

RESEARCH ARTICLE

The Correlates of Psychological Resilience in Turkish Adolescents During The COVID-19 Pandemic: A Systematic Review

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Abstract

Adolescents, already in a vulnerable state due to the challenges of adolescence, were among risk groups to develop psychosocial and emotional problems during the COVID-19 pandemic. Research conducted with adolescents identified psychological resilience as one of the protective factors which helped them cope better with pandemic-related adversities. The aim of this systematic review is to determine the correlates of Turkish adolescents' psychological resilience to gain a better understanding of its protective role during the pandemic. Using the related keywords (Turkish adolescents, students, psychological resilience, COVID-19 Pandemic) and limiting the publication period as 2020-2024, a database search was conducted, in which 340 articles were identified. 10 articles that met the eligibility criteria were included in the systematic review. By reviewing the articles systematically, doing exercise, emotional flexibility, spirituality, hope, parental and peer support, financial support, psycho-education programs supporting pandemic-specific coping, and certain personality traits including openness to new experience, extraversion, conscientiousness, and agreeableness were identified as variables that are positively correlated with psychological resilience. On the other hand, fear of COVID-19, anxiety, depression, post traumatic stress disorder (PTSD), smartphone addiction, playing digital games, online education, exam anxiety and neuroticism are variables that have negative correlation with psychological resilience. Based on the results, it appears that during the COVID-19 pandemic, psychological resilience, in relation with other individual and social/contextual protective factors, functioned as a psychological buffer against psychological problems for Turkish adolescents.

Keywords: Turkish adolescents, students, psychological resilience, COVID-19 Pandemic

Öz

Ergenlik döneminin zorlukları nedeniyle zaten kırılabilir bir durumda olan ergenler, COVID-19 salgını sırasında psikososyal ve duygusal sorunlar geliştirme açısından risk grupları arasında yer almıştır. Ergenlerle yapılan araştırmalar, psikolojik sağlamlığı, pandemiyle ilgili olumsuzluklarla daha iyi başa çıkmalarına yardımcı olan koruyucu faktörlerden biri olarak tanımlanmaktadır. Bu sistematik derlemenin amacı, pandemi sırasında Türk ergenlerin psikolojik sağlamlığının koruyucu işlevini daha iyi anlayabilmek için ilişkili olduğu değişkenleri belirlemektir. İlgili anahtar sözcükler (Türk ergenler, öğrenciler, psikolojik sağlamlık, COVID-19 Pandemisi) kullanılarak ve yayın tarihi 2020-2024 arası olarak belirlenmiş veritabanı taramasıyla 340 makaleye ulaşılmıştır. Uygunluk kriterlerine göre belirlenmiş toplam 10 makale sistematik derlemeye dahil edilmiştir. Psikolojik sağlamlığın pozitif yönde ilişkili olduğu değişkenler; egzersiz yapma, duygusal esneklik, maneviyat, umut, ebeveyn ve akran desteği, finansal destekpandemiyle başa çıkma becerilerini destekleyici psikoeğitimler olarak belirlenmiştir. Yeni deneyimlere açıklık, dışadönüklük, vicdanlılık ve uyumluluk kişilik faktörleriyle de pozitif yönde ilişkili çıkmıştır. Öte yandan, ergenlerde psikolojik sağlamlık arttıkça, COVID-19 korkusu, anksiyete, depresyon, travma sonrası stres bozukluğu (TSSB), akıllı telefon bağımlılığı, dijital oyun oynama, online eğitim, sınav kaygısı ve nevrotikliğin azaldığı görülmektedir. Sonuçlar, COVID-19 pandemisinde, psikolojik dayanıklılığın, diğer bireysel ve sosyal/bağlamsal koruyucu faktörlerle birlikte, Türk ergenlerde, psikolojik sorunlar geliştirmeye karşı psikolojik tampon işlevi gördüğüne işaret etmektedir.

Anahtar Kelimeler: Türk ergenler, öğrenciler, psikolojik sağlamlık, COVID-19 Pandemisi

Introduction

The COVID-19 pandemic, which started in Wuhan, China in 2019, rapidly spread and ended up affecting over 200 countries worldwide (World Health Organisation, WHO, 2020). Being a novel, highly contagious, and infectious disease, the COVID-19 pandemic sparked significant fear, stress, and many other psychological problems among people (Liu et al., 2020; Yıldırım et al., 2020). This rapidly growing panic atmosphere, forced governments to take very strict preventive measures such as social distancing, school closures, remote working, online education, curfews, forbidding big social gatherings, concerts, and sports events, etc. which significantly altered the daily life routines of individuals as well as the entire societies (Brooks et al., 2020). Studies have revealed that the long-term effects of the COVID-19 pandemic continue to affect people and the scope and severity of these effects vary across different age and risk groups (Brooks et al., 2020; Loades et al., 2020).

