

# COVID-19 and Its Association with Psychological Health of Children, Adolescents and Young Adults

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## Abstract

The COVID-19 pandemic has been causing a severe threat to multiple sectors, including people's psychosocial health. The main objective of this review is to identify the association of COVID-19 pandemic with the psychological health of children, adolescents and young adults. Total 18 primary studies, including most of the studies being cross sectional descriptive studies, were included in the review. The review found that the prevalence of anxiety levels among children ranges from 23.87 % to 38%. Similarly, in adolescents, it ranged from 29.27% to 31% and depression level ranges from 22.28% to 44.5 %. The prevalence of depression in young adults was found to be nearly 82 % while the prevalence of anxiety was found to be nearly 88 %. Most of the studies identified COVID-19 as major factor contributing to anxiety, depression and sleep disorders in children, adolescents and young adults. In the review, almost half of the papers described the factors associated with mental health status due to COVID-19 pandemic. The major factors to increase anxiety and depression were found to be restriction on movement, social distancing, closures of schools, little interaction with peers, educational status, smartphone and internet addiction, frequent watching, listening, or reading news related with COVID-19. Thus, efforts must be initiated to improve services within the country to overcome the increasing mental health problems in these groups. The findings of this review would be relevant for all health professionals, medical persons, and educational institutions to sensitize them about the prevalence of psychological problems among children, adolescents and young adults in terms of overcoming and addressing this pressing issue.

**Keywords:** COVID 19, psychological health, children, adolescent and young adults

## Introduction

The word coronavirus was derived from Latin word corona meaning crown. It is a group of RNA viruses that has ability to cause diseases in mammals and birds. In humans and birds, they cause a range of

respiratory tract infections which range from mild to lethal. This virus has ability to cause mild illness like common cold to more lethal varieties of diseases like SARS, MERS and COVID-19 (Liu et al., 2020).

The most common symptoms are fever, cough, body pain, diarrhea, vomiting, headaches, nausea, confusion, sore throat, chest pain and difficulty in breathing. This virus is airborne so that it can be transmitted through droplet infection. Primarily, COVID-19 is transmitted from one person to another from infected people when they have symptoms and can also happen just before they develop symptoms when the infected people are in close proximity with others (Poudel & Subedi, 2020). Corona Virus Disease-19 epidemic was reported first in December 2019 in the city of Wuhan, China. The unusual cases of patients with pneumonia, high fever and breathing difficulty were caused by COVID-19 and the disease was transmitted globally, thereby affecting more than 36 million people across the world, while the number of deaths reported to be 1,061,806 as of 8 October 2020 (Worldometer, 2020). People with underlying chronic diseases were found to have experienced more severe disease than those who are healthy. Severe cases of the disease had led to heart and respiratory failure, acute respiratory syndrome and even death. COVID-19 had physical as well as mental health problems in people who are infected and have mental health issues-, stress in infected person's family and other people as well (Torales et al., 2020).

The outbreak of COVID-19 has been declared a public health emergency with international concern as it caused the deaths of millions of people. However, there is little known about the disease. The disease is novel with less

evidence base to formulate correct clinical decisions and every human being of any age and both sexes are equally susceptible to the disease. It has been increasing and spreading continuously despite various strategies and plans are put in place across the globe for preventing the disease outbreaks and reducing its impact (Administrator, 2020). Despite travel restrictions and countrywide lockdowns, the disease has spread in many countries of South East Asia, Europe, Eastern Mediterranean, Africa and the United States of America. Up to mid-September, one Asian country (India) and European countries as Spain, United Kingdom, Germany, Italy, France, Switzerland, Turkey, Russia and the American countries- US, Mexico and Brazil- are the most affected countries by novel COVID-19 (Worldometer, 2020).

