

Screen Use Habits among Children and Adolescents with Psychiatric Disorders: A Cross-Sectional Study from Turkey*

Burge Kabukcu Basay, Omer Basay, Cemre Akdogan*, Seyma Karaisli*,
Merve Satilmis*, Burcu Gozen*, and Naci Bahadir Sekerci*

*Pamukkale University Medical Faculty,
Child and Adolescent Psychiatry Department, Denizli, Turkey*

In this cross-sectional study, we investigated screen use habits, problematic internet use (PIU), and screen–psychopathology relationship in a clinical sample of children and adolescents. The study included 277 children and adolescents (129 [46.4%] girls) aged between 6–17 years referred to a psychiatry outpatient setting for various reasons. All parents completed the Strengths and Difficulties Questionnaire (SDQ), while adolescents also completed the Internet Addiction Test (IAT). The mean screen time was 3.85 ($SD = 2.72$) hours per day. Longer screen times were found among children and adolescents with specific psychiatric disorders compared to those with no psychiatric symptoms; especially among those with internalizing disorders (i.e., an anxiety disorder and/or depression), but also with attention deficit/hyperactivity disorder and/or conduct disorder. Longer screen time may be related with more functioning impairments. Based on the IAT, 2.1% of adolescents may have PIU. The findings from this study suggest that children and adolescents with psychiatric symptoms may have prolonged screen times. This needs to be taken into account during diagnostic and therapeutic procedures.

Key words: screen time, digital media, problematic Internet use, mobile phone, internalizing, externalizing.

Corresponding author: omerbasay@gmail.com

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Highlights:

- Children and adolescents with psychiatric disorders have prolonged screen times.
- Screen time is longer among boys and they play more video games than girls.
- Both internalizing and externalizing symptoms are linked to prolonged screen time.

In today's world, the Internet and screen media use has an essential place in children's and adolescents' lives (Domoff et al., 2019; Lissak, 2018; Pluhar, Kavanaugh, Levinson, & Rich, 2019). The phrase "screen," in other words "electronic screen-based device use", involves television (TV), computer, tablet, mobile phone, and/or smartphone use that enables media connection, video game playing, and/or Internet access (Lissak, 2018; Twenge & Campbell, 2018). Screen time is the amount of time spent using an electronic device with a screen such as a smartphone, computer, television. (Ponti et al., 2017). Children use screens not only for entertaining activities, such as video gaming, but also for information gathering, communication, or socialization. However, there are serious concerns about possible negative effect of screen-time spent on the well-being of children and adolescents (e.g., Kardaras, 2016; Twenge & Campbell, 2018). A growing body of literature has shown potentially adverse effects of excessive screen time on physical and psychological health, including academic and social functioning (Domingues-Montanari, 2017; Lissak, 2018). Increased sleeping problems, obesity-related issues, and increased incidence of mental disorders in overall have been documented, too (Horgen, Choate, & Brownell, 2001; Lissak, 2018; Twenge & Campbell, 2018). Portable digital media devices like tablets and smartphones make access to media easier and the Internet (Adams, Daly, & Williford, 2013) and it has been shown that increasing numbers of children and adolescents have their own digital devices (Lissak, 2018). The predictable outcome is increased screen time and a higher risk of problematic use or dependency (Kawabe, Horiuchi, Ochi, Oka, & Ueno, 2016; Lemola, Perkinson-Gloor, Brand, Dewald-Kaufmann, & Grob, 2015; Lissak, 2018).

Evidence shows a trend towards an increased use of the Internet and the occurrence of problematic internet use (PIU) in child and adolescent populations (Pluhar et al., 2019). For example, in 2014 about 24% of adolescents surveyed/ studied may have had some form of PIU (Lenhart, 2015b), while in 2018 these numbers were about 45% (Monica & Jingjing, 2008). Similarly, interactive media use, especially access to smartphones, increased from 73% in 2014 to 95% in 2018 (Lenhart, 2015b; Monica & Jingjing, 2018; Pluhar et al., 2019). Although the increment is clear, the prevalence rates for PIU vary among the studies ranging between 0.8% to 14% (Poli & Agrimi, 2012; Sussman, Harper, Stahl, & Weigle, 2018; Wu et al., 2013). The large discrepancies between the studies may be related to diagnostic tools, methodological differences, population-based, cultural differences, and diverse behavioral norms (Kawabe et al., 2016; Pluhar et al., 2019; Rich, Tsappis, & Kavanaugh, 2018).

In the current literature, screen use and PIU are usually studied in general population. Clinically-based studies may provide more insight into the relationship between PIU and psychopathology and may complement population-based epidemiologic and descriptive studies. In the literature, a small number of studies with child and adolescent age groups was conducted in clinical settings and most of them were designed with either a specific population, like adolescents with attention deficit/hyperactivity disorder (ADHD) or those seeking treatments for PIU (Gunes et al., 2018; Karaer & Akdemir, 2019). Thus, the evaluation of the screen use in child and adolescent psychiatry settings is beneficial since it could provide opportunities to evaluate more children and adolescents with various psychiatric disorders and different severities. In this way, psychiatric symptomatology related predictors for screen time or screen time as a predictor of psychiatric complaints or functional impairment could be determined. For example, a finding from a study that compared a clinical sample of adolescents with a community sample supports this view. Namely, screen time was longer in the clinical sample in comparison to the community sample suggesting that adolescents with mental disorders spend more time on screen activities (Baer, Saran, Green, & Hong, 2012). In general, high screen time was linked with emotional and/or behavioral problems such as aggression, anxiety, depression in children and adolescents, but the findings were not consistent (Domingues-Montanari, 2017; Khouja et al., 2019; Mistry, Minkovitz, Strobino, & Borzekowski, 2007; Parkes, Sweeting, Wight, & Henderson, 2013; Sanchez-Villegas et al., 2008; Wang, Li, & Fan, 2019).

In the present study, we aimed to investigate the relationship of the total daily screen time with psychopathology and emotional and behavioral symptoms among children and adolescents who are referred to an outpatient child and adolescent psychiatry department. The presence of symptoms of PIU among adolescents and the screen-device-related impairment were also evaluated.

Method

The study was conducted at the Child and Adolescent Psychiatry outpatient polyclinic of the Pamukkale University Hospital (Denizli, Turkey) during the period January 2018–January 2019. Children and adolescents referred for the first time or already in the assessment for various reasons (any emotional or behavioral difficulty, any symptom related to a psychiatric disorder, or developmental-period specific problems, stressful life events related difficulties, etc.) were invited to participate in the study. Unwillingness to participate in the study, the presence of mental retardation, autism spectrum disorder, any acute mental disorder (like acute mania, psychosis, etc.), or severe physical disorder (e.g., cerebral palsy, neurological disorder, etc.) that could have prevented data collection, or illiteracy were the exclusion criteria. An informed, written consent was obtained from all parents, while we also sought an assent from children and adolescents participating in the study.

