



Mental Health of Children and Adolescents during the Coronavirus 2019 Pandemic: The Importance of the COVID-19 Vaccine

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Introduction

With the outbreak of Coronavirus 2019, governments imposed measures such as closing schools, sports clubs, leisure activities, and severe social isolation, which led to many children and adolescents being locked up in their homes. Peers and teachers should be away and spend most of their time in cyberspace and online games.¹ Outbreaks of COVID-19 have a far greater impact on the daily lives of children and adolescents around the world than SARS, MERS, or swine flu. The United Nations Educational, Scientific and Cultural Organization (UNESCO) estimates that school closures have affected 862 million children and adolescents, making up almost half of the world's population. This has led many researchers to express concern about the possible psychological effects on children and adolescents.² Childhood and adolescence are associated with many changes and challenges, including gaining independence from parents, choosing a field of study, discovering different areas of identity, and coping with problems in everyday life.

With all these challenges, the outbreak of COVID-19 also caused many problems for children and adolescents. According to studies, children and adolescents reacted differently to the coronavirus 2019 pandemic. To the extent that adolescents reported more anxiety and depression than children. Children were also more concerned about their caregivers and the attention they received.³

During the COVID-19 outbreak, many first-time students attended virtual classes and did not experience such an epidemic. This led to significant fear and stress in them. In April 2020, the United Nations Children's fund (UNICEF) surveyed the mental and physical health of approximately 1,700 children and adolescents in 104 countries. The results showed a high prevalence of psychological disorders in children and adolescents, which led to a decrease in their immune system, academic performance, and social interaction. It was also predicted that the psychosocial consequences of

COVID-19 on vulnerable children and adolescents would be felt in the long run. In general, children and adolescents' reactions to critical situations depend on their previous exposure to emergencies, physical and mental health issues, socio-economic conditions of the family, and their cultural background.⁴

The process of vaccinating and immunizing the people of the world against diseases is recognized as one of the greatest achievements of public health. Immunization programs have significantly reduced mortality and the incidence of infectious diseases, including the eradication of the Poliovirus worldwide.⁵ During the outbreak of COVID-19, after the clinical trials of some vaccines were confirmed, some people were skeptical about getting vaccinated and participating in the nationwide vaccination process. However, over time and the positive effects of the COVID-19 vaccine on reducing the number of hospitalizations and deaths due to COVID-19 infection, many people became more positive and accepting of the WHO-approved vaccines.⁶ All of this research has been done over the past year to encourage people around the world to participate in the vaccination process to show the many benefits that vaccination can bring. The success of the global vaccination process depends in part on people's perceptions of the benefits and risks of the vaccine, as well as how much trust they have in their government and country. Researchers believe that the refusal or delay of vaccination is due to the lack of knowledge and awareness of people about the safety of the vaccination process.⁷

Due to the appropriate efficacy of the COVID-19 vaccine in the elderly and adults, on May 10, 2020, the food and drug administration (FDA) issued an emergency permit for the Pfizer-BioNTech vaccine to adolescents aged 16 to 17 years. On May 11, 2021, it extended the Pfizer-BioNTech vaccine emergency license to 12- to 15-year-olds. Also on August 23, 2020, the US Food and Drug Administration approved a vaccine for people under the age of 16.⁸ In this regard, Scherer et al.⁹ in a study examined the acceptance of the COVID-19 vaccine among adolescents. Studies show that 13.2% of adolescents had to be vaccinated due to returning to school. Also, 17.1% were due to fear of COVID-19, 15.5% due to participation in social activities and 14.5% of people wanted to get vaccinated to increase travel. On the other hand, obtaining more information about vaccine safety (21.7%) and effectiveness (17.6%) were among the factors that led to the rejection of the vaccine among adolescents. In another study, Frenck et al.¹⁰ in a study examined the efficacy and safety of

the Pfizer-BioNTech vaccine in adolescents. In this study, 2260 adolescents aged 12 to 15 participated, of which 1131 received the Pfizer-BioNTech vaccine and 1129 received a placebo. Studies showed that 86% had injection site pain, 66% fatigue, and 65% headache. Among the participants who received the second dose of the vaccine, there were no cases of COVID-19, which indicated that the Pfizer-BioNTech vaccine was 100% effective in adolescents. Ali et al.⁷ in a study examined the effectiveness of the Moderna vaccine on adolescents. 3732 people participated in this study, of which 2489 people received the Moderna vaccine and 1243 people received a placebo. Of those vaccinated, 93% had pain at the injection site, 70% had a headache and 67.8% had fatigue. Also, two weeks after receiving the second dose of the Moderna vaccine, no cases of COVID-19 were observed in individuals.

After several months of the vaccination process in many countries around the world, we are witnessing the reopening of stadiums, schools, universities, businesses, and amusement parks, which can lead to the improvement of the mental and physical health of individuals. People have a high degree of confidence when they receive the first and second doses of the COVID-19 vaccine, which in turn reduces their risk of hospitalization and death from the coronavirus 2019.⁶ In this regard, Perez-Arce et al.¹¹ in a study investigated the association of the COVID-19 vaccine with psychological distress. 8003 American adults participated in this study. Studies have shown that depression is significantly reduced in people who have received at least one dose of the COVID-19 vaccine. It was also found that the risk of mild and severe depression was reduced by 4% and 15%, respectively.

Overall, since childhood and adolescence are known to be among the fast and sensitive developmental stages, a lot of vulnerabilities await the development of children's mental health during the outbreak of COVID-19. The most important reasons for this are the experience of stress and anxiety due to home quarantine, distance from peers, strict rules, and concerns about the health and financial status of the family. In addition, given that most mental health impairments occur during adolescence, people of this age range are due to COVID-19-

induced stress factors such as school, university closures, decreased social interaction, and fear. They are more vulnerable to mental health than coronary heart disease. To this end, it is necessary to start the process of vaccination of children and adolescents as soon as possible, so that we can witness the reopening of schools, clubs and leisure centers by creating an appropriate level of safety in the world.

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