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Impact of the Covid-19 Pandemic on Adolescent Mental Health and Well-being

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Abstract

Objective – The present study aimed to obtain a comprehensive view of the up-to-date global evidence on the impact of the COVID-19 pandemic on adolescent mental health and well-being. **Background** – A great deal of concern has been raised about the negative impact of the current health crisis on adolescents. **Methods** – Electronic literature searches were conducted in July 2022 in the Google Scholar database. A total of 57 original research articles and review articles that met the criteria were selected and reviewed. They comprised studies with adolescent populations from more than 20 countries across 5 continents. **Discussion** – The impact of the COVID-19 pandemic on adolescent mental health was identified as negative, positive, and fluctuating over the course of the pandemic. The accumulated evidence supports the assertion that there has been a considerable and wide-ranging negative impact. However, the long-term and short-term effects differ. Some positive effects of the current pandemic have also been reported: a small number of adolescents seemed to thrive overall, and the majority of them even seemed to have experienced positive changes in some specific aspects. Even so, the positive impact can hardly outweigh the negative. The fluctuating trajectories of adolescent mental health during the pandemic could be attributed to infection rates, quarantine, the severity of containment measures, the accumulation of stressors, etc. **Conclusion** – There is evidence for both negative and positive impacts of the COVID-19 pandemic on adolescent mental health and well-being. Further research is needed to study the complex impact of a health crisis of such magnitude.

Key Words: Adolescents ▪ COVID-19 ▪ Mental Health ▪ Pandemic.

Introduction

At the end of 2019 a novel coronavirus (SARS-CoV-2) was identified, leading to a highly contagious and often severe and fatal respiratory disease. The novel virus rapidly spread around the globe, causing numerous cases of sickness and death. Thus, by March 2020 the global pandemic of coronavirus disease (COVID-19) had emerged (1). Due to this pandemic the whole world was in the unprecedented situation of a global health and economic crisis. To control the spread of the disease, social distancing and stay-at-home measures were implemented, among other measures. Schools were closed, face-to-face extracurricular and leisure activities were cancelled, social gatherings were prohibited, etc. As a result, adolescents were not able to participate in social life as they used to and they were deprived of important contacts outside of their home. Their daily routines changed rapidly too. The literature shows that adolescents' eating habits changed compared to before, their physical activity decreased, and screen/online time increased (2–4). As the pandemic progressed, some measures were lifted and reintroduced according to the local situation. Nevertheless, in the years that followed the pandemic drastically altered the lives of adolescents, and has had a significant impact on their physical and mental health and well-being.

Research from previous health crises had already registered their negative impact on the mental

health of adolescents (3, 5) and, accordingly, during the current pandemic evidence showed worsened mental health in this group (2). Both the immediate and long-term impact of COVID-19 is of great concern (3, 6–11) and threatens minors' biopsychosocial development and the stability of the family (12, 13). Multiple researchers share the idea that studying mental health in times of pandemics is highly important, as a future pandemic could break out at any time and continue for a long period (5). As far as mental health in crises is concerned, adolescents represent a vulnerable group (2, 3, 5, 9, 10). A great deal of research has been conducted on the impact of the COVID-19 crisis on adolescent mental health, showing direct and indirect negative effects (2, 3, 9). However, there is evidence primarily of the short-term effects, and further research is necessary to study the long-term effects (5, 10, 14). Furthermore, a large proportion of the existing original studies and reviews investigate the effect in both children and adolescents, and report the collective impact on them. However, dedicated research for each age group separately is essential, since each is affected in a different way or degree (9, 10, 13, 15, 16).

The aim of this study was to obtain an updated and comprehensive view of the global evidence of the effects of the COVID-19 pandemic on adolescent mental health and well-being based on a review of papers published to date. This would support future research in the field, supporting specialists, as well as the development of interventions and informed policies.