The final sample included 277 participants (129 [46.4%] girls), aged between 6 and 17 years ($M = 11.98$; $SD = 3.27$). There were 131 children (6–11 years old, 47.3%) and 146 adolescents (12–17 years old, 52.7%), with at least one parent included.

The psychiatric diagnoses of the participants were based on to the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM–5; American Psychiatric Association

[APA], 2013). The parents were asked to indicate the socioeconomic status (SES) of their families, assessed through their income. Accordingly, 55 (19.9%) of the participants was in low, 156 (56.3%) was in middle, and 66 (23.8%) was in high SES.

The University Ethical Committee approved the study.

Instruments

General information form. A general information form was used to collect data related to socio-demographic characteristics, child and adolescents' weight and height, psychiatric history, electronic screen device-related data, screen use habits, and screen device use-related impairment (i.e., academic problems, parental conflicts, unfavorable friendships, and sleep problems). The electronic device use-related impairment was assessed based on the perceptions of the parents (e.g., "Do you think that you have conflict/quarrels with your child because of his/her computer/Internet use?" *Yes/No*; "Do you think that your child's mobile phone use affects his/her academic success negatively?" *Yes/No*). Screen time was defined as the daily total time the child was exposed to screen-based electronic devices (i.e., television, computer, tablet, mobile phone).

Internet Addiction Test (IAT). The IAT is a 20 item scale developed by Young (1998) to assess pathological internet use (Young, 1996). Items are scored on a 6-point Likert-type scale and the total score is a sum of all answered items. It can range between 0 and 100. The total IAT score is categorized as follows: 0–49 normal user, 50–79 borderline internet user, and 80–100 problematic internet user. The scale was previously adapted into Turkish (Bayraktar, 2001). It was completed by 12–17 years old adolescents only ($n = 146$). Cronbach's alpha coefficient was .91 in our study.

Strengths and Difficulties Questionnaire (SDQ). The SDQ is a 25-item scale developed by Goodman (1997) to assess behavioral and emotional difficulties of children and adolescents between 4 and 17 years of age (Goodman, 1997). Five domains of child functioning are evaluated by the SDQ through subscales: emotional problems, conduct problems, hyperactivity, peer problems, and prosocial behaviors. The total difficulty score (the sum of all subscales except prosocial behaviors), internalizing (the sum of emotional problems and peer problems), and externalizing scores (the sum of conduct problems and hyperactivity) are calculated. The second part of the scale collects information on the impairment (home life, friendships, classroom learning, and leisure activities) associated with difficulties present. Only the parent form was used in this study. Güvenir et al. (2008) created the Turkish adaptation of this instrument. Cronbach's alpha values were .80, .73, .76, .58, .71, and .40. for the subscales in the present study.

Statistical Analysis

For descriptive statistics, frequency, percent, mean (M), standard deviation (SD), median and interquartile range (IQR) were calculated. Kolmogorov-Smirnov Test assessed the normality of the dispersion of data. For analyzing the correlation between non-normally distributed data, Spearman correlation coefficient was used. The comparison of two groups with non-normal distributions was performed by using the Mann-Whitney-U Test. Linear regression analysis was run to assess the impact of emotional and behavioral difficulties on screen time, and logistic regression analysis was conducted to evaluate the impact of screen time on parent-reported screen device use-related impairment. Null hypotheses were rejected at $p < .05$ level. Statistical Analyzes were performed by using the SPSS 15.0 software (Chicago, SPSS Inc.).

Results

Overall, 169 (61%) children and adolescents had at least one psychiatric diagnosis, of which 108 (39%) had one psychiatric diagnosis, 35 (12.6%) had two, and 26 (9.4%) had three or more. The following diagnoses were present among participants: ADHD in 113 (40.8%), conduct disorder in 26 (9.4%), depressive disorder in 31 (11.2%), an anxiety disorder in 34 (12.3%), bipolar disorder (in remission) in 4 (1.4%), psychotic disorder (in remission) in 3 (1.1%), specific learning disorder in 16 (5.8%), obsessive-compulsive disorder in 7 (2.5%), tic disorder in 8 (2.9%), speech disorder in 7 (2.5%), elimination disorder in 6 (2.2%), or other in 8 (2.9%).

Table 1 shows electronic screen devices ownership. The average age of the first mobile phone ownership was 11.19 ($SD = 2.25$) years.

Table 1
Electronic screen device ownership

| | <i>n (%)</i> |
|---|--------------|
| Owner of a computer ($n = 266$) | 173 (65) |
| Owner of a mobile phone ($n = 274$) | 156 (56.9) |
| Owner of a smartphone ($n = 270$) | 143 (51.6) |
| Owner of a tablet ($n = 273$) | 136 (49.8) |
| The number of devices participants have ($n = 263$) | |
| No device | 30 (11.4) |
| 1 device | 78 (29.7) |
| 2 different type of devices | 93 (35.4) |
| 3 different type of devices | 62 (23.6) |

Screen Time and Screen Use Habits

The total screen time was 3.85 ($SD = 2.72$) hours per day, ranging from 0 to 16, with 102 (38.3%) participants having screen time of 2 hours or less per day and 164 (61.7%) longer than 2 hours per day. The total TV time was 1.76 (1.58) hours per day, ranging from 0 to 12, while computer and internet time was 2.73 (2.41) hours per day, ranging from 0 to 13. Boys' screen time (median = 3.5, 1–3 IQR = 2–5.5) was longer than girls' screen time (median = 2.5, 1–3 IQR = 2–4.5; $z = 2.96, p < .01$). There was a weak positive correlation between age and screen time ($r = .12, p = .048$).

The participants were using a mobile phone to communicate with family, 102 (65.3%); to connect to the Internet, 76 (48.7%); to communicate with friends, 55 (35.2%) and to play games, 61 (39.1%). The participants were using the Internet mostly to play games, 131 (49.1%); to watch videos, 91 (34.1%); to connect to social media, 20 (7.5%); to make searches, 9 (3.4%); to read news 6 (2.2%), and to make other activities, 10 (3.7%). Overall, 174 (63.5%) of the whole sample was playing computer games, including games online. Boys reported playing video games more frequently than girls (boys 61 [77.9%] vs. girls 113 [47.3%]; $\chi^2 (df) = 27.66 (1), p < .001$).

