

Child and Adolescent Mental Health During the COVID-19 Pandemic

As the 2019 coronavirus (COVID-19) pandemic enters its second year, concerns regarding the mental health of children have begun to increase. Stress due to the disease and its physical effects, economic instability and uncertainty, social justice and racial equity issues, isolation, and regular disruptions to daily life may cause increased mental health difficulties in children and adolescents. Additionally, because the pandemic is forcing many schools to operate remotely or on hybrid schedules (i.e., partial schooling happening in-person and the rest occurring online) more than a year after closures began, there are concerns that children may be experiencing an increased need for mental health services without access to traditional supports (Phelps & Sperry, 2020).

Although research and data on this topic is relatively sparse, understanding if, and how, the pandemic has contributed to mental health difficulties for children is a priority as the pandemic continues to impact many facets of everyday life. This research summary provides a review of current studies examining mental health concerns during the pandemic. There are several limitations to this work that impact the generalizability of the results presented including when the study was conducted, the geographic region of the study, and the sample used. Additionally, most studies do not specifically identify the variables that may have the most impact on mental health and well-being during the pandemic (e.g., mode of instruction, parental unemployment, economic instability, reduced access to care, COVID-related health problems); statements about the specific cause or nature of changes in well-being are hypothetical. Finally, many studies include data from surveys, which can introduce biases and errors that weaken conclusions.

Importantly, the literature review from which this summary is created was conducted in February 2021. New research and data continue to be presented that inform this discussion. As such, depending on when this summary is accessed, it may not constitute the totality of work on this topic.

Updated: 4/15/2021

Longitudinal studies

United States Sample

- The US Centers for Disease Control (CDC) found that although total visits to Emergency Departments (ED) in the USA for children under 18 years of age were down, for the period April through October 2020, the proportion of those visits for mental health issues increased. It is

unknown whether the results reflect increased mental health problems among youth or a factor of the lower incidence of total ED visits (Leeb et al., 2020).

- A sample of 238 adolescents and their parents in the United States were surveyed. Researchers found that significant increases in self-reported anxiety, depression, and sluggish cognitive tempo, as well as parent-reported inattention, and oppositionality were present when comparing May and June 2020 to pre-pandemic levels. However, all symptom levels returned to pre-pandemic levels except inattention by August 2020 (Breux et al., 2021).
- The US Centers for Disease Control (CDC) found no change in the number of weekly suicide deaths when comparing 2020 (data through October) to rates observed in 2016-2019 (Rossen et al., 2021).
- Behavioral inhibition in toddlerhood and social wariness in childhood predicted increased anxiety following COVID-19 pandemic lockdowns in a sample of 291 young adults from Maryland who completed measures in April and May 2020 (Zeytinoglu et al., 2021).
- A sample of 90 young adults from Los Angeles (18 to 25 years old) in a risk reduction program for homelessness were administered surveys between April and July 2020. 48% reported some mental health symptoms and, among those who used substances prior to the pandemic, 16%-28% reported increased use of alcohol, tobacco, or marijuana. It was not reported what percentage decreased their use of substances (Tucker, D'Amico, Pedersen, Garvey, Rodriguez, & Klein, 2020).
- In a majority Hispanic sample, adolescents who self-reported higher levels of mental health problems before the pandemic showed reduced internalizing, externalizing, and total problems up to three months after stay-at-home orders were implemented. Other adolescents showed significant reductions in internalizing and total problems (Penner, Ortiz, & Sharp, 2021).

International Sample

- Researchers in Australia found that parents' pre-existing health conditions, environmental stressors, and a pre-existing diagnosis of Attention-Deficit Hyperactivity Disorder (ADHD) or Autism Spectrum Disorder (ASD) was associated with greater anxiety and depression symptoms during April 2020 in children. However, when compared to pre-pandemic levels, no differences were observed (Westrupp et al., 2020). *
- Researchers in the Netherlands found that while parent anxiety, depression, and hostility increased, there was a gradual decrease in internalizing and externalizing symptoms during stay-at-home orders. Changes in parental symptoms and children's externalizing symptoms were mediated by perceived stress with higher ratings of stress pre-pandemic were associated with increased symptoms (Achterberg, Dobbelaar, Doer, & Crone, 2021).

