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IMPACT OF DIGITAL GAMING AND ENHANCED SCREEN TIME ON PHYSICAL AND MENTAL DEVELOPMENT OF LEARNERS

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Abstract

The study explores impact of increased screen time and higher inclination toward digital gaming on physical and mental development of learners. An in-depth illustration of link between these digital factors and learners' overall development is emphasised in this article, which is backed up with adequate statistical interpretations. This article is further developed with assistance of secondary qualitative data regarding research subject area, which has helped to review pre-existing information in a systematic manner. Furthermore, importance of physical interventions is also discerned explicitly. Every detail provided by data raises concerns for learners' physical and mental health challenges, which in turn, accentuates this article's profundity.

Introduction

Daily screen time due to engagement with digital gaming is associated with reduced psychological well-being of learners having impacts, such as lower self-control, lesser emotional stability, social exclusion, and more. Moreover, increased time spent in digital gaming affects physical development as well considering higher prevalence of obesity among learners in contemporary times. The study, therefore, discerned background of the study with pertinent statistical reinforcements. Research objectives are also formulated based on collated information to derive research essentials that address research questions in this study.

Research objectives

Research objectives of the article are formulated below -

- To investigate prevalence of learners' use of enhanced screen time and digital gaming in UK
- To identify impact of increased screen time on learners' physical and mental development
- To recommend feasible strategies to reduce learners' use of digital gaming and screen time

Research questions

Research questions of this article are discerned below -

RQ1: What is the prevalence of increased screen time and digital gaming use among UK learners?

RQ2: What impacts do digital gaming and increased screen time have on learners' physical and mental health?

RQ3: What are some feasible strategies to reduce learners' increased screen time and digital gaming?

Background

In wake of a recent global pandemic resulting in digital learning, ***delineated adverse influences*** are observed on both physical and mental health. Increased use of screen time is not limited to children and rather extended to adolescent learners, which makes excessive screen time becoming a grave concern (Pandya &Lodha, 2021). In UK, this similar context seems to be highly challenging and requires immediate attention.

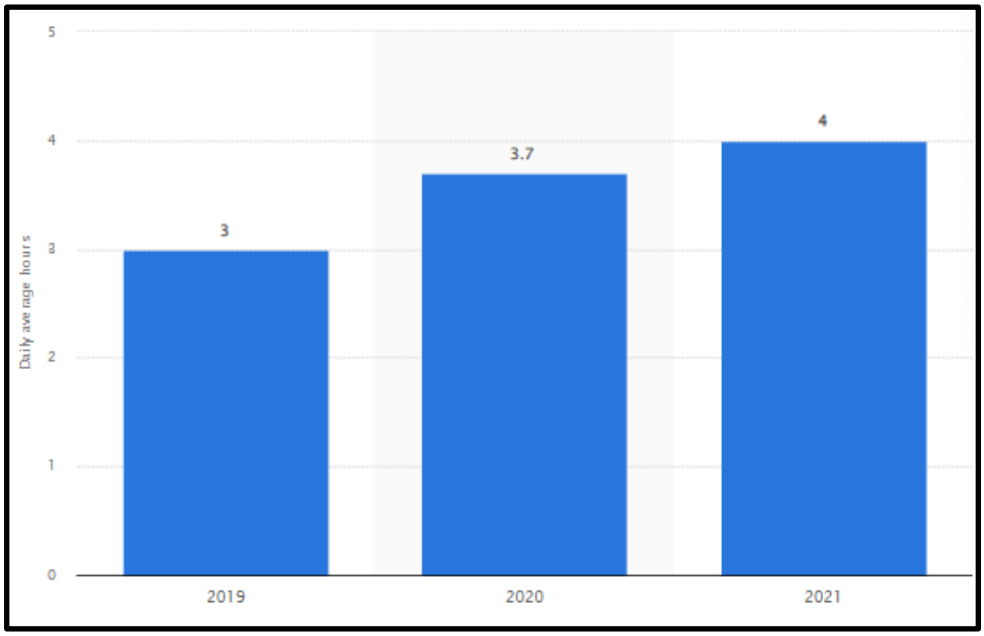

Figure 1: Increase use of mobile on daily basis in UK

(Source: Statista, 2022)