Among 149 adolescents, the mean total score of the IAT was 33.24 (19.11); of which 119 (81.5%) had scores in the range of 0–49 (normal internet users), 24 (16.4%) in the range 50–79 (borderline internet users), and 3 (2.1%) had 80 or above (problematic internet users). Girls’ (79) and boys’ (67) mean IAT scores were 31.75 (20.64) and 35 (17.13), respectively. Among girls, 63 (79.7%) were normal, 13 (16.5%) were borderline, and 3 (3.8%) were problematic internet users, while among boys, 56 (83.6%) were normal, 11 (16.4%) were borderline, and there were no problematic internet users. Mean total IAT scores of boys and girls were not statistically different, ($z = -1.2, p = .22$).

Table 2 presents three groups based on IAT scores (i.e., normal user, borderline user, and problematic user) according to psychiatric diagnoses present.

Table 2
 “Internet Addiction Test” groups according to the diagnoses of adolescents

| | Normal user <i>n</i> (%) | Borderline user <i>n</i> (%) | Problematic user <i>n</i> (%) |
|--|-----------------------------|---------------------------------|----------------------------------|
| No psychiatric disorder (<i>n</i> = 59) | 53 (89.8%) | 5 (8.5%) | 1 (1.7%) |
| Any psychiatric disorder (<i>n</i> = 87) | 66 (75.8%) | 19 (21.9%) | 2 (2.3%) |
| ADHD and/or CD (<i>n</i> = 55) | 43 (78.2%) | 11 (20%) | 1 (1.8%) |
| Anxiety disorder and/or depression (<i>n</i> =36) | 26 (72.2%) | 8 (22.2%) | 2 (5.6%) |

Participants who had at least one psychiatric diagnosis (163) had longer screen times in comparison to these who had no diagnosis (103; $p = .014$; Table 3). Participants with ADHD and/or conduct disorder, (118), had longer screen times than those with no psychiatric diagnosis ($p = .041$). Similarly, participants with an anxiety disorder and/or depression (52) had longer screen times than the group with no psychiatric diagnosis ($p = .013$). We also compared only ADHD and/or conduct disorder group (*n* = 94) with only anxiety and/or depression group (*n* = 28), by excluding the comorbid ones (some participants had both ADHD and anxiety disorder, they were 24 children and adolescents in total); and found no statistically significant difference ($p = .317$; Table 3).

Table 3
 Total screen time according to the diagnoses of the participants

| | Total screen time | | | |
|--|---------------------|----------|----------|---------------------------|
| | Median (1–3 IQR) | <i>z</i> | <i>p</i> | Effect size (<i>r</i>)* |
| Any psychiatric disorder (<i>n</i> = 163) | 3.5 (2–5.5) | 2.46 | .014 | .15 |
| No psychiatric disorder (<i>n</i> = 103) | 2.5 (2–5) | | | |
| ADHD and/or CD (<i>n</i> = 118) | 3.25 (2–5.5) | 2.04 | .041 | .14 |
| Anxiety disorder and/or depression (<i>n</i> = 52) | 3.75 (2–5.87) | 2.41 | .013 | .20 |
| Only ADHD and/or CD (<i>n</i> = 94) | 3.5 (2–5.12) | 1.00 | .317 | - |
| Only anxiety disorder and/or depression (<i>n</i> = 28) | 4 (2–6.5) | | | |

Note. Mann Whitney U Test; ADHD = Attention deficit hyperactivity disorder; CD = Conduct disorder; IQR = Inter-quartile range.

*The effect size (*r*) was calculated as $r = z/\sqrt{n}$, where *z* is the *z* score corresponding to the Mann-Whitney U statistic and *n* is the total number.

Correlations of IAT scores and screen time, SDQ domains, and impairment are presented in table 4. Except for emotional problems, all domains of SDQ corelated with total screen times.

Table 4
 Correlations of the SDQ, IAT, and screen time

| | Emotional problems | Conduct problems | Hyperactivity | Peer problems | Prosocial behaviors | Internalizing problems | Externalizing problems | Total difficulty |
|-----------------------------------|--------------------|------------------|---------------|---------------|---------------------|------------------------|------------------------|------------------|
| IAT | .21* | .24* | .26* | .29* | -.10 | .28* | .29* | .35* |
| Screen time | .09 | .21* | .18* | .24* | -.18* | .18* | .21* | .25* |
| Impairment caused by difficulties | Home life | | Friendship | | Classroom | | Leisure activities | |
| IAT | .17 | | .16 | | .19* | | .08 | |
| Screen time | .26* | | .24* | | .16* | | .23* | |

Note. * $p \leq .01$; IAT = Internet Addiction Test.

Participants who use screen two or less hours per day had lower scores on all of the SDQ domains, except emotional problems, than those who use screens more than 2 hours/day (emotional problems, $z = -1.39$, $p = .163$; conduct problems, $z = -3.96$, $p < .001$; hyperactivity, $z = -2.81$, $p < .01$; peer problems, $z = -3.04$, $p < .01$; prosocial behaviors, $z = 2.29$, $p = .022$; total difficulty, $z = -3.81$, $p < .001$; internalizing, $z = -2.46$, $p = .014$; externalizing, $z = -3.57$, $p < .001$; Man Whitney U test).

Table 5
 Linear regression analysis for the SDQ domains predicting total screen time

| | B | SE | 95% CI | β | t | p |
|--------------------|------|-----|-------------|---------|-------|-------|
| Emotional problems | .06 | .06 | -.05 – .18 | .06 | 1.08 | .280 |
| Conduct problems | .26 | .08 | .09 – .43 | .18 | 3.00 | < .01 |
| Hyperactivity | .17 | .06 | .05 – .30 | .16 | 2.77 | < .01 |
| Peer problems | .28 | .08 | .11 – .44 | .20 | 3.30 | < .01 |
| Prosocial | -.19 | .07 | -.34 – -.05 | -.16 | -2.71 | < .01 |
| Internalizing | .09 | .04 | .01 – .17 | .14 | 2.29 | .022 |
| Externalizing | .14 | .04 | .06 – .23 | .20 | 3.37 | < .01 |
| Total difficulty | .08 | .02 | .03 – .13 | .20 | 3.36 | < .01 |

In total, 152 (55.9%) of parents reported that they have conflicts with their child due to computer/Internet use and 101 (50%) due to frequent mobile phone use. For 154 (56.6%) children and adolescents, parents reported that computer/Internet (excessive use, non academical use and etc.) negatively affected academic achievement, while for 97 (48.3%) children and adolescents this was the case with mobile phone use. For 132 (48.7%) children and adolescents, parents reported sleeping problems of their children due to computer/Internet use, while for 95 (47.3%) due to mobile phone use. For 140 (51.7%) children

and adolescents, parents reported that computer/Internet use was related to unfavorable friendship, while this was the case for 80 (39.3%) children and adolescents using a mobile phone.