Adolescence, a period of rapid physiological and emotional changes and development, can be a challenging period. During this difficult and critical period, adolescents are more vulnerable to stressful life events, especially if they lack healthy and effective coping skills (İme & Ümmet, 2022). The long-term effects of traumatic and/or negative experiences during a developmentally critical period such as adolescence can be significant (Ellis & Zabatany, 2017; Gotlib et al., 2021). Stressful life events during adolescence was found to be related with increased psychological problems such as depression, substance use, criminal behaviors, academic problems and problems with friends and family members (Hsieh et al., 2016; Murray et al., 2019).

The COVID-19 pandemic, with its prevention measures and regulations significantly disrupted the psycho-social development of adolescents (Ho, et al., 2020). During adolescence, children normally tend to spend more time with their friends and peer groups away from home and parents which is crucial for gaining independence and autonomy, two important developmental tasks of adolescence (Ellis & Zabatany, 2017). However, due to the COVID-19 pandemic regulations and preventive

measures such as online schooling and curfews, adolescents experienced many restrictions on their daily life routines, which, by significantly limiting face-to-face socialization with peer groups and friends, disrupted their autonomy and independence development (Nagata, 2020). Moreover, they started to spend more time on using their digital devices mainly due to online schooling but also to socialize, entertain and keep in touch with their friends and peer groups (Ay Yılmaz et al., 2022; Zhao et al., 2020). As a result of spending more time at home and online, problematic digital behaviors such as video games, social media, and smartphone addictions increased among adolescents during the COVID-19 pandemic (Dong et al., 2020; Li et al., 2021).

Being exposed to different kind of COVID-related stressors led to a significant increase in adolescents' emotional distress (Branje & Morris, 2021). Compared to the other underaged groups, adolescents were found to be the group who experienced the highest increase in emotional problems during the pandemic (Schmidt et al., 2021). Especially due to being socially isolated from peers, teachers, and friends due to COVID-19 restrictions, social distancing, and online schooling, adolescents experienced an increase in a variety of psychological problems such as anxiety (Zhou et al., 2020; Chen et al., 2020; Eroğlu & Yakşi, 2021), depression (Chen et al., 2020; Demir & Çiftçi, 2020; Oosterhoff et al., 2020; Xie et al., 2020), stress (Rosen et al., 2020; Branje & Morris, 2021; Eroğlu & Yakşi, 2021), fear (Döğter et al., 2022; Oosterhoff et al., 2020), a decrease in psychological resilience (Çelebi, 2020; Legido-Quigley et al., 2020; Karaaslan, 2021), hopelessness (Erdoğan et al., 2020), loneliness (Çetin & Anuk, 2020; Orben et al., 2020; Loades et al., 2020), somatic symptoms (Liu et al., 2020; Karaaslan, 2021), social anxiety (Morrisette, 2020) and sleep problems (Jiao et al., 2020).

Despite experiencing many COVID-related stressors alongside the challenges of adolescence, adolescents who are more psychologically resilient seem to be less affected and showed better adaptation to all the new changes and disruptions caused by the COVID-19 pandemic (Noyola et al., 2024). Psychological resilience is defined as the capacity to continue growth and healthy

development in the face of negative and/or traumatic experiences (Masten, 2018). Rather than being innate and fixed, psychological resilience is a dynamic and improvable capacity, in which certain individual, social and contextual factors, which are called *promotive factors*, interact with each other and help the individual cope better with the adverse psychological effects of risk factors (Zimmerman, 2013). The promotive factors fall under two main categories: *assets* and *resources*. *Assets* can be described as positive and protective factors at the individual level such as self-esteem and self-efficacy whereas *resources* refer to positive social and contextual factors such as parental support, having good role models, and intervention programs. Risk factors, on the other hand, can be described as individual, familial, and environmental factors which prevent or disrupt the process of healthy development for an individual (Zimmerman, 2013). In this sense, the COVID-19 pandemic, with its significant and large-scale effects on the daily life routines, causing high levels of stress and disrupting the developmental tasks, is a risk factor for the healthy psychosocial and emotional development of adolescents (Shanafelt et al., 2020; Scott et al., 2021).

Studies show that being psychologically resilient functioned as a psychological buffer by helping adolescents cope better with pandemic-related adversities, adapt more easily to the new circumstances as a result of COVID-19 prevention regulations and protected them from developing psychological problems (Doom et al., 2023; Shi et al., 2022; Grazzani et al., 2022). Similarly, studies conducted with Turkish adolescents show that being psychologically resilient helped adolescents cope better with the psychological distress caused by COVID-related stressors (Yıldırım & Arslan, 2020) and showed lower levels of psychological problems such as depression, anxiety, stress, and somatic symptoms (Bilge & Bilge, 2020; Bozdağ, 2020; Çetin & Anuk, 2020; Yıldırım & Kumcağız, 2021).

