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Effects of Screen Addiction on Sleep in Children Aged 9-10

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ABSTRACT:
Purpose: This study was conducted to determine the effects of screen addiction on sleep in children aged 9-10.
Material and Methods: This descriptive and cross-sectional study was conducted between July 20 and September 30, 2023, with 380 parents of children aged 9–10. After obtaining the necessary institutional and ethical permissions, data were collected using the Descriptive Information Form, the Problematic Media Use Measure (PMUM), and the Sleep Disturbance Scale for Children (SDSC). Data analysis was performed using SPSS 23.0 with descriptive statistics, t-test, ANOVA, Mann–Whitney U, Kruskal–Wallis H, Pearson correlation, and simple linear regression analyses.
Results: Of the children, 51.6% were boys, 56.8% were 4th-grade students, and 93.7% had no chronic diseases. The most frequently used device was the mobile phone (43.7%). The mean SDSC score was 45.79±14.1, and the most common sleep disturbances were related to falling asleep and staying asleep. The mean PMUM score was 2.58±0.90, indicating a moderate level of problematic media use. Problematic media use levels explained 44.9% of the total variance in sleep disturbances. A moderate, positive, and statistically significant correlation was found between total SDSC and total PMUM scores.
Conclusion: As the problematic media use levels of children increased, their sleep disturbance levels also increased. To reduce the negative effects of screen addiction, it is recommended that families limit children's screen time to a maximum of two hours per day, guide them in choosing appropriate media content, and regularly monitor their behaviors and sleep routines.
Keywords: *Screen addiction; children; sleep*

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INTRODUCTION

Screen addiction is a condition in which a person cannot resist exposure to television, tablet, smartphone, or other device screens, gets attached to these devices to a problematic degree, and neglects their responsibilities (Young, 1996). With the developments in technology, many devices with screens have gained and continue to gain a place in a large part of people's lives. The concept of screens in everyday life, which began with the invention of the television, initially was be difficult to access, while access to screens becomes easier day by day with advancements in technology. Individuals closely interact with screens while eating, trying to sleep, studying, walking, waiting, and sitting on the toilet. When used responsibly, constantly developing and changing technology makes life easier. On the other hand, when technology is used in an ill-advised manner or when its use reaches addiction levels, the most adversely affected individuals are children and young people who have been born into a world filled with technology (Dinç, 2015). In Türkiye, screen addiction is seen in all age groups. The concept of screen addiction is highly frequently encountered, especially in children and young people, who have a strong sense of curiosity toward new technology

(Rideout, 2011). In global-scale studies on screen addiction, it has been observed that the age of screen addiction has dropped to under six years, and screen exposure durations continue to increase (Rideout et al., 2003; Ofcom, 2017). According to the Information and Communication Technology Use and Media Study by the Turkish Statistical Institute (TURKSTAT) involving children aged 6-15, the mean age at which children in Türkiye started using computers was approximately eight, the mean age at which they started using the internet was approximately nine, and the mean age at which they started using mobile phones was approximately 10 (TURKSTAT, 2021). Spending excessive amounts of time looking at a screen may lead to some physical, psychological, and social problems, especially in children who are in an important developmental stage. In the context of the health and development of children, this issue causes problems such as obesity, loneliness, anxiety, delated language development, reduced academic success, deterioration in cognitive functions, attention deficit, hyperactivity, disrupted social relationships, posture disorders, eye health issues, and sleep disorders (Martin, 2011; Mustafaoğlu et al., 2018; Schmidt, 2020).

While previous studies have usually focused on conventional media in this context, with the emergence of new technologies, children now have more access to mobile electronic devices such as tablets and smartphones. It has been argued that these newer technologies may have a more negative and substantial impact in comparison to conventional electronic devices (Twenge et al., 2018; Martin, 2011; Schmidt, 2020).

Sleep is one of the most essential needs of a person (Özer, 2000; Öztürk, 2004; Papilla et al., 2004). Sleep is a state of immobility, loss of consciousness, and active rejuvenation that meets the need of a person to rest by reduced sensitivity to environmental stimuli (Karadağ et al., 2007), and it is among the main requirements of a healthy life (Akdemir, 2004; Şenol et al., 2012). Sleep is even more important for children because it facilitates growth, development, rest, and the rejuvenation of brain cells and other parts of the organism. School-age children usually need 10-12 hours of sleep a day. Any interruption in the sleep patterns of children with screen addiction and the persistence of such an interruption causes deterioration in the bodily and mental health of children (Potter et al., 2003). This study was conducted to determine the effects of screen addiction on sleep in children.