The above graphical representation unveils that in 2021, learners spend an average of 4 hours in UK, which is an increase from use of 3.7 hours in 2020 (Statista, 2022). This shows a rising use of smartphones whether digital gaming or online learning, which leads to a high concern. Stiglic& Viner (2019) reported a strong association between increased screen-time and learners' disruptive physical development with regard to ***obesity*** alongside ***higher depressive symptoms***. Thus, it is indeed that both physical and psychological impacts are derived from rising screen time and digital gaming.

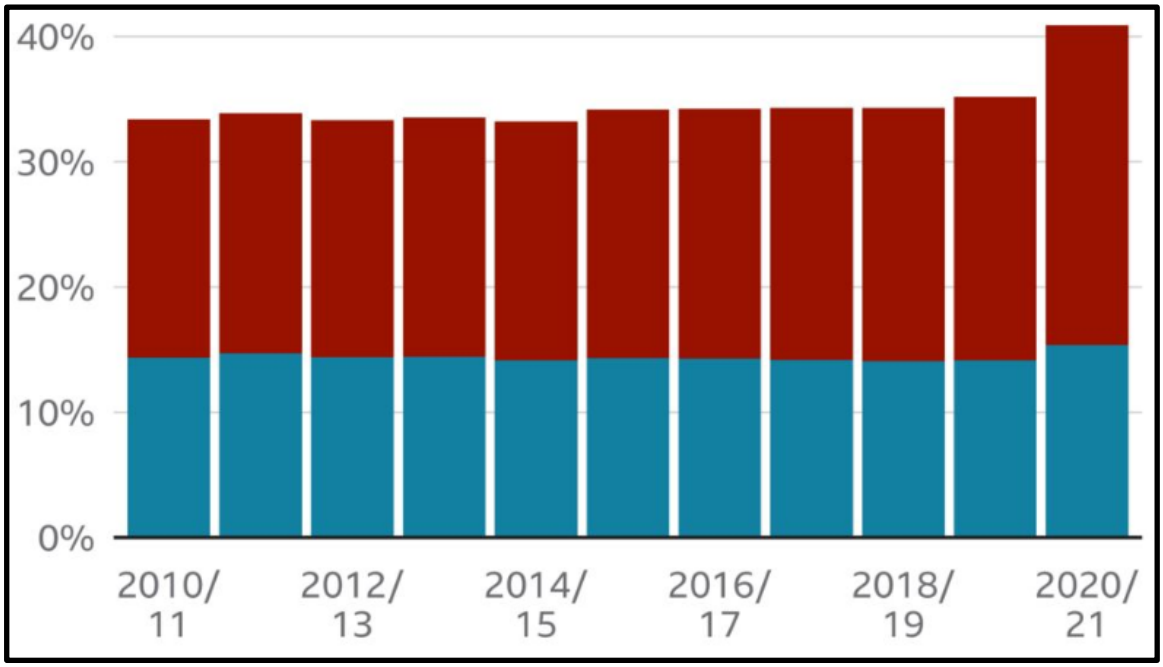

Figure 2: England's primary school learners' overweight during COVID-19

(Source: Bbc, 2021)

The above pictorial depiction reflects a similar argument unveiling how COVID-19 and its associated digital learning and gaming lowered physical activities. 10% of primary school children in England were obese in 2019/2020, whereas it stood at 14% in 2020/21, which also raised various mental problems among learners (Bbc, 2021). Hence, both physical and mental health concerns among learners are raised exponentially due to excessive screen time and high prevalence of digital gaming amid lockdown.