Methods

Electronic literature searches were conducted in July 2022 in Google Scholar database. The search included the use of the following terms: impact, effects, pandemic, COVID-19, coronavirus, adolescent, mental health, well-being. Additional articles were identified by scanning the bibliographies. The inclusion criteria were: articles in English; published between 2020 and 2022; literature reviews, systematic reviews, original research articles, as well as other types of research reports; including adolescents; studying the general adolescent population; exclusively examining the impact of COVID-19 on mental health and well-being. The exclusion criteria were: articles in languages other than English; published before 2020; articles not containing data (commentaries, opinion papers, etc.); studying other pandemics than COVID-19; not including adolescents; studying specific populations (e.g. with pre-existing physical or mental conditions).

Adolescents with pre-existing physical or mental conditions seem to suffer either more or greater negative effects of the pandemic (2, 3, 20, 5, 9, 10, 12, 16–19). For instance, the impact of the pandemic on externalizing symptoms (aggression, substance use, suicide) seems to concern primarily adolescents with pre-existing behavioural disorders (2). Even though a dedicated research focus on this group is highly relevant (21), this review focuses on the general impact of the COVID-19 pandemic on the mental health of adolescents, and excludes studies on specific groups of adolescents having risk factors that could moderate the effects. Finally, a total of 57 articles that met the inclusion criteria were selected and reviewed.

Results

The results of the reviewed articles summarized the effects of the pandemic in 3 broad categories: the negative impact of COVID-19 on adolescent mental health and well-being, the positive impact of COVID-19 on adolescent mental health and well-being, and trajectories of adolescent mental health during the pandemic.

The Negative Impact of COVID-19 on Adolescent Mental Health and Well-being

The risk of psychiatric disorders, such as depression, anxiety, Post-Traumatic Stress Disorder (PTSD), etc., increases in times of pandemic and disasters (5). A systematic review reported that among children and adolescents pandemics cause stress, worry, helplessness, behavioural problems, fear of

infection, frustration, boredom, fear of pandemic-related uncertainty, and fear of running out of basic supplies and finances (3).

Another systematic review, focusing on findings from the current pandemic, reported a wide range of emotional symptoms and behaviour changes among children and adolescents – anxiety (prevalence of 17.6% to 43.7%), depression (6.3% to 71.5%), stress (7% to 25%), PTSD (85.5%), suicidal ideation (29.7% to 31.3%), emotional symptoms, conduct problems, hyperactivity-inattention, peer problems, less prosocial behaviour, as well as other mental effects of quarantine: worry, helplessness, fear, nervousness, agitation, and aggressiveness (22). A high number of adolescents experienced moderate to extremely severe anxiety and depression during the first weeks of COVID-19 confinement (5). A recent review reported a high prevalence of COVID-19-related fear, concern, and stress among adolescents (10). Similarly, other literature reviews report children and adolescents feeling more anxious, depressed, fatigued, and distressed than prior to the pandemic (11, 23). Findings on individual depression and anxiety symptoms among children and adolescents show that clinginess was observed in 37%, inattention – in 33%, irritability – in 32%, worry – in 28%, obsessive requests for updates – in 27%, fear of the death of a relative – in 22%, sleep disorders – in 22%, appetite disorders – in 18%, fatigue – in 17%, nightmares – at 14%, and discomfort/agitation – in 13% (24). An increase in manifesting eating disorders symptomatology was reported from the beginning of the pandemic (14).