The coronavirus was found to have less effect on children as it has less symptomatic action in children, adolescents and youth. However, indirect effects other than direct diseased condition were found to be more in these age groups. The impacts on these age groups are multifaceted like psychological, mental, physical, social and cultural. Not only the health and wellbeing of these groups are affected but also the education, safety and psychosocial environment which again had direct effect on mental health condition of this population. Different studies had expressed their concern on heightened anxiety and stress on these age groups due to COVID-19. As they argued it may lead to an exacerbation of mental health problems in them (*Connecting with Children and Adolescents via Telehealth*

during COVID-19, n.d.). The disease has ability to carry a long lasting impact on behavioral and psychological consequences in human existence. Current death toll will create millions of orphans and homeless people. Parentless children, adolescents and youths are easy victims for abandonment, child trafficking, sexual exploitation, begging, child labor, malnutrition, hunger, teenage pregnancy, rape, child marriage and even death. There will be also the chance of juvenile delinquency, crime, unwanted pregnancy, unplanned abortion, substance abuse, self-harm and suicide (Usher et al., 2020).

Worldwide, 10-20 % children and adolescents suffer from some form of mental health problems (*Child and Adolescent Mental and Brain Health*, n.d.). It is reported that 1 in 10 children experience mental health problems globally. Mental health conditions account for 16 percent of the global burden of disease in people of age 10-19 years old (Sun et al., 2020). According to the National Mental Health Survey-2020, nearly 11 percent of the adolescents and 10 percent of adults is suffering from some form of mental health disorder in Nepal (*National Mental Health Survey, Nepal-2020 Fact Sheet*, n.d.).

The life of children, adolescents and young adults are full of emotional ups and downs. It is the age where external environmental changes have huge and immediate impact on the state of emotional and mental health. Bad temper and mood swings are common on these ages. COVID-19 might have increased

these states of mind, causing different mental health problems (*Common Disorders in Young Adults | Dual Diagnosis*, n.d.). Mental health is a state of wellbeing in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community (Cho et al., 2021).

Childhood, adolescence and young adulthood are the most influential time for development of human mind. These phases of life are distinctly celebrated as the most important phases for learning social norms, and values, morals, principles, commendable social prototype, which are completely restricted by the pandemic situation. Children's brain, and brain of adolescents and young adults are rapidly growing and are easily affected by the environmental adversities resulted from the pandemic situation (Veer et al., 2021). When these groups of people are kept in restricted environment it can cause damages to the care and bonds necessary for the quality of healthy growth and development. Due to COVID-19, changes might have occurred in physical, social and emotional environment, including the increased risk of exposure of children, adolescents and young adults to abuse, violence ultimately leading to mental health problems (*How Teenagers Can Protect Their Mental Health during COVID-19 | UNICEF*, n.d.). The growth and development of these age groups people in affective social environment has been limited because of the lockdown.

The lockdown and restricted mobility of children, adolescents and youths has tendency to cause irregular sleeping habit, unfavorable diet plans, sedentary life styles and longer digital exposures, which have great impact on physical and mental health, -frustration, depression, obesity, etc. The pandemic had induced forced homestay and routine lifestyle which too had impact on mental health.

### **Significance of the study:**

In the context of Nepal, 11.8 percent of the total population comprises adolescents where five percent suffered from anxiety and seven percent loneliness (*Mental Health Status of Adolescents in South-East Asia: Evidence for Action*, 2017). Adolescence is the period between 10-19 years which is the age of transition from child to an adulthood (Kaiser et al., 2021). In this phase, there are more chances of being mentally ill due to certain changes in the external environments, including the crisis like COVID-19 pandemic. So, this scoping review was done to find out about the impact of COVID-19 on mental health status of adolescents. All together 18 articles included the effects of pandemic on adolescents' mental health.

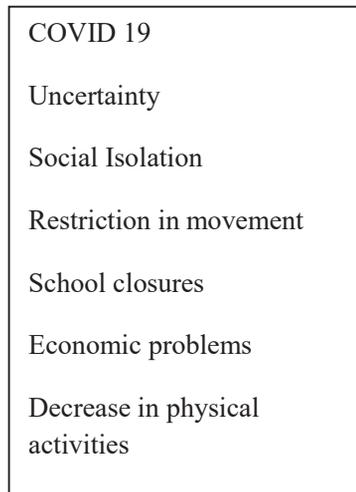
Due to pandemic and for lack of access to information, technology, employment opportunities and alternate forms of education, the young adults might be more vulnerable to anxiety, depression and other forms of mental illnesses (Reilly et al., 2021). In the study, we had taken age group from 20-29 as young adults. The COVID-19

pandemic became a triggering factor for the young adults who were already in vulnerable situation. This is the age where most of the young adults begin their career, enter adulthood responsibilities and due to the pandemic situation, the employment opportunities had decreased, thus causing stress, anxiety, depression in these people (*Common Disorders in Young Adults | Dual Diagnosis*, n.d.).