Literature review

Introduction

The chapter offers a vivid illustration of impact of increased digital gaming and screen time on both physical and mental development of learners. Lower mental well-being in terms of cognitive and socio-emotional development, and poor physical development with regard to obesity - increased screen time emerges to be disruptive for learners.

Prevalence of digital gaming and increased screen time in UK

Alongside increased screen-time, a high prevalence of digital gaming is perceived in UK in contemporary years. Burén*et al.* (2021) propounded that addictions to digital media and online gaming are noticed to have adverse impacts on mental in terms of psychosocial health of adolescent learners. ***Low self-confidence*** and ***social problems*** are a couple of common disruptive mental development issues found with learners indulging in digital media and online gaming.

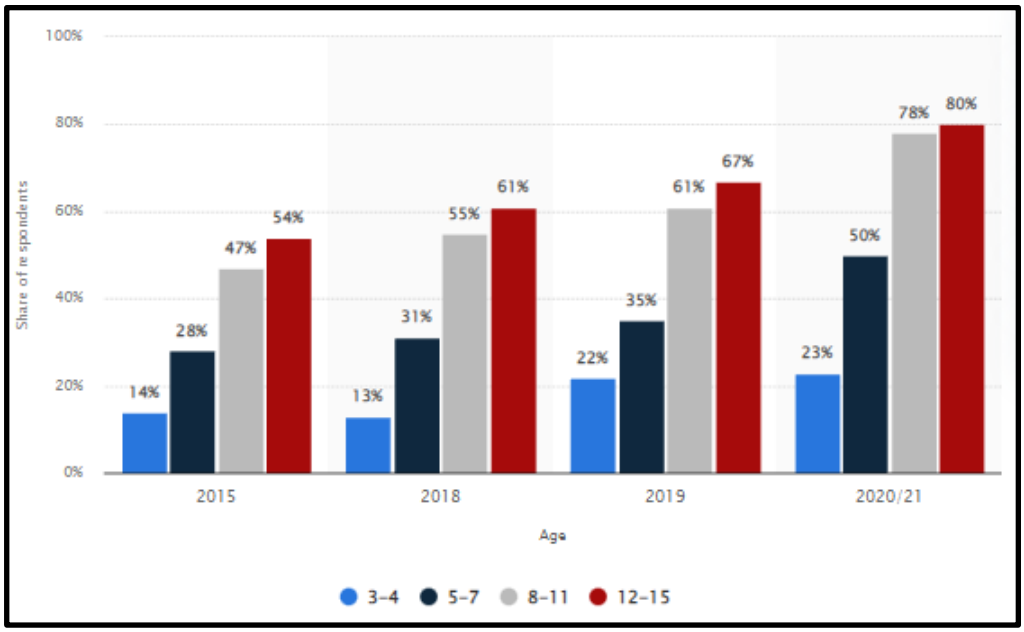

Figure 3: Increasing rate of digital gaming among UK children

(Source: Statista, 2021)

The above graphical representation exhibits online gaming has gained increased popularity among children in 12-15 age group, which is also surged in response to COVID-19. Report unveils that 80% of this age group were inclined to digital games in 2020/21, which is a sharp rise from 67% in 2019 (Statista, 2021). Hence, their association with substandard health and mental development has also become more prominent than ever. Comparatively, Twenge & Campbell (2018) derived a supportive argument that use of screen time among children and adolescent learners is increasing vehemently with their indulgence

in electronic devices, online gaming, smartphones, and televisions. It leads to concerning challenges faced by them with respect to their physical and mental development, as they witness more distractibility, difficulty in social inclusion or making friends, physical instability, and others.

Impact of digital gaming and increased screen time on learners' physical and mental development

Increasing screen time and digital gaming among learners are noticed to have adverse influences on both physical and mental development. Tamana*et al.* (2019) opined that children's psychological and cognitive hindrances, such as ***inattention is associated with their higher screen time***. It further illustrated that in response to digital learning, such increased screen-time brings mental problems including ***aggressiveness***, ***anxiety issues***, ***sleep problems***, and more. Thus, such issues with regard to their mental development problems appear to be concerning enough.