Numerous original studies identified the negative impact of the current pandemic on the mental health of adolescents. A qualitative study from Bangladesh identified stress, anxiety, depression, and sleeping disorders (25). Another qualitative study reports that home confinement and restrictions associated with COVID-19 had adverse mental health outcomes for all interviewed adolescents (26). 75% of Australian adolescents reported a negative effect on their mental health (19). 77% of youth in Germany reported that their lives, especially their health and well-being, had been negatively impacted by the COVID-19 pandemic (13). They reported that they frequently experienced headache, stomach ache, backache, feeling depressed, nervousness, difficulty in falling asleep and dizziness. A greater proportion of adolescents from Iceland perceived themselves to be negatively affected than positively affected across all well-being indicators, except for family relationships (27). During the current pandemic the most commonly described emotion among adolescents from Florida was "bored" (28). In May-June 2020 the prevalence of depression among Spanish adolescents was 19.2%, and of extensive worry about pain or disease – 50.6% (4). Data from several Chinese provinces heavily hit by COVID-19 suggest that the psychological well-being of children and adolescents declined during the pandemic –depressive, anxious, compulsive, inattentive, and sleep-related problems increased after the outbreak (29). In China studies indicate a high prevalence of psychological health problems – depression (43.7%/44.5%), anxiety (37.4%/38.0%), a combination of both symptoms (31.3%), and trauma-related distress (20.5%/22.7%) (30–32). The reported rate of depression among adolescents in China reached as high as 76.48% in March 2020 (anxiety rate – 33.08%) (20). Throughout Indonesia, 54.1% experienced varying degrees of distress during the early stage of the pandemic (April 2020) (33). Data from Brazil show that during the COVID-19 pandemic (June-September 2020) 48.7% were either often or always nervous, irritated or moody, and 34. 4% of them often felt sad (34). About a year after the onset of the pandemic in the U.S. 95.3% reported health stress and 85% – financial stress on more than one day over the period of a 14-day daily-diary study (35). A study from Spain concludes that confinement due to COVID-19 may induce anxiety in children and adolescents, which may in turn negatively impact their sleep and executive functioning (36). Findings on adolescents from Georgia indicate the concerning impact of the COVID-19 pandemic on stress, anxiety, depression, and loneliness (37). Data from Turkey and Austria show mental health decline during the COVID-19 pandemic among adolescents and young people (38).

There were numerous pandemic-related challenges for adolescent mental health during the crisis (39). The main challenges were anxiety, lack of peer contact and reduced opportunities for stress regulation. However, the authors distinguished between the impact of the acute phase of COVID-19 and the following long return to normality in 2020. The main burden during the acute phase was associated with social distancing, increased pressure on families, and reduced access to support services. After that came economic recession and the consequences of exposure to anxiety, stress and violence. The COVID-19 pandemic has been associated with a variety of fears among youth, the most common of which was the possibility of COVID-19 infection among family or friends (40). COVID-related angst – being scared of getting the virus, spreading the virus, or somebody from the family getting the virus – was identified among U.S. adolescents by means of qualitative analysis (41). In May-June 2020 the prevalence of depression among Spanish adolescents was based on the main perceived concerns of getting COVID-19 (either oneself or someone close) (70.3%) and not seeing friends and family (61.5%) (4). A recent review also identified that the most commonly reported fear was of getting COVID-19, either oneself or a vulnerable loved one; other concerns were associated with not being able to cope with academic workload, the imprint on the school year and future plans (10). The control measures per se, including online learning and social isolation, were identified across many studies to induce negative emotions or mental health deterioration (increases in anger, worry, helplessness, annoyance, PTSD symptoms, grief, depression, and loneliness, as well as a decrease in happiness and positive emotions). Some young people or parents reported breaking their daily routine, as well as increased conflict with parents and siblings, as a result of spending more time at home. Many minors perceived lost relationships with peers and missing out on usual daily activities. In Germany adolescents reported that during the pandemic, the family climate deteriorated and escalating conflicts at home increased (13). A third of the participating Czech adolescents (32%) reported psychosocial disruptions to their family life (42). In some cases, home confinement during the COVID-19 pandemic may have led to an increase in domestic violence, which means an increased risk for adolescents of enduring or witnessing violence (5). In a U.S. study, adolescents discuss the negatives of the pandemic: the inability to communicate in person with friends and romantic partners; not getting out to play sports or participate in various entertainment and extracurricular activities; too much family time, lack of personal space and conflicts; experiencing negative emotions, fear and anxiety related to the coronavirus; apathy and depression; increased school stress (41). Last but not least, for some adolescents, death due to COVID-19 of a close person, was their first experience with death, and in adolescents parental death is a risk factor for major depressive disorder (5).

A dozen literature reviews indicate that elevated depressive and anxiety symptoms represent the most commonly reported effects of the pandemic among the general adolescent population (2, 3, 46, 47, 7, 10, 11, 22, 23, 43–45). One of the recent reviews reported that, compared to the pre-pandemic period, 25 articles showed increases in depressive symptoms during the pandemic and 17 – increases in anxiety symptoms (10). Similarly, a qualitative study from Ireland reported depression and anxiety to be commonly reported experiences for adolescents during the lockdown (26).