In a review study by Doom et al. (2023), individual, and social/contextual resilience factors and interventions that helped adolescents to be more psychologically resilient against COVID-related stressors and psychosocial problems were

reviewed and listed. Some of the individual promotive factors which studies showed helped adolescents to cope better and to experience less depression, anxiety, stress symptoms, and internalization problems included: emotional regulation (Breux et al., 2021), emotional flexibility (İme & Ümmet, 2022), cognitive reappraisal and self-enhancing humor (Kuhlman et al., 2021), problem-focused coping (Stein et al., 2023), as well as protective behaviors such as physical activity and exercising (Magson et al., 2020), spending time in nature (Jackson et al., 2021), and digital socialization (Camerini et al., 2022). Besides individual factors, social protective factors such as parental support (Luthar et al., 2021), parental warmth (Wang et al., 2022), better adolescent-parent relationship quality (Martin-Storey et al., 2021), support from teachers and peers (Zhu et al., 2022) were found to be related with lower psychological problems and higher emotional well-being.

Therefore, examining the different correlates of psychological resilience and its role in protecting adolescents from the negative effects of COVID-19 pandemic is important in gaining a better understanding of the protective factors that helped adolescents cope better with the difficulties caused by the pandemic-related stressors. This understanding is crucial for developing effective intervention programs that will support adolescents' psychosocial and emotional wellbeing and psychological resources in the post-covid era (Magson et al., 2020; Xing et al., 2023).

The purpose of this systematic review is systematically reviewing the resilience studies conducted with Turkish adolescents (11-18 years of age) during the COVID-19 pandemic that specifically examined the relationship between psychological resilience and different variables. By reviewing these studies systematically, it was aimed to provide an answer to the following questions: What are the correlates of psychological resilience identified in these studies and how did they influence the psychosocial and emotional wellbeing of adolescents during the COVID-19 pandemic?

The results of this systematic review are expected to provide a more thorough

understanding of the effects of the COVID-19 Pandemic on Turkish adolescents' psychosocial and emotional well-being and the protective role of psychological resilience in relation to different variables. Moreover, it is expected that the results of this review will contribute to the development of more effective and realistic intervention programs, specifically tailored to the psychosocial and emotional needs of adolescents in order to support their psychological resilience capacity in the post-covid era.

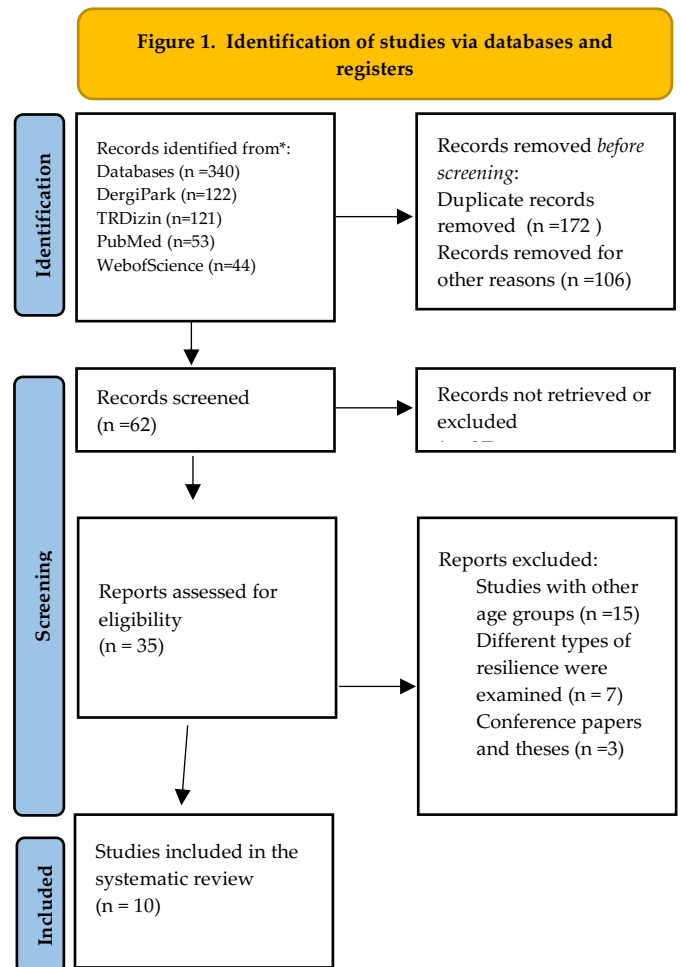
Methods

TRDizin, DergiPark, WebofScience, and PubMed databases were searched to identify the research articles to include in the systematic review. The search period was limited to 2020-2024, beginning from the year the COVID-19 pandemic outbreak was officially announced in Türkiye (March 11th, 2020) until the present. The protocol followed in the current systematic review, as shown in Figure 1, was shaped according to Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines, which is one of the widely used methods for presenting the results of systematic reviews (Moher et al., 2009; Page et al., 2021). While searching the databases, several keywords were used both in Turkish and English in different combinations: "Psychological resilience", "Turkish adolescents", "students", "COVID-19", "pandemic" and "Turkey".