MATERIAL and METHODS

Type of the Study

This study was carried out with a descriptive and cross-sectional design. This study was conducted to determine the effects of screen addiction levels on sleep in children aged 9–10.

Sampling and participant

The population of the study consisted of a total of 12,926 children, including 6,308 3rd-grade and 6,618 4th-grade students, attending 52 different primary schools affiliated with the Kocasinan District Directorate of National Education in the district center of Kocasinan in the province of Kayseri. The sample of the study included 380 parents who were recruited based on the sample size calculation made using the following formula: n= (N*t2*p*q)/[d2 *(N-1)+t2*p*q] (N=12.926, p=0.5, q=0.5, t=1.96, d=0.05).

Data Collection Tools

A “Descriptive Information Form”, the “Problematic Media Use Measure”, and the “Sleep Disturbance Scale for Children” were used to collect data.

Descriptive Information Form

The form, which was created by the researchers in line with the literature, comprised questions about the characteristics of the parents such as marital status, education level, age, working status, family type, family income level, the characteristics of the children such as age, sex, and grade, and screen use-related parameters including whether the family set a rule for their child regarding screen time, their degree of implementing such a rule if they did, whether the child had their own electronic device, and the concerns of the parents about the media usage of their child (Şahin et al., 2012; Küçük & Çakır, 2020).

Problematic Media Use Measure (PMUM)

PMUM was developed by Domoff et al. (2017) to

identify problematic media use in children aged 4-11. The validity and reliability studies of the long and short forms of PMUM were performed by Furuncu (2020). It is a Likert-type scale in which each item has response options varying from 1 (never) to 5 (always). Total PMUM scores are obtained by summing the scores of all scale items. Higher scores indicate more problematic media use. The scale, which is filled out by parents by taking into account the behaviors of their children, does not measure the problematic use of a specific media device. Rather, it measures the problematic use of visual media devices (e.g., television, computer, tablet, phone) in general, namely screen addiction. The Cronbach's alpha internal consistency coefficients of the long and short forms of the scale were reported as 0.97 and 0.93, respectively (Domoff et al., 2017). In this study, the long form of the scale was used, and the Cronbach's alpha coefficient of the scale was found to be 0.97.

Sleep Disturbance Scale for Children (SDSC)

SDSC was developed by Bruni et al. (1996) to examine sleep disturbances observed in children aged 6-16 within the last six months. It was tested for validity and reliability in Turkish by Ağadayı et al. (2020). It consists of 6 dimensions: disorders of initiating and maintaining sleep (items 1, 2, 3, 4, 5, 10, and 11), sleep-wake transition disorders (items 6, 7, 8, 12, 18, and 19), disorders of arousal/nightmares (items 17, 20, and 21), sleep breathing disorders (items 13, 14, and 15), disorders of excessive somnolence (items 22, 23, 24, 25, and 26), and sleep hyperhidrosis (items 9 and 16). It is a 5-point Likert-type scale (1=never, 2=occasionally, 3=sometimes, 4=often, and 5=always) with 26 items. The total score range of the scale is 26-130. Higher scores indicate more disordered sleep. The Cronbach's alpha coefficient of the scale was reported as 0.81, while this coefficient was found to be 0.91 in this study.

Application of Data Collection Tools

After obtaining the necessary permissions for the study, data were collected between 20 July 2023 and 30 September 2023. Administrators of the primary schools determined by the researcher were contacted, and the parents of children in selected classrooms were invited to the school for meetings. In the meetings, information about the purpose of the study and data collection instruments was provided to the parents, and their verbal and written consent was received. The researcher supervised the face-to-face completion of the data collection forms by the participants. It took about 15-20 minutes for each participant to complete the forms.

Statistical Analysis

Data were analyzed using the SPSS 23.0 program. The Kolmogorov-Smirnov test was conducted to determine whether the data were normally distributed. For the normally distributed data, two groups were compared using independent-samples t-tests, three or more groups were compared using one-way analysis of variance (ANOVA), relationships between variables were analyzed using Pearson's correlation analysis, and predictive variables were identified using simple linear regression analysis. For the non-normally distributed data, two groups were compared using the Mann-Whitney U test, whereas three or more groups were compared using the Kruskal-Wallis H test. The level of statistical significance was taken as $p<0.05$.

