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BEHAVIORAL AND SOCIO-EMOTIONAL DISORDERS AS CO-OCCURRING FACTORS IN THE PROBLEM OF DIGITAL DEVICE ABUSE BY CHILDREN AND ADOLESCENTS - A RESEARCH RESULTS

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I SPOŁECZNO-EMOCJONALNE JAKO
CZYNNIKI WSPÓŁWYSTĘPUJĄCE
W PROBLEMIE NADUŻYWANIA URZĄDZEŃ
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ABSTRACT

Objectives: The aim of the research was to identify the types of behavioral and emotional disorders as factors that parents (and carers) believe co-occur in the problem of digital device abuse of their children's digital devices.

Material and methods: The study was conducted in 2024. Parents of primary school students in the Kuyavian-Pomeranian Voivodship in Poland were included. A questionnaire survey was completed by 1216 persons. The study was quantitative and qualitative.

Results: Analysis of the data showed that co-occurring factors in the problem of digital device abuse by school children and adolescents include low self-esteem and lack of confidence, mood and/or depressive disorders, feelings of loneliness, anxiety disorders, suicidal thoughts and/or attempts, self-harm and specific learning difficulties, sleep disorders, and excessive shyness. Parents also identified circumstances that may have contributed to their children's excessive use of digital devices, such as difficulties in parent-child communication, child disease, difficult family or school situations, feelings of loneliness, lack of activities and interests, staying home alone, and the impact of the COVID-19 pandemic and remote learning.

KEYWORDS: *PUI, behavioral disorders, digital device abuse, school children, socio-emotional disorders, risk factors for digital device abuse*

INTRODUCTION

Research on the impact of media on the mental health of children and adolescents yields inconclusive results (Siemieniecka & Jarczyńska, 2023). Some reports indicate a link between excessive media use, especially social media, and anxiety and depression, particularly among younger users (Tsitsika et al., 2014; Shannon et al., 2022). Spending online for more than 2-3 hours per day exacerbates symptoms of anxiety, depression and depressed mood (Neira & Barber, 2014; Banjanin et al., 2015; Hanprathet et al., 2015; Alpaslan et al., 2016; Hoare et al., 2017; Barry et al., 2017; Kim, 2017; Yan et al., 2017; Li et al., 2017; Wang et al., 2018; Riehm et al., 2019; Onat et al., 2019). Other problems associated with digital device use include obesity, low physical activity (Bediou, Rich, & Bavelier, 2020, after Stiglic & Viner, 2019), low self-esteem (Kelly et al., 2018) and concentration difficulties. It is therefore important to study the determinants of children's problematic internet use, thus identifying at-risk groups and taking action at the early diagnosis stage in the home environment and institutions (school and support institutions).

Research to date has focused on analysing the relationship between time spent online and individual factors such as age, gender and personality traits, as well as emotional problems and the influence of environmental factors (Chung, Lee, & Lee, 2019). However, there is a paucity of research to identify the most relevant co-occurring factors in the problem of children's excessive use of digital devices. There is a lack of studies in the literature that analyse these factors based on the experience and observations of children by their parents.

In the text, the term 'digital device abuse' is synonymous with 'problematic use of interactive media' (PUI) (Bediou et.al., 2020, after Rich, Tsappis, & Kavanaugh, 2017). PUI (Problematic Use of the Internet) is a set of behaviors characterised by compulsive use, increasing tolerance and inappropriate responses to lack of access to interactive media, which impairs an individual's physical, psychological, cognitive and social functioning (Bediou et.al, 2020). Similar in meaning is 'Internet addiction', which involves compulsive behaviors that affect an individual's functioning (Geng et al., 2021, after Ioannidis et al., 2021; Lai et al., 2022). These terms can be used interchangeably, as suggested by Weinstein and Lejoyeux (2010, p. 277): *Problematic Internet addiction or excessive Internet use is characterised by excessive or poorly controlled preoccupations, urges, or behaviors regarding computer use and Internet access that lead to impairment or distress.*

Bediou et.al (2020) note the difficulties in defining and studying the phenomenon, indicating that the online environment can compensate for children's difficulties in real social situations. Research shows that children's excessive use of digital devices may be associated with anxiety, lowered mood or depression. However, the direction of the causal relationship is not clear (Siemieniecka, Jarczyńska, 2023). Two groups of risk factors have been identified: social and emotional and psychological. The first group includes suicidal thoughts and attempts, self-harm, low self-esteem, loneliness and shyness. In the second group are anxiety disorders, obsessive-compulsive personality traits, antisocial disorders, impulsivity, mood and depressive disorders (ICD 10, F90-98).