We conducted a logistic regression analysis to evaluate how daily screen time predicted impairment according to parent reports (Table 6). We found that longer hours of total screen time predicted a higher risk of impairment for both computer/Internet use and mobile phone use.

Table 6
Logistic regression analysis for “screen time” predicting screen use-related impairment

| | B | SE | OR | 95% CI | p |
|------------------------------|-----|-----|------|-----------|--------|
| Computer/Internet use | | | | | |
| Conflicts with the family | .39 | .07 | 1.48 | 1.28–1.70 | < .001 |
| Academic problems | .33 | .06 | 1.40 | 1.23–1.59 | < .001 |
| Sleep problems | .39 | .96 | 1.47 | 1.29–1.68 | < .001 |
| Unfavorable friendships | .13 | .04 | 1.14 | 1.04–1.26 | < .01 |
| Mobile phone use | | | | | |
| Conflicts with the family | .19 | .05 | 1.21 | 1.08–1.36 | < .01 |
| Academic problems | .25 | .06 | 1.29 | 1.14–1.45 | < .001 |
| Sleep problems | .24 | .06 | 1.27 | 1.12–1.43 | < .001 |
| Unfavorable friendships | .13 | .05 | 1.14 | 1.03–1.26 | < .001 |

In the whole group, body mass index (BMI) was weakly correlated with screen time ($r = .14, p = .04$); among boys screen time was not correlated with BMI ($r = .04, p = .61$), while a moderate correlation was found for girls ($r = .35, p < .01$).

Discussion

A majority of children and adolescents who participated in our study owned a computer (65%) and/or tablets (50.2%). The percentage of those having a computer was similar in a previous study from Turkey conducted in a similar socio-cultural setting (Gunes et al., 2018). Pluhar et al. (2019) recently reported that adolescents’ ownership and access to smartphones markedly increased in recent years (Pluhar et al., 2019). For example, 87% of American teenagers aged between 13–17 years have their own desktop/laptop computers or have regular access to these devices, while 58% have their own tablets or have regular access to a tablet (Lenhart, 2015a). We found that 51.6% of our participants have a smartphone, while 56.9% have a mobile phone. This ratio was 88% for 13–17 years old American teens for mobile phones and 73% for smartphones (Lenhart, 2015a). Children tend to have access to mobile media devices such as tablets and smartphones at younger ages (Common Sense Media, 2013) and the mean first age for owning a mobile phone was 11.9 (2.25) in our study.

The mean total daily screen time was found to be nearly 4 hours in our study, but there were great variations among participants, and we found longer

screen time in boys than in girls. Mullan (2017) reported that the children's screen-related activity time was 2.9 hours/day in 2000, while it was 3.4 hours/day in 2015, and it was higher in boys compared to girls (Mullan, 2018). We also found that boys play more video games than girls. A recent study, which reviewed 130 studies among 5–18 years-olds, reported that 52.3% of participants (in 19 studies) exceeded two hours/day screen time (health-related recommended screen time cut off) and the mean total screen time was 3.6 hours/day (1.3–7.9 hours/day; (Thomas, Bennie, De Cocker, Castro, & Biddle, 2019). The positive correlation of age and screen time in our study is also consistent with the previous literature (Atkin, Sharp, Corder, & Van Sluijs, 2014; Olds, Ridley, & Dollman, 2006).

Considering the IAT, in our sample 2.1% of adolescents could be problematic Internet users. A population-based study from Turkey reported 1.6% of adolescents as having possible PIU (Seyrek, Cop, Sinir, Ugurlu, & Şenel, 2017); another population-based study reported the same categories as 2.0% and 21.7% respectively (Kawabe et al., 2016). A clinical study which was conducted with ADHD diagnosed adolescents showed PIU in 63.9% of participants (Gunes et al., 2018). We found statistically significantly higher screen times in participants with a DSM–5 based psychiatric disorder diagnosis in comparison to participants who had no diagnosis. In addition, it was found that screen time was longer among children and adolescents with ADHD and/or conduct disorder (i.e., externalizing disorders) than among those with no diagnosis. Similarly, anxiety disorder and/or depression (i.e., internalizing disorders) group had longer screen time than the no diagnosis group. However, there was no significant difference between externalizing and internalizing disorders). Consistent with our data, two previous studies with clinical samples also reported longer screen times among participants with psychiatric disorders (Baer, Bogusz, & Green, 2011; Baer et al., 2012). A study from Turkey compared the community sample with the psychiatric sample aged between 12–18 years regarding screen times and found that the percentage of participants who use the internet more than 8 hours/week was 10.6% in the community sample, while it was 23.3% in the psychiatric sample (Tahiroğlu et al., 2010). Another study conducted in a clinical setting draws attention to excessive electronic media usage among ADHD diagnosed children and adolescents (Görmez & Örengül, 2017). A meta-analysis study detected a weak association between ADHD and media use (Nikkelen, Valkenburg, Huizinga, & Bushman, 2014). A study which used 6–17 years old youth data whose parent/guardian reported a physician's diagnosis of ADHD, investigated the relation of presence of a bedroom TV and screen time. The study showed that, TV in the bedroom was associated with 25 minute higher daily screen time (Lo, Waring, Pagoto, & Lemon, 2015). Another study showed a relationship between preschool screen time and ADHD inattention symptom clusters (Tamana et al., 2019).

There are studies in the literature reporting the relation of anxiety and depression with screen times. A population-based study from China found a

positive relationship between anxiety symptoms and screen time (Cao et al., 2011). A review by Hoare et al. showed a moderate relation between anxiety severity and screen time (Hoare, Milton, Foster, & Allender, 2016). A recent review reported a moderately strong association between depressive symptoms and screen time (Stiglic & Viner, 2019). We reported here in this study that children and adolescents whose screen time is over 2 hours per day have worse SDQ scores, except for emotional problems, when compared with the group of adolescents who have 2 hours and less screen time. This shows us that psychological functionality is negatively affected if the daily total screen time exceeds 2 hours. Similarly, we showed that all the SDQ domains except emotional problems predict daily total screen time and are weakly correlated with screen time. Twenge and Campbell (2018) reported in their study that participants with screen times equal to 4 or more hours a day had progressively lower psychological well-being (Twenge & Campbell, 2018). In a study conducted with adolescents in a clinical setting, SDQ scores were not found to be correlated with gaming time, but non-gaming time was found to be positively correlated with conduct problems and negatively correlated with peer problems (Baer et al., 2011). In children of younger age, conduct problems and hyperactivity were related to the regular use of digital devices (Hosokawa & Katsura, 2018). Another study was conducted with community and clinical samples of children and adolescents aged 3–18 years, and excessive screen use was not found to be correlated with any domain of SDQ except for the decrease in socialization (Segev et al., 2015). When we compare these studies collectively with ours, it could be suggested that reported relationships between screen time and emotional or behavioral problem domains represented by SDQ scores are inconsistent. The differences between studies may be due to sampling (community vs. clinical), age group varieties, gender varieties, or varying mean screen times.

