

ORIGINAL ARTICLE

The Relationship Between Cyber Wellness and Psychological Resilience in Children: A Cross-Sectional Study

Çocuklarda Siber Sağlık ve Psikolojik Sağlamlık Arasındaki İlişki: Kesitsel Bir Araştırma

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ABSTRACT

Aim: This study aimed to examine the relationship between cyber health and psychological resilience among children.**Methods:** A cross-sectional study design was employed, with data being collected from a sample of 420 middle school students. The Student Cyber Health Scale (SCHS) and the Child and Adolescent Psychological Resilience Scale (CAPRS) were utilized as data collection instruments.**Results:** The study revealed that 87.1% of the children accessed the internet through their phones, with an average usage time of 2.75 ± 2.16 hours. The study found a positive correlation between psychological resilience scores and various cyber health sub-dimensions. Specifically, a series of significant positive correlations were identified, with psychological resilience scores demonstrating positive associations with various aspects of cyber health, including awareness of internet addiction ($r=0.385, p<0.001$), online courtesy ($r=0.414, p<0.001$), online privacy ($r=0.384, p<0.001$), online safety ($r=0.493, p<0.001$), cyberbullying awareness ($r=0.534, p<0.001$), and online inappropriate content awareness ($r=0.450, p<0.001$). An increase of one unit in psychological resilience level was associated with a corresponding increase of 0.534 in cyberbullying awareness score, 0.414 in online kindness awareness score, 0.386 in online privacy awareness score, 0.450 in online inappropriate content awareness score, and 0.443 in online safety awareness score.**Conclusion:** It is imperative to educate children from an early age about the risks and responsibilities associated with online interactions. It is imperative to inculcate a sense of awareness regarding cyber health from the onset of the academic year. To this end, the development and implementation of psychoeducation programs and group training on topics such as media literacy and online privacy protection is recommended.**Keywords:** Children and youth, cyber wellness, psychological resilience

ÖZ

Amaç: Bu araştırmanın amacı, çocuklar arasında siber sağlık ile psikolojik sağlamlık arasındaki ilişkiyi incelemektir.**Yöntem:** Kesitsel bir araştırma olarak gerçekleştirilen bu çalışmada, 420 ortaokul öğrencisinin verileri toplanmıştır. Yeri toplama araçları olarak "Öğrenci Siber Sağlık Ölçeği" ve "Çocuk ve Genç Psikolojik Sağlamlık Ölçeği" kullanılmıştır.**Bulgular:** Araştırma sonuçlarına göre, çocukların %87,1'i internete telefon aracılığıyla girmekte ve ortalama internet kullanım süresi 2.75 ± 2.16 saattir. Psikolojik sağlamlık puanları ile siber sağlık alt boyutları arasında pozitif ilişkiler bulunmuştur. Özellikle, psikolojik sağlamlık ile internet bağımlılığı farkındalığı ($r=0.385, p<0.001$), çevrimiçi nezaket farkındalığı ($r=0.414, p<0.001$), çevrimiçi mahremiyet farkındalığı ($r=0.384, p<0.001$), çevrimiçi güvenlik farkındalığı ($r=0.493, p<0.001$), siber zorbalık farkındalığı ($r=0.534, p<0.001$) ve çevrimiçi uygunsuz içerik farkındalığı ($r=0.450, p<0.001$) arasında anlamlı pozitif korelasyonlar tespit edilmiştir. Psikolojik sağlamlık düzeyindeki her 1 birimlik artış, siber zorbalık farkındalığı puanında 0.534, çevrimiçi nezaket farkındalığı puanında 0.414, çevrimiçi mahremiyet farkındalığı puanında 0.386, çevrimiçi uygunsuz içerik farkındalığı puanında 0.450 ve çevrimiçi güvenlik farkındalığı puanında ise 0.443'lük bir artışa yol açmıştır.**Sonuç:** Çocukların okul yılı başından itibaren siber sağlığa duyarlı hale getirilmesi önemlidir. Bu amaçla, medya okuryazarlığı ve çevrimiçi mahremiyetin korunması gibi konularda psikoeğitim programları ve grup eğitimlerinin planlanması önerilmektedir.**Anahtar kelimeler:** Çocuk ve genç, psikolojik sağlamlık, siber sağlık

Introduction

The advent of the digital age has precipitated a period that has exerted a profound influence on numerous facets of children's lives. This period has afforded children numerous opportunities in various domains, including education, entertainment, socialization, and access to information (1). Therefore, it is imperative to acknowledge the effective utilization of technology by children in these domains. However, the increase in time spent in the digital world introduces potential risks

(2). In this context, the concepts of cyber health and psychological resilience have emerged as significant determinants of children's physical and psychological well-being (3).

