











## REVIEW ARTICLES

# Mental health crisis in children and adolescents: The hidden harm of COVID-19

## Crise de saúde mental em crianças e adolescentes: O impacto oculto da COVID-19

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### ABSTRACT

Given the atypical scenario caused by the COVID-19 pandemic in recent years and the changes it brought to daily routines, particular attention should be paid to the mental health of children and adolescents. During this period, child and adolescent psychiatrists faced challenges in their clinical practice and had to adjust to the new reality. There was a significant increase in consultation referrals due to eating disorders, self-harm behaviors, and anxiety symptoms. This paper describes the experience of the Department of Child and Adolescent Psychiatry of Centro Materno-Infantil do Norte, Centro Hospitalar Universitário do Porto, in the outpatient, inpatient, and Emergency Room care of children and adolescents in different age groups during this period. It also highlights the need for special attention to the psycho-affective development of these groups and to the role of family and school.

Overall, the pandemic had a number of detrimental effects on children and adolescents, but also on their families. At this time, it is still difficult to ascertain what long-term consequences it will have, particularly in the first years of life. Joint efforts should be employed by health and community systems to create adequate conditions for assessing the mental health of these groups and developing appropriate support and prevention strategies.

**Keywords:** adolescence; Child and Adolescent Psychiatry; childhood; mental health; pandemic

### RESUMO

A situação pandémica vivida nos últimos anos e as alterações que esta trouxe às rotinas diárias salientou a necessidade de prestar particular atenção à saúde mental da população em geral e das crianças e adolescentes em particular. Durante este período, os psiquiatras da infância e da adolescência enfrentaram desafios importantes na sua prática clínica e tiveram de se adaptar à nova realidade. A procura desta especialidade médica foi variando ao longo da pandemia, tendo sido notório o incremento de consultas motivadas por perturbações do comportamento alimentar, comportamentos autolesivos e queixas de ansiedade. Este artigo descreve a experiência do Departamento de Psiquiatria da Infância e da Adolescência do Centro Materno-Infantil do Norte, Centro Hospitalar Universitário do Porto, no atendimento em contexto de ambulatório, internamento e urgência de doentes pediátricos, em diferentes faixas etárias, durante o período da pandemia. Adicionalmente, salienta a necessidade de prestar especial atenção ao desenvolvimento psicoafectivo destes grupos etários e ao papel da família e da escola neste contexto.

Globalmente, a pandemia teve vários efeitos negativos nas crianças e adolescentes, mas também nas suas famílias. Atualmente, é ainda difícil determinar que efeitos terá a longo prazo, especialmente nos primeiros anos de vida. No entanto, é inegável a necessidade de um

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esforço concertado dos sistemas de saúde e comunitários para o desenvolvimento de condições adequadas para a avaliação da saúde mental destes grupos e respetivas estratégias de apoio e prevenção.

Palavras-Chave: adolescência; infância; pandemia; Psiquiatria da Infância e da Adolescência; saúde mental

## INTRODUCTION

Psychiatry has traditionally been considered the poor relation of medical specialties, with mental health undervalued and repeated calls to achieve parity with physical health ignored. The unprecedented global health catastrophe caused by the coronavirus disease 2019 (COVID-19) and the strategies used to contain its spread represented complex chronic psychosocial stressors that spurred the public debate about the importance of mental health, particularly in pediatric age.<sup>(1)</sup>

The Child and Adolescent Psychiatry practice has evolved over the last two years of pandemic. There was a significant increase in the demand for treatment of children and adolescents with mental health problems and simultaneously an important shortfall of treatment supply, already deemed insufficient before the pandemic.