Ethical Approval

Before starting the study, approval from the Non-Invasive Clinical Studies Ethics Committee at Sivas Cumhuriyet University (dated 22.03.2023, numbered 2023-03/14) and written permission from the Kayseri Provincial Directorate of National Education were obtained. All parents who agreed to participate in the study read and signed the informed consent form. All procedures in the study adhered to applicable ethical principles.

RESULTS

It was determined that 51.6% of the children whose parents were included in the study were 10 years old, 51.6% were male, 43.2% were 3rd-grade students, 56.8% were 4th-grade students, 93.7% did not have any chronic disease, 66.3% had their own electronic devices, and 43.7% had mobile phones as their most frequently used device. While 40.5% of the mothers were at least literate and at most middle school graduates, 40.3% of the fathers were

high school graduates, 31.8% of the mothers and 97.4% of the fathers were working, 84.5% of the parents had nuclear families, and 54.7% of the parents had family income equivalent to their expenses. Screen time rules were followed by 82.6% of the children's families, and those who implemented such a rule "sometimes" had the highest rate among all groups (30.0%). The use of electronic devices by their children raised concerns among 37.6% of the families.

The mean total SDSC score of the children was 45.79±14.16, while their mean SDSC dimension scores were 14.65±4.85 for Disorders and Initiating and Maintaining Sleep, 4.55±1.87 for Sleep Breathing Disorders, 5.86±2.55 for Disorders of Arousal/Nightmares, 7.14±2.75 for Sleep-Wake Transition Disorders, 9.67±5.16 for Disorders of Excessive Somnolence, and 3.92±1.94 for Sleep Hyperhidrosis. The children had a mean PMUM score of 2.58±0.901.

Table 1. Descriptive Characteristics of Parents and Children (n=380)

Characteristics		*n*	%
Child's Age	9	184	48.4
	10	196	51.6
Child's Sex	Female	184	48.4
	Male	196	51.6
Child's Grade	3rd grade	164	43.2
	4th grade	216	56.8
Child Has a Chronic Disease	Yes	24	6.3
	No	356	93.7
Child Has Own Electronic Device	Yes	252	66.3
	No	128	33.7
Visual Media Device Used Most Frequently by Child	TV	56	14.7
	Computer	30	7.9
	Tablet	128	33.7
	Mobile phone	166	43.7
Mother's Education Level	Literate-Primary-Middle school	154	40.5
	High school	124	32.6
	Undergraduate or above	102	26.8
Father's Education Level	Literate-Primary-Middle school	105	27.6
	High school	153	40.3
	Undergraduate or above	122	32.1
Mother's Employment Status	Working	121	31.8
	Not working	259	68.2
Father's Employment Status	Working	370	97.4
	Not working	10	2.6
Family Type	Nuclear family	321	84.5
	Extended family	36	9.5
	Fragmented family	23	6.1
Family Income Status	Income < expenses	118	31.1
	Income ~ expenses	208	54.7
	Income > expenses	54	14.2
Family Has a Rule about Screen Time	Yes	314	82.6
	No	66	17.4
Frequency of Implementing Screen Time Rule	Never	89	23.4
	Occasionally	63	16.6
	Sometimes	114	30.0
	Often	86	22.6
	Always	28	7.4
Child's Usage of Electronic Device Concerns Family	Never	12	3.2
	Occasionally	39	10.3
	Sometimes	105	27.6
	Often	143	37.6
	Always	81	21.3
Total		**380**	**100.0**

Table 2. Scale Scores

Scales	Min.	Max.	X̄	SD	Score Range
Disorders of Initiating and Maintaining Sleep	7.00	33.00	14.65	4.85	7-35
Sleep Breathing Disorders	3.00	14.00	4.55	1.87	3-15
Disorders of Arousal/Nightmares	3.00	14.00	5.86	2.55	3-15
Sleep-Wake Transition Disorders	4.00	20.00	7.14	2.75	4-20
Disorders of Excessive Somnolence	5.00	24.00	9.67	4.16	5-25
Sleep Hyperhidrosis	2.00	10.00	3.92	1.94	2-10
SDSC Total	24.00	106.00	45.79	14.16	24-120
PMUM	1.00	5.00	2.58	0.90	1-5