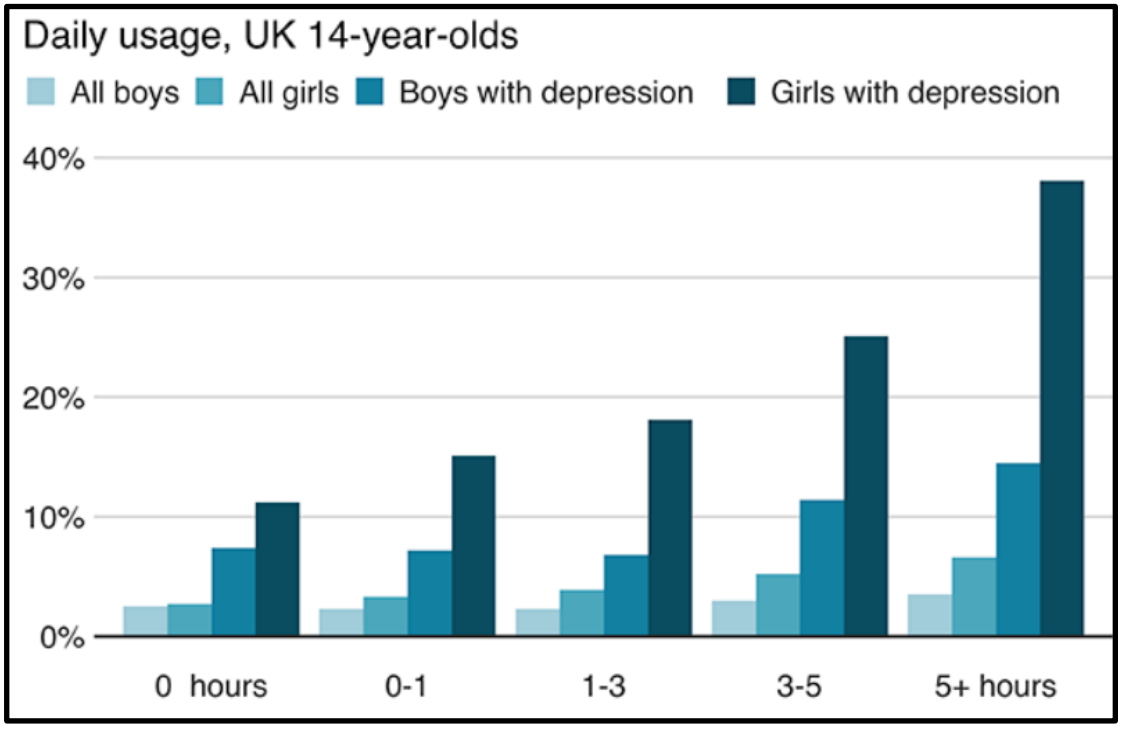

Figure 4: Association between screen-time and depression among UK learners in 2019

(Source: Bbc, 2019)

The above graphic exhibition shows a similar perception, as both UK girls and boys of 14 years of age having screen-time of more than 5 hours are associated with high depression. The BBC report further reveals that children having high screen use and online gaming also face lower self-esteem, hindered sleep patterns, and more (Bbc, 2019). Further research unveils that use of screens and digital gaming also contribute to ***adverse health development*** among learners. Lissak (2018) reported that physical health development is largely affected due to online gaming and screen time. A further emphasis illustrates that alongside changed sleep patterns, a higher ***risk of cardiovascular diseases*** incorporating ***cholesterol***, and ***high blood pressure*** are driven by increased screen use.