Literature data show that PIU is related to psychiatric diagnoses like ADHD, conduct disorder and anxiety disorders (e.g., Gunes et al., 2018; Li, Hou, Yang, Jian, & Wang, 2019; Qian Wang, Yao, Zhou, Liu, & Lv, 2017). There are studies in literature that used the SDQ to evaluate emotional and behavioral problems in internet-addicted youth. A community-based study reported a relationship between pathological internet use and SDQ total difficulty score and conduct problems (Ozturk, Ekinci, Ozturk, & Canan, 2013). In another study, 11th and 12th-grade students reported that excessive internet use had both positive (prosocial) and negative impacts (peer problems, conduct problems, emotional problems, and hyperactivity) on the SDQ (Kumar et al., 2019). Adolescents with PIU had significantly higher scores on SDQ in comparison to controls on conduct problems, hyperactivity, emotional symptoms, and total difficulty domains and lower scores on the prosocial behaviors domain (Cao et al., 2011). Another study reported higher SDQ domains' and total difficulty score among adolescents with PIU. For example, nearly half of the girls and a quarter of boys with PIU were found to have an abnormal rating for emotional problems (Rikkers, Lawrence, Hafekost, & Zubrick, 2016). Although there are some

differences between the studies; in general, PIU is linked to increased emotional and behavioral problems. We also found weak correlations between IAT scores and SDQ domains except for prosocial behaviors.

The excessive and addictive use of digital media has been related to physical, psychological, and social impairment (Lissak, 2018), with significant conflicts between parents and children due to the use of technology at home. Various reasons for disagreement have been described such as the anxiety of the parent who can see that their children are using a device, but not what they are using it for (Blackwell, Gardiner, & Schoenebeck, 2016). Negative effects of screen use on school performance has been reported (Sharif & Sargent, 2006). There is growing evidence about the unfavorable impact of screen time on sleep quality, too. In his review study, Lissak (2018) summarized the ways in which the adverse effects of screen time on sleep occur. Accordingly, digital screen exposure negatively affects sleep, by taking place of daily routines and physical activity known to be beneficiary for sleep, by shortening sleep duration and quality, or by increasing psychophysiological arousal and by suppression of melatonin production. (Lissak, 2018). Excessive screen time can cause sleep disorders in childhood and adolescence and these sleep disorders are linked to internalizing, externalizing, and peer problems (Parent, Sanders, & Forehand, 2016). In our study, we found that screen time predicts conflicts with parents, academic problems, negative influence in friendships (risk for negative friendships and harm), and sleep problems according to parents' reports.

Extreme screen times contribute to childhood and adolescence obesity as well (Council on Communications and Media & Strasburger, 2011; Mitchell, Rodriguez, Schmitz, & Audrain-McGovern, 2013). We also showed a positive weak correlation between BMI and screen time; the correlation was moderate in girls, while boys' BMI was not correlated with screen time. This finding of a difference between genders may be related with different occurrence rates of psychiatric disorders among boys and girls (Cohen et al., 1993), more frequent incidences of weight gaining side effects of psychopharmacological agents in girls compared to boys (Regitz-Zagrosek, Schubert, & Krüger, 2008) or it may be due to the effect of post-pubertal sex hormones (Reinehr & Roth, 2019). There is a need for future studies that will assess the effects of these variables.

Limitations

Several limitations must be addressed for the present study. First, the sample was a convenient one and no data were used from healthy children and adolescents or those with other somatic disorders to compare findings. Second, we obtained data related to screen use from parents and older adolescents through self-reports and we did not gather data from other sources, such as teachers. In addition, no direct observations or measurements were used. Third, as a cross-sectional study, we cannot obtain a cause-effect data; we can only assess the relation of screen time with psychopathology and other variables.

Conclusion

Prolonged screen time was evident among children and adolescents with psychiatric disorders. After two hours of daily screen time, both externalizing and internalizing symptoms are more severe. Longer screen time may lead to more functioning impairments. These findings are especially important because children and adolescents are vulnerable to negative consequences of increasing screen exposure since their neurological and psychological development is ongoing (Crone & Konijn, 2018; Wolf, Wolf, Weiss, & Nino, 2018). Adolescence is a sensitive period for the development of addiction; because that adolescents' desire for playing games and using social media is stronger than the other age groups (Ayar et al., 2017). In addition, the maturation of prefrontal cortex, which is the brain area responsible for executive functions such as judgment, problem-solving and decision making, has not been completed yet ("Brain Basics | NIH News in Health," 2012; Pluhar et al., 2019). A noteworthy point is the impact of data that came from different cultures. Population-based cultural variabilities and diverse behavioral norms may affect the screen use habits and its relation to psychopathology in different ways. It is why we need studies that will be conducted in different cultural and geographic areas, especially if we consider that screen dependency and internet addiction have become a problem of not only the western cultures but of the whole globalized world. We suggest that health care professionals should be taking screen use into account, especially if they are working with adolescents. Every child and adolescent who is referred to the child and adolescent outpatients should be evaluated for the risk of excessive screen use and problematic internet use. Effective assessment methods to evaluate the impact of increased screen times on the severity of psychopathology and functional impairment of the child and adolescent should be developed as well as empirical treatment strategies involving both the familial and child-related factors in the clinical settings.

References

- Adams, S. K., Daly, J. F., & Williford, D. N. (2013). Adolescent sleep and cellular phone use: recent trends and implications for research. *Health Services Insights, 6*, 99–103. <https://doi.org/10.4137/HSI.S11083>
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*. <https://doi.org/10.1176/appi.books.9780890425596.744053>
- Atkin, A. J., Sharp, S. J., Corder, K., & Van Sluijs, E. M. F. (2014). Prevalence and correlates of screen time in youth: An international perspective. *American Journal of Preventive Medicine, 47*(6), 803–807. <https://doi.org/10.1016/j.amepre.2014.07.043>
- Ayar, D., Bektas, M., Bektas, I., Akdeniz Kudubes, A., Selekoglu Ok, Y., Sal Altan, S., & Celik, I. (2017). The Effect of Adolescents' Internet Addiction on Smartphone Addiction. *Journal of Addictions Nursing, 28*(4), 210–214. <https://doi.org/10.1097/JAN.0000000000000196>
- Baer, S., Bogusz, E., & Green, D. A. (2011). Stuck on screens: Patterns of computer and gaming station use in youth seen in a psychiatric clinic. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 20*(2), 86–94.

