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# Children Living a Global Pandemic: Anxiety Repercussions

*Salvador I. Garcia-Adasme and Alejandro López-Escobar*

## Abstract

A global pandemic caused by SARS-CoV-2 is still beaten our world. The disease, termed COVID-19 by the WHO, has a wide range of clinical manifestations, ranging from a mild, self-limiting form of the disease to multiple organ failure and death, forcing governments to take measures to mitigate the transmission and reduce the economic impact. However, the paediatric manifestation appears to take a milder form of the disease but they are not oblivious to the consequences of the disease. They suffered personal and parental lost, broke their social relationships, forced to home confinement, school closures, all of them with secondary implications. As a result, children's anxiety levels and manifestations have increased during pandemic. To prevent and counteract this situation, measures were implemented like increase physical activity, a balanced diet, and regular sleep pattern; and in relationship sphere use social media to stay in touch with school mates and relatives.

**Keywords:** COVID-19, Anxiety, Children, Mental Health, Nursing, Confinement, Pandemic

## 1. Introduction

The COVID-19 disease, produced by SARS-CoV-2 and its variants [1, 2], has had the most impact on human health globally in recent times; infecting a large number of people; causing severe disease and associated long-term health sequelae; resulting in death and excess mortality; in many counties exceeding the healthcare services capacity, even mortuary capability; interruption of business, travel, education and many other societal functions.

Children population have lived this pandemic from the background because have a milder course with better prognosis than adults [3, 4], being deaths extremely rare, although there have been inflammatory impact in children, in the form of Multisystem Inflammatory Syndrome [5–7] and Kawasaki disease [8, 9], both with severity impact.

Despite of moderated physical impact, COVID-19 directly or indirectly may have had a probable impact on children's mental health.

## 2. Anxiety in children: day-a-day

Mental health problems in children could became these children in a dysfunctional adults, creating a social, economics and health concerning [10].

Anxiety is the most common mental disorder in children between 9% and 32%, being a 14% in Europe population [11, 12]. Traditionally girls usually show more anxiety symptoms than boys [13, 14], but this paradigm are finding news research with opposite outcomes. Examples of that are Costa et al., and Iranian study, studies which find boys with more anxious manifestations than girls [15, 16]. These findings may be modulated by sociocultural or educational factors.

The symptoms depend on children' developmental stage [17]. Younger children are less able to symbolise subjective states and verbalise them, somatising with neurovegetative symptoms such as psychomotor restlessness, tachycardia, tachypnea or sweating; or somatic manifestations such as insomnia, somniloquy, hyperactivity-excitation, abdominal pain, hyperphagia/anorexia, nausea or headache [18]. On the other hand, elder children somatising trough restlessness, tiring easily, impaired concentration or feeling as thought the min goes black, irritability, muscle aches or difficulty sleeping [17]. Moreover, evidence suggests that stressful situations can trigger psychological distress [19, 20].

Anxiety and depression share comorbidities, which is why sometimes anxiety is addressed like as risk factor of depression [21] and both are related to Post Traumatic Disorder (PTSD). Marshall et al. found a direct relation between anxiety sensitivity and PTSD [17], being anxiety sensitivity a predictor of future PTSD symptoms [22].

Risk factor to develop anxiety include genetic heritage, parental mental disorders, inhibition behavioural patterns and environmental factors such as socioeconomically disadvantaged status, poor familiar functioning, parental separation in early children' ages, among others [23–25].

### **3. Anxiety and pandemic**

Most of world's children routines were disrupted during COVID-19 pandemic.

The lockdown was a measurement to avoid the spread implemented by most of countries with a few exceptions like as South Korea [26], Taiwan [27], Sweden [28], some territories of Brazil [29, 30] and some states of United States [31], which enforcing different measures. Additionally, most of the countries which had applied lockdown added curfew to limit the population movements. Due to recurrent COVID-19 waves, several governments had reimposed these or partially measurements [32]. As a result of this measurements school classes were moved to their own homes due to school closures, as well as parks and playgrounds. These facts, added to home confinement imposed in some countries, provided a large feel of isolation. The duration of loneliness was more associated with anxiety than the intensity of loneliness [33].

During quarantine period, the main routines have been affected. Children reduced their physical activity, had irregular sleep patterns and changes diet habits, added to eventually familiar disputes and even domestic maltreatment [34]. These routines disruptions could develop some problems [34]. Nevertheless, pandemic seems to have had a little impact in the younger children' sleep [35] and in some studies the sleep time increased [36–38].

Restrictive measurements decreased physical activities among children and adolescents, being girls less active than boys and youth than children [36], changing physical activities' time for screen time [38, 39]. The prevalence of this reduction increased from 21.3% up to 65.6% according to a 2426 children and adolescent surveyed in Shanghai [40]. Outdoors activities during quarantine depend on the living environment and whether it was rural or metropolitan and exercises could be practised at home instead [41]. Adolescents specially missed their peers during quarantine and their extra-curricular activities [42].