Articles were selected according to the following criteria: i) research articles that were reached via selected databases; ii) sample groups that consisted of adolescents attending middle school and/or high school; iii) studies conducted between 2020-2024; iv) psychological resilience was examined in relation to the COVID-19 pandemic; v) Studies conducted in English or Turkish with only Turkish adolescent sample groups.

The exclusion criteria for the current systematic review were determined as a) studies conducted before 2020 b) articles published in a language other than Turkish or English c) studies that did not examine psychological resilience during the COVID-19 pandemic d) Studies conducted with university students and/or adult groups e) if the

article was not accessible as full text f) studies that were not research articles. The PRISMA Flowchart is presented in Figure 1.



Results

The sample group sizes for the studies ranged from 12 (Yıldırım & Kumcağız, 2021) to 3704 (Söner & Gültekin, 2021) adolescents, in which females constituted 57.7% and males 42.3% of the total number of participants. The average age range for the participants was between 9.92 (Akgül, 2022) and 17.78 (Yıldırım & Çiçek, 2022). Six out of 10 studies included in the review used a correlational descriptive research design model as their method of research (Döğler et al., 2022; Demir & Çiftçi, 2020; Eroğlu & Yakşi, 2021; Acar & Han, 2022; Söner & Gültekin, 2021; Akgül, 2022). One of the studies used explanatory sequential mixed methods as its research design (Erol & Erduran Tekin, 2021), 1 experimental study used a single group pre-test/post-test experimental design (Yıldırım & Kumcağız, 2021), 1 study used confirmatory factor

Table 1. An overview of studies that are included in the systematic review

Author, Year	Population(F/M)	Mean Age	Methodology	Comparators	Findings
Döger et al (2022)	n:45 adolescents (F:28, M:17)	Age 14-18 (Xage= 15.82)	-Quantitative - Correlational descriptive research model -convenience sampling	fear of COVID-19, psychological resilience	When fear of COVID-19 scores increases psychological resilience scores decreases. Lower scores of family support, peer support, perseverance and empathy dimensions were correlated with higher scores of covid-19 fear.
Akgül (2022)	N:199 gifted students F:103, M:96	Xage: 9.92 ± 1.52	-Quantitative - Correlational descriptive research design -convenience sampling	psychological resilience, anxiety, playing digital games, physical activity	-For the whole sample: Anxiety was negatively correlated with resilience. Participants who engaged more in physical activity had lower anxiety scores. For boys: Anxiety was negatively correlated with doing physical activity and positively correlated with playing digital games. Psychological resilience was negatively correlated with playing digital games and positively correlated with doing physical activity.
Acar & Han (2022)	N:512 high school students F: 71,3%, M:28,7% (365) (147)	Age: 14-18	-Quantitative - Correlational descriptive research design -convenience sampling	spirituality, psychological resilience, gender	Boys had significantly higher psychological resilience level compared to girls. Girls' spirituality levels were significantly higher than boys'. Participants whose parents were living together had significantly higher level of spirituality than those whose parents were seperated. Spirituality was positively correlated with psychological resilience.
Yıldırım & Çiçek (2022)	N:508 F:53.9%, M:46.1% (274) (234)	Xage=17.78±1.11	-Quantitative -Cross-sectional study -correlational descriptive analysis and mediation analysis -convenience sampling	fear of Covid-19, smartphone addiction, psychological resilience	Fear of Covid-19 was positively correlated with smartphone addiction and negatively correlated with resilience, resilience had significant negative correlation with smartphone addiction, resilience partially mediated the relationship between fear of covid-19 and smartphone addiction, Girls had lower levels of resilience while also showing higher levels of covid-19 fear and smartphone addiction than boys.
İme & Ümmet (2022)	N: 833 high-schoolers F:423, M:410	Xage: 16.06 ± 0.66	-Quantitative - Confirmatory factor analysis and correlational descriptive research method and mediation analysis -convenience sampling	emotional flexibility, subjective well-being, psychological resilience	Emotional flexibility was significantly positively correlated with both subjective well-being and resilience. Subjective well-being mediated the relationship between emotional flexibility and resilience.
Eroğlu & Yakşı (2021)	N:52 (whose mom and/or dad had covid infection in the last 3 months) F: 27, M:25	Xage: 12	-Quantitative - Correlational descriptive research model -purposive sampling	one or both parents infected with Covid-19, depression, anxiety, post-traumatic stress disorder (PTSD),	Depression, anxiety and PTSD symptoms were strongest when both parents were infected and put into isolation in hospitals instead of home treatment. Depression, anxiety and PTSD scores were higher for children whose mothers were infected and isolated than those whose fathers were put into isolation. Significant and negative correlations were found between anxiety, depression, PTSD levels and psychological resilience scores.