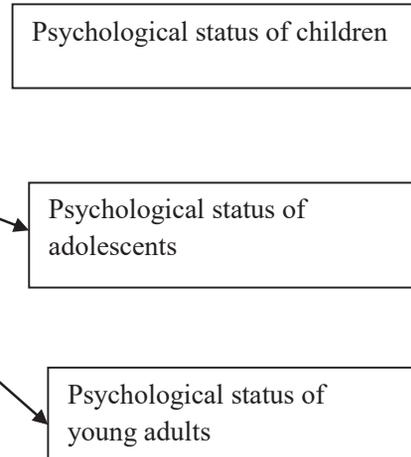
The COVID-19 pandemic is undoubtedly huge public health crisis. Children, adolescents and young adults are more vulnerable group of people because of their limited understanding of the disease and the panic caused by the pandemic. These groups of people have limited coping strategies, so they are more prone to be mentally ill. These groups of people might have less ability to communicate their feelings and problems with their seniors or parents (*Helping Children Cope with Emergencies | CDC*, n.d.). Because of the restrictions of mobility, their contact with peer group, to whom they share their feelings, might be less resulting into different mental health issues. The crisis created by COVID-19 has negative impact on psychological health and wellbeing of children, adolescents and young adults (Dalton et al., 2020). Thus, this study identified the prevalence of factors associated with mental illnesses among children, adolescents and young adults due to pandemic. Even the major types of mental illness have been identified to this regard.

## Study Framework

### Independent Factor



### Dependent Factors



## Method

### Search Strategy and selection criteria

Articles related to COVID-19 and its impacts on psychological health of children, adolescents and young adults were searched in Google Scholar, Pubmed, Litcovid, WHO COVID-19 Database and UNICEF Database. We used the terms Novel Corona Virus, Children, Adolescents, Young Adults, Impact, Psychosocial Health of Children, Adolescents and Young Adults in freely accessible research domains Lancet, Google Scholar, Pubmed. The data searched were done in 19 August 2020. All the articles from December 2019 till the date were searched. Articles with English language were included in the review work. We focused on children, adolescents and young adults from age 3 to 25 years old in the review.

This review article is based on the method of rigorous review of the literatures related to the impact of COVID-19 on children, adolescents and young adults. The articles were selected on the basis of the objective of review by reviewing their title, abstracts and full text. We included following types of studies in the review: cross-sectional study, case control studies, Cohort study design, descriptive study and longitudinal study. Screening on the basis of title and abstract were conducted independently by two researchers. A third researcher was involved in classifying those articles in line with the study objective. All the researchers were involved in full text review and data extraction. After reviewing full text by all the reviewers, the data extracted were compiled, summarized and necessary conclusion drawn from rigorous discussion.

## **Inclusion and Exclusion Criteria**

The articles related to COVID-19 and children, adolescents and young adults were found very diverse. It had been difficult for us to cover all aspects of the impact of COVID-19 on children, adolescents and young adults. So, we had prepared inclusion and exclusion criteria. Inclusion criteria for the scoping review were, a) studies with primary data (empirical articles including quantitative studies, cross-sectional studies, longitudinal studies, Cohort study), b) focusing on children above 3 years, adolescents from 10-19 years and young adults from 20-25 years, and c) written in English language. For describing psychological health, we included anxiety, distress, depression, anger, frustration, loneliness, low motivation, insecurity, post traumatic distress and insomnia in the articles. Similarly, exclusion criteria were systematic review articles, meta-analysis articles, clinical cases, opinion papers, letters to editors and commentaries. Mental health articles, including study groups other than children, adolescents and young adults below 3 years and above 25 years were excluded in the study.