PUI is associated with depression and other psychiatric disorders, as well as lower self-esteem and impulsivity (Lai et al., 2022; Greenberg et al., 2022; Onat et al., 2019; Banjanin et al., 2015). PUI can be accompanied by poor sleep quality (Onat et al., 2019) and insomnia, and are predictors of internet addiction (Chen, Gau, 2016). Ioannidis et al. (2021) showed an association between

PUI and eating disorders. Adolescents with PUI are more likely to have suicidal thoughts and attempts (Peng et al., 2021; Marchant et al., 2017) and self-esteem problems (Laconi et al., 2017). Another study (Cai et al., 2023, p. 51) analysing 223 research studies published between 2002 and 2022 shows that PUI is *were associated with more serious mental health issues (depressive symptoms, anxiety, loneliness, and other mental health outcomes), and with lower level of subjective well-being*. Furthermore, research suggests that PUI may be associated with somatisation, vulnerability, aggression and phobias (Werling et al., 2022; Subramaniam et al., 2019). Social support and positive communication in the family reduce the risk of PUI (Agbaria & Bdier, 2021; Huang et al., 2023; Yilmaz&Özkan 2025). On the other hand, family violence and difficulties resulting from parental divorce may influence the severity of youth Internet use (Huang et al., 2023; van Dijk et al., 2021). PUI is a complex research problem due to a variety of causal relationships (Cai et al., 2023; Yilmaz&Özkan 2025).

RESEARCH METHODOLOGY

In the first stage of the research, a scoping review of the literature was carried out, reviewing existing scientific and research reports in order to identify key features and factors related to cyber addiction and the problem of excessive use of digital devices by school children and adolescents. Then, an author's survey questionnaire for parents was developed (Survey questionnaire on the scale of parents' needs to recognise, respond to and prevent the risk of their child's excessive use of digital devices), thanks to which, in addition to research data on the scale and nature of the problem of children's abuse of digital devices in the Kuyavian-Pomeranian Voivodship (in Poland), parents' opinions were obtained on factors important in the emergence and development of the problem of their child's abuse of digital devices.

The survey was conducted between May and July 2024 via the Librus and Vulcan electronic diary systems. The sample selection for the study was purposeful. All parents and legal guardians of primary school students were included.

An electronic survey questionnaire containing 36 questions (both open-ended and closed) was completed by 1,216 people. The participants of the survey were parents of students from primary schools in the Kuyavian-Pomeranian Voivodship. They were mainly women (1119 (92%)). The largest proportion of respondents (766 people (63%)) were in the 41-50 age range, with more than a quarter of respondents being parents aged 31-40 (333 people (27%)). A small number of parents were in the age range 18-20 (1 person), 21-30 (14 people (1%)) and over 50 (101 people (8%)). The majority of respondents live in rural areas (765 people (63%)), with some parents living in a city of more than 100,000 inhabitants (282 people (23%)) and a city of up to 100,000 inhabitants (168 people (14%)). Most parents have a university degree (959 people (79%)). The remainder declared secondary education (196 persons (16%)), vocational education (50 persons (4%)) and primary or lower secondary education (10 persons (1%)).

The research objective was realised based on research procedures, i.e. literature analysis, diagnostic survey, descriptive statistics and logical analysis and construction.

The aim of the study was to identify the types of behavioral and socio-emotional disorders as factors that parents (and carers) believe co-occur in the problem of their children's digital device abuse. The study sought to answer the question: What factors do parents and carers believe co-occur in the problem of their children's digital device abuse?

SURVEY RESULTS

On the basis of the survey results, it can be concluded that the children of more than half of the parents surveyed are confronted with the problem of digital device abuse, manifested mainly by difficulties in controlling the time spent using digital devices (58%), and more than a third additionally feel a hard-to-resist urge to use digital media (35%) and neglect household chores (36%). In some children, these difficulties are exacerbated by additional neglect of school duties, relationships with household members and sleep (Table 1).