Physical activity and diet are closely linked. Sedentary behaviours are associated with more caloric meals, and energy intake was higher when sedentary time enhanced [43]. Changes in diet were found during quarantine period. Lopez-Bueno et al. observed a reduction of fruit and vegetal consumption in young children, might be influenced for misbalanced familiar activities [38], similarly to Pietrobelli et al. who detected red meat, potato chip and sugary drink consumption increased [37].

Screen time has been increased due to children spent more time to accomplish school duties and stay in contact with their peers [38]. Videogames had been a reasonable tool to cape the pandemic stress, however, children with previous anxiety or depressive symptoms history positively predicted Internet Gaming Disorder (IGD) severity and videogame use during COVID-19 pandemic, but not inversely [44]. Nevertheless, spend more time in videogames activities coping pandemic-related stress could potentially became them more vulnerable to IGD.

In COVID-19 outbreak, Zhou et al. have studied the frequency of mild, moderate and mild-to-severe anxiety symptoms and they found 27%, 7.4% and 37.4% respectively among 8079 students [45]. Chen et al. have found by an online survey 18.92% and 11.78% answers related to anxiety and depression respectively [46]. Alike figures have found Duan et al., 29.27% of adolescent have shown levels of anxiety increased regarding to previous situation [47]. Magson et al. have studied a group of 248 Australian adolescents before and after pandemic and gathered girls with more anxiety and depression symptoms and boys reported more familiar conflict [42]. Depression was found in 3498 (36.6%) of 9744 Chinese adolescents surveyed, and of them, 45.15% had anxiety symptoms [48]. To a greater or lesser extent, the anxiety and depression emerged during COVID-19 pandemic.

During home confinement, a few researches have reported anxiety symptoms among children. Xie et al. have reported 22.6% and 18.9% depressive and anxiety symptoms respectively out of a total 2330 students in Hubei [49]. In southern Europe, Francisco et al. through online survey gathered a 1480 children and adolescents parents responses, have found 30.1% their children more anxious, with greater impact in Spanish children [39]. We have investigated anxiety levels in 2292 children during Spanish lockdown with home confinement through online survey. We divided our research in two parts, children under seven year's parents reported behavioural symptoms and children over seven years answered revised Children's Manifest Anxiety Scale's (RCMAS). In the elder group, 23.3% of those above seven years old scored above the 75th percentile in the RCMAS, with  $47.7 \pm 27.9$  of mean of Total Anxiety percentile. Curiously, in this group, males reported higher anxiety levels than girls. However, considering the factors impacting a child, 53.6% described problems concentrating on homework and 92% of participants were reported high scores in all anxiety facets regarding to missing being in contact with their peers. We gathered higher scores on the Total Anxiety in children who have parents which are health workers or which has suffered COVID-19 at home [50].

Families have had to cape with several mishaps. During confinement many family members had to work from their homes, added to their children's classes. Other families had their work interrupted or directly were fired, with the consequently financial problem. In case of health care workers children' had more complications than their peers to adapt the confinement routines [51, 52], partly due to prolonged absence for work-related reasons in the first stages of pandemic; and developmental children' stages, breastfeeding-dependence in early ages, following by difficulty in understanding situation and fear to view their parents involved in potentially lethal disease in the eldest.

Duan et al. have highlighted as factors associated with increased levels of anxiety several characteristics, including female gender, denizen in urban regions,



emotion-focused coping style [47]. In contrast, de Miranda have found lower levels of anxiety and depression in metropolitan-regions [53]. Vulnerable socioeconomic status is a recognisable anxiety' risk factor and in this pandemic has had special impact in young people [47].

Family relationship wellbeing were not affected by living in risk-zone contagion, environment or the living space characteristics, but when parents had less own space or time, or when they had to take care children' learning, they were more stressed. This stress have affected significantly on children' mental health [54]. When familiar roles are dysfunctional, extreme patterns could raise such as domestic violence, directly inflicted on the child or between relatives, generating stressful situations, with impossibility of scape from assailant resulting from confinement with his [55]. COVID-19 and the implemented measurements such as home confinement and limitation to social contacts could raise the figures [56, 57]. In this way, even though the school could provide a secure place where children can report home abuse [47], but the school is not always safe. Children who have been bullied may benefit from a quarantine period to be separated from their abusers. The problem during stay-at-home indication is where the children's abuser is.

Regarding to children with special educational needs and disabilities, a study in UK reported increased impact both parents and children [58]. In case of children with Autism Spectrum Disorder (ASD), after an initial deterioration in the first phases of confinement, symptoms were subsequently reduced with an average impact on behaviour, partly mediated by pharmacological changes [59]. Other study conducted in Italy by Colizzi et al. have shown more intense (35.5%) and more frequent (41.5%) behaviour problems, added to changes routines with difficult to manage free time (78.1%) and structured activities (75.7%) [60].