## **Results**

### **Characteristics of Included Literature**

In the scoping review, the search for the articles was done in search engines like Google scholar, Pubmed and litcovid. A total of 13,107 articles were gathered (7460 from Google scholar, 673 from Pubmed, 4910 from litcovid, 14 from JAMA and 24

from Chest). As many as 1941 articles were removed for being duplicate articles. Among 13,107 articles 18455 articles were removed because they did not meet the inclusion criteria. Similarly, 60 articles were removed after reviewing full text articles, and 18 articles were removed for they were review articles. Finally, 18 articles were included in scoping review. As the COVID-19, a new disease emerged at the end of 2019, it was found that all the research works were conducted after the outbreak of disease. All the articles were found to be published in 2020 onwards.

### **Prevalence of Mental Health Illnesses**

Children, adolescents and young adults have felt more isolated, anxious, bored and uncertain. Homeless, disabled, malnourished children, adolescents and young adults are at higher risk of getting infected with COVID-19 and are at greater risk of negative mental health outcomes.

It was found that the prevalence of anxiety levels among children ranges from 23.87 % to 38%. Similarly, in adolescents, it ranged from 29.27% to 31 % and depression level ranges from 22.28% to 44.5 % (Lopez-Serrano et al., 2021; Qi et al., 2020). The prevalence of depression in young adults was found to be nearly 82% while the prevalence of anxiety was found to be nearly 88 % in the review (M. A. Islam et al., 2020a).

It was found that in one of the studies, male adults had higher prevalence of depression and anxiety level (67.35%, 66.33%

respectively) than female (32.65%, 33.67% respectively). Also the adults with no physical exercise had both depression and anxiety (62.24% depression and 61.95% anxiety) (M. A. Islam et al., 2020b). Adults living in urban areas had higher level of depression and anxiety than those living in rural areas (47.5%-65.05% depression range, 40.4%-53.21% anxiety range) (Cao et al., 2020; M. S. Islam et al., 2020; Zhou et al., 2020). With the increase in age, the anxiety depression symptoms were found to be increased i.e. the anxiety depression symptoms was found to be higher in young adults from age 20 to 25 than in adolescents and children (32%, 49%, 59% depression in children, adolescents and young adults respectively, 28%, 41%, 53% anxiety in children, adolescents and young adults respectively) (SJ et al., 2020). The prevalence of insomnia symptoms was 23.2%. The symptom was higher in young adults than adolescents, and higher in adolescents than in children (18%, 25.3% and 25.7% insomnia in children, adolescents and young adults respectively) (Davin-Casalena et al., 2021).

It was identified in one of the studies that children were misbehaving more since COVID-19. Irritability, restlessness, boredom, sadness with no reason, fighting with siblings, diminished trouble handling behavior, quick frustration, sleeping and eating disorder had increased after lockdown (Carroll et al., 2020).

## **Factors Associated with Mental Health Illnesses**

During the COVID-19 pandemic, children, adolescents and young adults might have been exposed to direct and indirect factors that could have impact on their mental health illnesses. Mental health is considered as the most essential condition for quality life. We tried to identify different factors which might have influenced the mental health status of adolescents, children and young adults. In the review, almost half of the papers described the factors associated with mental health status due to COVID-19 pandemic. The major factors that have tendency to increase anxiety and depression were found to be restriction on movement, social distancing, school closures, low interaction with peers, educational status, smartphone and internet addiction, increased use of digital screens, continuous watching, listening, or reading news related to COVID 19, urban residency, family members or friends infected with coronavirus, being children of frontline health workers, level of anxiety, fear-physical injury fear, fear of separation, employment status, type of occupation, female gender, low social support, exposure to COVID-19 (Cohodes et al., 2021; Qi et al., 2020; Terzioğlu & Büber, 2021).