- Baer, S., Saran, K., Green, D. A., & Hong, I. (2012). Electronic media Use and addiction among youth in psychiatric clinic versus school populations. *Canadian Journal of Psychiatry, 57*(12), 728–735. <https://doi.org/10.1177/070674371205701204>
- Bayraktar, F. (2001). *İnternet kullanımının ergen gelişimindeki rolü*. Ege University, İzmir, Turkey.
- Blackwell, L., Gardiner, E., & Schoenebeck, S. (2016). Managing Expectations: Technology Tensions among Parents and Teens. *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing - CSCW, 16*, 1388–1399. <https://doi.org/10.1145/2818048.2819928>
- Brain Basics | NIH News in Health. (2012). Retrieved August 1, 2019, from <https://newsinhealth.nih.gov/2012/04/brain-basics>
- Cao, H., Qian, Q., Weng, T., Yuan, C., Sun, Y., Wang, H., & Tao, F. (2011). Screen time, physical activity and mental health among urban adolescents in China. *Preventive Medicine, 53*(4–5), 316–320. <https://doi.org/10.1016/j.ypmed.2011.09.002>
- Cohen, P., Cohen, J., Kasen, S., Velez, C. N., Hartmark, C., Johnson, J., ... Streuning, E. L. (1993). An Epidemiological Study of Disorders in Late Childhood and Adolescence—I. Age- and Gender-Specific Prevalence. *Journal of Child Psychology and Psychiatry, 34*(6), 851–867. <https://doi.org/10.1111/j.1469-7610.1993.tb01094.x>
- Common Sense Media. (2013). Zero to Eight: Children’s Media Use in America 2013 | Common Sense Media. Retrieved August 1, 2019, from <https://www.commonsensemedia.org/zero-to-eight-2013-infographic>
- Council on Communications and Media, V., & Strasburger, V. C. (2011). Children, Adolescents, Obesity, and the Media. *Pediatrics, 128*(1), 201–208. <https://doi.org/10.1542/peds.2011-1066>
- Crone, E. A., & Konijn, E. A. (2018). Media use and brain development during adolescence. *Nature Communications, 9*(1). <https://doi.org/10.1038/s41467-018-03126-x>
- Domingues-Montanari, S. (2017). Clinical and psychological effects of excessive screen time on children. *Journal of Paediatrics and Child Health, 53*(4), 333–338. <https://doi.org/10.1111/jpc.13462>
- Domoff, S. E., Harrison, K., Gearhardt, A. N., Gentile, D. A., Lumeng, J. C., & Miller, A. L. (2019). Development and validation of the problematic media use measure: A parent report measure of screen media “addiction” in children. *Psychology of Popular Media Culture, 8*(1), 2–11. <https://doi.org/10.1037/ppm0000163>
- Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 38*(5), 581–586. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/9255702>
- Görmez, V., & Örengül, A. C. (2017). DEHB’li çocuk ve ergenlerin elektronik medya kullanımı açısından değerlendirilmesi. *Anadolu Psikiyatri Dergisi, 18*(5), 495–502. <https://doi.org/10.5455/apd.255347>
- Gunes, H., Tanidir, C., Adaletli, H., Kilicoglu, A. G., Mutlu, C., Bahali, M. K., ... Uneri, O. S. (2018). Oppositional defiant disorder/conduct disorder co-occurrence increases the risk of Internet addiction in adolescents with attention-deficit hyperactivity disorder. *Journal of Behavioral Addictions, 7*(2), 284–291. <https://doi.org/10.1556/2006.7.2018.46>
- Hoare, E., Milton, K., Foster, C., & Allender, S. (2016, December 8). The associations between sedentary behaviour and mental health among adolescents: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity, 13*, 108. <https://doi.org/10.1186/s12966-016-0432-4>
- Horgen, K. B. Choate, M. & Brownell, K. D. (2001). *Television food advertising: Targeting children in a toxic environment*. In D. G. Singer, & J. L. Singer. The handbook of children in media. Thousand Oaks, CA: Sage.

- Hosokawa, R., & Katsura, T. (2018). Association between mobile technology use and child adjustment in early elementary school age. *PLoS One*, *13*(7), e0199959. <https://doi.org/10.1371/journal.pone.0199959>
- Karaer, Y., & Akdemir, D. (2019). Parenting styles, perceived social support and emotion regulation in adolescents with internet addiction. *Comprehensive Psychiatry*, *92*, 22–27. <https://doi.org/10.1016/j.comppsy.2019.03.003>
- Kardaras, N. (2016). *Glow Kids: How Screen Addiction Is Hijacking Our Kids-and How to Break the Trance*. New York, NY, USA: St. Martin's Press, Inc.
- Kawabe, K., Horiuchi, F., Ochi, M., Oka, Y., & Ueno, S. (2016). Internet addiction: Prevalence and relation with mental states in adolescents. *Psychiatry and Clinical Neurosciences*, *70*(9), 405–412. <https://doi.org/10.1111/pcn.12402>
- Khoulja, J. N., Munafò, M. R., Tilling, K., Wiles, N. J., Joinson, C., Etchells, P. J., ... Cornish, R. P. (2019). Is screen time associated with anxiety or depression in young people? Results from a UK birth cohort. *BMC Public Health*, *19*(1), 82. <https://doi.org/10.1186/s12889-018-6321-9>
- Kumar, N., Kumar, A., Mahto, S. K., Kandpal, M., Deshpande, S. N., & Tanwar, P. (2019). Prevalence of excessive internet use and its correlation with associated psychopathology in 11th and 12th grade students. *General Psychiatry*, *32*(2), 100001. <https://doi.org/10.1136/gpsych-2018-100001>
- Lemola, S., Perkinson-Gloor, N., Brand, S., Dewald-Kaufmann, J. F., & Grob, A. (2015). Adolescents' Electronic Media Use at Night, Sleep Disturbance, and Depressive Symptoms in the Smartphone Age. *Journal of Youth and Adolescence*, *44*(2), 405–418. <https://doi.org/10.1007/s10964-014-0176-x>
- Lenhart, A. (2015a). A Majority of American Teens Report Access to a Computer, Game Console, Smartphone and a Tablet. *Pew Research Center's Internet & American Life Project*, 1–7. Retrieved from <https://www.pewinternet.org/2015/04/09/a-majority-of-american-teens-report-access-to-a-computer-game-console-smartphone-and-a-tablet/>
- Lenhart, A. (2015b). Teens, Social Media & Technology Overview 2015 | Pew Research Center. Retrieved August 1, 2019, from Pew Research Center website: <https://www.pewinternet.org/2015/04/09/teens-social-media-technology-2015/>
- Li, G., Hou, G., Yang, D., Jian, H., & Wang, W. (2019). Relationship between anxiety, depression, sex, obesity, and internet addiction in Chinese adolescents: A short-term longitudinal study. *Addictive Behaviors*, *90*, 421–427. <https://doi.org/10.1016/j.addbeh.2018.12.009>
- Lissak, G. (2018). Adverse physiological and psychological effects of screen time on children and adolescents: Literature review and case study. *Environmental Research*, *164*, 149–157. <https://doi.org/10.1016/j.envres.2018.01.015>
- Lo, C. B., Waring, M. E., Pagoto, S. L., & Lemon, S. C. (2015). A television in the bedroom is associated with higher weekend screen time among youth with attention deficit hyperactivity disorder (ADD/ADHD). *Preventive Medicine Reports*, *2*, 1–3. <https://doi.org/10.1016/j.pmedr.2014.11.001>
- Mistry, K. B., Minkovitz, C. S., Strobino, D. M., & Borzekowski, D. L. G. (2007). Children's Television Exposure and Behavioral and Social Outcomes at 5.5 Years: Does Timing of Exposure Matter? *Pediatrics*, *120*(4), 762–769. <https://doi.org/10.1542/peds.2006-3573>
- Mitchell, J. A., Rodriguez, D., Schmitz, K. H., & Audrain-McGovern, J. (2013). Greater screen time is associated with adolescent obesity: A longitudinal study of the BMI distribution from Ages 14 to 18. *Obesity*, *21*(3), 572–575. <https://doi.org/10.1002/oby.20157>
- Monica, A., & Jingjing, J. (2008). Teens, Social Media & Technology 2018 | Pew Research Center. Retrieved August 1, 2019, from Pew Research Center website: <https://www.pewinternet.org/2018/05/31/teens-social-media-technology-2018/>