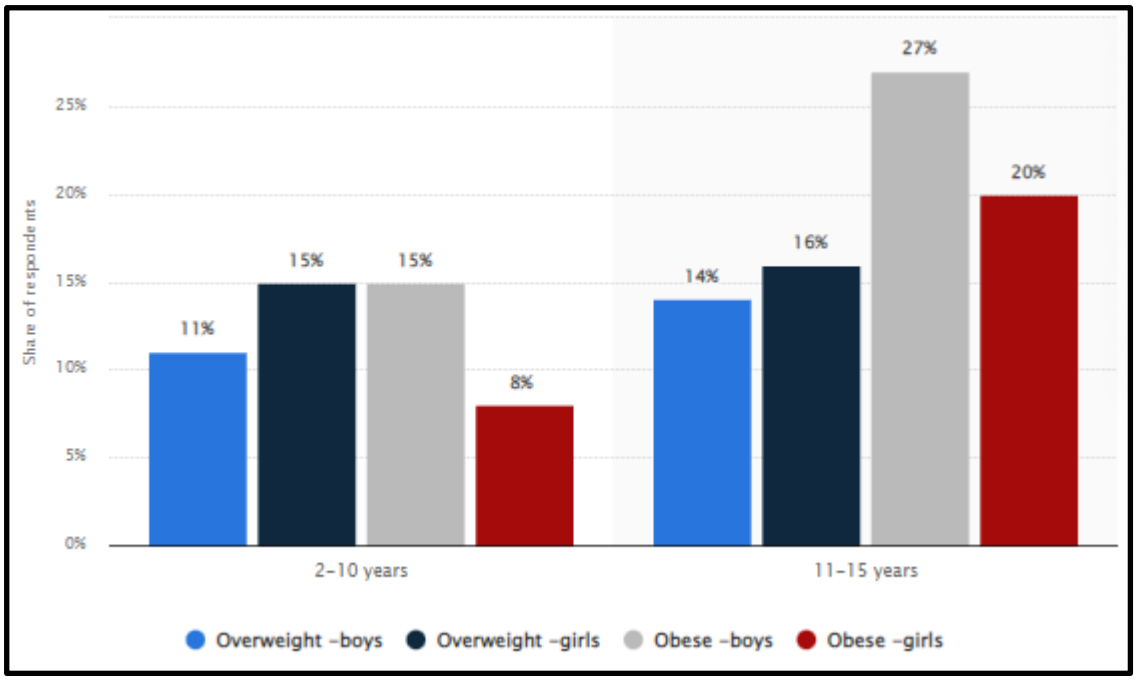

Figure 5: Prevalence of overweight among England's children and adolescents in 2019

(Source: Statista, 2022)

The above graphical illustration exhibits a continuous rise in obesity among children in UK. Prevalence of ***obese population was surging*** since 2000 in England at 21%, while by 2019, it reached 27% and 29% for men and women respectively (Statista, 2022). Such concerning prevalence is accentuated by the population's behaviour of lower physical

activities, high screen time, and sedentary attitudes. Thus, it is indeed that increased screen time alongside time spent in online gaming has an undeniable link with lower physical activities among learners. Their sedentary behaviour is perceived to be a challenging concern for parents, considering its direct contribution to a high prevalence of obesity.

Theory

Theory of planned behaviour

Theory of planned behaviour is subject to shaping one's behaviour, and thus, can refrain from disruptive actions and behaviour. This particular theory endeavours to focus on motivating people to determine and emphasise their positive actions. Research on health sciences and shaping their psychological behaviour can be ensured with an application of this planned theory (Sussman& Gifford, 2019). Its components, such as subjective norms and perceived behavioural controls can be emphasised to determine one's positive actions to ensure reduced screen time and digital gaming.

