technology and Its Dangers to Development and Health

Use of Digital Technology and Behavioural and Developmental Risks In preschoolers and school-age children: the use of digital technology has been linked to aggressive behaviours, obesity, physical inactivity, lack of concentration, and sleep issues. Children that utilise digital technology excessively end up wasting time. The impact that these

technologies have on children's cognitive and emotional development is another area that warrants concern (Brown, 2011). Community-based research has indicated a connection between cognitive, language, and social/emotional delays and early childhood electronics overuse (Pagani, Fitzpatrick, Barnett, & Dubow, 2010).

Utilizing Digital Technology with the Skeletal System: There has been evidence linking a rise in musculoskeletal issues to a consistent rise in the use of digital media at home and in educational settings (Harris & Straker, 2000; Kelly, Dockrell, & Galvin, 2009). Apart from psychological factors like anxiety monitoring and somatic complaints like headache and abdominal pain, musculoskeletal disorders are linked to physical factors like age, sex, body mass index (BMI), and exposure to sedentary activities (Harris, Straker, Pollock, & Smith, 2015). In order to reduce the risks of potential musculoskeletal disorders and sedentary lifestyles, playing with toys should be encouraged instead of watching screens. Parents and carers should also be given conscious instruction manuals for tablets and other technological devices (Howie, Coenen, Campbell, Ranelli, & Straker, 2017).

Use of Digital Technology and Lack of Exercise: There is little evidence to suggest that technology usage has altered physical activity, however it is being studied if excessive technology use in particular replaces sleep at night. According to Anderson and Whitaker's (2010) study, which involved children ages 4 to 11, 37% of the participants engaged in low levels of active play, 65% spent a lot of time on screens (TV, computers, tablets, etc.), and 26% combined the two. According to another study (Fakhouri, Hughes, Brody, Kit, & Ogden, 2013), only 4 out of 10 children aged 6 to 11 years met the guidelines' recommendations for both physical activity and screening duration. This finding further demonstrated the link between increasing age and decreased physical activity in children.

Digital Technology Use and Obesity: In the past 20 years, there has been a threefold increase in childhood obesity. Three to four hours a day of physical activity and social interaction are necessary for children's healthy growth (Hancox & Poulton, 2006). Overuse of technology is associated with a lifetime risk of obesity and cardiovascular disease, and this association is now shown as early as childhood (Bel-Serrat et al., 2013). According to Cox et al. (2012), excessive use of social media during the pre-school years is linked to modest but significant increases in BMI, which paves the way for weight gain in later life.

Digital technology use and sleep quality: Children who grow up with a television, computer, or smartphone in their bedroom sleep less (Cespedes et al., 2014). Sleep disruptions are more likely to occur in children who use social media excessively or who sleep with mobile devices in their bedrooms (Levenson, Shensa, Sidani, Colditz, & Primack, 2016). Extreme mobile phone use is linked to poor sleep quality in teenagers, while the amount of gadgets in a bedroom, excessive internet use, and the amount of time spent using digital devices before bed are linked to poor sleep quality in pre-adolescents (Bruni et al., 2015). The quality of sleep can also be impacted by using electronics during the day (Hysing et al., 2015).

- Innovative Technology in Nursing Practice

Information and communication technology (ICTs) for health, or eHealth, is a way to facilitate the provision of healthcare. The way nurses organise, carry out, record, and evaluate clinical care is altered by these technologies, and this trend will further intensify as technology develops, Further integration of ICTs into nursing practice will profoundly alter the way nurses acquire and review diagnostic information, make clinical choices,

interact socially and communicate with patients and their families, and carry out therapeutic interventions.

eHealth can exist in a wide variety of ways. It may entail: A phone chat between a patient and a medical professional to assess symptoms, give instructions, track vital signs, and offer advice on how to take medication call or text for management or appointment reminders on health promotion health information provided by the patient via a mobile device—such as a smartphone or a portable computer app—that leads to a referral or consultation appointment a video conference-based remote consultation between a patient and physician Patient began interacting with practitioner through a neighbourhood online support group featuring a blog, chat room, or social network where members might exchange information.

ians to improve health and well-being, but as science, technology, and public demands for efficient and timely healthcare grow more complex, many nations will need to rebuild the foundations of nursing education. Some nations and areas still use antiquated nursing curriculum that do not adequately prepare nurses for further practice. Although technology has numerous advantages, there are significant gaps in nurse education and training settings involving access to and training in technology, as well as issues with the type, price, and rapid obsolescence of technology utilised in teaching and learning environments. Understanding the impact of technology on the health of patients, physicians, students, and educators is another difficulty. Nursing education must adapt to technological innovation and enhanced globalisation in a methodical and well-executed manner if it is to remain relevant.

- Conclusion

modern technology not only make living easier but also become indispensable to daily existence. Due to the epidemic, a lot of activities that were formerly done outside have started to relocate inside of families and small towns, necessitating a link to the virtual world. There are a lot of benefits to modern technologies that we may not have known about or utilised in the past. But they are also to blame for the rise and detrimental effects of contemporary addictions, which can have disastrous effects on both the person and the larger community.

Numerous research investigations have examined the similarities between pathological alterations in the brains of drug abusers and Internet users. Depression, hostility, hopelessness, abandonment, and anxiety are psychological effects of not reaching dopamine levels. Physical withdrawal symptoms don't exist. Yes, there are brain changes.

A person's dependence on the Internet or other technology can show up as a variety of communication styles, maladaptation, intolerance, alternative coping mechanisms for stressful situations, or strained family ties. It is customary to purchase new technical equipment on a regular basis and to browse the Internet nonstop.

Spending a lot of time online, cravings, and frequently recognised thoughts about the current online day were among the primary indications of prominence. Respondents identified relaxation and excitement/joy as the most prevalent categories in the mood shift dimension. Tolerance showed up as excessive internet use, connecting at any location, and making new profiles and accounts. The two most prevalent kinds of withdrawal symptoms were found to be anxiety/restlessness and irritability/anger. These were the categories of conflicts involving intimate friends and family, social contact prohibitions, and dishonesty in the context of interpersonal conflicts. The overall conflict of being online against not

being online, as well as more focused issues like online work/study or chores, are examples of intrapersonal conflicts. The relapse was said to have occurred anywhere from a few days ago to several months ago.

It is obvious that study into these items and advancements in digital technology will go on. Technological advancements vary widely, and their impacts also rely on the kind of technology used, how it is used, how much is used, and the child's or adolescent's traits. Since children today use highly customised technology, parents should make plans based on their children's age, health, character, and developmental stage in order to ensure that they can implement and benefit from the principles of balanced nutrition, good sleep, enough physical activity, and positive social interaction for healthy growth and development. Parents should, however, be conscious of their obligations to set an example for responsible technology use and to strike a balance between using technology and other activities.

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