The concept of cyber health encompasses the secure, ethical, and informed utilization of digital technologies, playing a pivotal role in the development of contemporary youth. The cultivation of cyber health awareness and the development of relevant skills

in children is instrumental in empowering them to safeguard their well-being against potential threats and hazards encountered in the digital landscape (4). The phenomenon of bullying on online platforms has been shown to have detrimental effects on children, including the development of psychological trauma (5). Sarcastic comments, threats, and experiences of exclusion, especially on social media platforms, have the potential to engender long-term mental health problems in children (6). Furthermore, children may encounter harmful content online, which can have a detrimental impact on their mental well-being. Content containing violence, hate speech, or misinformation can have a detrimental effect on children's mental development (7). Moreover, excessive screen time can lead to various physical health concerns, such as eye strain and a sedentary lifestyle. Additionally, this excessive screen time can result in social isolation (8). The development of addiction to digital games and social media platforms has the potential to adversely impact children's academic achievement and real-world relationships (9). The depiction of idealized lifestyles on social media platforms has the potential to adversely impact children's self-esteem. Consequently, this may result in the development of social anxieties, jealousy, and a negative body perception (10).

Psychological resilience is defined as a set of skills that enhance an individual's ability to cope with challenging life circumstances, leading to personal growth and strength (11). In the contemporary digital landscape, children are particularly vulnerable to the challenges posed by online negativity, underscoring the necessity for this skill (12). Psychological resilience equips children with the capacity to effectively cope with the stress they encounter in the online environment. For instance, in the context of online bullying, a child possessing this skill set can rationalize the incident and seek support when necessary (13). The cultivation of psychological resilience in children has been shown to foster the development of empathy and a more profound understanding of their own emotional experiences (14). These competencies serve as effective instruments for managing adversity in online interactions. Children who possess a robust psychological foundation are better equipped to navigate online environments with confidence. These individuals possess the capacity to articulate their thoughts and feelings with confidence, enabling them to adopt a more assertive stance when confronted with challenging situations (13).

Children may be exposed to problematic behaviors, such as cyberbullying, which can result in psychological, social, and academic negativity (15). For children who have been exposed to negative experiences, psychological resilience is a crucial factor in their ability to recover and cope with these challenges in a healthy manner (16). It is therefore proposed that psychological resilience may be an effective variable in the context of cyber health. A review of the literature revealed no research examining the relationship between the concepts of cyber health and psychological resilience. The concept of cyber health is a significant and timely issue in Turkey. However, the notion of cyber health is addressed based on more specific concepts, such as internet/game addiction, cyberbullying, online kindness, online privacy, online inappropriate content, copyright, and online safety (17,18). It is important to note that cyber health is not studied as a general concept; rather, it is introduced as an important concept in Turkey. In light of these considerations, the objective of this study is to ascertain whether psychological resilience constitutes a significant predictor of cyber health in children, encompassing domains such as internet/game addiction, cyberbullying, online kindness, online privacy, inappropriate content, copyright, and online safety. In line with this general objective, the research questions are as follows:

- 1) Does a significant relationship exist between children's cyber health concepts, including but not limited to internet/game addiction, cyberbullying, online kindness, online privacy, online inappropriate content, copyright, and online safety, and their psychological resilience levels?
- 2) Does psychological resilience act as a significant predictor of cyber health, including such factors as internet/game addiction, cyberbullying, online kindness, online privacy, online inappropriate content, copyright, and online safety, in children?

Material and Methods

Design and Participants

The cohort of this cross-sectional study consisted of a total of 1800 students attending three different secondary schools in a city center in western Turkey during the spring semester of the 2023-2024 academic year. To enhance the heterogeneity of the sample and ensure the generalizability of the findings, schools from diverse socioeconomic backgrounds were purposively selected. The sample size was determined according