### **3.1 Anxiety in the youngest in pandemic**

Anxiety in youngest children, under eight years of age, has not been commonly studied. However, a recent study conducted by Mira Vasileva et al. estimated in 8.5 the any anxiety disorders' prevalence in children between one and seven years [24]. In similar direction Duan et al., have shown that 23.87% children had significant anxiety level in a population of 3613 children, who 9.94% of were between seven to twelve years [47]. A Turkish study conducted by Zengin et al., found anxiety scores in children from nine to twelve years answering The State-trait Anxiety Inventory for Children (STAIC), as the children are elder, the state anxiety levels decreased and the trait anxiety levels increased. While they did not found difference between the genders in terms of the trait anxiety score, boys' state anxiety level was significantly higher than girls [61]. In our investigation, divided in two parts, children under seven year's parents reported behavioural symptoms in an online self-designed research team survey. 50.9% of the children aged below 7 reported four or more symptoms and 88.7% at least one. The most common paediatric symptoms included tantrums (56.4%), emotional changes (34.1%), restlessness (33.6%), and fear of being alone (33.2%) [50].

## **4. Long-term impact: Still unknown?**

Undoubtedly, pandemic crisis can leverage a weak point in the most vulnerable and may induce to suicidal acts, as persons with previous attempts, history of mental disorders and emotional distress [62]. In children, despite this situation and increased pressure, suicidal attempts due to the first pandemic wave were not increased [63, 64].

Previous epidemics with quarantine measurements such as H1N1 and SARS-CoV, Sprang and Silman have reported 30% of PTSD in children exposed to this [65], likely in stressful events such as natural disasters or other catastrophes [19].

Domestic violence increased during pandemic could have increase the risk of develop further complications such as PTSD, drug abuse, anxiety and depression problems, among others [66].

Under Foucauldian sight, this pandemic could be generate some changes, or accelerate this, in occidental and capitalism paradigms. Starting from power and knowledge pairing as discipline, the evolution from disciplined societies to new forms of fast adaptability has had in pandemic, a global disease, a strong ally. This pandemic has enhanced new dispositives or dispositifs, understanding dispositive as anything that has, in one way or another, the capacity to capture, orient, determine, intercept, shape, control and secure the gestures, behaviours, opinions and discourses of living beings, with the aim to manage an emergency. It has a dominant strategic role [67, 68].

The Confinement measures, keeping social distance, disinfections in public places during early stages, military in streets, the curfew, new laws adapting to changeable circumstances, and much more, could be examples of dispositives implemented in COVID-19 pandemic. Some of them may remain for some time or permanently while others will be phased out as the pandemic could be keep under control, but the final impact remains to be seen. Special mention need the extensive deployment of technology capable of keeping us all permanently connected, which have reinforced the role of social media as sources of contact between people, just as videoconferencing has become a meeting room where parents work and children attend classes with their peers. But at the same time this technology is becoming step by step in an externalised panopticon, applying disciplinary power, generate a state of constant monitoring and surveillance, causing a self-governing and self-censorship in each member of society, where privacy is constantly challenged [67].

## **5. Prevention: politics and facts**

However, uncorroborated, false information and rumours have had in media an influential ally due to easy spread them. These misleading reports may have intensified anxiety symptoms in children [69] but also in general population [70], despite of the efforts of media companies to curb the propagation [71]. Therefore, the government and health authorities should provide accurate information on the epidemic situation, refute rumours in time, and reduce the impact of rumours on the public emotional state [71].

Some reviews point to preserve physical health and activity [53] and promote home-based activities [72]. Many governments implemented different programs to stimulate physical exercise among population, using TV programs or other strategies.

Ensuring continuity of psychiatric support, both children under treatment and debut or stressful situations, countries such as France or Germany had improved teleconsultations of mental health professionals [73].

Related to vulnerable situations, governments have to reinforce help resources and tighten surveillance over most frail, encouraging tele-consultations, developing routines, promoting technical support to children without online connection [74].

Schools are turning to creative and diversity model abandon the disciplinary model, in line with previous words. They are acting as one of the main pillar of the socialisation and formation of the young child, and without doubt may and must develop an active role to promote healthy practices [67, 75].

## 6. Conclusion

COVID-19 pandemic has had a strong impact on the world's youth population. These consequences, now-a-days, still are unknown and hidden. Previous stressful situations such as natural disaster or violence situations have shown that children are able to adapt and go ahead thus resilience. However, always there are consequences and children that derived from special and vulnerable circumstances could develop mental problems. That is why we shall to reinforce our mental health resources and carry out a detailed screening of the most vulnerable people and deploy strategies and multidisciplinary interventions in early steps of problem development. Mental health professionals, paediatricians, nurses in many areas such as school or primary care, social workers and teachers may be implied in surveillance of children's mental health status. This reinforcement should include a special surveillance of suicide figures. Maybe it is too early to assess the real impact on suicide and suicidal attempts and we should be updating and tracking figures to quickly observe a change in trend.

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## Conflict of interest

Salvador I. Garcia-Adasme has received private funds by HM Hospitales to course his doctoral studies in CEU International Doctoral School – CEINDO, CEU-San Pablo University.

Alejandro Lopez-Escobar declares no conflict of interest.

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