With no effective treatment or vaccine against COVID-19, several public health interventions were implemented to preserve individual physical health.<sup>(2-4)</sup> Meanwhile, and despite the impression that time was suspended, children and adolescents around the world continued to grow and develop. However, the mental health of children and their families faced challenges associated with the burden of isolation, closure of schools and workplaces, suspension of most social life and physical activities, increase in family conflicts, financial insecurity, and greater exposure to preexisting vulnerabilities (such as abuse or neglect, domestic violence, substance use, and mental illness in family members).<sup>(4,5)</sup> During this period, children and adolescents could partially maintain their educational activities through distance learning but were deprived of the social environment they would otherwise have at school. Due to the socioeconomic disparities among families, closing schools meant a total shutdown of learning activities and peer support for many children with no access to proper electronic devices or internet.<sup>(4,6)</sup> Since free socialization and relationships are important for the general wellbeing, increasing social behaviors, and stimulating synaptic connections, this social isolation may have had several negative consequences. Furthermore, school closure resulted in a significant disruption in family routines, especially in cases of parents that were working from home or facing unemployment or loss of income.<sup>(3-6)</sup> Both children and adults had to stay at home, schooling and working from home, respectively. Additionally, they experienced health anxiety related to COVID-19, as the media reported mounting case and death numbers every day. Overall, this meant that families had to navigate through a new daily

dynamic, which increased domestic tension and the likelihood of conflicts between children and other family members.<sup>(5,7)</sup>

## IMPACT OF THE PANDEMIC ON CHILD AND ADOLESCENT PSYCHIATRY: OUR EXPERIENCE

Child and Adolescent Psychiatry practice faced enormous challenges with the COVID-19 pandemic. In the initial times of the pandemic, outpatient departments had to reorganize to include the use of telemedicine methods, like telephone and video, for patient follow-up, which presented several limitations, like confidentiality and privacy issues and restrictions in the use of therapeutic techniques involving physical interaction (like playing). Distancing rules had to be established within inpatient units, which included the interruption of visits by family members, to prevent contaminations, sometimes with prejudice to the therapeutic aspects of social interaction and working with families. Child Psychiatry day treatment was also suspended due to the risk of infection associated with the daily return of patients to their families.

As in many other European pediatric mental health facilities, we observed a substantial drop in the number of referrals to our Child and Adolescent Psychiatry Department during the first months of the pandemic, overlapping the Spring 2020 COVID-19 lockdown.<sup>(8-10)</sup> We hypothesize that the reasons for this decrease may be related to treatment barriers associated with the pandemic, including social distancing rules, hesitation in seeking help for fear of infection, and staff shortage and decreased service capacity under COVID-19 conditions. After this initial period, treatment requests steadily increased starting in Summer 2020, considerably exceeding the pre-pandemic demand and reaching a peak in the first quarter of 2021, remaining more or less constant since. The acknowledgment of this delayed but alarming increase in the treatment demand was confirmed by the analysis of electronic patient records prior to and during the COVID-19 pandemic. At Centro Materno-Infantil do Norte, Child and Adolescent Psychiatric emergency episodes increased by 95% between March and May 2021 compared to the same period of 2019. According to our perception, the complexity of referrals to the emergency outpatient facility increased, with more youth presenting with self-harm behaviors and suicidal ideation. Medical admissions due to eating disorders (ED) considerably escalated among adolescents. In the outbreak of the pandemic, there was a

43% increase in emergency admissions due to anorexia nervosa compared to the previous year. This upward trend continued in 2021, with a substantial 174% increase compared with the pre-pandemic period, in agreement with international data.<sup>(6-11)</sup> There was also an approximate 50% increase in the number of hospitalized adolescents diagnosed with anorexia nervosa. Although the average number of hospitalization days was generally maintained, the inpatient bed occupancy rate per ED had an important increase of 40% due to the increase in the number of patients. The factors that may have led to an increase in eating psychopathology during this period are not fully understood yet, but certainly include premorbid vulnerabilities, including dysfunctional family dynamics. Regarding eating patterns, the disruption in daily routines, with the need to prepare meals several times a day, suddenly increased the time spent handling and being around food, which may have negatively impacted the risk of ED.<sup>(12,13)</sup> As compulsive exercise is a common coping strategy in ED, the limitations on physical activity imposed by the lockdown combined with the disruption in eating patterns may have led to heightened shape and weight concerns and disordered/pathological eating. Simultaneously, as pleasant activities, potentially helpful for emotional regulation, were not accessible, less adaptive emotional regulation strategies might have emerged instead, including emotionally-induced eating, restrictive eating, and purging behavior.<sup>(12-14)</sup>

An increased prevalence of anxiety and mood, obsessive-compulsive, and somatic symptom-related disorders were observed in patients presenting to outpatient services. The lack of school routines together with home confinement might have particularly affected children and adolescents with underlying psychiatric and/or neurodevelopmental disorders, with psychological consequences, such as fear, anxiety, restlessness, irritability, lack of stress regulation, and others.