to a 5% margin of error and 95% confidence interval, and the probability of occurrence (p) was taken as 0.5 and the probability of non-occurrence (q) as 0.5 to ensure maximum variance. According to these parameters, it was determined that a sample of 317 students would be sufficient for the study. However, the final sample size was 420 secondary school students, which was done to ensure a more comprehensive representation. To ensure a diverse sample, a stratified random sampling method was employed for participant selection. This method aimed to ensure a balanced representation of demographic variables, such as school type and socioeconomic level. The age distribution of the selected students ranged between 10-14 years, and the gender distribution was balanced (52% girls, 48% boys). While the majority of the participants hailed from middle-income families, the study also included students from low and high-income groups. The inclusion criteria for students in the study were as follows: (1) Enrollment in a secondary school (2) Obtaining written parental consent for participation (3) Engaging in data collection sessions organized during the research process (4) Not being in a situation to affect the applicability of the study, such as a communication disorder or cognitive impairment. The students meeting the criteria completed the data collection tools applied within the scope of the study. The representativeness of the study population, both in terms of demographic characteristics and size, enhances the generalizability and validity of the results obtained.

Data Collection

Between January and April of 2024, the current study was carried out in three secondary schools located in a western Turkish city center. The consent form was given to the adolescents' parents in an envelope along with interviews explaining the study's purpose and scope after ethical approval and necessary permissions were obtained from the pertinent institutions. In this manner, the children were extended an invitation to participate. The data were collected using the Student Cyber Health Scale (SCHS) and the Child and Adolescent Psychological Resilience Scale (CAPRS). The data were collected by the researchers on the days and at the times specified by the students' course schedules.

Introductory Information Form

The form examines a range of characteristics on children, including age, gender, the device used to

access the Internet, daily Internet usage time, the presence of an Internet connection at home, the purpose of connecting to the Internet, the practices employed to reduce Internet use, and the effect of Internet use on academic performance.

Child and Adolescent Psychological Resilience Scale (CAPRS)

CAPRS was utilized to assess psychological resilience in adolescents. The scale's original 28-item form was developed based on data collected from 11 countries and consists of three subscales (19). In the context of this study, the scale underwent adaptation. The scale was initially translated into Turkish by Arslan (2015) and subsequently translated back into English by two faculty members from the field of Educational Sciences. The final version of the scale was then determined by comparing the translations of a third faculty member, who possesses proficiency in both languages. Following the translation of the scale, the final version was administered to 422 high school students (mean age = 15.42 years, standard deviation [SD] = 1.48 years, 39.9% female, 48.7% male) aged between 12 and 18 years. The factor structure was examined by confirmatory factor analysis, which indicated that the three-factor structure of the scale produced good fit values. The range of standardized regression values was from 0.37 to 0.74, and the total internal consistency coefficient was 0.92. The range of item-total correlation values was from 0.43 to 0.65, and the internal consistency coefficients for the subscales ranged from 0.80 to 0.82. The analysis demonstrated that the scale is a valid and reliable measurement tool for assessing psychological resilience in adolescents (20).

Student Cyber Health Scale (SCHS)

A psychometric tool called SCHS was created to evaluate middle school students' levels of cyber health. The scale was created to evaluate middle school pupils' levels of cyber health. This scale, which is a four-point Likert-type and self-report-based measurement tool, was developed by Mihçı and Kılıç Çakmak (21). SCHS was deemed to be a valid and reliable instrument comprising seven distinct scales and a total of 54 items. The scales are as follows: Internet addiction awareness, cyberbullying awareness, online courtesy awareness, online privacy awareness, inappropriate content awareness, copyright awareness, and online safety awareness. Participants who obtained a score of 22 or lower on