SDSC: Sleep Disturbance Scale for Children; PMUM: Problematic Media Use Measure

Table 3. Comparison of Scale Score Based on the Descriptive Characteristics of the Children

Demographic Variables	n	Disorders of Initiating and Maintaining Sleep	Sleep Breathing Disorders	Disorders of Arousal/ Nightmares	Sleep-Wake Transition Disorders	Disorders of Excessive Somnolence	Sleep Hyperhidrosis	SDSC Total	PMUM
		X±SD	X±SD	X±SD	X±SD	X±SD	X±SD	X±SD	X±SD
Child's Age									
9	184	14.45±4.71	4.48±2.04	5.63±2.46	6.87±2.73	9.30±4.17	3.83±2.01	44.58±14.04	2.49±0.88
10	196	14.83±4.98	4.61±1.71	6.07±2.62	7.39±2.74	10.01±4.14	3.98±1.88	46.92±13.96	2.65±0.91
TEST		t=-0.752 p>0.05	Z=16158.5 p>0.05	t=-1.687 p>0.05	t=-1.858 p>0.05	t=-1.665 p>0.05	t=-0.764 p>0.05	t=-1.611 p>0.05	t=-1.744 p>0.05
Child's Sex									
Female	184	14.55±4.95	4.41±1.82	5.56±2.39	6.93±2.68	9.59±4.15	3.90±2.01	44.97±14.44	2.47±0.91
Male	196	14.73±4.77	4.67±1.92	6.13±2.67	7.34±2.80	9.74±4.18	3.92±1.88	46.56±13.88	2.67±0.88
TEST		t=-0.372 p>0.05	Z=16595.0 p>0.05	**t=-2.176 p<0.05**	t=-1.443 p>0.05	t=-0.356 p>0.05	t=-0.079 p>0.05	t=-1.093 p>0.05	**t=-2.111 p<0.05**
Child's Grade									
3rd grade	164	14.46±4.88	4.63±2.11	5.75±2.51	7.18±2.89	9.60±4.28	4.05±2.13	45.69±14.92	2.48±0.89
4th grade	216	14.78±4.83	4.49±1.67	5.93±2.58	7.11±2.64	9.72±4.08	3.81±1.79	45.86±13.58	2.65±0.90
TEST		t=-0.631 p>0.05	Z=17488.5 p>0.05	t=-0.717 p>0.05	t=0.235 p>0.05	t=-0.274 p>0.05	t=1.213 p>0.05	t=-0.116 p>0.05	t=-1.835 p>0.05
Child Has a Chronic Disease									
Yes	24	14.33±4.742	5.66±2.776	6.20±2.858	7.75±2.625	9.70±4.133	4.58±2.749	48.25±13.571	2.87±0.856
No	356	14.67±4.869	4.47±1.78	5.83±2.53	7.10±2.75	9.66±4.17	3.87±1.87	45.62±14.20	2.56±0.902
TEST		t=-0.330 p>0.05	**Z=3239.5 p<0.05**	t=0.694 p>0.05	t=1.114 p>0.05	t=0.045 p>0.05	t=1.250 p>0.05	t=0.878 p>0.05	t=1.641 p>0.05
Child Has Own Electronic Device									
Yes	252	14.54±4.48	4.65±1.76	5.82±2.49	7.07±2.59	9.57±4.14	3.91±1.97	45.59±13.12	2.57±0.850
No	128	14.85±5.53	4.35±2.07	5.91±2.66	7.28±3.03	9.85±4.22	3.91±1.90	46.17±16.05	2.58±0.999
TEST		t=-0.538 p>0.05	**Z=13411.0 p<0.05**	t=-0.305 p>0.05	t=-0.728 p>0.05	t=-0.601 p>0.05	t=0.012 p>0.05	t=-0.380 p>0.05	t=-0.046 p>0.05
Visual Media Device Used Most Frequently by Child									
(1) TV	56	13.17±5.80	4.26±2.10	5.21±2.54	6.69±3.49	8.58±4.34	3.89±2.16	41.83±17.81	2.09±0.931
(2) Computer	30	14.60±5.06	4.50±1.47	5.73±2.80	6.30±2.38	9.20±3.92	3.83±1.96	44.16±14.76	2.57±1.044
(3) Tablet	128	15.00±4.46	4.69±1.84	6.16±2.60	7.35±2.61	9.86±4.17	3.91±1.85	47.00±13.34	2.62±0.822
(4) Mobile phone	380	14.87±4.71	4.54±1.88	5.86±2.44	7.28±2.61	9.96±4.11	3.93±1.95	46.48±13.11	2.71±0.877
TEST		F=2.088 p>0.05	KW=5.857 p>0.05	F=1.836 p>0.05	F=1.844 p>0.05	F=1.774 p>0.05	F=0.029 p>0.05	F=2.047 p>0.05	**F=6.942 p<0.05 1<3 1<4**