Numerous studies compared the pre-pandemic mental health and well-being of adolescents with these during the health crisis. Literature reviews report that findings indicate an increase in depressive and anxiety symptoms, as well as non-suicidal self-injury and suicidal ideation (10, 44, 48). Original studies show an increase in depressive symptoms in Poland (49), mental health problems and anxiety in Germany (13), anxiety, depression, panic symptoms and global psychological distress in Israel (18), depressive, anxiety symptoms, loneliness, suicidal ideation and self-harm in the U.S. (41, 50), psychological distress, sleep disturbance, and health anxiety in Australia (19,51), and anxiety

and depression in Canada (52). A decrease was observed in positive adjustment characteristics (e.g. positive peer relationships, plans for the future) in the U.S. (50), happiness and positive emotions in Australia (51), life satisfaction and experience of positive emotions in Israel (18).

Conversely, a study on adolescents from Florida, U.S., reflects that during the early phase of the COVID-19 pandemic most of them appeared to be resilient and doing as well as previously – only a quarter perceived a decline in mental health; about half of them felt lonelier, but 60% reported intact relationships and 75% reported having a good support system; most of them reported unchanged or improved diet and exercise (28). Findings from Indonesia during the early COVID-19 pandemic are also mixed – the proportion of adolescents who perceived worsened mental well-being increased significantly compared to the pre-pandemic; at the same time, the proportion of adolescents at risk of emotional problems was lower (53).

There is some other mixed evidence on the long-term negative impact of the COVID-19 pandemic as well. About one year after the outbreak, adolescents in Norway (54) and Iceland (27) showed some adverse changes in psychosocial well-being to what would have been expected on the basis of pre-pandemic data. Less optimistic future life expectations and more screen time were reported; however, the estimated effect was small. Yet, levels of satisfaction with social relationships and conduct problems remained stable, and some risky health behaviours decreased (54). In Iceland during the pandemic girls had higher depressive symptoms and unchanged anger scores, while boys even had slightly lower depressive symptoms and anger scores compared to pre-pandemic levels (27).

The Positive Impact of COVID-19 on Adolescent Mental Health and Well-being

Some authors reason that some lifestyle changes due to the COVID-19 pandemic may be "an unexpected blessing" for part of the population, and research should also include the perspective of families benefitting from the changed context (55). There is evidence in some children and families of reduced daily stress, sensory exposure and social pressure, as well as enjoyment of more intensive family life and relaxed family routines, instead of busy normal modern-life routines. These changes actually seem to improve well-being for some, and "certain patients and families seemed to thrive on the novel situation" (p. 1139). In the clinic, there were mixed reports of negative perceptions of home confinement, whilst people were also able to devote extraordinary time and attention to one another in the family.

A systematic review on adolescent mental health during the COVID-19 pandemic laid out some benefits stemming from the current health crisis – staying at home during lockdown caused family members to come closer, and parents to have more conversations with their children (11). Notably, only one of the 16 reviewed studies identified the positive impact of the COVID-19 pandemic context along with the negative. In a study from the U.S., adolescents discuss the negatives and positives of the pandemic. The benefits outlined are: spending more time with family, having more time for yourself and finding out which friendships are true in the conditions of restrictions (41). The greater part of Czech adolescents (79%) acknowledged that the novel circumstances had presented positive opportunities for interactions within the family or learning new things (42). In Italy, about a quarter of the responding adolescents reported improved relationships with their parents during the pandemic – about twice more in number than adolescents who reported worsened relationships (56). Similarly, a recent review, based on 3 other studies, reported more family time and time to relax as positive effects of the lockdown for adolescents (10). During the early COVID-19 pandemic certain stress factors (e.g. social pressure, bullying at school) seem to have decreased (2). Fegert et al. concluded in their literature review that the COVID-19 pandemic may bring opportunities for personal growth and family cohesion; even so, the disadvantages may outweigh these benefits (39).

