Review

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A Systematic Overview of Adolescents' Smartphone Habits and Internet Addiction During the COVID-19 Era

COVID-19 Döneminde Ergenlerin Akıllı Telefon Alışkanlıklarına ve İnternet Bağımlılık Durumlarına Sistematik Bir Bakış

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ABSTRACT

In order to prevent the spread of the virus during the COVID-19 epidemic period, measures such as maintaining social distance, quarantine practices, and keeping schools closed have been taken in many countries. In this process, individuals' internet use has also increased in order to restore interpersonal relationships that have decreased with staying at home. In addition, the transfer of educational activities, which are risky to be carried out face-to-face during the epidemic period, to online platforms, as in many countries, brought about an increase in the time spent on devices with internet providers in adolescents. For this reason, it is important to evaluate the results of studies examining the concepts of internet and smartphone addiction in relation to the use of the internet in the COVID-19 period. In this context, in this systematic review, *"What is the status of adolescents' smartphone and internet addictions in the COVID-19 Era?"* The question has been tried to be answered. As a result of the searches made in the databases, fourteen studies were reached and these studies were examined in depth. The findings showed that adolescents' internet/smartphone addictions were higher than before the epidemic, the prevalence of internet/smartphone addictions increased in general, and internet/smartphone addictions were associated with adolescents' mental disorders and problems.

Key words: Internet addiction, smartphone addiction, adolescents, COVID-19

ÖZ

COVID-19 salgını döneminde virüsün yayılmasını engellemek için birçok ülkede sosyal mesafeyi koruma, karantina uygulamaları, okulların kapalı tutulması gibi önlemler alınmıştır. Eve kapanmalarla birlikte azalan kişilerarası ilişkileri yeniden sağlamak için bu süreçte bireylerin internet kullanımı da artmıştır. Ek olarak salgın döneminde yüz yüze gerçekleştirilmesi riskli olan eğitim faaliyetlerinin pek çok ülkede olduğu gibi çevrimiçi platformlara taşınması, ergenlerde internet sağlayıcısı olan cihazlarda geçirilen sürede artışı da beraberinde getirmiştir. Bu sebeple COVID-19 döneminde internetin kullanımı ile ilişkili olarak internet ve akıllı telefon bağımlılığı kavramlarının incelendiği araştırmaların sonuçlarını değerlendirmek önem kazanmaktadır. Bu bağlamda bu sistematik derlemede, COVID-19 döneminde artan internet/akıllı telefon bağımlılığı riskinin ergenlerdeki durumunu ortaya koymak için *"COVID-19 döneminde ergenlerin akıllı telefon ve internet bağımlılıklarının durumu nedir?"* sorusu yanıtlanmaya çalışılmıştır. Veri tabanlarında yapılan aramalar sonucunda on dört araştırmaya ulaşılmış olup bu araştırmalar derinlemesine incelenmiştir. Bulgular, ergenlerin internet/akıllı telefon bağımlılıklarının salgın öncesine göre yüksek oranda olduğunu, genel olarak internet/akıllı telefon bağımlılıklarının yaygınlığının arttığını ve internet/akıllı telefon bağımlılıklarının ergenlerin ruhsal bozukluklarıyla ve sorunlarıyla ilişkili olduğunu göstermiştir.

Anahtar sözcükler: İnternet bağımlılığı, akıllı telefon bağımlılığı, ergenler, COVID-19

Introduction

The COVID-19 pandemic continues as an epidemic that affects people of different age groups, resulting in a high infectious rate, increasing daily number of cases and death, worldwide (Munnoli et al. 2021). Each country has produced a variety of solutions to prevent the transmission of the epidemic by ensuring that schools are kept closed except for measures such as quarantine, the obligation to wear masks, the application of social distancing rules, recommendations for personal hygiene,

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travel restrictions, and so on (Harris and Jones 2020, Saurabh and Ranjan 2021). The United Nations Educational, Scientific and Cultural Organization (UNESCO) reported that schools were closed in more than 100 countries in April 2020. Although these measures which are taken to control the virus are necessary, they have caused adolescents to move away from their friends, their extended families and social support networks just like other individuals (Magson et al. 2020). According to Masaeli and Farhadi (2021), an increase in addictions has been observed as a way of coping with the negative emotions that increased with staying at home. It is thought that the use of internet has increased to restore interpersonal relationships (Baltacı et al. 2020) that have decreased with staying at home. In addition, the transfer of educational activities which are risky to carry out face-to-face during the epidemic period to online platforms as in many countries, has led to an increase in the time spent on devices that are internet providers in adolescents (Zhao et al. 2020, Hermantoi and Srimulyani 2021, Rucsanda et al. 2021, Sultana et al. 2021, Wong et al. 2021).