- Monica, A., & Jingjing, J. (2018). Teens, Social Media & Technology 2018 | Pew Research Center. Retrieved January 6, 2020, from Pew Research Center website: <https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/>
- Mullan, K. (2018). Technology and Children's Screen-Based Activities in the UK: The Story of the Millennium So Far. *Child Indicators Research*, 11(6), 1781–1800. <https://doi.org/10.1007/s12187-017-9509-0>
- Nikkelen, S. W. C., Valkenburg, P. M., Huizinga, M., & Bushman, B. J. (2014). Media use and ADHD-related behaviors in children and adolescents: A meta-analysis. *Developmental Psychology*, 50(9), 2228–2241. <https://doi.org/10.1037/a0037318>
- Olds, T., Ridley, K., & Dollman, J. (2006). Screenieboppers and extreme screenies: The place of screen time in the time budgets of 10-13 year-old Australian children. *Australian and New Zealand Journal of Public Health*, 30(2), 137–142. <https://doi.org/10.1111/j.1467-842X.2006.tb00106.x>
- Ozturk, F. O., Ekinci, E., Ozturk, O., & Canan, F. (2013). 2684 – The relationship of affective temperament and emotional-behavioral difficulties to internet addiction in high school students. *European Psychiatry*, 28, 1. [https://doi.org/10.1016/s0924-9338\(13\)77302-4](https://doi.org/10.1016/s0924-9338(13)77302-4)
- Parent, J., Sanders, W., & Forehand, R. (2016). Youth Screen Time and Behavioral Health Problems. *Journal of Developmental & Behavioral Pediatrics*, 37(4), 277–284. <https://doi.org/10.1097/DBP.0000000000000272>
- Parkes, A., Sweeting, H., Wight, D., & Henderson, M. (2013). Do television and electronic games predict children's psychosocial adjustment? Longitudinal research using the UK Millennium Cohort Study. *Archives of Disease in Childhood*, 98(5), 341–348. <https://doi.org/10.1136/archdischild-2011-301508>
- Pluhar, E., Kavanaugh, J. R., Levinson, J. A., & Rich, M. (2019). Problematic interactive media use in teens: comorbidities, assessment, and treatment. *Psychology Research and Behavior Management*, Volume 12, 447–455. <https://doi.org/10.2147/prbm.s208968>
- Poli, R., & Agrimi, E. (2012). Internet addiction disorder: Prevalence in an Italian student population. *Nordic Journal of Psychiatry*, 66(1), 55–59. <https://doi.org/10.3109/08039488.2011.605169>
- Ponti, M., Bélanger, S., Grimes, R., Heard, J., Johnson, M., Moreau, E., ... & Williams, R. (2017). Screen time and young children: Promoting health and development in a digital world. *Paediatrics & Child Health*, 22(8), 461–468. <https://doi.org/10.1093/pch/pxx123>
- Regitz-Zagrosek, V., Schubert, C., & Krüger, S. (2008). Gender differences in psychopharmacology. *Der Internist*, 49(12), 1516–1523. <https://doi.org/10.1007/s00108-008-2233-6>
- Reinehr, T., & Roth, C. L. (2019). Is there a causal relationship between obesity and puberty? *The Lancet Child and Adolescent Health*, 3(1), 44–54. [https://doi.org/10.1016/S2352-4642\(18\)30306-7](https://doi.org/10.1016/S2352-4642(18)30306-7)
- Rich, M., Tsappis, M., & Kavanaugh, J. R. (2018). Problematic Interactive Media Use Among Children and Adolescents: Addiction, Compulsion, or Syndrome? In *Internet Addiction in Children and Adolescents* (pp. 3–28). <https://doi.org/10.1891/9780826133731.0001>
- Rikkers, W., Lawrence, D., Hafekost, J., & Zubrick, S. R. (2016). Internet use and electronic gaming by children and adolescents with emotional and behavioural problems in Australia - Results from the second Child and Adolescent Survey of Mental Health and Wellbeing. *BMC Public Health*, 16(1), 399. <https://doi.org/10.1186/s12889-016-3058-1>
- Sanchez-Villegas, A., Ara, I., Guillén-Grima, F., Bes-Rastrollo, M., Varo-Cenarruzabeitia, J. J., & Martínez-González, M. A. (2008). Physical activity, sedentary index, and mental disorders in the sun cohort study. *Medicine and Science in Sports and Exercise*, 40(5), 827–834. <https://doi.org/10.1249/MSS.0b013e31816348b9>
- Segev, A., Mimouni-Bloch, A., Ross, S., Silman, Z., Maoz, H., & Bloch, Y. (2015). Evaluating computer screen time and its possible link to psychopathology in the context of age: A

