

# Editorial Perspective: COVID-19 pandemic-related psychopathology in children and adolescents with mental illness

## Introduction

The coronavirus disease (COVID-19) has put the world in a state of emergency (Phelan, Katz, & Gostin, 2020). Prevention of the virus' spread is currently pursued by means of mass quarantines, school closures, social distancing, etc. Under these chaotic circumstances, children and adolescents are constantly exposed to the threat of the pandemic and may experience high levels of psychological distress (Liu, Bao, Huang, Shi, & Lu, 2020). Concurrently, many of the routines and social infrastructures that normally bolster against mental health problems during emergencies may have disappeared (Danese, Smith, Chitsabesan, & Dubicka, 2020). Children and adolescents who already live with a mental illness may be particularly vulnerable to pandemic-related distress and thus require special attention. However, there is currently no published data on how the COVID-19 pandemic affects children and adolescents with mental illness. We recently provided documentation of COVID-19 pandemic-related psychopathology in adult patients with mental disorders based on data from psychiatric services in the Central Denmark Region (CDR – catchment area: 1.3 million people) (Rohde, Jefsen, Nørremark, Danielsen & Østergaard, 2020). Here, we report similar data for children and adolescents receiving in- or outpatient treatment at the psychiatric services of the CDR.

## Children with mental illness during the COVID-19 pandemic

We extracted all clinical notes for patients below 18 years of age from the electronic patient record system of the psychiatric services in the CDR between February 1 and March 23, 2020 (the first verified case of COVID-19 in Denmark was reported on February 26, 2020). This yielded 61,467 notes from 4,879 patients. We then conducted an electronic keyword-based search for clinical notes containing at least one of the following words: “corona”, “COVID”, “virus”, “epidemic”, “pandemic”, and “contaminate/contamination” (including compound words), which yielded a total of 1,847 clinical notes. These notes were then screened manually (878 screened by OHJ and 969 screened by CR) to determine whether they described pandemic-related

psychopathology (a plausible link between the pandemic/the consequential societal changes, and psychiatric symptoms apparent from the mental health professionals' description of the symptoms and the context) or not. Specifically, the clinical notes were labeled with ‘0’ (no pandemic-related psychopathology), ‘1’ (possible pandemic-related psychopathology) or ‘2’ (pandemic-related psychopathology). All notes labeled ‘1’ were reassessed by both OHJ and CR and relabeled either ‘0’ or ‘2’. Lack of consensus was resolved by discussion and/or after consultation with SDØ. After the screening, the included notes were manually labeled according to the dominant psychopathology – this labeling process is described in detail elsewhere (Rohde et al., 2020). The project was approved by the Chief Medical Officer of Psychiatry in the CDR as part of a quality development effort (‘COVID-19 and mental disorders’) aimed at optimizing the detection and care of patients with COVID-19 pandemic-related psychiatric symptoms in the mental health services of the CDR.

We identified a total of 113 clinical notes describing pandemic-related psychopathology in 94 children and adolescents (55% female, median age 14 years). A large proportion of notes described anxiety-related symptoms (38 notes from 33 patients) and obsessive–compulsive symptoms (14 notes from 11 patients). Other patients exhibited autism-related symptoms (eight notes from seven patients), or symptoms of attention-deficit/hyperactivity disorder (16 notes from 16 patients). We also identified descriptions of self-harm or suicidality related to the pandemic (eight notes from five patients), unspecific stress (12 notes from 12 patients), and other symptoms seemingly related to the pandemic (17 notes from 17 patients). The psychopathology tended to be aligned with the (ICD-10) diagnoses of the identified patients, 26 of whom were diagnosed with hyperkinetic disorder (DF90.0), 13 with anxiety/stress-related disorders (DF4x) including seven with obsessive–compulsive disorder (DF42), nine with autism (DF84), and six with a depressive episode (DF32). Fifteen patients had another psychiatric diagnosis, and 25 were not registered with a psychiatric diagnosis in the data available to this project. The symptoms often appeared to be the result of changes to daily routines (e.g., home confinement), while in other cases, the symptoms seemed more directly related to the pandemic itself (e.g., fear of contamination).