Table 1. *Parents' indications of their children's behavioral symptoms with digital device use issues*

Answer Do you observe the following behavior or symptoms in your child/children?	Number	Percent age of total
has difficulty controlling the time spent using the Internet, digital devices or video games	701	58%
has an irresistible urge to use the Internet, digital devices or video games	423	35%
neglects household duties	440	36%
neglects school duties	323	27%
neglects relationships with household members	245	20%
neglects relationships with peers	174	14%
abandons existing interests	120	10%
neglects sleep	249	20%
neglects personal hygiene	88	7%
neglects meals	96	8%
shows signs of sadness, irritability, anxiety or frustration when not using the Internet, digital devices or video games	137	11%
needs more time spent online or playing to feel comfortable	96	8%
shows symptoms of withdrawal, restlessness or irritability when not accessing the Internet, digital devices or video games	73	6%
attempts to reduce the amount of time your child spends in front of a screen result in symptoms of anxiety, frustration or apathy	91	7%
hides from others the amount of time he or she spends using the Internet, digital devices or video games	154	13%
conceals or deceives about the use of the Internet, digital devices or video games	134	11%
when forced to stop using the Internet, digital devices or video games, often displays verbal aggression	139	11%
when forced to stop using the Internet, digital devices or video games, often displays non-verbal aggression (ignoring, exclusion, silence, etc.).	129	11%
when forced to stop using the Internet, digital devices or video games, often displays physical aggression	20	2%
when forced to stop using the Internet, digital devices or video games, often displays self-aggression	11	1%

Source: Own elaboration

In contrast, a small percentage of parents identified their child's complex behaviors suggestive of a digital addiction problem. The survey listed 20 different symptoms of digital addiction based on the criteria for the diagnosis of behavioral addictions (DSM-5, ICD-10). The largest percentage of surveyed parents indicated single symptoms (1 – 30%; 2 – 16%; 3 – 14%; 4 – 10%). More than half of their child's digital addiction symptoms were recognised by a significant minority of parents (10 symptoms – 2%; 11,12,14, 15 symptoms – 1%).

Parents indicated co-occurring health problems in their children using digital devices excessively (Table 2). Low self-esteem and lack of self-confidence was the most numerous category (indicated by 208 parents surveyed (17%)). Other difficulties faced by the children of respondents who abuse digital devices are mood and/or depressive disorders (this category was indicated by 130 parents (11%)), specific learning difficulties (this category was indicated by 125 parents (10%)), excessive shyness (120 indications (10%)). Other categories with similar numerical values are: feelings of loneliness (108 (9%)), anxiety disorders (99 (8%)) and sleep disorders (95 (8%)). Children who overuse digital devices also have few co-occurring health problems, such as attention deficit hyperactivity disorder (ADHD), impulse control disorders (including anger and spite outbursts, gambling or kleptomania), and autism spectrum disorder. Some children manifest suicidal thoughts and/or attempts, self-harm (4%) and display obsessive-compulsive personality traits (3%), such as excessive pedantry, excessive conscientiousness, scrupulousness, frugality, stubborn habits and rigid attitudes. It is worth noting that the categories of disorders mentioned by the parents co-occur with each other.

Table 2. *Co-occurring health problems in children who overuse digital devices*

Answer Does your child affected by excessive use of digital devices have other health problems and/or developmental difficulties, i.e:	Number	Percentage of total
other addictions (e.g. to alcohol, nicotine, psychoactive substances, drugs)	9	1%
disability	9	1%
antisocial personality disorder (e.g. cheating, stealing, destruction of public property, aggressive behavior towards people and animals)	12	1%
other mental disorders	15	1%
chronic diseases	26	2%
obsessive-compulsive personality traits (e.g. excessive pedantism, excessive: conscientiousness, scrupulousness, thriftiness, stubbornness in habits, rigidity of attitudes, etc.).	35	3%
suicidal thoughts and/or attempts, self-harm	45	4%
autism spectrum	47	4%
impulse control disorders (including outbursts of anger and rage, as well as gambling or kleptomania)	57	5%
attention deficit hyperactivity disorder (ADHD)	69	6%
other	72	6%
sleep disorders	95	8%
anxiety disorders such as social anxiety and social phobia (anxiety or fear in social situations)	99	8%
feeling of loneliness	108	9%
excessive shyness	120	10%
specific learning difficulties (in learning to write, read, dyslexia, dysgraphia, dyscalculia, etc.).	125	10%
mood and/or depression disorders	130	11%
low self-esteem and lack of confidence	208	17%
none of the above	477	39%

Source: Own elaboration

A small number of parents (72 (6%)) also indicated other co-occurring health problems in their children who use digital devices excessively (Table 3). Parents surveyed indicated behavioral problems related to their children's behavior, social and emotional problems, psychological and psychiatric problems, as well as physical problems and eating disorders.