The nature and extent of COVID-19 impact depend on several vulnerability factors, such as educational status, special needs, preexisting mental health conditions, economic vulnerability, and child/parent quarantine due to the infection.<sup>(4,5,15)</sup> However, we believe that children's developmental age group influenced the way in which lockdown was experienced and had an important influence on COVID-19 consequences.

### **- Young children**

In the *Diagnostic Classification Manual for Mental Health Disorders of Early Childhood* (DC:0-5TM), the pandemic lists among the various psychosocial stressors that clinicians must identify on Axis IV.<sup>(16)</sup> Infants and toddlers face some stressors early in their lives, which can be acute or chronic, direct or indirect.<sup>(16)</sup> The pandemic has proven to be a chronic stressor with direct and indirect implications for infants and toddlers. It triggered external and internal changes in the daily lives of parents and young children. Exogenous influences were related to confinement, which closed daycare centers and

kindergartens, prompted parental telework, and reduced social contact.<sup>(17-19)</sup> At a stage of life in which the social support provided by parents is crucial, they had to focus on work and parental duties in a single space and sometimes at the same time. Internal modifications elicited an altered emotional state which, supported by feelings of fear and anxiety, had implications on one of the most significant aspects of the normative psychoaffective development of infants and young children: the parent-child relationship. In some cases, anxiety became so pervasive that the need for control experienced by some parents overrode the affective availability that they should have towards their children.

Globally, in the clinical practice of early years, a lower degree of stimulation provided to children, on the one hand, and the development of more severe conditions downstream of the stressor, on the other, were observed. More cases of global developmental delay (GDD) were empirically identified, as well as more severe cases at the time of diagnosis. The severity of GDD sometimes made the differential diagnosis with autism spectrum disorders (ASD) challenging. Young children suffering from the latter experienced significant consequences due to the pandemic. In undiagnosed children, early diagnosis and intervention were delayed, and in those already diagnosed, therapy interruption contributed to a stagnation of the previously observed improvements.

But the pandemic also proved to be a chronic stressor for families, with psychological, financial, and social implications. These stressors had an impact on the relationship pathology between children and caregivers<sup>20</sup>. In early childhood, this translated in sleep and feeding symptoms, but also in more externalizing symptoms, such as tantrums and self- or hetero-aggressive behaviors. It is acknowledged that infants and young children learn from relationships, which have a direct impact on their world models. During the pandemic, children grew up with their parents and were not made aware of the outside world. The likelihood of developing separation anxiety symptomatology was also more noticeable.

The pandemic brought routine changes for all infants and young children. Routines are considered one of the basic foundations of proper psychoaffective development.<sup>21</sup> Without them, babies and young children are more prone to develop the above-mentioned symptoms. More specifically, children with ASD experienced more emotional dysregulation behaviors, with repercussions on their development and family dynamics.

It is worth mentioning that stressors are experienced in different ways by different children. In infants and young children, the subjective experience linked to a stressful event ties closely to how the family manages to contain the impact of the stressor on the child.<sup>(16)</sup> However, it is difficult to identify a stressor as long-lasting and unpredictable as the pandemic. Its downstream effects are clear to everyone, as well as its dramatic consequences.

Although the pandemic elicited a number of difficulties and obstacles in early infancy, it also fostered resilience and flexibility from families, babies, and young children. In fact, the available evidence suggests

that the greater involvement of children with parents may have had several benefits, including an increase in positive interactions, closeness, and demonstration of love and affection.<sup>(19,21)</sup>

### **- School-aged children**

Children between 6 and 11 years old are often referred to Child Psychiatry consultation due to difficulties related to school, namely worries about academic performance, difficulties in adjusting to the school environment, and interaction and socialization issues. Attention-deficit/hyperactivity disorder (ADHD) is undoubtedly the most frequent psychiatric diagnosis in this age group, but anxiety and other emotional/behavioral disorders, specific school learning, and other neurodevelopmental disorders are also prevalent.