the Internet Addiction sub-dimension were classified as "Not Aware"; those who obtained a score between 22 and 33 were classified as "Moderately Aware"; and those who obtained a score of 33 or higher were classified as "Highly Aware". The Cyberbullying Scale, which is comprised of eight items, consists exclusively of positive statements. Participants who attained a score of 16 points or less on the Cyberbullying dimension were designated as "Not Aware"; those who scored between 16 and 24 points were classified as "Moderately Aware"; and those who scored 24 points or more were labeled as "Highly Aware". The Online Courtesy sub-dimension, which comprises eight items, is characterized by positive connotations. Participants who attained a score of 16 or less on the Online Civility sub-dimension were designated as "Not Aware"; those who scored between 16 and 24 were labeled as "Moderately Aware"; and those who scored 24 or more were categorized as "Highly Aware." The Online Privacy sub-dimension consists of 4 items, all of which have a positive meaning. Participants who obtained a score of 8 or less on the Online Privacy sub-dimension were classified as "Not Aware"; those who obtained a score between 8 and 12 were classified as "Moderately Aware"; and those who obtained a score of 12 or higher were classified as "Highly Aware". The Inappropriate Online Content sub-dimension consists of seven items, all of which have positive meanings. Participants who obtained a score of 14 points or less on the Online Inappropriate Content sub-dimension were designated as "No Awareness"; those obtaining between 14 and 21 points were classified as "Moderately Aware"; and those attaining 21 points or more were labeled as "Highly Aware". The Copyright sub-dimension, which comprises six items, also manifests positive connotations. Participants who obtained a score of 10 points or less on the Copyright sub-dimension were designated as "Not Aware"; those who attained scores between 10 and 15 points were classified as "Moderately Aware"; and those who achieved scores of 15 points or higher were labeled as "Highly Aware". The Online Safety Scale is comprised of 11 items, with items 3, 5, 6, 8, 9, and 10 exhibiting reversed meanings. These items are scored by reversing them. Consequently, students who attained a score of 22 points or less on the Online Safety dimension were categorized as "Not Aware"; those who scored between 22 and 33 points were designated as "Moderately Aware"; and students who achieved a score of 33 points or more were labeled as "Highly Aware". The Cronbach Alpha coefficients for

each scale are reported to be as follows: 0.82, 0.81, 0.61, 0.60, 0.72, 0.75, and 0.81, respectively. As the scale scores increase, awareness also increases (21). In this study, the Cronbach alpha coefficients were determined to be 0.87, 0.87, 0.74, 0.74, 0.72, 0.72, 0.78, 0.79, and 0.84, respectively.

Statistical Analysis

The analysis of the data was conducted using the Statistical Package for the Social Sciences (SPSS) version 22 in a computerized environment. Descriptive statistics were presented, including the mean, standard deviation, median, minimum, maximum, and percentage values. To assess the normality of the data, the Kolmogorov-Smirnov test was applied. In cases where the data conformed to a normal distribution, pairwise comparisons were performed using a Student's t-test. The Pearson correlation test was utilized to explore the relationships between continuous variables, such as scale scores. Additionally, simple regression analysis was employed to investigate the relationship between psychological resilience and cyber health. A significance threshold of $p < 0.05$ was established as acceptable.

Ethics

The study was carried out in compliance with the ethical guidelines established by the XXX University Social and Human Sciences Ethics Committee (Protocol No. 2024-SBB-0001, Date: 01/02/2024). Authorization for the research was obtained from the Provincial Directorate of National Education. The authors were approached through email to seek permission for the utilization of the scales used in the research. The participating families have thoroughly explained the purpose and method of the research, that participation was voluntary, and that participation or non-participation would not have any negative consequences. The families were informed about how the confidentiality of the data to be collected during the research would be protected and would only be used for scientific purposes. The families were informed that participation in the study was completely voluntary and were given time to address any questions or concerns they might have had. Both written and verbal consent were obtained, with a standard consent form being utilized for the written component. This form explicitly delineated the specifics of the research and the participants' rights. Participants and their families were reminded that they had the right to terminate their participation at any time.

Results

The mean age of the children was 13.76 ± 4.20 years (range 8-12 years), and 51.4% were female. A total of 87.1% of the students accessed the Internet via their mobile phones, with an average daily usage time of 2.75 ± 2.16 hours. Eighty percent of the students had access to the Internet at home. The primary objective of accessing the Internet was to obtain information, as reported by 25.7% of respondents. Twenty-five percent of the students engaged in activities with their families to reduce their Internet usage, while 48.6 percent believed that the Internet had a beneficial impact on their academic performance (Table 1).

Table 1. Characteristics of children (n=420)

	n	%
Age	Mean$\pm$SD=13.76$\pm$4.20	Range=8-12
Gender		
Girl	216	51.4
Male	204	48.6
Device accessing the Internet		
Telephone	366	87.1
Computer	45	10.7
Television	9	2.1
Daily Internet usage time (hours)	Mean$\pm$SD=2.75$\pm$2.16	Range=1-12
Presence of Internet connection at home		
Yes	336	80.0
No	84	20.0
Purposes for connecting to the Internet		
Obtaining information	108	25.7
Playing games	93	22.1
Social media	90	21.4
Watching educational videos	57	13.6
Wasting time aimlessly	72	17.1
The most common practices to reduce or cut Internet use		
Spending time with family	105	25.0
Studying	96	22.9
Talking to my friends	72	17.1
Reading a book	63	15.0
All of them	51	12.1
Eating food	33	7.9
Impact of Internet use on lessons		
Positive	204	48.6
No impact	147	35.0
Negative	69	16.4