- cross-sectional study of parents and children. *PLoS One*, *10*(11), e0140542. <https://doi.org/10.1371/journal.pone.0140542>
- Seyrek, S., Cop, E., Sınır, H., Ugurlu, M., & Şenel, S. (2017). Factors associated with Internet addiction: Cross-sectional study of Turkish adolescents. *Pediatrics International*, *59*(2), 218–222. <https://doi.org/10.1111/ped.13117>
- Sharif, I., & Sargent, J. D. (2006). Association Between Television, Movie, and Video Game Exposure and School Performance. *Pediatrics*, *118*(4), e1061–e1070. <https://doi.org/10.1542/peds.2005-2854>
- Stiglic, N., & Viner, R. M. (2019). Effects of screentime on the health and well-being of children and adolescents: a systematic review of reviews. *BMJ Open*, *9*(1), e023191. <https://doi.org/10.1136/bmjopen-2018-023191>
- Sussman, C. J., Harper, J. M., Stahl, J. L., & Weigle, P. (2018). Internet and Video Game Addictions. *Child and Adolescent Psychiatric Clinics of North America*, *27*(2), 307–326. <https://doi.org/10.1016/j.chc.2017.11.015>
- Tahiroğlu, A. Y., ÇelİK, G. G., Fettahoğlu, Ç., Yildirim, V., Toros, F., Avci, A., ... Uzel, M. (2010). Psikiyatrik bozukluğu olan ve olmayan ergenlerde problemlı internet kullanımı. *Noropsikiyatri Arsivi*, *47*(3), 241–246. <https://doi.org/10.4274/npa.5452>
- Tamana, S. K., Ezeugwu, V., Chikuma, J., Lefebvre, D. L., Azad, M. B., Moraes, T. J., ... Mandhane, P. J. (2019). Screen-time is associated with inattention problems in preschoolers: Results from the CHILD birth cohort study. *PLoS One*, *14*(4), e0213995. <https://doi.org/10.1371/journal.pone.0213995>
- Thomas, G., Bennie, J. A., De Cocker, K., Castro, O., & Biddle, S. J. H. (2019). A Descriptive Epidemiology of Screen-Based Devices by Children and Adolescents: a Scoping Review of 130 Surveillance Studies Since 2000. *Child Indicators Research*, 1–16. <https://doi.org/10.1007/s12187-019-09663-1>
- Twenge, J. M., & Campbell, W. K. (2018). Associations between screen time and lower psychological well-being among children and adolescents: Evidence from a population-based study. *Preventive Medicine Reports*, *12*, 271–283. <https://doi.org/10.1016/j.pmedr.2018.10.003>
- Wang, B. qian, Yao, N. qi, Zhou, X., Liu, J., & Lv, Z. tao. (2017). The association between attention deficit/hyperactivity disorder and internet addiction: A systematic review and meta-analysis. *BMC Psychiatry*, *17*(1), 260. <https://doi.org/10.1186/s12888-017-1408-x>
- Wang, X., Li, Y., & Fan, H. (2019). The associations between screen time-based sedentary behavior and depression: a systematic review and meta-analysis. *BMC Public Health*, *19*(1), 1524. <https://doi.org/10.1186/s12889-019-7904-9>
- Wolf, C., Wolf, S., Weiss, M., & Nino, G. (2018). Children's Environmental Health in the Digital Era: Understanding Early Screen Exposure as a Preventable Risk Factor for Obesity and Sleep Disorders. *Children*, *5*(2), 31. <https://doi.org/10.3390/children5020031>
- Wu, X., Chen, X., Han, J., Meng, H., Luo, J., Nydegger, L., & Wu, H. (2013). Prevalence and Factors of Addictive Internet Use among Adolescents in Wuhan, China: Interactions of Parental Relationship with Age and Hyperactivity-Impulsivity. *PLoS One*, *8*(4), e61782. <https://doi.org/10.1371/JOURNAL.PONE.0061782>
- Young, K. (1996). *Caught in the Net: How to Recognize the Sign of Internet Addiction and a Winning Strategy for Recovery*. Retrieved from <https://eric.ed.gov/?id=ED444112>

Navike korišćenja uređaja sa ekranima kod dece i adolescenata sa psihijatrijskim poremećajima: transferzalna studija u Turskoj

Burge Kabukcu Basay, Omer Basay, Cemre Akdogan*, Seyma Karaisli*,
Merve Satilmis*, Burcu Gozen*, and Naci Bahadir Sekerci*

*Pamukkale University Medical Faculty,
Child and Adolescent Psychiatry Department, Denizli, Turkey*

U ovoj transferzalnoj studiji smo istraživali navike korišćenja uređaja sa ekranom, problematičnu upotrebu Interneta (eng. problematic Internet use – PIU), i povezanost psihopatologije i korišćenja uređaja sa ekranom na kliničkom uzorku dece i adolescenata. U istraživanju je učestvovalo 277 dece i adolescenata (129 [46.4%] devojčica) uzrasta 6–17 godina koji su na ambulantnom psihijatrijskom lečenju iz različitih razloga. Svi roditelji su popunili Upitnik snaga i teškoća (eng. the Strengths and Difficulties Questionnaire; SDQ), dok su adolescenti popunjavali i Test zavisnosti od Interneta (eng. Internet Addiction Test; IAT). Prosečno vreme korišćenja uređaja sa ekranom je bilo 3.85 ($SD = 2.72$) sati dnevno. Nađeno je da deca sa psihijatrijskim poremećajima u proseku provode više vremena uz ekran nego deca bez psihijatrijskih simptoma, naročito deca i adolescenti sa internalizujućim poremećajima (tj. anksioznim poremećajima i/ili depresijom), ali i deca sa hiperkinetskim poremećajem (tj. ADHD-om) i/ili poremećajem ponašanja. Duže vreme korišćenja uređaja sa ekranom može biti povezano sa pogoršanjem psihološkog funkcionisanja. Rezultati na IAT-u ukazuju na moguću problematičnu upotrebu Interneta kod 2.1% adolescenata. Rezultati ove studije ukazuju da deca i adolescenti sa psihijatrijskim simptomima provode više vremena uz ekran nego što je uobičajeno. Ovo treba imati u vidu prilikom dijagnostičkih i terapijskih procedura.

Ključne reči: vreme provedeno u korišćenju uređaja sa ekranom, digitalni mediji, problematična upotreba Interneta, mobilni telefon, internalizujući poremećaji, ekternalizujući poremećaji.

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