It should be highlighted that the COVID-19 pandemic had a negative impact on the learning process and socialization among peers, two fundamental assets during this developmental period. During the ongoing lockdowns and limitations to social interaction, children started expressing feelings of loneliness and isolation, as they missed being with their friends.<sup>(1,4,22)</sup> Those who started school for the first time or moved to a new school faced even more challenges as they started (or transitioned in) their academic journey in extraordinary circumstances. They were deprived of normal inclusion in school and peer groups, with a serious impact on academic, social, and emotional skills. Although some children were relieved with homeschooling, as they felt protected from adverse experiences (e.g., bullying, difficulties in social interaction, and comparison with peers), the lockdown made them miss the opportunity of developing adaptive coping skills. In fact, these children later showed reluctance in returning to face-to-face classes, with higher distress levels than before the pandemic.<sup>(7,22)</sup>

Online lessons led to learning shortcomings compared to the classroom environment, where a teacher is easily accessible. This was particularly noted in the first school years and in families with economic difficulties, who were not able to provide appropriate technology and room conditions.<sup>(7,22,23)</sup> Digital technologies were even more present in children's life. This was a requirement for learning and socializing but increased the parental demand for guidance regarding excessive screen time.<sup>(4,22,23)</sup> The long-term impact of this fragile learning process and overuse of electronic devices in years to come is still to be determined.

As in early childhood, specific therapeutic interventions, such as speech and occupational therapy, were interrupted, compromising the evolution of children with neurodevelopmental disorders.<sup>(22)</sup> Children with anxiety, obsessive-compulsive disorders, or ASD were clearly at a greater risk of psychopathological worsening due to routine disruption and feelings of impending threat and insecurity. They often presented with exacerbation of emotional and behavioral symptoms, including irritability, aggression, agitation, nervousness, fear, and autonomy difficulties.<sup>(4,9,24,25)</sup> Despite that, children with anxiety disorders such as separation anxiety, elective mutism, school refusal, or social anxiety (namely performance anxiety) expressed

feelings of relief and viewed homeschooling as a form of avoiding anxious symptoms.

### **- Adolescents**

Adolescence is a time of physical, neurobiological, and cognitive changes that herald dramatic shifts in the adolescent's relationship with his/her own body, appetite, parents, peers, and self-image. Adaptation to these shifts imposes some fundamental psychological adjustments to the evolving teenager, which may be summarized in the development of a satisfactory and realistic body image, increased parental independence, and adequate capacity for self-care and regulation, satisfying relationships outside the family context, appropriate control and expression of increased sexual drives, and finally identity consolidation, including a personal moral code and provisional plans for a vocation and economic self-sufficiency.<sup>(26)</sup> In order to thrive, the adolescent must fulfill these tasks, a process in which mood and behavioral changes are to be expected. Mainly, it is the interaction between individuals and their different contexts that drives positive development.<sup>(6,27)</sup>

The COVID-19 pandemic has dramatically altered the lives of adolescents, changing their developmental opportunities in several ways and impacting their experience of this transition and reorientation. In fact, lockdown and numerous social restrictions (school closure, suspension of activities, and limits to social group size upon return to school) have impaired the normative seeking of social independence from parents/caregivers, renegotiation of privacy boundaries, and further integration with peers.<sup>(6,27)</sup> In parallel, the concomitant increase in family pressure and mandatory confinement intensified parent-adolescent conflicts, adding to both parts negative mood and worsened mental health.<sup>(6)</sup> Therefore, adolescents' expected spacing from parents and closeness to peers was hindered, hampering social connectedness, sense of belonging, and interpersonal support from peers, all of which represent fundamental assets for normal adolescent development. School transition years are particularly sensitive times as teenagers prepare to adjust to a new environment, friends, teachers, and routine, all of which were disrupted by the social distancing measures imposed by the pandemic.<sup>(27)</sup> Overall, deprived from social relationships and interactions, key to the development of a greater sense of self-awareness, awareness of others, and identity formation, many teenagers struggled to keep up with these crucial psychological adjustments of adolescence.<sup>(6,27,28)</sup>