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To our knowledge, this is the first data on COVID-19 pandemic-related psychopathology in children and adolescents from a large psychiatric treatment setting. We found that some children and adolescents with mental illness appear to be negatively affected by the COVID-19 pandemic and its derived societal effects. While we only found descriptions of pandemic-related psychopathology in 94 out of 4,879 patients (approximately 2%), it should be taken into account that this is by no means an exact estimate of the overall prevalence of this phenomenon (patients were not systematically assessed for pandemic-related psychopathology), and we therefore suspect that this merely represents the tip of the iceberg. Also, it should be taken into account that the results from this cross-sectional 'ecological' quality development project do not allow us to properly evaluate increases or decreases in psychopathology in relation to the pandemic (here we relied on the descriptions made by the mental health professionals in the clinical notes), and we obviously have no knowledge of the counterfactual (the state of the patients had a pandemic not occurred), limiting the possibilities for causal inference. Furthermore, there is an inherent bias associated with the data source available to this project, that is the electronic patient records, as a key function of this system is to serve as a log of psychopathology (and hence predominantly worsening of such). The consequence of this report bias is that we do not know whether there is an equally large group of patients that have actually improved because of the pandemic and the associated societal changes. Keeping these limitations in mind, the children and adolescents in this investigation that seemingly experienced deterioration tended to fall into two groups with different diagnoses and psychopathological presentations; (a) those with anxiety/stress-related and mood disorders experiencing anxious/nervous symptoms due to fear of the coronavirus, and (b) those with developmental disorders (autism and attention-deficit/hyperactivity disorder) presenting with exacerbated behavioral symptoms due to disruption of habits and familiar structures. Although these trends are speculative and must be considered in light of the small number of cases, we believe that they should motivate further investigation of the psychological effects of the pandemic – both in children with and without a history of mental disorder.

### Acting now: what can we do?

Parents and governments share an immense responsibility to reduce the likely harmful effects of the COVID-19 pandemic on the mental health of children all over the world (Wang, Zhang, Zhao, Zhang, & Jiang, 2020). Below, we provide some advice on how this may be achieved:

1. Mental health professionals should actively aim to identify pandemic-related exacerbations in psychopathology in children and adolescents with mental disorders by asking them, and their parents, about how the pandemic has affected them, and their family life.
2. Based on the results reported in this paper, we hypothesize that children and adolescents with mood and anxiety/stress-related disorders (incl. obsessive-compulsive disorder) may be particularly prone to symptom exacerbation due to fear of the coronavirus. This may potentially be prevented/alleviated by limiting/curating exposure to the news media (to avoid misunderstandings about the coronavirus and COVID-19), and ensuring fact-based and balanced education regarding viruses and pandemics.
3. Furthermore, we hypothesize that children and adolescents with attention-deficit/hyperactivity disorder and autism may be particularly prone to psychological distress during the pandemic due to loss of daily routines (e.g., school closures and home confinement). We propose that this may be minimized by supporting families to maintain a clear structure in family life, in spite of the changed circumstances.
4. Parenting tips on how to manage family life during the pandemic are now available online, including notably the Parenting For Lifelong Health Programme, which has been translated into 90 different languages ([www.covid19parenting.com](http://www.covid19parenting.com)) (Cluver et al., 2020).

### Future research: where do we go from here?

The advice given above may provide some preliminary guidance regarding management/prevention of pandemic-related psychopathology, but the level of evidence on which it is based is far from satisfactory (or directly absent). Furthermore, as the pandemic evolves, and societies react along with it, the stressors faced by children and adolescents, and hence the psychological consequences, may also change – and the advice on management/prevention may need to do the same. In order to effectively prevent and alleviate the pandemic's likely negative impact on the mental health, we urgently need more research and systems to rapidly but robustly translate the results of that research into useful policy and clinical practice. Below, we propose six lines of research in pandemic-related psychopathology in children and adolescents (and adults):

1. Thorough characterization of pandemic-related psychopathology based on validated interviews and psychometric tools.
2. Assessment of the overall balance between improved and deteriorated mental health during the pandemic – both in the background

population and in those at-risk (including children and adolescents living with mental illness).

3. Identification of possible causes of and risk factors for pandemic-related psychopathology (e.g., based on surveys dedicated to the purpose or machine learning analysis of clinical notes from standard clinical practice).
4. Population-based studies – to quantify the longitudinal effects of the COVID-19 pandemic on mental health (e.g., based on nationwide health registers). International studies involving comparison between countries would also be of interest to understand how different policies with regard to the handling of the pandemic are impacting children and young people.
5. Following establishment of pandemic-related psychopathology as a real phenomenon: Treatment studies (ideally randomized controlled trials) aimed at alleviating pandemic-related psychopathology.
6. Follow-up studies of children (including infants) and adolescents that have suffered from COVID-19 (Shekerdeman et al., 2020), particularly those who have presented with neurological symptoms (Nathan, Prevost, & Corvol, 2020).

We are confident that colleagues across the globe have already initiated studies falling under these categories and are hopeful that their results will inform clinical practice during COVID-19 and potential future pandemics. We strongly encourage politicians, health authorities, and funding bodies to support these initiatives.

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