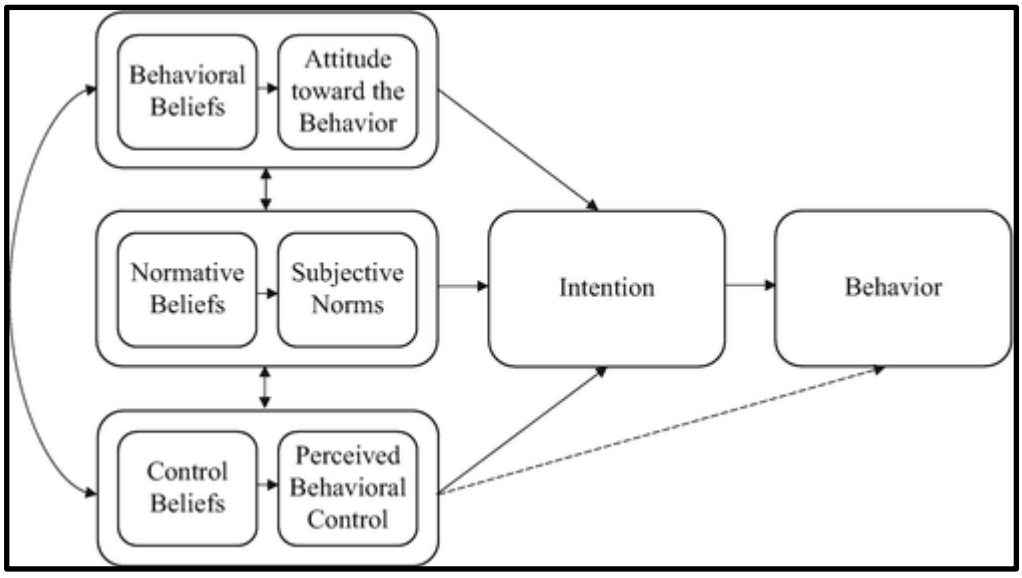

Figure 6: Theory of planned behaviour

(Source: Influenced by Sussman& Gifford, 2019)

Further research reveals that relevance of this particular theory comes forth in this research, as learners' behaviour to screen time can be reduced with their perceived controlled

behaviour concerning physical and mental risks. Schmidt *et al.* (2020) propounded that children's and adolescents' sedentary behavioural intentions with respect to higher screen time and online gaming witnessed a surge during emergence of COVID-19. It further emphasised that such intentions can be retorted by behavioural intentions, which can reduce screen time and inclination toward digital gaming.

Methodology

The study is formulated with consideration of a secondary qualitative research method, which has allowed this article to collate pertinent journals and articles. Gathering all peer-reviewed journals relevant to this article's topic seems to be effective, as meeting research objectives is possible with implementation of this research method. Sherif (2018) opined that evaluation of pre-existing data and information is highly reliable, as it includes both supportive and argumentative observations, and thus, new ideas are generated explicitly. Moreover, a systematic review of peer-reviewed journals regarding research subject area is possible through a secondary qualitative method. Rodrigues *et al.* (2019) further reported that by tracking pre-existing research papers regarding e-learning through systematic review, adequate factual knowledge is acquired. Similarly, conduction of this secondary qualitative research strategy appears to be beneficial, which allows one to grasp how increased screen time and digital gaming impact physical and mental development of learners.

Furthermore, a positivism research philosophy is considered in this article, as it is suitable to offer observational knowledge of a social phenomenon. Besides, secondary data analysis is also reinforced with a descriptive exploratory research framework (Hallingberg*et al.* 2018). It also illustrated that exploratory research designs are appropriate to comprehend health interventions, and thus, possible strategies to reduce learners' screen time are fortified. In addition, thematic analysis of accumulated secondary data is ensured in this article to retain profundity and reliability of the study.