				psychological resilience	
Yıldırım & Kumcağız (2021)	N: 12 middle school students F:7, M:5	Age group: 11-14	-single group pre-test and post-test experimental design -purposive sampling	Psycho-Education Program in Combating Epidemic, fear of Covid-19, psychological resilience	After attending the Psycho-Education Program in Combating Epidemic, fear of Covid-19 scores significantly decreased and psychological resilience scores significantly increased.
Erol & Erduran Tekin (2021)	N:401 high school students F: 175, M:226	Not mentioned	-explanatory sequential mixed methods research design, -Convenience sampling	online education, exam anxiety, psychological resilience	Quantitative results: Participants' average score for exam anxiety was higher than the average score assigned for the test, meaning that they had high exam anxiety. Girls had higher exam anxiety scores compared to boys. Participants' average score for psychological resilience was higher than the average score assigned for the test, meaning that they had high psychological resilience. There was no significant difference between girls' and boys' psychological resilience scores. Qualitative results: Participants reported that their exam anxiety increased during Covid-19 pandemic due to difficulties of online education, low motivation and concentration, higher stress, less regular studying and high health concerns/ fear caused by covid-19. Participants also reported that they felt less psychologically resilient during the pandemic due to social isolation, pandemic restrictions, fear of covid and losing loved ones, anxiety.
Söner & Gültekin (2021)	N:3704 high school students F: 2227 (%60,1) M: 1477 (%39,9)	Age group: 14-18	-Quantitative - Correlational descriptive research design -convenience sampling	hope, psychological resilience, personality traits	Hope was positively associated with resilience. Participants who did not need psychological or financial support had higher levels of hope and psychological resilience than those who needed them. Having a family member infected with Covid-19 or who lost his/her job was associated with lower hope and psychological resilience. Those who were high in neuroticism had lower psychological resilience and hope whereas those who were high in openness to experience, extraversion, conscientiousness and agreeableness had higher psychological resilience and hope.
Demir & Çiftçi (2020)	N:223 high school students (F:116, M:107)	Age Xage=16.18 ±1.06	-Quantitative - Correlational descriptive research model -convenience sampling	psychological resilience, exercise status, preferences and frequency, gender of adolescent	Girls' psychological resilience level is higher than boys. Psychological resilience level significantly differed according to exercise status and frequency in favor of participants who exercised regularly and more frequently during the pandemic.

analysis and correlational descriptive analysis methods together (İme & Ümmet, 2022) and 1 cross-sectional study used correlational descriptive analysis and mediation analysis as its research method (Yıldırım & Çiçek, 2022). When it comes to the method of reaching the participants in the studies convenience sampling method was used as the sampling method in 8 out of 10 studies (Döğer et al., 2022; Demir & Çiftçi, 2020; Yıldırım & Çiçek, 2022; İme & Ümmet, 2022; Erol & Erduran Tekin, 2021; Acar & Han, 2022; Söner & Gültekin, 2021; Akgül, 2022). The purposive sampling method was used in the remaining 2 studies (Eroğlu & Yakşi, 2021; Yıldırım & Kumcağız, 2021). In all of the studies included in the review, the data was collected during the COVID-19 pandemic.

As can be seen in table 1, the studies included in this systematic review, which focus on the psychological resilience of adolescents during COVID-19 pandemic showed that psychological resilience was correlated with different variables. These variables can be categorised as risk and protective factors based on their relationship with psychological resilience.

Risk Factors

Based on this systematic review, fear of COVID-19 (Döğer et al., 2022; Yıldırım & Çiçek, 2022; Yıldırım & Kumcağız, 2021), gender (Demir & Çiftçi, 2020; Acar & Han, 2022), smartphone addiction (Yıldırım & Çiçek, 2022), depression (Eroğlu & Yakşi, 2021), anxiety (Eroğlu & Yakşi, 2021; Akgül, 2022), post-traumatic stress disorder (PTSD) (Eroğlu & Yakşi, 2021), online education (Erol & Erduran Tekin, 2021) exam anxiety (Erol & Erduran Tekin, 2021), playing digital games (Akgül, 2022) were identified as risk factors for the psychosocial and emotional wellbeing of adolescents during the COVID-19 pandemic.

