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Mini Review

Pediatric Conditions During COVID-19: A Brief Summary

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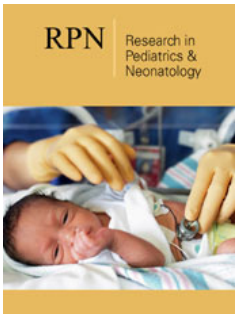

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Introduction

COVID-19 pediatric conditions have been similar to those for adults, including medical, neurological, sensory and psychological conditions, although they have typically been less prevalent and severe in children and adolescents. The lesser severity in children and adolescents may relate to their less mature viral receptors, less dysregulation of immune responses, and a lesser incidence of pre-existing comorbid conditions. This brief review is a summary of publications found on PubMed for 2019-2021 on the prevalence of infection, neurological, sensory and psychological conditions in children during COVID-19. This is a fast changing literature because of the increasing number of variants and prevalence of infection.

The clinical condition that has predominated for children has been called multisystem inflammatory syndrome that has typically presented with fever and cough in 1-5% of children between the ages of 1 and 14 [1]. In a retrospective study on 2,141 children with COVID-19, mild disease was noted in 43%, moderate in 21%, severe in 3% and critical in less than 1% [2]. Approximately 9 to 15% of COVID-positive children remained asymptomatic and only mild to moderate severity was noted for those who were symptomatic. The current prevalence may be greater as more children and adolescents are being affected by variants of COVID-19. Extra-pulmonary symptoms have also been noted in children during Covid-19. In a systematic review on 28 studies, the decreasing order of frequency of extra-pulmonary symptoms was gastrointestinal, renal, cardiovascular, neurological, hematological, lymphatic, cutaneous, optic, ocular, olfactory and gustatory [3]. Most of the extra-pulmonary symptom literature has focused on neurological and sensory conditions including headaches and loss of smell and taste as well as skin problems.

In an overview on smell and taste problems in children, 19% tested positive for these disorders [4]. Other authors have reported greater prevalence at 30% [5] and 37% [6]. However, most of these studies were self-report surveys. When a more objective test was given (a mix of eugenol, ethanol and vinegar on swabs held 1 to 2 centimeters from the nostril), only 10% of those who had normal subjective olfaction showed abnormal responses [6]. It is notable that 54% of these occurred in mild cases of COVID-19 infection, 37% in moderate cases and 17 % in severe cases of COVID-19, suggesting that these disorders are less apparent as COVID-19 symptoms increase.

Most of the data on pediatric psychological problems during COVID-19 have been derived from non-infected children and adolescents who were experiencing these problems during quarantines/lockdowns. In one sample, helplessness was noted in 66%, worry in 69% and fear in 61% of children and adolescents [7]. More serious psychological conditions including anxiety, depression and PTSD symptoms have also been noted among children and adolescents during COVID-19 [8]. Typically depression has been noted as a comorbid state with anxiety. In a Greek lockdown study, for example, 27% were noted to be depressed while

14% expressed high anxiety [9]. Psychological problems have been attributed to less exercise, separation from schools and peers, over-exposure to social media, already existing psychiatric disorders and chronic illnesses that have been exacerbated by COVID-19. Methodological limitations of this literature include small sample, cross-sectional studies assessing single variables in countries that experienced lockdowns early in the pandemic. And, sequelae or post-COVID problems have rarely been researched, although they are increasingly reported as infections are increasing in children and adolescents. These data highlight the need for more research and intervention programs for pediatric problems and populations during COVID-19.

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