The internet, as a developing global network system; has provided diversity in online activities in addition to making it easier to access information. Activities such as browsing websites, collecting information, downloading files, shopping, communicating through social networks, playing games can be carried out with the Internet on a wide scale (King et al. 2011, Omar et al. 2014, Wong et al. 2015, Fitria 2018, Marsh and Rajaram 2019). From this point of view, depending on the purpose and functional use of the internet, there are advantages as well as disadvantages. For example, if used consciously during COVID-19, social media can provide opportunities to control panic throughout society by obtaining quarantine-related information and realistic advice and preventing misinformation and panic (Arendt et al. 2020). As a matter of fact, in a study conducted by Aydoğdu and his colleagues (2021) with a special group of adolescents during the COVID-19 pandemic, the cognitive construct groups of the participants related to the internet were examined, and it was found that the *"negative impact"* of the internet was the last among the importance of the cognitive construct groups of both male and female participants. In the same study, it was determined that male participants perceived the internet as "facilitator and opportunity provider". However, considering the finding that the age of internet use is gradually decreasing (82.7% for the ages 6-15; Turkish Statistical Institute [TURKSTAT] 2021), it is thought that as younger individuals, adolescents trigger early and willing internet use behavior compared to adults, which can be considered as a significant risk factor in adolescent development (Young 2017). Considering the increasing internet use due to decreased social interaction during the COVID-19 epidemic, the concept of internet addiction or the concepts of pathological internet use, problematic internet use and smartphone use have gained importance.

Internet addiction can be defined in general as excessive and uncontrolled use of the internet and inability to prevent internet use (Dong et al.2020). Li et al. (2021) have found that internet addiction during the epidemic period was 36.7%; severe internet addiction was determined as 2.8% and internet usage increased significantly compared to the pre-epidemic period. Moreover, the intense and problematic use of the internet accessed by smartphones or other providers during the epidemic causes adolescents to encounter some problems. These problems are high levels of depression (Kahraman and Demirci 2018, Dong et al. 2020, Fernandes 2021), anxiety (Kahraman and Demirci 2018, Masi 2020, Duan et al. 2020), weight gain (Chen et al. 2021), suicidal ideation and attempt (Kim et al. 2006), poor interpersonal relationships (Chen et al. 2015, Guo et al. 2020), low academic achievement (Chen et al. 2015), and other emotional and behavioral problems (Lin et al. 2014, Wu et al. 2015, So et al. 2017, Kahraman and Demirci 2018, Ra et al. 2018, Kawabe et al. 2019, Guo et al. 2020, Masi et al. 2020, Jeong et al. 2021, Kaya and Dalgıç 2021).

Problematic internet use and internet addiction seem to be an escape route that individuals use to meet their psychological needs and to relieve their psychological stress, based on the theory of self-determination. This escape can lead to deterioration in the academic and relational fields of individuals (Beard 2015, Wong et al. 2015). Borg-Laufs (2013), inspired by Maslow's (1954) Hierarchy of Needs *(physiological, safety, social needs, need for value/esteem, and self-actualization)*, reports that adolescents have psychological needs that are expected to be met after their physical needs. These needs are defined as orientation/control, maintaining self-esteem, pleasure/avoidance of boredom and attachment. Since the possibilities provided by the Internet make it easier to address these needs, it suggests the fact that adolescents are at risk for enthusiastic use of the internet and, accordingly, internet addiction and internet abuse. The psychological stress and increasing social restrictions caused by the COVID-19 pandemic might lead adolescents to meet their basic psychological needs via the internet. Therefore, it is important to evaluate the results of research examining the concepts of internet addiction, pathological internet use, problematic internet use or problematic smartphone use in relation to the use of the internet during COVID-19. The findings that will be revealed as an outcome of the systematic evaluation of these results will provide clues about the practice of mental health professionals who provide services to adolescents during and after the epidemic. In this context, this systematic review aims to reveal the situation of the increased risk of internet/smartphone addiction in adolescents during COVID-19. Within the scope of this purpose, the question *"What is the status of smartphone and internet addictions of adolescents during COVID-19?"* was tried to be answered.