Cross-sectional studies

United States Sample

- In a subsample of parents surveyed between March 15 and March 17, 2020 in New York City, 45.6% observed signs of distress in their children, though the majority said such distress was manageable (Rosen et al., 2020). *
- The US Centers for Disease Control (CDC) found that children ages 5 to 7 years who received virtual instruction had worsening mental or emotional health when compared to those who received combined or face-to-face instruction. The study was conducted in October and November 2020 and consisted of a sample of 1,561 parents who reported on their children's well-being. Importantly, the majority (no less than 75%) of children had better or no change in mental or emotional health regardless of mode of instruction (Verlenden et al., 2021).
- In a sample of preschoolers assessed for mental health issues during stay-at-home orders in California showed elevated depression and externalizing symptoms compared to pre-pandemic norms. No pre-pandemic data was collected as part of this study. Family routines were protective even after controlling for income, food insecurity, and maternal depression and stress (Glynn, Davis, Luby, Baram, & Sandman, 2021).

International Sample

- In a review of studies on children's mental health during the pandemic, conducted in the summer of 2020, the authors found that studies indicated high rates of anxiety, depression, and post-traumatic stress symptoms. No conclusions are made as to whether these rates reflected significant increases when compared to rates prior to the pandemic. Additionally, the location, sample characteristics, timing, and methodology of the studies in the review vary greatly (de Miranda, da Silva Athanasio, de Sena Oliveira, & Silva, 2020).
- Self-reported mental health ratings declined, indicating worsening mental health, from pre- to post-pandemic in a survey of Canadian adolescents and young adults conducted in April 2020. However, self-reported substance use declined for this sample during that time (Hawke et al., 2020a).
- Canadian adolescents and young adults with pre-existing health conditions and/or symptoms associated with COVID-19 were more likely to meet screening criteria for an anxiety disorder or depression compared to those without a physical health condition. Additionally, for those with a physical health condition, greater declines in mental health were observed during the pandemic when compared to the 3 months prior to the pandemic (Hawke et al., 2020b).
- In a sample of 381 families from Australia, New Zealand, UK, USA, and Canada pandemic stress, parent mental health concerns, harsh parenting behaviors, and low family cohesion predicted declines in child mental health from before the pandemic. This survey occurred mid-April to mid-May 2020 (Whittle, Bray, Lin, & Schwartz, 2020). *
- In a comparison between gender diverse youth and cisgender youth from Canada, researchers found that gender diverse youth experienced more mental health unmet needs and greater substance use during the early pandemic period (Hawke, Hayes, Darnay, & Henderson, 2021).

- A sample of 1054 Canadian adolescents self-reported their retrospective substance use prior to the pandemic and during April 2020. For substances asked about (i.e., alcohol, vaping, and marijuana) the percentage of users decreased but the frequency of use increased (Dumas, Ellis, & Litt, 2020).
- A survey conducted in February and March of 2020 found that among Chinese students in grades 2 through 6, 22.6% reported depressive symptoms and 18.9% reported anxiety symptoms. Although the authors note this is an increased prevalence compared to surveys conducted prior to the pandemic, no direct comparison is made (Xie, Xue, Zhou, Zhu, Liu, Zhang, & Song, 2020).
- A survey of Chinese high school students, conducted in early March 2020, found that 43.7% endorsed depressive symptoms, 37.4% endorsed anxiety symptoms, and 31.3% endorsed some combination of both anxiety and depression symptoms. This is higher than rates for anxiety and depression symptoms found in other studies conducted prior to the pandemic, though it is unknown whether such increases are significant (Zhou et al., 2020).
- A survey of 3613 Chinese students, aged 7 to 18 years, taken during the pandemic showed that 22.28% reported clinical levels of depression, a higher rate than was typically found prior to the pandemic (Duan, Shao, Wang, Huang, Miao, Yang, & Zhu, 2020).
- In a sample of 310 Chinese children ages 3 to 18 years, surveyed in February 2020, the most observed mental health symptoms were: clinginess (37%), inattention (33%), irritability (32%), worry (28%), and obsessive requests for updates (27%). No comparison to pre-pandemic rates were presented (Jiao et al., 2020).
- A survey of 1264 Chinese primary school students conducted in February and March 2020 found the following prevalence rates of behavior problems: conduct problems (7.0%), peer problems (6.6%), hyperactivity-inattention (6.3%) and emotional problems (4.7%). Those children with anxiety symptoms were found to have an increased likelihood of total difficulty. No comparison is made to rates of pre-pandemic behavior problems (Liu et al., 2021).
- In a sample of 4342 Chinese primary and secondary school students surveyed in March 2020, researchers found that symptoms of anxiety, depression, and stress were most prevalent. However, participants were mostly satisfied with their life and 21.4% became more satisfied during school closures (Tang, Xiang, Cheung, & Xiang, 2021).
- Among a sample of 1500 high school students from Ecuador who were surveyed in April 2020, 68% reported feeling happy, while 16% had scores that indicated major depression (Asanov, Flores, McKenzie, Mensmann, & Schulte, 2020).
- Researchers in Canada found that between 67% and 70% of youth, depending on the age group, experienced a deterioration in one mental health domain (e.g., anxiety, irritability). However, between 19% and 31% depending on the age group experienced improvement in one mental health domain (Cost et al., 2021).
- In a sample of youth with physical and intellectual disabilities assessed between June and July 2020, 61% reported a reduction in physical activity while 90% reported a negative impact on mental health including behavior, mood, and social and learning difficulties (Theis, Campbell, De Leeuw, Owen, Schenke, 2021).