F=One-Way ANOVA, t=Independent-Samples t-Test, Z=Mann-Whitney U Test, KW=Kruskal-Wallis Test

In the comparisons of the mean scores of the children based on their descriptive characteristics, it was found that the "Sleep Breathing Disorders" scores of the children differed significantly depending on their chronic disease status and their status of having their own electronic device ($p<0.05$). The "Disorders of Arousal/Nightmares" scores of the children also differed significantly based on their sex ($p<0.05$). The children's sex and the visual media devices used most frequently by them were variables

significantly associated with their PMUM scores (p<0.05).

A moderate, positive, and statistically significant relationship was found between the PMUM scores and SDSC total scores of the children (p<0.05). According to this result, as the problematic media use levels of the children increased, their degrees of having sleep disturbances also increased. There were also positive and significant relationships between the SDSC dimension scores of the children and their PMUM scores. Here, the most significant relationship was identified between their PMUM scores and their scores in the "Disorders of Initiating and Maintaining Sleep" dimension of SDSC [r(380)=0.636; p<0.05], while the least significant relationship was found between their PMUM scores and their SDSC "Sleep Breathing Disorders" dimension scores [r(380)=0.328; p<0.05].

As seen in Table 5, the regression model established to determine the effects of problematic media use on sleep disturbances was found to be statistically significant (p<0.05). According to the results of the analysis, problematic media use explained 44.9% of the total variance in the sleep disturbances of the children (R=0.670; R2=0.449). Considering the significance level of the regression coefficient, problematic media use was a significant predictor of sleep disturbances (β=0.670; t(380)=17.54; p<0.05).

Table 4. Results of the Correlation Analyses of the Scale Scores of the Children

Scales	1	2	3	4	5	6	7	8
(1) Disorders of Initiating and Maintaining Sleep	1							
(2) Sleep Breathing Disorders	0.351*	1						
(3) Disorders of Arousal/Nightmares	0.564*	0.464	1					
(4) Sleep-Wake Transition Disorders	0.543*	0.504	0.472	1				
(5) Disorders of Excessive Somnolence	0.647*	0.511	0.553	0.493	1			
(6) Sleep Hyperhidrosis	0.376*	0.567	0.505	0.550	0.465	1		
(7) SDSC Total	0.839*	0.663	0.759	0.753	0.843	0.676	1	
(8) PMUM	**0.636***	**0.328***	**0.511***	**0.477***	**0.580***	**0.382***	**0.670***	1

*p<0.05, PMUM: Problematic Media Use Measure; SDSC: Sleep Disturbance Scale for Children

Table 5. Regression Analysis of the Effects of the Problematic Media Use of the Children on Their Sleep Disturbances

	B	Standard Error	*β*	T	p
Constant	18.65	1.63		11.38	0.000
Problematic Media Use	10.51	600	0.670	17.54	0.000
R=0.670, **R^2**=0.449, **$F_{(1-378)}$**=307.693, **p**=0.000					

DISCUSSION

This study was conducted to determine the effects of screen addiction on sleep in primary school students. Based on the mean total score of the children on the "Sleep Disturbance Scale for Children (SDSC)" (45.79±14.16), it was determined that they had low levels of sleep disturbances. Sleep disturbances were slightly more prevalent in boys (46.5%) than in girls (44.9%). Similar to our results, in the study conducted by Bildirici et al. (2023), no significant relationship was found between sex and SDSC scores. Kabel et al. (2018) revealed that sleep disturbances were generally more common in girls. In our study, no significant relationship was found between age and SDSC scores. In contrast to our study, in the study conducted by Bildirici et al. (2023) with children aged 5-17, it was found that sleep disturbance symptoms increased with age. Based on the mean total score of the children on the "Problematic Media Use Measure (PMUM)" (2.58±0.90) in this study, it was determined that they were moderate-level problematic media users. In our study, the difference between groups based on the sex variable was found to be statistically significant. According to the significant differences that emerged, boys had higher levels of problematic media use than girls (p<0.05). Similar studies have shown that boys spend more time with digital