Method

This study is a systematic review to evaluate the research results on internet/smartphone addiction of adolescents during the COVID-19 epidemic period. Systematic reviews are known as reviews that are conducted within the scope of a certain method, that can be repeated by other researchers, and that have inclusion and exclusion criteria (Karaçam 2013). In this context, searches were made in the databases of Science Direct, Web of Science

(WOS), PUBMED, Scopus and TR Index, which include scientific articles. The keywords *"problematic internet use", "smartphone addiction", "internet addiction"* and *"COVID-19"* were used in these searches. The searches were carried out with the combinations of *"problematic internet use AND COVID-19", "smartphone addiction AND COVID-19"* and *"internet addiction AND COVID-19"* in the article titles for each directory. No date filtering was made in the searches. The study was based on the PRISMA Flow Chart (Page et al. 2021). Articles that meet the criteria of (1) the sample consisting of adolescents, (2) being a research article, (3) being associated with the COVID-19 pandemic are included in the study. In addition, studies were excluded according to the following criteria: (1) The sample being different groups from the adolescents, (2) Being a development study like scale, inventory, etc. apart from the research article. (3) Being a study that measures the effectiveness of a particular program and for which the full text is not available. The PRISMA Flowchart of the study is presented in Figure 1.

Results

As seen in Table 1, 42.85% of the included studies were in China (*n* = 6), 21.42% in Turkey (*n* = 3), 7.14% in Indonesia (*n* = 1), 7.14% in Croatia (*n* = 1), 7.14% in Taiwan (*n* = 1), 7.14% in South Korea (n = 1) and 7.14% in Italy (*n* = 1) has been carried out. In other words, the majority of the studies were conducted in countries belonging to the Asian continent. The number of participants in the studies ranged from 129 (Lee et al. 2021) to 3615 (Duan et al. 2021), with a male/female ratio of 0.78. The lowest average age in the studies was 11.29 ± 0.82 (Chen et al. 2020), while the highest average age was 17.57 ± 1.89 (Lee et al. 2021).

Convenience sampling method in 71.42% (*n* = 10) of the 14 studies included in the review, stratified sampling method in 14.28% (*n* = 2), snowball sampling method in 7.14% (*n* = 1) and purposive sampling method in 7.14% (*n* = 1) were used. When the results were analyzed, it was found that 57.14% of the studies (*n* = 8, Chen et al. 2020, Dong et al. 2020, Duan et al. 2020, Duan et al. 2021, Fung et al. 2021, Serra et al. 2021, Siste et al. 2021, Sarialioğlu et al. 2022) stated that the time spent on the internet increased during the epidemic, while 42.86% of them (n = 6, Lin, 2020, Cui and Chi, 2021, Lee et al. 2021, Ozturk and Ayaz-Alkaya 2021, Peker et al. 2021, Vejmelka and Matković 2021) did not find any evidence on this. In addition, it has been determined that the duration of internet and/or smart phone use varies between 2 hours (Ozturk and Ayaz-Alkaya 2021) and 5 hours (Duan et