In general, as a result of the aforementioned changes that must be faced in a period of still-evolving self-regulation skills, adolescents are more likely to experience negative emotional states than adults, and their emotional responses tend to be more intense, variable, and extreme.<sup>(26,27)</sup> This heightened emotional reactivity, added to cognitive competencies that granted awareness of the impact of COVID-19 (both personally and for the wider society), led to increased anxiety in adolescents.<sup>(27,28)</sup> Concomitantly, social restrictions

(namely in hanging out with peers and engaging in sports activities) prevented them from relying on their usual coping strategies, contributing to increased difficulties in emotional regulation,<sup>(28)</sup> and boredom and lethargy increased over time and contributed to mood swings.<sup>(27)</sup> There is in fact conclusive evidence that adolescents of varying backgrounds experienced higher rates of anxiety and depression due to the pandemic, as well as a higher frequency of maladaptive behaviors (deliberate self-harm, binge eating episodes, aggressiveness, and alcohol and cannabis use), which often represent an attempt to manage emotional activation and reduce emotional distress.<sup>(11,28,29)</sup> In addition to the physical risks associated with these behaviors, the use of dysfunctional strategies emerges as a significant risk factor for increased future psychopathology.<sup>(28,29)</sup>

Overall, with the pandemic, adolescents endured challenging times that threatened their psychological wellbeing and normal development. Many of those who were already struggling with mental health difficulties saw their situation aggravated, with the lack of social and medical support associated with various pre-pandemic problems.<sup>(11)</sup> However, it should be noted that COVID-19 seems to have had a different impact on the mental health of different adolescent subgroups. At younger ages, the pandemic and associated restrictive measures may have represented a sort of protective condition for specific anxiety domains by lowering the exposure to triggering factors.<sup>(28)</sup> This temporary relief increased the difficulties when the lockdown ended and social restriction measures were loosened, realized in the increase in Child and Adolescent Psychiatry admissions due to school refusal seen after the return of on-site school teaching.

## LOOKING AHEAD

The COVID-19 pandemic has undoubtedly impacted the mental health of children and adolescents.<sup>(11)</sup> Despite the ongoing uncertainty around the current crisis and the need for further research to capture the full extent of its short- and long-term psychological effects, action must be taken immediately, as children and adolescents should receive the care they need to grow and thrive.<sup>(11,15)</sup> The consequences of not addressing their mental health status extend to adulthood and prevent them from reaching their full potential. To effectively respond to the mental health requirements of children and adolescents, we must innovate collectively and sustainably in an effort to not only repair broken systems but also improve the care and resilience of future generations. Governments and key community stakeholders should prioritize children and adolescents' mental health, working closely and developing efforts within health and community systems and spurring collaborations across sectors.<sup>(15)</sup> It is mandatory to increase healthcare access to assure the provision of early diagnosis and treatment; expand maltreatment prevention efforts, urging child welfare systems to

create new approaches and mechanisms of prevention, surveillance, reporting, and intervention; and promote literacy in mental health, educating caregivers and community outreach services to protect and care for the mental health of their children and adolescents, as it is well established that sensitive and supportive family and social relationships buffer the impact of stressful events on physical and mental health across all ages.<sup>(5,6,15,29)</sup> In summary, the COVID-19 pandemic widened the longstanding gap between the needs of youth with psychiatric disorders and the resources available for their care. Facing this crisis requires perspective, planning, policy, resourcing, and funding, compelling the healthcare and community systems to properly invest in the mental health of children and adolescents.<sup>(5,29)</sup>

## CONCLUSION

As the world still struggles with the dramatic medical, educational, social, and economic toll of the COVID-19 pandemic, the mental health of children and adolescents cannot be ignored. Many of the negative effects of the pandemic in these age groups have been the result of containment and mitigation measures, which directly and indirectly affected children across all ages, jeopardizing their social and family context, known to be of utmost importance for healthy development. Although the magnitude of COVID-19 impact on the mental health of children and families has yet to be ascertained, action must be urgently taken to address this psychosocial crisis, with health systems in collaboration with family, community, and governmental agencies that serve youth playing a crucial role.

## AUTHORSHIP

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