A recent review reported that some studies, even though a small minority, showed improved mental health among adolescents during closures, and speculated this was due to reduction in school stress (10). Despite perceiving worsened mental well-being during the early COVID-19 pandemic, adolescents from Indonesia reported lower levels of emotional problems than samples outside the pandemic (53). The authors speculate that this might be related to the high satisfaction with parental and friend support in most participants in the study, which might be a protective factor against emotional problems. Even though most mental health outcomes worsened after the COVID-19 outbreak among Israeli adolescents, they reported significantly fewer somatization symptoms (18).

Another study reports that there are some adolescents, even though a small percentage, for whom mental health seems to have improved after closure (50). For some young people specific mental health concerns, which they had prior to COVID-19 closures, ceased – anger (2.9%), anxiety (7.6%), depression (2.2%), loneliness (1.9%), self-harm or suicidal ideation (0.3%), and stress (7.8%). Similarly, some youths appeared to display new positive adjustment characteristics during closure – being relaxed (10.6%), hopeful and positive (7.7%), interacting positively with siblings and family members (7.6%), talking about plans for the future (6.8%), and positive social and peer relationships (4.1%).

Findings from Iceland show that boys, in contrast to girls, reported lower levels of depressive symptoms and anger during the COVID-19 pandemic than before the pandemic (27). More participants (both boys and girls) perceived their family relationships to be positively affected during the pandemic than negatively affected. Still, the overall major impact of the pandemic is perceived as negative both for adolescent boys and girls. Even so, there are some adolescents, although a small percentage, that reported a positive perceived impact. In particular, 7.7% of girls and 8.3% of boys perceived their mental health to have been positively affected by the pandemic.

Some studies report a decrease in suicidal behaviour and substance abuse during the early COVID-19 pandemic when the stay-at-home measure was most drastic (2). Lockdown measures can reduce substance abuse among teenagers due to a reduction in access and contexts (2). In Norway, one year after the outbreak of the COVID-19 pandemic, adolescents showed a decrease in some risky health behaviours (alcohol and cannabis abuse), although other psychosocial well-being outcomes declined or remained stable. Altogether, the estimated effect of the reported changes is small (54). A study from Canada (57) reported that, directly after introducing social distancing, fewer adolescents abused substances than before. Yet, among those who continued, the frequency of abuse of alcohol or cannabis increased. Next, family relationships and perceived support may strengthen during home confinement and thus prevent adolescents' suicidal behaviour (2). However, it should also be noted that after the initial drop, suicidal behaviour among adolescents escalated later on, probably due to the accumulation of risk factors (increases in anxiety, depression, stress, etc.) in the longer term that lead to emotional crises (2).

Trajectories of Adolescent Mental Health during the Pandemic

Trajectories of mental health seem to have fluctuated over the course of the pandemic. A recent systematic review that pooled data from more than 127,923 children and adolescents across 116 studies, speculates that anxiety was higher shortly after the introduction of lockdown measures and gradually subsided in the following months (10). A longitudinal study on pandemic experiences among adolescents and young people from New York, U.S., reports that early in the pandemic symptoms of depression and anxiety increased slightly (through April to a peak around late April/early May 2020), and then subsided (through July 2020). The findings suggest that levels of anxiety and depression correspond with COVID-19 infection rates (58). Another U.S. study shows that from May to August 2020

the reported mental health of youths improved. Namely, anger, frustration, perceived stress, COVID-19–related worry, and the impact of virus fears significantly decreased (17). In line with this, a review paper incorporating only longitudinal data (14), also suggests the same trajectory of overall depressive symptoms in youth – an increase during the early phase of the pandemic, but manifesting recovery during the summer of 2020. However, evidence on changes in anxiety symptoms during the early stage of the pandemic was mixed – the findings indicate either improvements, no change or minor detriments (14). A longitudinal study from Norway reported an overall increase in total mental health problems among adolescents from the first weeks in lockdown (April 2020) to 9 months after the pandemic outbreak (Dec 2020) (59). Interesting findings from the study are that increases were primarily observed in internalizing difficulties (e.g. emotional and peer problems), whereas levels of externalizing difficulties (e.g. conduct problems, hyperactivity) remained stable.