High levels of fear of COVID-19 was found to be negatively correlated with psychological resilience scores in adolescents, meaning that when fear of COVID-19 increased psychological resilience decreased (Döğer et al., 2022; Yıldırım & Çiçek, 2022; Yıldırım & Kumcağız, 2021). Adolescents with lower scores of family support, peer support, perseverance and empathy dimensions of psychological resilience reported

higher levels of fear of COVID-19, which shows that getting support from family and friends, being perseverant and empathetic helped adolescents to cope better with fear of COVID-19 (Döğer, et al., 2022). Fear of COVID-19 was also found to be positively correlated with smartphone addiction in adolescents, a relationship which was partially mediated with psychological resilience, suggesting that higher levels of fear of COVID-19 makes adolescents more susceptible for smartphone addiction through reduced level of psychological resilience (Yıldırım & Çiçek, 2022). In another study, adolescents' fear of COVID-19 level significantly decreased after attending a 6-session psycho-education program. Adolescents who had higher levels of fear of COVID-19 and lower psychological resilience scores were chosen to participate in this psycho-education program. At the end of the program, adolescents' psychological resilience scores significantly increased and their fear of COVID-19 scores significantly decreased (Yıldırım & Kumcağız, 2021). Moreover, there were inconsistent findings regarding gender differences in resilience scores and scores of covid-related risk factors in the studies. Girls' psychological resilience scores were found to be significantly higher than boys (Demir & Çiftçi, 2020) whereas Yıldırım and Çiçek (2022) found that girls had lower levels of psychological resilience and higher levels of fear of COVID-19 and smartphone addiction compared to boys. In another study no significant difference was found between girls and boys in terms of psychological resilience scores but girls were found to have significantly higher levels of exam anxiety compared to boys (Erol & Erduran Tekin, 2021). Acar and Han (2022) also found that boys had significantly higher psychological resilience level than girls. Another study examining the relationship between physical activity, playing digital games and anxiety revealed that boys who reported higher level of physical activity and lower level of digital game playing had significantly lower anxiety scores and higher psychological resilience (Akgül, 2022). This finding can be interpreted as for boys, high level of digital play gaming is a risk factor for anxiety and engaging in physical activity functions as a protective factor for

their psychological wellbeing through affecting their resilience level.

Anxiety, depression and post traumatic stress disorder (PTSD) were also identified as risk factors by Eroğlu and Yakşi (2021) in a study conducted with adolescents who had at least one or both parents infected with COVID-19 virus. The anxiety, depression and PTSD scores were highest when both parents were infected and put into isolation in hospitals instead of home treatment. In addition, adolescents whose only mothers were infected and isolated reported higher anxiety, depression and PTSD levels than adolescents whose only fathers were infected and isolated. Depression, anxiety and PTSD scores were significantly lower in adolescents with higher psychological resilience, suggesting that resilience functioned as a psychological buffer against the negative psychological impacts of having a parent who got infected with COVID-19 virus.

Online education was also determined as one of the risk factors that had significant impact on adolescents' psychological wellbeing. Adolescents reported that their exam anxiety increased and they felt less psychologically resilient due to the difficulties of online education such as technical difficulties, learning problems, low motivation and concentration for studying regularly, health concerns, feeling restricted and social isolation (Erol & Erduran Tekin, 2021).

Protective Factors

In this systematic review several variables were identified as protective factors, which together with psychological resilience helped adolescents cope better with Covid-related stressors. For instance, exercising regularly and more frequently was found to be positively related with psychological resilience (Demir & Çiftçi, 2020; Akgül, 2022). Emotional flexibility also functioned as a protective factor for adolescents. Adolescents with higher levels of emotional flexibility reported significantly higher levels of subjective well-being and psychological resilience. Subjective wellbeing mediated the relationship between emotional flexibility and psychological resilience (İme & Ümmet, 2022). Moreover, Acar and Han (2022) identified spirituality as a protective factor which

protected adolescents from developing psychological, social and emotional problems during COVID-19 pandemic. When spirituality increased, psychological resilience also increased. In addition, it was found that girls compared to boys, and adolescents whose parents lived together compared to those whose parents were separated had significantly higher level of spirituality (Acar & Han, 2022). Hope was also found to be positively correlated with adolescents' psychological resilience. Adolescents who were more extroverted, agreeable, open to new experiences or conscientious and those who did not experience financial problems during COVID-19 pandemic reported higher levels of hope and psychological resilience (Söner & Gültekin, 2021).