## **Discussion**

Due to pandemic, community based mitigation strategies, such as restriction in social gathering, closure of parks, zoo, playgrounds have disrupted children's usual lifestyles which has potentially promoted

distress and confusion. Home confinement has made these age groups more demanding, thereby exhibiting impatience, annoyance and hostility. Overly pressurizing parents had unknowingly been pushing their children, adolescents and youth into the way of mental disaster. Stressors such as disappointment, lack of face-to-face contact with classmates, friends, relatives, dear ones, inadequacy of personal space at home and family's financial losses had potential to trigger troublesome and prolonged adverse mental health consequences.

The pandemic created the crisis on educational system. School is not only for children's education but it is also a second home for them where they interact with peers and seniors, and share their issues with each other. At school, they learn a lot like importance of personal hygiene, physical activity, healthy food, and healthy habits. Prolonged pandemic and subsequent lockdown and school closure had direct impact on child psychology. Millions of parents have been struggling for maintaining their livelihoods and for managing basic needs. This gap further increased because of unemployment resulted from COVID-19 pandemic and lockdown. Due to COVID-19 pandemic, children are forced to stay inside home. All the normal daily activities like going to school, playing outdoor, going to parks and roaming around, outside home are interrupted. Moreover, when anyone in family and relatives suffers from infection or passes away, and the isolation and quarantine

become mandatory, there will be more chance to be depressed, anxious or mentally ill (M & D, 2020).

The drastic change in lifestyles of children and adolescents- being confined in home with physical inactivity- has led to immediate and lingering psychosocial health issues. Children's wellbeing depends not only on health care, nutrition and parental care but also on social interaction with peers, physical activities outside home, school going, sharing of their activities with friends and companionship. Getting detached from peers and friends, watching fear-filled news in social media, and fear of getting infected, isolation and detachment from parents and near ones created everlasting psychiatric consequences including post traumatic disorder, anxiety, psychosis, depression, delinquency and even suicidal tendency (Humphreys, 2018).

Psychological wellbeing of children, adolescents and youth is mostly associated with the social, home and family environment where he/she enjoys upbringing. During lockdown, children spend more time in digital technologies like mobile, TV, and other gazettes and some children might experience cyber bullying or age inappropriate materials and advertisement. This might cause different psychological problems, leading to sleeping disorder, bedwetting, unusual food behavior, difficulty in attention or concentration, unexplained body aches and headaches in these age groups (Buheji et al., 2020).

Children, adolescents and youth of marginalized communities are the most vulnerable to COVID-19 and other problems associated with COVID-19. As many as 33 million children were found to be living as migrants and refugees in 2019 as a consequence of conflict, violence, disasters and displacement. The pandemic has threatened to bring even more uncertainty and harm to the lives of those children. In low and middle income countries, children are living in slums while many are refugees, living in deprivation, in the overcrowded camps, where they lack adequate health care services, clean water, sanitation and personal hygiene. Because of this, they lack proper hand washing facilities like clean water and soap. Social distancing is also impossible. This may lead to greater chance of getting COVID-19 in addition to other infectious diseases like tuberculosis, dengue, malaria, ARI etc (Mari et al., 2021). Such children are at higher risk of violence, exploitation and abuse. Girl children are facing heightened risk of gender based violence, early marriage and teenage pregnancy. Discrimination and stigma related to COVID-19 have further resulted into crisis on protection of children belonging to the marginalized community.

## Conclusion

This review paper gives insights on overall impact of COVID-19 on children, adolescents and young adults. The paper provides the guidance for the policy makers to develop a framework to help children overcome the difficulties and consequences

following the pandemic. The whole world is learning a lesson that allow individuals, family, community, health care systems and educational system to revisit the services they currently are delivering and thus making them more efficient and effective that would combat the future crisis with less effect on children.

In further studies, it is recommended to include the assessment of the psychological impact of COVID-19 on three categories: psychological impacts of COVID 19, i) in children, adolescents and young adults who are COVID-19 patient and are isolated, ii) in children, adolescents and young adults whose parents are affected by COVID-19 and are isolated and lastly iii) in children, adolescents and young adults who are in home quarantine because of lockdown, school closure and restriction in social movement.

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