SD: Standard deviation

The mean score on CAPRS was found to be significantly correlated with SCHS sub-dimensions of Internet addiction awareness ($r=0.385$, $p<0.001$), online courtesy awareness ($r=0.414$, $p<0.001$), online privacy awareness ($r=0.384$, $p<0.001$), online safety awareness

($r=0.493$), cyberbullying awareness ($r=0.534$, $p<0.001$), and online inappropriate content awareness ($r=0.450$, $p<0.001$) (Table 2).

The results of the regression analysis indicated that, except for the Internet addiction and copyright models, all models were statistically significant ($p < 0.05$) when the corresponding F-value significance level was examined. An examination of the beta coefficient value, t-value, and significance level of the independent variable reveals that the psychological resilience score has a statistically significant effect on cyberbullying ($t=6.856$, $p<0.001$), online courtesy ($t=4.871$, $p<0.001$), online privacy ($t=4.540$, $p<0.001$), online inappropriate content ($t=5.378$, $p<0.001$), and online safety ($t=5.283$, $p<0.001$) scores (Table 3).

The present study sought to investigate the relationship between psychological resilience and children's cyber health awareness levels. Specifically, a one-unit increase in the psychological resilience score was associated with a 0.534-unit increase in the cyberbullying awareness score (Table 3). This finding suggests that individuals with high resilience possess the capacity to more effectively recognize online bullying incidents and cope with such situations. This finding lends further support to the notion that an individual's capacity to resist bullying is directly related to their emotional resilience. An increase of 0.414 units in online kindness awareness suggests that children with high resilience are more inclined to demonstrate positive and constructive communication in online environments (Table 3). The increase of 0.386 units in online privacy awareness demonstrates a correlation between resilience level and individuals' awareness of protecting their digital identities (Table 3). This suggests that enhancing individuals' psychological resilience can equip them with better tools to navigate and withstand the potential risks they may encounter in online spaces. The findings further indicate that individuals with higher resilience demonstrate a greater propensity to adhere to online ethical and safety standards, as evidenced by the increases in awareness of inappropriate content sharing (0.450 units) and online safety awareness (0.443 units) (Table 3). These findings underscore the critical role of psychological resilience in effectively managing online risks and cultivating safe digital habits.

Discussion

The objective of this study was to determine whether psychological resilience serves as a significant predictor

Table 2. The relationship between children's mean scores on the sub-dimensions of the Student Cyber Health Scale and the total scores of the Child and Adolescent Resilience Scale (n=420)

Scales	Mean±SD	1	2	3	4	5	6	7	8
SCH- Internet addiction awareness (1)	25.12±6.03	1							
SCH- Cyberbullying awareness (2)	25.25±4.42	0.004	1						
SCH- Awareness of online courtesy (3)	23.20±3.51	0.082	0.558*	1					
SCH-Online privacy awareness (4)	12.04±2.11	0.015	0.508*	0.511*	1				
SCH- Awareness of inappropriate content online (5)	21.28±3.76	0.054	0.486*	0.349*	0.512*	1			
SCH-Copyright awareness (6)	14.59±2.96	0.056	0.547*	0.505*	0.430*	0.622*	1		
SCHS-Online safety awareness (7)	26.16±4.40	0.374*	0.300*	0.445*	0.420*	0.372*	0.402*	1	
CYPR (8)	38.10±6.35	0.385*	0.534*	0.414*	0.386*	0.450*	0.443*	0.493*	1

SCHS: Student Cyber Health Scale, CYPR: Child and Youth Psychological Resilience Scale, SD: Standard deviation

*p<0.001

Table 3. Regression analysis results for the level of psychological resilience predicting cyber health (n=420)