Table 3. *Other co-occurring health problems in children who use digital devices excessively, as mentioned by parents*

Category of problems (based on DSM-5)	Types of problems	Number of responses in the category	%
neurodevelopmental and neurocognitive disorders	intellectual disability attention deficit disorder non-harmonious psychomotor development some behaviors similar to the autism spectrum (not stated) Asperger's syndrome sensory integration disorder auditory processing disorder lack of concentration nervous tics	9	22,5%
depressive disorders	depression (strongly associated with suicidal thoughts) sometimes says that she would not like to exist/birth (associates with suicidal thoughts or depression) rapid mood swings	3	7,5%
anxiety disorders	timidity situational motor anxiety fear of harsh peer assessment	3	7,5%
eating disorders	anorexia overweight (2 people) obesity eating disorders	5	12,5%
disruptive, impulse-control and conduct disorders	beating children and adults oppositional defiant behavior syndrome	2	5%
trauma and stressor-related disorders	loss of father loss and grief after the loss of a parent, longing for them	2	5%
obsessive-compulsive and related disorder	persistence in habits rigidity of attitudes	2	5%
somatic symptoms and related disorders	headaches postural defect	2	5%
personality traits and behaviors perceived by the parent as problems for the child	inconsistency lack of motivation to do anything lack of tasking lying to me hypersensitivity individualism introvert assertiveness resulting from a high awareness of one's rights disagreement with senseless prohibitions belonging to a group, others playing, no one in the yard excessive use of digital communication by the school little movement	12	30%
Total		40	100%

Source: Own elaboration

From the point of view of analysing the social factors determining the excessive use of digital devices by children, it is important to identify the circumstances surrounding the emergence of this problem. The parents surveyed indicated the circumstances under which their children's increased use of digital devices occurred (Table 4). The results of the survey indicate a significant influence of the children's social environment and its role in the emergence of the problem of excessive use of digital devices. Parents believe that friends/colleagues (41%) and the purchase of the device (34%) are significant influences. The need for remote activities during the COVID-19 pandemic was also another factor in the emergence of the problem (27%). Some parents cited their child's loneliness at home (22%), feeling lonely at school and among peers (13%), and their child's lack of activities and interests (19%) as reasons for their child's abuse of digital devices.

Table 4. *Circumstances surrounding the emergence of the problem of excessive use of digital devices by children in the opinions of parents*

Answer Can you pinpoint the circumstances in which your child started abusing the phone, tablet or computer?	Number	Percentage of total
influence of colleagues	505	41%
purchase of equipment	412	34%
difficulties began with the start of remote classes during the COVID-19 pandemic	323	27%
child staying at home alone	266	22%
lack of activities and interests of the child	226	19%
feelings of loneliness of the child at school/among peers	160	13%
other	142	12%
difficult situation at school	85	7%
difficult family situation	78	6%
child's illness	50	4%
difficulties in parent-child communication	46	4%

Source: Own elaboration

Some parents also pointed out additional circumstances, noting the work and home load and limited time for the child, who often cannot cope with boredom and is also influenced by peers and prone to the risk of abusing digital devices. The family situation, emotional problems and the availability of electronic devices can exacerbate this problem. An introverted child who

is lonely or bored spends a lot of time in the virtual world, which negatively affects his or her development and social relationships (Table 5).