Results

Quality review

Authors	Study design	Number of resources	Measured outcomes	Results	Quality overview
Twenge & Campbell, 2018	Quantitative	40,337	Connection between increased screen time and lower mental well-being among children and adolescent learners	More screen time contributes to learners' lower emotional stability, poor self-control, anxiety, and depressive behaviour.	High
Lissak, 2018	Qualitative	1	Impact of increased screen time on physical and psychological health	Physical impacts are reduced bone density, impaired vision, etc, whereas psychological	Moderate

				impacts integrate depression.	
Kracht, Joseph &Staiano, 2020	Scoping review	26	Relationship between digital gaming and children's obesity	Increased sedentary behaviour of children is associated with their engagement with video game play, contributing to obesity.	High
Pardhan*et al.* 2022	Qualitative	20	Risk of increased screen time with online learning, and its impact on learners.	Considering risks of enhanced screen time including obesity, eye strain, etc., where interventions	Moderate

				are discerned.	
Lee & Morgan, 2018	Qualitative	15	Health interventions to reduce learners' inclination to digital gaming.	Awareness of adverse impacts of online gaming alongside parents' promotion of socialisation is conducive to reducing children's online gaming addiction.	High

Table 1: Quality review

(Source: Self-developed)

Thematic coding

Authors	**Codes**	**Themes**
Lissak, 2018 Kracht, Joseph &Staiano, 2020	Physical and psychological well-being, impacts, depressive symptoms,	Adverse impacts of digital gaming and increased screen-time

Twenge & Campbell, 2018	anxiety, obesity	
Pardhan*et al.* 2022 Lee & Morgan, 2018	Video games, screen time, interventions, obesity, addiction, socialisation, family counseling	Strategies and interventions for reducing inclination toward online gaming, and screen usage

Table 2: Thematic coding

(Source: Self-developed)

Thematic analysis

Theme 1: Adverse impacts of digital gaming and increased screen-time

Increased screen-time and online gaming are prevalent in current times, and their negative influences on learners' development are unquestionable. Physical issues including impaired vision, obesity, high blood pressure, etc. are prominent among learners engaged in increased screen-time (Lissak, 2018). Further research unveils that their adverse consequences are also seen in hindering mental development of individuals. Poor sleep patterns, anxiety issues, depressive patterns, and lower emotional stability are perceived to be some common challenges faced by learners having high screen-time and online gaming addictions (Twenge & Campbell, 2018). Hence, both physical and mental health development of learners is disrupted by mentioned two factors.

Theme 2: Strategies and interventions for reducing inclination toward online gaming, and screen usage

In response to a wide range of negative influences on physical and mental well-being of learners, some positive interventions are to be integrated to alleviate such concerns. Lee & Morgan (2018) commented that perception of associated risks of online gaming and their awareness among parents can be conducive to shaping learners' controlled behaviour in terms

of lower screen time and engagement with online gaming. A further emphasis illustrates that continuous promotion of socialisation and educational games can replace children's screen time with kid's play. Furthermore, increased physical activities can be promoted by parents and educators, which can reduce physical impacts of increased online gaming (Pardhan*et al.* 2022). Thus, such positive measures and strategies seem highly encouraging.

Discussion

It is evident that increasing screen-time, particularly driven by COVID-19's online learning facilities has accelerated one's concern over learners' physical and mental development. This is because enhanced screen time and involvement in digital gaming are associated with negative physical and psychological well-being (Kracht, Joseph &Staiano, 2020). Obesity, high blood pressure, cholesterol, etc contribute to adverse physical development, whereas other psychological issues including anxiety, depression, social exclusion, and more can impede overall mental development of learners.

Conclusion

Increasing popularity of digital gaming and enhanced screen time in contemporary times are noticed to contribute to adverse impacts on overall development of learners. From the above article, a wide range of health and development issues in terms of both physical and psychological effects are discerned. Thus, this article highlights need for effective and positive interventions considering the high prevalence of adverse health and mental development among UK learners.

Future scope

There are some areas, which require additional emphasis from researchers, such as understanding adolescents' addiction rate in association with their psychological disruptions. Besides, a further focus on positive interventions can also furnish a better illustration of this

article to offer a finer grasp. Hence, research can become more profound with a comparison of such impacts of increased screen-time and online gaming with other developed nations.

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