In contrast, a recent literature review reported that in the initial stage of the pandemic suicidal behaviour among adolescents dropped, but there was an escalation later on, especially in girls (2). This may explain the mixed evidence observed in another literature review (14) – no change in suicide death rates (two studies), a decrease in hospital visits for self-harming behaviours during the first months of the pandemic (one study), as well as slight increase in suicide ideation and attempts (two studies).

Along with infection rates, periods of quarantine or strict home confinement may play a role in these fluctuations, too. A review of evidence from longitudinal studies speculates that declines in mood among youth seemed to be associated with stricter lockdown measures (14). Another review on the impact of COVID-19 reported that being in quarantine challenges adolescents and puts their mental health at higher risk (9). Once the home confinement period was over, Spanish children and adolescents reported emotional and behavioural alterations (depression, anxiety, problems with emotional regulation, somatic complaints, rage control problems, rebellious behaviour, integration, etc.) (15). After a COVID-19 pandemic lockdown adolescents from China reported depression, anxiety, and suffering from both (60). During the lockdown the dominant perceived feelings were psychological pressure (41.51%), scare (27.86%), depressed mood (26.01%), anxious mood (23.65%), unhappiness (20.19%), suicidal thoughts (3.00%), and disliking parents (2.96%). The dominant behaviours were inattention during online learning (21.93%), not getting up on time (19.86%), not eating on time (8.33%), quarrelling with parents (6.63%) and insomnia (6.24%).

Discussion

This review aimed to obtain a comprehensive view of the global current evidence on the impact of the COVID-19 pandemic on the mental health and well-being of adolescents. There is a great deal of concern raised in the literature regarding the short-term and long-term negative impact of the ongoing health crisis on this vulnerable group, and numerous studies have been conducted to analyse it. The findings, which are based on 57 articles reporting data from more than 20 countries across 5 continents, support the notion that the current and future psychological state, as well as the development of youth, are threatened. The greater part of the accumulated evidence suggests a considerable and wide-ranging negative impact – increases in levels of depression, anxiety, stress, fears, behavioural problems, problems with sleep, boredom, self-harm, etc. At the same time, there is some mixed evidence and some findings indicate the effects are small. However, it cannot be concluded that the negative impact is negligible and further research is needed, preferably based on more consistent measures and differentiating between the stages of the pandemic and distinct groups. The long-term and short-term effects were reported to differ too, and are possibly underlined by distinct mechanisms and determinants. Furthermore, fluctuations in the strength and type of the impact on adolescent mental health and well-being were observed over the course of

the current pandemic, which could be attributed to infection rates, quarantine, the severity of containment measures, accumulation of stressors, etc. Last but not least, along with the widely reported negative impact of the pandemic a positive one was also identified. On the one hand, some adolescents and families, albeit a small number, seemed to thrive overall in the specific circumstances brought about by COVID-19. On the other hand, it could be assumed that even the majority of adolescents experienced benefits in some specific aspects (such as family time and relationships, personal growth, etc.). Even so, the positive impact of the current pandemic could hardly outweigh the negative.

This review could support future research in the field to better comprehend the impact of the current pandemic, and serve as a reference for future health and other types of crises. The findings could support the development of interventions and informed policies to address the sequels of the COVID-19 pandemic, or predeveloping courses of action in a future pandemic, which could break out at any time. Last but not least, this review could be of use to mental health specialists who are involved in counselling adolescents, who need psycho-social support, and their families.

Further research could provide more insight into the differences in the impact on adolescent mental health during the different stages of the pandemic. Further research is also needed to identify the differences in the impact of the COVID-19 pandemic on adolescents with different personality and socioeconomic characteristics. The use of more consistent measures that allow for comparisons is highly recommended. Further integration of the findings on the complex impact is also needed.

Conclusion

In sum, the current review found evidence for both negative and positive impacts of the COVID-19 pandemic on adolescent mental health and well-being. However, the identified benefits could hardly outweigh the considerable negatives. It should be noted that the impact of the pandemic seemed to fluctuate over its course.

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