Studies on suicide rates

United States Sample

- An examination of suicide death rates during the pandemic period (i.e., March through May 2020) in Massachusetts found no difference when those rates were compared to the same period in 2019. This study included individuals of all ages, but no differences in the findings were observed by age (Faust, Shah, Du, Li, Lin, & Krumholz, 2021).
- Suicide ideation and attempt rates in 9092 youth who presented to pediatric emergency departments from January to July 2020 were compared to rates from January to July 2019. Although significant increases in rates were observed for certain months in 2020 (i.e., higher proportion of individuals in emergency departments indicating suicidal ideation and attempts), compared to 2019, it is unclear whether these increases represented higher rates of these behaviors in the community or were due a lower frequency of total emergency department visits during those months (Hill, Rufino, Kurian, Saxena, Saxena, & Williams, 2021).
- The average number of weekly Emergency Department visits for suicide ideation, attempt, and self-harm in youth under 18 years old increased for the 4-week period from December 15th, 2020 to January 16th, 2021 when compared to the same period in 2019-2020. This accounted for the reduced overall number of Emergency Department visits (Adjemian et al., 2021).

International Sample

- The suicide rate (i.e., the number of suicides per month) among Japanese youth under 20 years old was unchanged for the months March through May when comparing 2018, 2019, and 2020. This period (i.e., March through May) coincided with school closures in Japan. Initial school closures in Japan, due to the COVID-19 pandemic, did not impact suicide rates (Isumi, Doi, Yamaoka, Takahasi, & Fujiwara, 2020).

* Paper accessed as a preprint prior to publication.

REFERENCES

- Achterberg, M., Dobbelaar, S., Boer, O. D., & Crone, E. A. (2021). Perceived stress as mediator for longitudinal effects of the COVID-19 lockdown on wellbeing of parents and children. *Scientific Reports*, *11*, 1-14. doi: 10.1038/s41598-021-81720-8
- Adjemian, J., Hartnett, K. P., Kite-Powell, A., DeVies, J., Azondekon, R., Radhakrishnan, L., ... & Rodgers, L. (2021). Update: COVID-19 Pandemic–Associated Changes in Emergency Department Visits — United States, December 2020–January 2021. *Morbidity and Mortality Weekly Report*, *70*, 552-556. doi: 10.15585/mmwr.mm7015a3
- Asanov, I., Flores, F., McKenzie, D., Mensmann, M., & Schulte, M. (2021). Remote-learning, time-use, and mental health of Ecuadorian high-school students during the COVID-19 quarantine. *World Development*, *138*, 105225. doi: 10.1016/j.worlddev.2020.105225