devices and prefer these devices more than girls do (Brito, 2016; Gentile, 2009; Işıkoğlu et al., 2021; Küçük & Çakır, 2020; Şahin & Tuğrul, 2012; Merter et al., 2025). In our study, a significant relationship was found between owning a personal electronic device and problematic media use, and it was determined that the PMUM scores of the children who frequently used tablets and mobile phones were higher than those of the children who frequently watched TV . In the "Study on the Media Usage Habits of Children in Türkiye," it was determined that 97.9% of 4,306 children aged 6-18 had a television at home, and 73.7% owned a computer or tablet (RTÜK, 2013). Chang et al. (2018) reported how widespread technological devices were in homes, with televisions at 94.6%, computers at 90%, tablets at 48.21%, and smartphones at 95.9%. A moderate, positive, and significant relationship was found in this study between the PMUM and SDSC scores of the Children . As the problematic media use levels of the children increased, their levels of sleep disturbances also increased. Similarly, Hisler et al. (2020) reported that increased screen-media (television, video games) use was associated with reduced sleep duration and delayed sleep onset. In our study, it was determined that the problematic media use levels of the children explained 44.9% of the total variance in their sleep disturbance levels, and problematic media use was a significant predictor of sleep disturbances in children. In another study, a weak but positive correlation was also identified between sleep disturbances and media use. Problematic media use was associated with an 81.6% increase in abnormal sleep status (Merter et al., 2025).

CONCLUSION

In conclusion, screen addiction is seen today as a serious and increasingly prevalent problem among school-age children. Especially among primary school students, increased screen use leads to problematic media use and causes problems in sleep patterns that are critical for the healthy growth and development of children. School nurses should organize educational programs for families with school-age children regarding the age characteristics of this period and how children can use screens responsibly and effectively. It is recommended that families limit the time their children spend in front of screens to a maximum of two hours, help them choose appropriate media, direct them toward physical activities, and establish sleep routines for children.

Conflict of Interest

The authors declare no conflict of interest.

REFERENCES

Ağadayı, E., Çelik, N., Başer, D. A. (2020). Turkish validity and reliability study of the sleep disorder scale for children. Turkish Journal of Sleep Medicine, 7(2), 65–72. https://doi.org/10.4274/jtsm.galenos.2020.98598

Akdemir N., Birol L. (2004). Nursing Care in Rest and Sleep Disorders, Internal Medicine and Nursing Care, 2nd edition, Eds. Sistem Ofset Printing House, Ankara. https://doi.org/10.37609/akya.694

Bildirici, Y., Sungur, S., Muz, F. N. Ö. et al. (2023). The Relationship Between Sleep Disorder Symptoms and Healthy Lifestyle Behaviors in School Children. Osmangazi Medical Journal, 45(5), 732-746. https://doi.org/10.20515/otd.1344793

Brito, R. (2016). "Who taught you how toplay?", "I did!" Digital practices and skills of children under 6. Media Education, 7(2), 281-302. https://doi.org/10.21764/maeuefd.1081497

Chang, H. Y., Park, E. J., Yoo, H. J. et al. (2018). Electronic media exposure and use among toddlers. Psychiatry Investigation, 15(6), 568. https://doi.org/10.30773/pi.2017.11.30.2

Dinç, M. (2015). Technology addiction and youth. Journal of Youth Studies, 3(3), 31-65.

Domoff, S. E., Miller, A. L., Khalatbari, N. et al. (2017). Maternal beliefs about television and parental mediation in a low income United States sample. Journal of Children and Media, 11, 278–294. https://doi.org/10.1080/17482798.2017.1339102

Furuncu, C., Öztürk, E. (2020). Validity and reliability study of Turkish version of problematic media use measure: A parent report measure of screen addiction in children. Journal of Early Childhood Studies, 4(3), 535–566. https://doi.org/10.24130/eccd-jecs.1967202043

Gentile, D. (2009). Pathological video-game use among youth ages 8 to 18: A national study. Psychological Science, 20(5), 594-602. http://dx.doi.org/10.1111/j.1467- 9280.2009.02340

Hisler, G. C., Hasler, B. P., Franzen, P. L. et al. (2020). Screen media use and sleep disturbance symptom severity in children. Sleep Health, 6(6), 731–742. https://doi.org/10.1016/j.sleh.2020.07.002

Işıkoğlu, N., Erol, A., Atan, A. et al. (2021). A qualitative case study about overuse of digital play at home. Current Psychology, 1–11. https://doi.org/10.1007/s12144-021-01442-y

Kabel, A. M., Al Thumali, A. M., Aldowiala, K. A. et al.