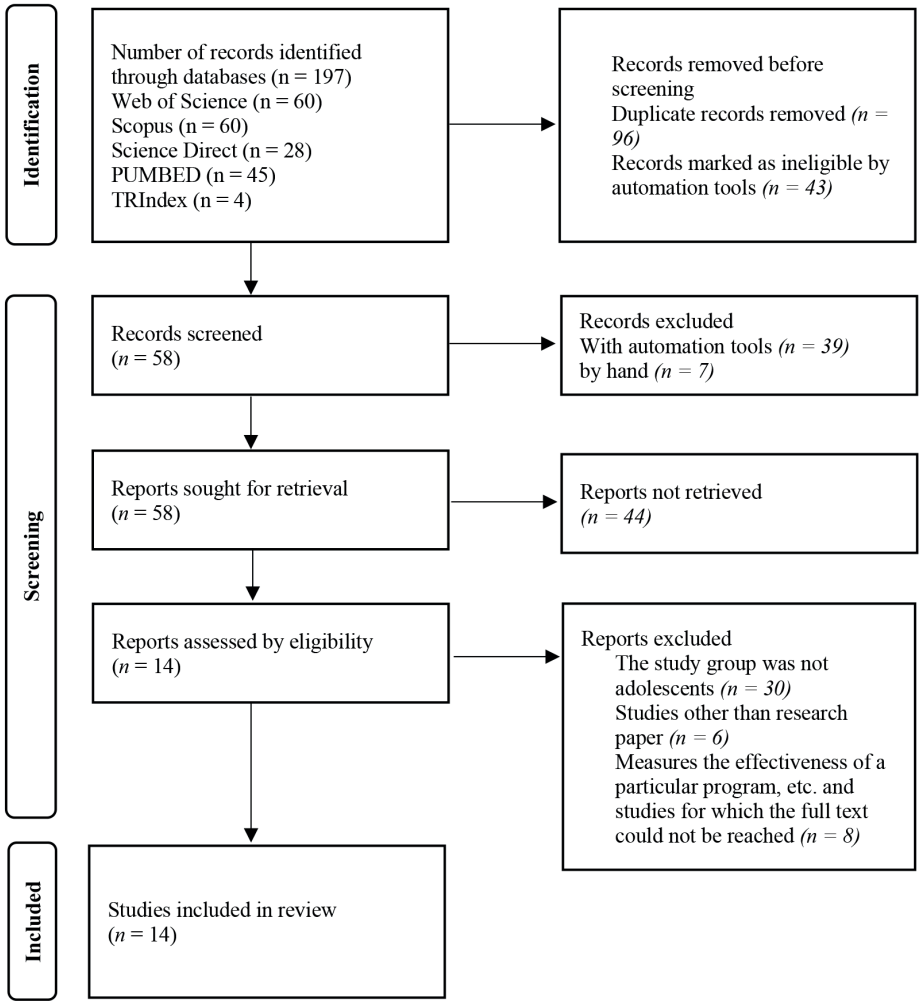

Figure 1. PRISMA Decision Criteria

Table 1. Features of the articles included in the review

N	Author	Country	Participants	Model/Sample	Results
1	Duan et al. (2020)	China	M: (*n* = 1812) F: (*n* = 1801) 7-12 A: (*n* = 359) 13-18 A: (*n* = 3254)	Relational screening Convenience sampling	During the epidemic, close to 30% of participants were online for more than five hours a day. During the epidemic, the time spent online is more than before the epidemic. Both internet addiction and smartphone addiction were found to be moderately positively correlated with depression and anxiety.
2	Duan et al. (2021)	China	M: (*n* = 1799) F: (*n* = 1816) 7-12 A: (*n* = 351) 13-18 A: (*n* = 3264)	Relational screening Convenience sampling	During the epidemic, smartphone addiction was found to be 23.5% among all participants. The number of participants reporting more than 5 hours of smartphone use per day increased after the epidemic. Smartphone addiction rates of female students are higher than male students. Daily smartphone usage time, level of anxiety symptoms and coping type predict smartphone addiction.
3	Sarıalioğlu et al. (2022)	Turkey	M: (*n* = 228) F: (*n* = 254) 10-12 A: (*n* = 58) 13-15 A: (*n* = 176) 16-18 A: (*n* = 248)	Relational screening Snowball sampling	Adolescents were found to have low internet addiction during the COVID-19 pandemic. Internet usage time has increased during the epidemic. They reported that 67.4% of the adolescents used the internet to relieve the loneliness they felt during the epidemic. A low level of positive and significant correlation was found between loneliness and internet addiction.
4	Siste et al. (2021)	Indonesia	M: (*n* = 625) F: (*n* = 2307) AA: 17.38 ± 2.24	Relational screening Convenience sampling	In the study, it was determined that internet addiction increased by 6% compared to the global average before the epidemic. Increased Internet usage time, externalization and internalization problems, decreased prosocial behavior and sleep disorders have been found to increase the risk of internet addiction directly or indirectly as intermediary variables during the pandemic.
5	Chen et al. (2020)	China	M: (*n* = 252) F: (*n* = 252) AA: 11.29± 0.82	Relational screening Convenience sampling	Problematic internet use activities of Group 1 and Group 2 increased over time in groups divided into Group 1 (low), Group 2 (moderate) and Group 3 (high) according to their problematic internet use. During the COVID-19 recovery period, group 1 and Group 2's fear of COVID-19 was found to be higher than Group 3. The change in problematic internet use predicted fear of COVID-19 during the recovery period.
6	Ozturk and Ayaz-Alkaya (2021)	Turkey	M: (*n* = 568) F: (*n* = 1004) 13 A: (*n* = 110) 14 A: (*n* = 630) 15 A: (*n* = 714) 16 A: (*n* = 118)	Relational screening Stratified sampling	The risk of psychosocial problems was found in 20% of the participants, internet addiction in 0.6% and limited internet addiction in 9%. The risk of problematic internet use in boys was found to be higher than that of girls. Participants who use the Internet for three or more hours a day have a higher risk of psychosocial problems than students who use the Internet for 2 hours or less a day.