Discussion

Psychological resilience is one's capability to cope with stress caused by negative life events and continue growth and development (Doom et al., 2023). Being psychologically resilient was found to be mitigate the adverse effects of the COVID-19 pandemic in adolescents, who, due to being in a developmentally vulnerable period, are more prone to experience psychological problems such as depression, anxiety and post-traumatic stress disorder (Liu et al., 2020). Research on psychological resilience identified various protective factors, which can be categorized as individual and social/contextual factors, that helped adolescents cope better with COVID-related stressors, adapt more easily to the new circumstances of the pandemic and protected their psychosocial and emotional wellbeing (Doom et al., 2023). In accordance with the research findings in the resilience literature, the results of this systematic review also revealed that psychological resilience was positively related with different protective resilience factors at the individual and social/contextual levels.

Individual resilience factors: Based on the results of the systematic review, adolescents who exercised more frequently and regularly during the pandemic had higher level of psychological resilience (Demir & Çiftçi, 2020) and reduced level of anxiety (Akgül, 2022). There are several studies

showing that spending more time outdoors and engaging in physical activities (sports, etc.) during the pandemic are related with reduced levels of internalizing problems (Rosen, et al, 2020), anxiety and depression symptoms (Magson, et al, 2020) and better subjective wellbeing (Jackson, et al, 2021) in adolescents.

In addition, higher level of emotional flexibility was positively correlated with psychological resilience and subjective wellbeing (İme & Ümmet, 2022). This positive correlation was found by several other studies in the literature as well (Fu et al., 2018; Schunk et al., 2021). It can be suggested that emotional flexibility helped adolescents adapt more easily to the new changes and circumstances of the pandemic and manage negative emotions.

Spirituality was another protective factor that was positively correlated with psychological resilience (Acar & Han, 2022). Through spirituality adolescents might find more positivity and meaning in the pandemic-related difficulties which led to better coping and better psychological wellbeing. Similarly, hope was also positively correlated with psychological resilience. Adolescents who had higher levels of hope and psychological resilience showed no need for psychological help compared to adolescents who had lower levels of hope and psychological resilience (Söner & Gültekin, 2021). Moreover, in the same study certain personality traits (openness to experience, extraversion, conscientiousness, and agreeableness) found to function like protective factors, which were also positively associated with psychological resilience. In addition to being extroverted, agreeable, open to new experiences or conscientious, adolescents with no financial problems and who had no family member suffering from the COVID-19 disease reported higher levels of hope and psychological resilience (Söner & Gültekin, 2021). This finding can be interpreted as a reflection of the interplay between individual and social/contextual resilience factors that made adolescents psychologically resilient and more hopeful about the circumstances of the pandemic. On the other hand, neuroticism was found to be negatively correlated with hope and psychological resilience (Söner & Gültekin, 2021). It can be suggested that neuroticism negatively

influenced the healthy coping mechanisms of adolescents making them more prone to experience psychosocial and emotional problems during the COVID-19 pandemic.

Social/contextual resilience factors: A 6-session Psycho-Education Program in Combating the Epidemic which was applied to a group of adolescents, increased their psychological resilience scores while significantly reducing their fear of COVID-19 level (Yıldırım & Kumcağız, 2021). This finding is in line with the literature showing that intervention programs, specifically developed to support the psychological wellbeing of adolescents during the pandemic were found to be effective in reducing hopelessness, symptoms of anxiety and depression and increasing agency, psychological resilience and social support (Schleider et al., 2022; Glaser et al., 2022). This shows the importance of providing the necessary social support and helping them to learn more effective ways of coping with COVID-related stressors in order to support their psychosocial and emotional wellbeing.

Moreover, adolescents reported that parental support, supportive teachers, spending more time with family members, peer support and digital socialization helped them to be more psychologically resilient during lockdowns (Döğler et al., 2022). Similarly, in the literature, parental support was found to be related with reduced level of anxiety and depression (Luthar et al., 2021) and higher emotional wellbeing in adolescents (Wang et al., 2022). Additionally, adolescents with better family functioning and good parent-adolescent relationship quality reported lower level of depressive symptoms and higher level of psychosocial wellbeing (Afriat et al., 2023). On the other hand, support from friends/peers and teachers were also found to be important in protecting the mental wellbeing of adolescents during the pandemic (Zhu et al., 2022). In this sense, digital socialization, by providing a new way of keeping in touch with friends and other peer groups, were found to be effective in reducing adolescents' internalizing symptoms (Rodman et al., 2022). These findings are important in showing the protective role of feeling socially connected

and having good relationships with family, peers and teachers for adolescents' psychosocial and emotional wellbeing during the COVID-19 pandemic in which social interactions were significantly restricted due to pandemic-related preventive measures such as lockdowns and online education.

