

Effect of COVID-19 Pandemic on Children's Mental Health

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Abstract:

Objective: To summarize the effect of exposure to COVID-19 pandemic on the children's mental health

Methods: We reviewed the published literature about the factors affection the children's mental health and its relation to the situation of COVID-19 pandemic.

Conclusions: Social support, good quality diet and healthy life style can enhance the children's mental health during the unexpected situations facing the families during COVID-19 pandemic.

Key Messages:

- Children's IQ depends on the supervision and regulation of their life behind screens.
- Poor quality diet can have an impact on children's mental health.
- Family interaction improves their children's self-confidence and helps in enhancing their mental health.

Introduction

In the past two decades, the world has witnessed different members of the coronavirus family. Some of those members are SARS co-v in 2002, H1N1 in 2009, and MERS co-v in 2012. The last attack was in 2019 by a novel member of this family (SARS cov-2) known after that by coronavirus-disease-2019 (COVID-19). This virus forced the World Health Organization (WHO) to declare it as a pandemic in March 2020. Since that date, most of the countries are in curfew and quarantine [1]. The state of global emergency has its impacts on every single individual in the world. Children are a critical group of the

population that needs special care and attention in normal situations. This care must be increased during these unusual circumstances. Their mental health can be affected negatively by the end of this pandemic.

Infancy & childhood are crucial periods for childhood brain development. Every single second in this period is a break in the human brain development building [2]. According to epigenetic science, the life we live has its effects on our genes & brains [3]. Experiments on mice prove the occurrence of methylation change in the brain of neglected mice. This effect also proved to happen in humans [4].

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According to Teicher, children suffering from neglect in their childhood will have the following in their future: Learning & memory impairment due to reduced growth in the hippocampus, anxiety disorders due to increased sensitivity in the limbic system and finally, increased risk of depression due to decreased growth of the left hemisphere [5]. The result from that is the serious affection of children's mentality.

Nowadays, unexpectedly children face neglect more than before. This is due to working parents, especially in a medical career, or due to parents' stress owing to the current situation of the pandemic [6]. Their stress is reasonable due to the current status of a work stoppage, financial problems. Also, if one of the family members gets infected, this will increase levels of stress. This stress will be reflected on the children. Parenting stress is an important variable to take in mind when talking about children's mentality. Parents who perceived a moderate to low level of family support perceived a high level of parental stress [7, 8]. Resources should be existed for establishing a family support system that promotes family quality of life and buffers parental stress for families of children with severe disorders [8, 9].

Parenting stress refers to psychological responses to the challenges and demands of parenting roles. It has a direct impact on the parents' emotional well-being, parent-child relationship, as well as the child's emotional and social development [6, 7]. Sometimes neglect occurs unintentionally. The best example for that are parents with COVID-19 infection and medical personnel. These two groups have to leave their children facing neglect & stress. Medical personnel children are a particular group. As those children, due to their parents' work against COVID 19 pandemic, they can't see or hug their parents for long times or almost for months; they lose their parents' interest. They will try to depend on themselves in time their parents should take care of them. Those children will lose the supervision of their parents, and this will make them mostly disturbed and depressed most of the time.

From another side, some of their friends who their parents are not medical or

paramedical personnel, they will live under the supervision and with the love and interest of their parents. So yes, they are special, and the entire world should take care of them. In a study, there are some paramedical personnel taking about their life changes after the coronavirus as they left their families and children and lives in their cars or hotels special for the medical staff [10].

Due to school closure, children have to stay at home for a long time. Such a thing has a negative impact on health and more likely to be much worse when children are confined to their homes without outdoor activities. Staying at home is associated with more TV watching. Some studies show that social interaction is beneficial to children to see more ideas, and having social media gives a circle of friends for getting their life better.

There is a study that proved that social media, TV shows, and games have a bad effect on children as it isolates them from real life and makes them depend only on life behind the screens [11]. Other studies proved that TV watching under the supervision of their parents has a role in children's IQ and school achievement than others as they regulate the time and type of TV shows that are helpful for children [12]. On the other hand, Violent TV shows also have a role in children's actions in school, and among his friends, the child becomes more Violent than others [13]. So, to conclude this point we can say that children's IQ depends on the supervision and regulation of their life behind screens and if this thing is lost, their IQ and actions will be lower than before.

Children during quarantine tend more to follow an unhealthy lifestyle with bad food habits and reversed sleep and physical inactivity, which affects their mental health. According to a previous study, there is a relationship between good quality diet and better mental health. A new meta-analysis has confirmed the association between healthy foods and depression [14, 15].

In fact, a poor quality diet can have an impact on children's mental health biologically. Specific nutrient deficiencies, like zinc, folate, magnesium, and fatty acids,

can affect mental health [16]. A healthy diet can help to enhance the immune system, and this is needed now for facing the pandemic [17]. Evidence suggests that high sugar and fat foods can affect proteins that are important for brain development.

The epithelial cells containing ACE-2 enzyme receptors are the main target for SARS CoV-2 [18, 19]. The glial cells and neurons of the brain contain ACE-2 receptors making these cells a possible target for SARS CoV-2. Previous studies were done on mice demonstrated the ability of the virus to cause damage to the brain, along with the olfactory epithelium [20]. The virus can infect endothelium and peripheral nerves or olfactory sensory neurons path through the hematogenous spread, which can lead to neurological manifestations reported in many cases as seizures, headache, and impaired consciousness [21, 22]. So, if this happened in a child will affect his/her mentality after that.

Parents should listen carefully to their children and communicate more with them about what they know or believe about COVID-19 and giving them a proper explanation [23]. Family interaction also plays an essential role by involving the children in family activities, and improving their self-confidence helps in enhancing the mental health of the children. The government and non-governmental organizations should be aware of the side effects of the lockdown on children [24]. Children should be encouraged to interact with their school teachers. Teachers also have a role in supporting children to take care of their hygiene, having a healthy lifestyle, regular sleeping patterns, and eating a balanced diet [25]. Online learning also should meet specific guidelines and its content meets the educational requirement. Social workers can help by providing online counsel to help the parents to cope with the current situation. Social workers also can play a role, especially with single-parent families [26, 27].

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