- Breaux, R., Dvorsky, M. R., Marsh, N. P., Green, C. D., Cash, A. R., Shroff, D. M., ... & Becker, S. P. (2021). Prospective impact of COVID-19 on mental health functioning in adolescents with and without ADHD: protective role of emotion regulation abilities. *Journal of Child Psychology and Psychiatry*. Advance online publication. doi: 10.1111/jcpp.13382
- Cost, K. T., Crosbie, J., Anagnostou, E., Birken, C. S., Charach, A., Monga, S., ... & Korczak, D. J. (2021). Mostly worse, occasionally better: impact of COVID-19 pandemic on the mental health of Canadian children and adolescents. *European Child & Adolescent Psychiatry*, 1-14. doi: 10.1007/s00787-021-01744-3
- Duan, L., Shao, X., Wang, Y., Huang, Y., Miao, J., Yang, X., & Zhu, G. (2020). An investigation of mental health status of children and adolescents in china during the outbreak of COVID-19. *Journal of Affective Disorders*, 275, 112-118. doi: 10.1016/j.jad.2020.06.029
- Dumas, T. M., Ellis, W., & Litt, D. M. (2020). What does adolescent substance use look like during the COVID-19 pandemic? Examining changes in frequency, social contexts, and pandemic-related predictors. *Journal of Adolescent Health*, 67, 354-361. doi: 10.1016/j.jadohealth.2020.06.018
- Faust, J. S., Shah, S. B., Du, C., Li, S. X., Lin, Z., & Krumholz, H. M. (2021). Suicide deaths during the CoViD-19 stay-at-home advisory in Massachusetts, March to May 2020. *JAMA Network Open*, 4, e2034273-e2034273. doi: 10.1001/jamanetworkopen.2020.34273
- Glynn, L. M., Davis, E. P., Luby, J. L., Baram, T. Z., & Sandman, C. A. (2021). A predictable home environment may protect child mental health during the COVID-19 pandemic. *Neurobiology of Stress*, 14, 100291. doi: 10.1016/j.ynstr.2020.100291
- Hawke, L. D., Barbic, S. P., Voineskos, A., Szatmari, P., Cleverley, K., Hayes, E., ... & Henderson, J. L. (2020a). Impacts of COVID-19 on Youth Mental Health, Substance Use, and Well-being: A Rapid Survey of Clinical and Community Samples. *The Canadian Journal of Psychiatry*, 65, 701-709. doi: 10.1177/0706743720940562
- Hawke, L. D., Hayes, E., Darnay, K., & Henderson, J. (2021). Mental health among transgender and gender diverse youth: An exploration of effects during the COVID-19 pandemic. *Psychology of Sexual Orientation and Gender Diversity*. Advance online publication. doi: 10.1037/sgd0000467
- Hawke, L. D., Monga, S., Korczak, D., Hayes, E., Relihan, J., Darnay, K., ... & Henderson, J. (2020b). Impacts of the COVID-19 pandemic on youth mental health among youth with physical health challenges. *Early Intervention in Psychiatry*. Advance online publication. doi: 10.1111/eip.13052
- Hill, R. M., Rufino, K., Kurian, S., Saxena, J., Saxena, K., & Williams, L. (2021). Suicide ideation and attempts in a pediatric emergency department before and during COVID-19. *Pediatrics*, 147, e2020029280. doi: 10.1542/peds.2020-029280.
- Isumi, A., Doi, S., Yamaoka, Y., Takahashi, K., & Fujiwara, T. (2020). Do suicide rates in children and adolescents change during school closure in Japan? The acute effect of the first wave of COVID-19 pandemic on child and adolescent mental health. *Child Abuse & Neglect*, 110, 104680. doi: 10.1016/j.chiabu.2020.104680
- Jiao, W. Y., Wang, L. N., Liu, J., Fang, S. F., Jiao, F. Y., Pettoello-Mantovani, M., & Somekh, E. (2020). Behavioral and emotional disorders in children during the COVID-19 epidemic. *The Journal of Pediatrics*, 221, 264-266. doi: 10.1016/j.jpeds.2020.03.013