7	Dong et al. (2020)	China	M: (*n* = 1057) F: (*n* = 993) 6-9 A: (*n* = 420) 10-14 (*n* = 1053) 15-18 (*n* = 577) AA: 12.34 ± 4.67	Relational screening Convenience sampling	Problematic internet use was found in 33.37% of the participants. Internet usage time has increased during the COVID-19 pandemic. Female gender, age, depression and stress were found to be significant predictors of Internet addiction.

Table 1. Continued

N	Author	Country	Participants	Model/Sample	Results
8	Vejmelka and Matković (2021)	Croatia	M: (*n* = 211) F: (*n* = 283) AA: 14.97	Relational screening Convenience sampling	25-30% of the participants spend about four hours a day on online platforms. 14.57% of the participants are moderately internet addicted. Internet addiction scores of female students were higher than male students. 12.75% of the participants were identified as victims, 5.87% as bullies, and 8.3% as both cyber victims and cyberbullies. It has been found that those who engage in, or experience cyberbullying have higher internet addiction scores.
9	Lin (2020)	Taiwan	M: (*n* = 542) F: (*n* = 504) AA: 14.66 ± 0.86	Relational screening Stratified sampling	Internet addiction of the participants was found to be 24.4%. High impulsivity, high virtual support, old age, low subjective well-being, low family functioning and high alexithymia predict participants' internet addiction scores.
10	Fung et al. (2021)	China	M: (*n* = 247) F: (*n* = 242) AA: 11.60 ± 0.74	Relational screening Convenience sampling	The problematic smartphone use of the participants was found to be high during the epidemic period. The relationship between problematic social media use and depression and anxiety increased consistently across all three measures.
11	Lee et al. (2021)	South Korea	M: (*n* = 129) AA: 17.57 ± 1.89	Relational screening Purposive sampling	A positive correlation was found between smartphone addiction and depression levels of low-income boys. This relationship is strengthened in the participants who are the only child of the family.
12	Serra et al. (2021)	Italy	M: (*n* = 52) F: (*n* = 132) 6-12 A: (*n* = 39) 13-18 A: (*n* = 145) AA: 14.84 ± 2.73	Relational screening Convenience sampling	Compared to before the epidemic, more frequent use of smartphones was observed. This frequent use has been associated with addiction. Excessive smartphone use has been associated with physical, psychological, and social problems.
13	Peker et al. (2021)	Turkey	M: (*n* = 228) F: (*n* = 304)	Relational screening Convenience sampling	Life satisfaction and subjective vitality mediated the relationship between fear of COVID-19 and problematic internet use.
14	Cui and Chi (2021)	China	M: (*n* = 1086) F: (*n* = 1458) AA: 16.29 ± 0.75	Relational screening Convenience sampling	Post-traumatic stress disorder and psychological resilience mediated the negative relationship between social support and internet addiction. In this model, internet addiction scores decrease with increased psychological resilience and social support; with the decline in symptoms of post-traumatic stress disorder.