Risk factors

Based on the results of this systematic review, there were also several variables identified as risk factors based on their negative impacts on adolescents' psychosocial and emotional wellbeing during the COVID-19 pandemic. Studies revealed that adolescents who had higher levels of psychological problems such as fear of COVID-19 (Döğer et al., 2022; Yıldırım & Çiçek, 2022; Yıldırım & Kumcağız, 2021), depression (Eroğlu & Yakşi, 2021), anxiety (Eroğlu & Yakşi, 2021; Akgül, 2022), PTSD (Eroğlu & Yakşi, 2021) and exam anxiety (Erol & Erduran Tekin, 2021) had lower level of psychological resilience. Moreover, adolescents who had both or one of their parent infected with COVID-19 virus showed higher levels of depression, anxiety, and PTSD symptoms, whereas the severity of symptoms was reduced in adolescents who had higher psychological resilience (Eroğlu & Yakşi, 2021). These findings show that adolescents who were less psychologically resilient during the COVID-19 pandemic were more prone to develop psychosocial and emotional problems due to COVID-related stressors.

In addition, online education was also identified as a COVID-related risk factor for adolescents which was found to be positively related with exam anxiety (Erol & Erduran Tekin, 2021), psychological distress levels (Ay Yılmaz et al., 2022), and problematic internet use (Fernandes et al., 2021). Due to pandemic regulations such as lockdowns and online education, adolescents had to spend more time at home away from their friends and peer groups which resulted in spending more time online as a way of stress relief, digital socialization and keeping in touch with friends (Ay Yılmaz et al., 2022), which increased the risk of developing problematic digital behaviours such as excessive use of internet, social media and

digital game addiction in adolescents (Fernandes et al., 2021). Adolescents who had lower level of psychological resilience reported higher level of smartphone addiction (Yıldırım & Çiçek, 2022) and digital game playing (Akgül, 2022). Lower levels of TV watching, video game playing and social media surfing were found to be related with better mental wellbeing in adolescents during the pandemic (Camerini et al., 2022). Based on these results, it can be suggested that psychological resilience, by helping adolescents find more effective ways of coping with stress caused by the pandemic-related adversities, also protected them from developing problematic digital behaviors and habits.

Conclusion

The COVID-19 pandemic, significantly altered the way of life at different levels for every age group worldwide. Adolescents, due to the developmental sensitivity of adolescence, were more prone to be negatively effected by the drastic preventive measures and regulations the pandemic had brought along. Studies conducted with adolescents revealed that being socially isolated from peer groups, friends, teachers, and family members due to COVID-19 restrictions, social distancing, curfews, and online schooling, adolescents experienced an increase in a variety of psychological, behavioral, and social problems (Liu et al., 2020; Morrisette, 2020; Nagata, 2020; Karaaslan, 2021; Ay Yılmaz et al., 2022). On the other hand, research shows that, during the COVID-19 pandemic, adolescents who had higher levels of psychological resilience coped better with the pandemic-related adversities and were less likely to develop psychological problems such as depression, PTSD, and anxiety (Doom et al., 2023; Xing et al., 2023; Beames et al., 2021; Karaaslan, 2021; Yıldırım & Arslan, 2020).

The expected hypothesis of this systematic review study was that psychological resilience, in relation with other variables, would also function as a psychological buffer for Turkish adolescents, helping them cope better with the adversities of the COVID-19 pandemic and protecting them from developing psychosocial, emotional and behavioral problems, which was supported by the results of the current study. In accordance with the

literature examining the role of psychological resilience for adolescents during COVID-19 pandemic, the results of this systematic review revealed that psychological resilience, together with the individual and social/contextual protective factors identified in this study, protected Turkish adolescents' psychosocial and emotional wellbeing from pandemic-related risk factors during the COVID-19 pandemic.

The findings of this systematic review underlie the importance of extending both the scope and content of psychological resilience research on adolescents, especially when considering adolescents' vulnerability for developing psychosocial and emotional problems in the face of stressful life events such as the COVID-19 pandemic. More research is needed on identifying the resilience factors at the individual, familial and social/contextual level which helped adolescents cope better and become more resilient during the pandemic. This understanding is crucial for correctly identifying the psychosocial and emotional needs of adolescents so that more effective psycho-education programs, interventions and youth-specific policies can be developed to promote adolescents' resilience both at individual and social-contextual levels in the post-covid era. Limitations

One limitation of this systematic review is the low number of studies reached as a result of the database search. Although it may decrease the generalizability of the findings, it also indicates the limited number of resilience studies conducted with Turkish adolescents younger than 18 during the COVID-19 pandemic. One possible explanation for this could be that due to pandemic restrictions, it became more difficult for researchers to reach adolescents and get the permission of their parents. Thus, they may preferred to conduct studies with university students who were easier to reach both online and face to face.

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