(2018). Sleep disorders in a sample of students in Taif University, Saudi Arabia: The role of obesity, insulin resistance, anemia and high altitude. Diabetes Metabolic Syndrome: Clinical Research & Reviews, 12(4), 549–554. https://doi.org/10.1016/j.dsx.2018.03.024

Karadağ, M., Ursavaş, A. (2007). Sleep studies around the world and in Turkey. Lung Archive, 8, 62-64.

Küçük, Y., Çakır, R. (2020). An Investigation of Middle School Students' Digital Game Addictions in Terms of Various Variables. Turkish Journal of PrimaryEducation, 5(2), 133-154.

Martin, K. (2011). Electronic overload: The impact of excessive screen use on child and adolescent health and wellbeing. Perth, Western Australia: Department of Sport and Recreation.

Merter, Ö. S., Kisecik Şengül, Z., Akay, K. (2025). The effect of the digital world on sleep: Problematic media use and sleep disturbances in school-age children. Anatolian Journal of Health Research, 6(1), 21–26. https://doi.org/10.61534/anatoljhr.1608756

Mustafaoğlu, R., Zirek, E., Yasacı, Z. et al. (2018). The negative effects of digital technology use on children's development and health. Addicta: The Turkish Journal on Addiction, 5, 227–247. http://dx.doi.org/10.15805/addicta.2018.5.2.0051

Ofcom (2017). Media nations: UK. Available from https://www.ofcom.org.uk/research-and-data/media-literacyresearch/childrens/children-parents-2017 (Access date: 2024-08-24).

Özer, Z. (2000). Is sleep the yeast of learning? Science and Technology Magazine, 39, 48–50.

Öztürk, M. O. (2004). Sleep disorders. In Mental Health and Disorders (10th edition, pp. 479–486). Ankara Nobel Medical Publishers.

Papilla, İ., Acıoğlu, E. (2004). Obstructive sleep apnea syndrome. Hippocrates Journal, 13, 387– 391.

Potter A. P., Perry A. G. (2003). Basic nursing esential for practice. England: Mosby.

Rideout, V. (2011). Zero to eight: Children's media use in America. Available from https://www.Commonsensemedia.org/file/zero-to-eight-2013pdf-0/download (Access date: 2024-10-22).

Rideout, V. J., Vandewater, E. A., Wartella, E. A. (2003). Zero tosix: Electronic media in the lives of infants, toddlers and preschoolers.

RTÜK. (2013). Study on children's media usage habits (pp. 1–350). Available from https://www.rtuk.gov.tr/Media/FM/Birimler/Kamuoyu/2013%20Y%C4%B1l%C4%B1%20Ara%C5%9Ft%C4%B1rmalar%C4%B1_0110.pdf (Access date: 2024-08-24).

Schmidt, M. K. (2020). Screen Children (2nd edition, pp. 10–135). Istanbul: Remzi Publishing House.

Şahin, C., Tuğrul, V. M. (2012). An investigation of computer game addiction levels among elementary school students. Zeitschriftfürdie Welt der Türken/Journal of World of Turks, 4(3), 115-130.

Şenol, V., Soyuer, F., Akça, R. P. et al. (2012). Sleep Quality in Adolescents and Influencing Factors. Kocatepe Medical Journal, 14: 93-102. https://doi.org/10.18229/ktd.02830

TÜİK. (2021). Study on the Use of Information Technologies in Children. Available from https://data.tuik.gov.tr/Bulten/Index?p=Cocuklarda-Bilisim-Teknolojileri-Kullanim-Arastirmasi2021-41132/ (2025-06-10).

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

Young, K. S. (1996). Psychology of computer use: XL. Addictive use of the Internet: A case that breaks the stereotype. Psychological Reports, 79(3 Pt 1), 899–902. https://doi.org/10.2466/pr0.1996.79.3.899