Note. M = Male, F = Female, A = Age, AA = the Average Age

al. 2020) per day in the studies. In addition, the frequency of internet and/or smartphone addiction was determined as; 0.6% (Ozturk and Ayaz-Alkaya 2021), 14.57% (Vejmelka and Matković 2021), 23.50% (Duan et al. 2021), 24.40% (Lin 2020) and 33.37% (Dong et al. 2020). In other words, the rate of internet/smartphone addiction in studies ranges from 0.6% to 33.37%. In terms of gender, 21.42% (*n* = 3) of the studies reported that females are more (Dong 2020, Duan et al. 2021, Vejmelka and Matković 2021); and 7.14% (*n* = 1) of the studies reported that males (Ozturk and Ayaz-Alkaya 2021) are more internet/smartphone addicts.

When the variables associated with Internet/Smartphone addiction were examined, it was detected that in 28.57% of the studies, depression (*n* = 4, Dong et al. 2020, Duan et al. 2020, Fung et al. 2021, Lee et al. 2021) in 21.42% of it, loneliness; in 57.14% of it, anxiety disorder (*n* = 3, Dong et al. 2020, Duan et al. 2020, Fung et al. 2021), in 7.14% of it, post-traumatic stress disorder (n = 1, Cui and Chi 2021) , in 57.14% of it, externalization-internalization problems, sleep disorders, decrease in prosocial behaviors, fear of COVID-19, cyberbullying, decrease in life satisfaction, decrease in subjective well-being (*n* = 8, Lin 2020, Chen et al. 2021, Cui and Chi 2021, Ozturk and Ayaz-Alkaya 2021 Peker et al. 2021, Serra et al. 2021, Siste et al. 2021, Vejmelka and Matković 2021, Sarialioğlu et al. 2022) are associated with internet and/or smartphone addiction.

Discussion

In this study, studies examining smartphone and internet addictions of adolescents during the COVID-19 epidemic were evaluated. In this context, fourteen articles that met the inclusion criteria of the study were examined in depth. The number of participants of the evaluated studies ranged from 129 to 3615; the average age ranges from 11.29 to 17.57. The majority of the studies discussed were conducted in China, but also in Asian countries such as Turkey, Indonesia, Taiwan, and South Korea. In addition, two of the studies were carried out in Italy and Croatia, which are European countries. The concentration of studies on internet/smartphone use in Asian countries might be related to the greater interest of researchers in this issue. When studies in which pre-pandemic country comparisons are examined, it is seen that there are findings similar to this view (Tang et al. 2018, Zhang and McDowell 2008).

In the studies handled within the scope of the systematic evaluation, it was found that the average daily internet usage time was between 2 and 5 hours (Duan et al. 2020, Ozturk and Ayaz-Alkaya 2021) and the time spent on the internet during the epidemic increased compared to the previous period (Chen et al. 2020, Dong et al. 2020, Duan et al. 2020, Duan et al. 2021, Fung et al. 2021, Serra et al. 2021 Siste et al. 2021, Sarialioğlu et al. 2022). As another finding, the prevalence of internet/smartphone addiction was found to be high at different rates (Dong et al. 2020, Lin, 2020, Duan et al. 2021, Ozturk and Ayaz-Alkaya 2021, Vejmelka and Matković 2021). Considering these findings, it can be said that the increase in internet usage rates is an expected result due to decreased social relations during the COVID-19 period, the uncertainty of the virus, and the continuation of educational activities online. It can be stated that adolescents turn to the internet or smart phones in order to meet their psychological needs via the internet and to reduce their psychological stress caused by the COVID-19 epidemic. As a matter of fact, it is known from the literature that loneliness is associated with problematic use of the internet in connection with declining social relations (Fernandes et al. 2020). Similarly, it is seen in previous studies that the internet was used extensively to meet psychological needs (eg, Wong, 2015). However, considering that the studies examined were conducted in the relational model, qualitative studies based on adolescents' self-reports are needed in order to reach a definite opinion.