Table 5. *Circumstances surrounding the emergence of the problem of children's excessive use of digital devices in parents' opinions. Category other (n=142)*

Response category	Examples of respondents' answers	Number of responses in the category	%
domestic and professional responsibilities	Professional responsibilities: parents working a minimum of 8 hours, mother working, lack of interest in the child by the father. Domestic responsibilities: parents busy with housework, which affects the lack of time for the child: boredom and lack of control of the child.	7	10%
environment and social pressure	Peer pressure: peers playing games, peer pressure not to stand out from the group, all friends playing something. Adverts and promotion of digitalisation: adverts and fashion for certain apps, promotion of digitalisation, technological development that is unstoppable. School environment: teacher sending assignments via messenger, no opportunity to meet peers after school every day.	10	15%
technological developments and availability of equipment	Accessibility of devices: phones and tablets used everywhere, ease and accessibility of 'time wasters', presence of the device at home. Requirement to use devices also at school.	8	12%
interest of the child	Curiosity: interest in social media. Interest in cartoons and games: the child likes to play games, watch cartoons when bored, an attractive way for the child to spend time.	9	13%
family and caring situations	Family residence: residence with father, mother, grandparents, grandparents' custody of child, child staying abroad with mother for 3 years. Birth of another child: limited time for other children. Divorce or separation: parents living apart, limited contact with child. Emotional problems: child in foster care, with emotional problems and broken bond syndrome, autism, specific interests of the child, tendency to fixation.	7	10%
emergencies and crisis situations/impact of pandemics	Pandemic and remote learning: pandemic, remote lessons, not being able to leave home when children were playing and not learning. Hospital stay: child's stay in hospital, frequent infections and long stay in bed.	6	9%
other factors	Boredom and lack of activity: Boredom, no opportunity to meet peers after school every day, no outdoor activities, too much free time. Addiction: addiction to electronic devices, choosing easy viewing over difficult responsibilities, my child got 'hooked' so much that she now finds it hard to persevere without it. Specific interests: tendency to fixation, Lack of interest: the child is bored, nothing interests him, even though we tried so many activities and sports he always gave up quickly.	11	16%
demographic and social factors	Age and development: age 12-13, adolescence/ teenage years. Social environment: lack of a close relative of a similar age, grandparents looking after the child + nursery/parents and older children with 'heads on their phones'. Change of environment: change of school, new friendships continued in the virtual world.	5	7%
psychological factors	Introversion: is an introvert likes to spend time with herself. Lack of hope at school: lack of hope at school, my have phones in lessons.	4	6%
Total		67	100%

Source: Own elaboration

The majority of parents report that their child has a smartphone (916 indications (75%)) or a computer/laptop for personal use (627 indications (52%)). Parents' opinions show that children are most likely to use digital devices for 1-4 hours a day, with smartphones being more popular than computers and tablets. There is also a noticeable group of children spending more than 5-6 hours a day on these devices (smartphone – 13%, computer/tablet – 6%) or more (smartphone – 10%, computer/tablet – 4%), which can raise concerns about mental and physical health, increase the risk of digital addiction or have a negative impact on children's development. A significant number of parents (25%) declare that their children do not use computers or tablets at all, which may indicate children's hardware preferences or device access restrictions.

DISCUSSION

Findings indicate that the risk of children and adolescents abusing digital devices is related to the following environmental factors: parental responsibilities and activities (referred to as 'being busy'), social pressure, easy availability of devices, the child's curiosity and interests, family and caregiving situations, emergencies and crises, as well as psychological and social factors. Circumstances in which children start to abuse digital devices are often related to the influence of classmates, the purchase of a device, difficulties started during the COVID-19 pandemic, staying home alone and lack of activities and interests. Some of the children who overuse digital devices are characterised by low self-esteem and lack of confidence, mood and/or depressive disorders, shyness, feelings of loneliness. The results obtained correlate with the findings of the research reports discussed in the research review. An interesting result is the finding of the co-existence of specific learning difficulties of some children with the problem of excessive use of digital devices.

CONCLUSIONS

The results of the research presented here make it possible to identify those risk factors that, in the opinion of carers and parents, coexist with problematic use of digital devices by their children. There is a need for in-depth analyses and the development of a model of parental support that includes action strategies that cover the influence of individual as well as environmental factors related to the risk of the problem (Yılmaz& Özkan 2025). A broader description of the correlation of these factors with the intensity of PUI and the specificity of children's family and school functioning is part of a larger research project. This project will result in a theoretical support model aimed at parents, teachers, and therapists. It will include indications for parents regarding the occurrence of specific situations resulting from children's PUI-related behavior, and recommendations for educators, therapists and socio-therapists regarding risk groups and factors relevant to PUI diagnosis and further therapeutic measures.

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