Model	Variable	B	SE	β	t	p	Model analysis
Internet addiction awareness	Consent	27.197	3.368		8.075	<0.001	R=0.060 R ² =0.005 F=0.424 p=0.516
	Psychological resilience	0.057	0.087	0.060	0.651	0.516	
Cyberbullying awareness	Consent	10.959	2.112		5.188	<0.001	R=0.534 R ² =0.279 F=47.007 p<0.001
	Psychological resilience	0.374	0.055	0.534	6.856	<0.001	
Online politeness awareness	Consent	14.448	1.816		7.956	<0.001	R=0.414 R ² =0.164 F=23.723 p<0.001
	Psychological resilience	0.229	0.047	0.414	4.871	<0.001	
Online privacy awareness	Consent	7.128	1.092		6.529	<0.001	R=0.386 R ² =0.141 F=20.608 p<0.001
	Psychological resilience	0.128	0.028	0.386	4.540	<0.001	
Awareness of inappropriate content online	Consent	11.318	1.884		6.006	<0.001	R=0.450 R ² =0.195 F=28.924 p<0.001
	Psychological resilience	0.261	0.049	0.450	5.378	<0.001	
Copyright Awareness	Consent	21.506	2.505		8.584	<0.000	R=0.178 R ² =0.022 F=3.439 p=0.066
	Psychological resilience	0.121	0.065	0.178	1.855	0.066	
Online safety awareness	Consent	6.886	1.478		4.660	<0.001	R=0.443 R ² =0.190 F=27.911 p<0.001
	Psychological resilience	0.203	0.038	0.443	5.283	<0.001	

of cyber health, which encompasses various aspects such as awareness of Internet and gaming addiction, cyberbullying, online kindness, privacy issues, inappropriate content, copyright concerns, and the safety of children in online environments. The findings indicated that fostering positive behaviors related to cyber health correlates with an enhancement in psychological resilience. This correlation was evidenced by a reduction in the recognition of cyberbullying incidents, an increase in acts of online kindness, an expansion of privacy measures, a decline in the dissemination of inappropriate content, and an improvement in online safety protocols. Within the realm of cyber health, psychological resilience is posited as a robust predictor and a protective factor

(22). SCHC is utilized as a tool for assessing awareness in specific domains pertinent to cyber health (21). As psychological resilience increases, it can be inferred that awareness of positive behaviors linked to cyber health also improves or develops (22). For example, it can be proposed that children with elevated levels of psychological resilience demonstrate a heightened awareness of cyberbullying, which may serve as a protective mechanism against the associated risks (4).

The research demonstrated a notable positive relationship between children's psychological resilience and their understanding of cyberbullying. Additionally, psychological resilience emerged as a crucial predictor of awareness regarding cyberbullying.

In a similar vein, Kabadayı and Sarı(22) examined the influence of psychological resilience on children's experiences with cyberbullying and victimization. Their results corroborate our findings, indicating that psychological resilience is negatively and significantly associated with both cyberbullying and victimization, and it can serve as a significant predictor of cyberbullying. Thus, psychological resilience may act as a strong protective factor against the impacts of cyberbullying (23).

A salient finding of this study is that enhancing psychological resilience among adolescents is associated with an increased awareness of cyberbullying. This finding suggests that individuals with high psychological resilience possess the capacity to more effectively recognize online bullying incidents and develop effective coping strategies. Psychological resilience is defined as an individual's capacity to maintain emotional balance and cope with adversity in stressful situations. The present study's findings are consistent with those of previous research in this field. A study by Güçlü and Çam (24) demonstrated that psychological resilience is associated with a reduced likelihood of individuals becoming victims of cyberbullying, suggesting that those with high resilience are less susceptible to online threats. Likewise, Yiğit and Seferoğlu's (25) study underscored the significance of strategies aimed at enhancing cyberbullying awareness, demonstrating that these strategies facilitate heightened awareness of online bullying incidents among individuals. These studies underscore the protective role that educational programs and interventions aimed at enhancing psychological resilience can play at both the individual and societal levels.

The research revealed a significant positive relationship between children's psychological resilience and their awareness of online privacy. Psychological resilience was identified as a crucial predictor of online privacy awareness. Online privacy refers to an individual's ability to control the degree to which others can access personal information that has been shared online (26). In today's digital landscape, the importance of privacy is increasingly pronounced, as potential violations of online privacy can significantly impact individual behavior (27). Consequently, it is essential to enhance our understanding of individuals' psychological resilience concerning online privacy breaches (28). Psychological resilience may serve as a valuable tool for fostering the ability to manage the

sharing of personal information (23).