In four of the studies evaluated within the scope of this study, findings regarding gender were obtained (Dong 2020, Duan et al. 2021, Ozturk and Ayaz-Alkaya 2021, Vejmelka and Matković 2021). Accordingly, it was found that internet/smartphone addiction did not differ significantly in favor of any gender. This finding overlaps with the results of previous studies in the literature. In the literature there are studies reporting that boys are addicted to the internet/smartphone more than girls (Park and Jeon 2013, Ha and Hwang 2014); girls are more addicted to the internet/smartphone than boys (Durkee et al. 2012, Casaló and Escario 2019, Procházka et al. 2021), and there are also studies stating that there is no difference in both genders (Chang and Law 2008). From this point of view, it can be concluded that there are different mediating/confounding variables that affect the relationship between internet/smartphone addiction and gender. For example, this mediator variable might be attention deficit and hyperactivity disorder (Kahraman and Demirci 2018) or there might be a problem such as the presence of depressive symptoms (Lee et al. 2021). There is a need for meta-analysis studies examining the mediating variables in order to reach a definite opinion on this issue.

In this systematic review, internet/smartphone addiction has been found as associated with concepts such as; depression (Dong et al. 2020, Duan et al. 2020, Fung et al. 2021, Lee et al. 2021), anxiety disorder (Dong et al. 2020, Duan et al. 2020), Fung et al. 2021), post-traumatic stress disorder (Cui and Chi 2021), loneliness (Sarialioğlu et al. 2022), externalization-internalization problems (Siste et al. 2021), sleep disorders (Siste et al. 2021), decrease in prosocial behaviors (Siste et al. 2021), fear of COVID-19 (Chen et al. 2021, Peker et al. 2021), cyberbullying (Vejmelka and Matković 2021), decrease in life satisfaction (Peker et al. 2021) and decreased subjective well-being (Peker et al. 2021). In all studies, internet/smartphone addictions of adolescents were found to be associated with mental disorders, as in the results of previous studies (Fernandes et al. 2020, Huckins et al. 2020, Alheneidi et al. 2021, Chen et al. 2021, Hallauer et al. 2021, Jahan et al. 2021, Li et al. 2021, Nakayama et al. 2021). This situation makes us think that the internet is used more frequently to cope with existing mental problems and that some mental problems might occur due to internet/smartphone addiction. In other words, there might be a causal relationship between adolescents' internet/smartphone addiction and mental problems and disorders. However, regardless of the origin of the causal relationship, it can be said that the internet and smart phones bring along various developmental risks due to the inappropriate use of adolescents and require psychosocial support of adolescents.

This review article contains several limitations. The first of these limitations; the use of convenient sampling method in the majority of the studies discussed, and the use of the relational model in all of the studies. Secondly, since the majority of the screened studies are located in the Asian continent, it is not possible to generalize at the global level. For these limitations, mixed/qualitative studies with international comparisons can be carried out in the future.

Conclusion

In conclusion, as a result of this systematic review, it can be stated that both the duration of internet use and the prevalence of internet/smartphone addictions of adolescents increased during the COVID-19 period. However, no gender difference was found for internet/smartphone addiction in studies. In addition, internet/smartphone addictions in adolescents have been found to be associated with mental disorders, especially depression, anxiety disorders and post-traumatic stress disorder. When these findings are evaluated together, internet/smartphone addiction

can be considered as a risk factor for adolescents during the COVID-19 period. Therefore, parents can be supported to create norms at home in order to reduce the adolescent's internet use time, to develop effective parenting skills, and to spend quality time with the adolescent. While planning school guidance services, school psychological counselors can create specific goals and carry out preventive studies on the conscious use of technology for school counselors, parents, and students. Apart from this, school counselors can carry out psycho-educational groups or group counseling studies on the conscious use of technology for these students by identifying students at risk of internet addiction in their schools through scales or with the opinions of teachers and parents. These studies are important in terms of making positive contributions of peers to each other. In addition, non-governmental organizations can increase their efforts to raise social awareness about the consequences of internet/smartphone addiction.

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