- Leeb, R. T., Bitsko, R. H., Radhakrishnan, L., Martinez, P., Njai, R., & Holland, K. M. (2020). Mental health–related emergency department visits among children aged < 18 years during the COVID-19 pandemic—United States, January 1–October 17, 2020. *Morbidity and Mortality Weekly Report*, *69*, 1675. doi: 10.15585/mmwr.mm6945a3
- Liu, Q., Zhou, Y., Xie, X., Xue, Q., Zhu, K., Wan, Z., ... & Song, R. (2021). The prevalence of behavioral problems among school-aged children in home quarantine during the COVID-19 pandemic in china. *Journal of Affective Disorders*, *279*, 412-416. doi: 10.1016/j.jad.2020.10.008
- de Miranda, D. M., da Silva Athanasio, B., de Sena Oliveira, A. C., & Silva, A. C. S. (2020). How is COVID-19 pandemic impacting mental health of children and adolescents?. *International Journal of Disaster Risk Reduction*, 101845. doi: 10.1016/j.ijdr.2020.101845
- Penner, F., Ortiz, J. H., & Sharp, C. (2021). Change in Youth Mental Health During the COVID-19 Pandemic in a Majority Hispanic/Latinx US Sample. *Journal of the American Academy of Child & Adolescent Psychiatry*, *60*, 513-523. doi: 10.1016/j.jaac.2020.12.027
- Phelps, C., & Sperry, L. L. (2020). Children and the COVID-19 pandemic. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(S1), S73-S75. doi: 10.1037/tra0000861
- Rosen, Z., Weinberger-Litman, S. L., Rosenzweig, C., Rosmarin, D. H., Muennig, P., Carmody, E. R., ... & Litman, L. (2020). *Anxiety and distress among the first community quarantined in the US due to COVID-19: Psychological implications for the unfolding crisis*. PsyArXiv. <https://psyarxiv.com/7eq8c/download?format=pdf>
- Rossen, L. M., Hedegaard, H., Warner, M., Ahmad, F. B., Sutton, P. D. (2021) Early provisional estimates of drug overdose, suicide, and transportation-related deaths: Nowcasting methods to account for reporting lags. *Vital Statistics Rapid Release*, *11*, 1-20. doi: 10.15620/cdc:101132
- Tang, S., Xiang, M., Cheung, T., & Xiang, Y. T. (2021). Mental health and its correlates among children and adolescents during COVID-19 school closure: The importance of parent-child discussion. *Journal of Affective Disorders*, *279*, 353-360. doi: 10.1016/j.jad.2020.10.016
- Theis, N., Campbell, N., De Leeuw, J., Owen, M., & Schenke, K. C. (2021). The effects of COVID-19 restrictions on physical activity and mental health of children and young adults with physical and/or intellectual disabilities. *Disability and Health Journal*, 101064. doi: 10.1016/j.dhjo.2021.101064
- Tucker, J. S., D'Amico, E. J., Pedersen, E. R., Garvey, R., Rodriguez, A., & Klein, D. J. (2020). Behavioral health and service usage during the COVID-19 pandemic among emerging adults currently or recently experiencing homelessness. *Journal of Adolescent Health*, *67*, 603-605. doi: 10.1016/j.jadohealth.2020.07.013
- Westrupp, E., Bennett, C., Berkowitz, T. S., Youssef, G., Toumbourou, J., Tucker, R., ... & Sciberras, E. (2020). *Child, parent, and family mental health and functioning in Australia during COVID-19: Comparison to pre-pandemic data*. PsyArXiv. <https://psyarxiv.com/ydrm9/download?format=pdf>
- Whittle, S., Bray, K., Lin, S., & Schwartz, O. (2020). *Parenting and child and adolescent mental health during the COVID-19 pandemic*. PsyArXiv. <https://psyarxiv.com/ag2r7/download?format=pdf>
- Verlenden, J. V., Pampati, S., Rasberry, C., Liddon, N., Hertz, M., Kilmer, G., ... & Either, K. A. (2021). Association of children's mode of school instruction with child and parent experiences and well-being

during the COVID-19 Pandemic—COVID Experiences Survey, United States, October 8–November 13, 2020. *Morbidity and Mortality Weekly Report*, 70, 369-376. doi: 10.15585/mmwr.mm7011a1

Xie, X., Xue, Q., Zhou, Y., Zhu, K., Liu, Q., Zhang, J., & Song, R. (2020). Mental health status among children in home confinement during the coronavirus disease 2019 outbreak in Hubei Province, China. *JAMA pediatrics*, 174, 898-900. doi: 10.1001/jamapediatrics.2020.1619

Zentinoglu, S., Morales, S., Lorenzo, N., Chronis-Tuscano, A., Degnan, K., Almas, A., ... & Fox, N. (2021). A developmental pathway from early behavioral inhibition to young adults' anxiety during the COVID-19 pandemic. *Journal of the American Academy of Child & Adolescent Psychiatry*. Advance online publication. doi: 10.1016/j.jaac.2021.01.021

Zhou, S. J., Zhang, L. G., Wang, L. L., Guo, Z. C., Wang, J. Q., Chen, J. C., ... & Chen, J. X. (2020). Prevalence and socio-demographic correlates of psychological health problems in Chinese adolescents during the outbreak of COVID-19. *European Child & Adolescent Psychiatry*, 29, 749-758. doi: 10.1007/s00787-020-01541-4

For additional information and resources on the COVID-19 pandemic, please visit NASP's COVID-19 Resource Center at <https://www.nasponline.org/resources-and-publications/resources-and-podcasts/covid-19-resource-center>

© 2021, National Association of School Psychologists, 4340 East West Highway, Suite 402, Bethesda, MD 20814, 301-657-0270, www.nasponline.org

Please cite this document as:

National Association of School Psychologists. (2021). *Child and adolescent mental health during the COVID-19 Pandemic* [Research summary]. Bethesda, MD: Author.