The research indicated a positive relationship between children's recognition of inappropriate online content and their psychological resilience levels. Psychological resilience was identified as a crucial predictor of awareness regarding online inappropriate content. This term refers to any material that negatively affects a child's development, such as offensive language, pornographic images, and videos (29). Exposure to such content can lead to harmful effects (27). For instance, many adolescents who encounter sexual imagery online do not report feeling distressed as a result (30). Psychological resilience serves as an essential protective mechanism, reducing the probability of negative emotional responses that may arise from unfavorable online encounters (4). Furthermore, children and adolescents who demonstrate elevated levels of psychological resilience are likely to be less prone to participating in behaviors linked to inappropriate online material, as they possess the capacity to effectively navigate and cope with the challenging situations they encounter (31,32).

The research revealed a notable positive relationship between children's psychological resilience and their awareness of online safety. As the levels of psychological resilience in children increased, so too did their awareness regarding online safety issues. Given that children and adolescents have expanded opportunities to interact with the digital landscape, they are concurrently more susceptible to encountering potentially harmful content (33). Psychological resilience, which is characterized by the ability to effectively navigate online risks and manage the negative repercussions associated with online safety challenges, can act as a protective mechanism against the detrimental emotional effects that may follow an encounter with online risks (34). Children and adolescents exhibiting higher levels of psychological resilience are less prone to experiencing negative outcomes after facing online risks compared to their peers with lower resilience levels (35). This phenomenon can be attributed to their ability to undertake more intentional measures to ensure their safety (4).

In recent years, the relationship between cyber health and psychological resilience has been the subject of increased investigation in Turkey. According to the studies conducted on this subject, individuals with high levels of psychological resilience exhibit greater resistance to online threats and possess a stronger capacity to cope with negative online situations,

such as cyberbullying. Güçlü (36) underscored the correlation between exposure to cyberbullying in adolescents and psychological resilience, asserting that adolescents with high resilience demonstrate superior coping mechanisms in the face of such bullying. Sabancı's (37) examination of adolescents' coping strategies with cyberbullying and their psychological resilience levels further corroborates this finding, asserting that psychological resilience serves as a mitigating factor in the effects of online victimization. The findings of these studies are consistent with the results of the present study.

It has been demonstrated that deliberate actions and coping mechanisms in the digital domain are efficacious in fortifying the association between cyber health and psychological resilience. Çelik and Yılmaz's (38) study, which examined the mediating role of psychological resilience in the relationship between social media addiction and emotional eating, asserted that the level of resilience is a crucial factor in coping with online addiction and emotional difficulties. Moreover, Çekirdekçi and Yılmaz (39) investigated the function of psychological resilience as a protective factor in coping with negative emotional states, such as depression and anxiety. Their findings revealed that the level of resilience also provides significant protection against online safety risks. These findings underscore the necessity of integrating cyber health and psychological resilience training into the education system in Turkey. The integration of strategies aimed at enhancing psychological resilience within the framework of cyber health education programs is poised to empower young individuals, enabling them to navigate the digital landscape with greater safety and well-being (40).

Limitations

The notion of cyber health has emerged as a pertinent topic in Turkey, and the robustness of this research enhances the current body of literature on the subject. Additionally, the application of predictive factors and regression analyses serves as a notable methodological advantage. However, despite these strengths, the study does have its limitations. The sample was limited to three secondary schools within a single urban area, which may restrict the generalizability of the findings to a wider population. Moreover, the dependence on self-reported data constitutes a considerable limitation of the research.

Conclusion

This study demonstrates that children's psychological resilience is a critical factor in safeguarding their cyber health. It plays a protective role in various domains, including online safety, privacy, and coping with cyberbullying. Observations have revealed that children who possess high psychological resilience demonstrate a greater capacity to withstand online risks and can mitigate these risks by engaging in conscious behaviors. This underscores the significance of imparting media literacy and online safety education from an early age, a strategy that has been demonstrated to foster children's cyber health.

The findings of this study provide concrete recommendations for educators, parents, and policymakers. Educators are encouraged to incorporate media literacy and ethical Internet use into their curricula, while also providing guidance and counseling to support the development of psychological resilience in children. Parents, too, should receive training to raise awareness and model appropriate behavior, thereby facilitating the safe management of their children's online activities. Additionally, the development and implementation of national cyber health policies can contribute to enhancing online safety within educational institutions and throughout society.

Finally, the implementation of psychoeducational programs designed to enhance children's psychological resilience is strongly advocated. These programs can be implemented through school-based activities and gamified content on digital platforms. The development of projects in collaboration with local governments and communities has the potential to empower children and families to navigate the online landscape with greater awareness and safety. These recommendations offer a framework for mitigating online risks and empowering children to securely reap the benefits of the digital world.

Declaration of conflicting interests

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