

Supplementary Table 1: List of excluded studies

Citation	Reason for exclusion
Alves JM, Yunker AG, DeFendis A, et al. BMI status and associations between affect, physical activity and anxiety among U.S. children during COVID-19. <i>Pediatr Obes.</i> 2021;16(9):e12786.	Not relevant to PICO
Argiansya F, Soedjadhi R, Indra RM, et al. Electronic media use and sleep disorders among adolescents during the COVID-19 pandemic. <i>Sleep Disord.</i> 2021;2096944. doi: 10.1155/2021/2096944.	Not relevant to PICO
Aristovnik A, Keržič D, Ravšelj D. Impacts of the COVID-19 Pandemic on Life of Higher Education Students: A Global Perspective. <i>Sustainability.</i> 2020;12:8438.	Not relevant to PICO
Babu TA, Selvapandiyan J. The Psychological Effects of COVID-19 Pandemic Related Lockdown in Children. <i>Indian Pediatr.</i> 2020;57:1087.	Study design
Bacaro V, Chiabudini M, Buonanno C, et al. Sleep characteristics in Italian children during home confinement due to COVID-19 outbreak. <i>Clin Neuropsychiatry.</i> 2021;18:13-27.	Not relevant to PICO
Balasubramanian S, Rao NM, Goenka A. Coronavirus Disease 2019 (COVID-19) in Children - What We Know So Far and What We Do Not. <i>Indian Pediatr.</i> 2020;57:435-42.	Study design
Bates L, Zieff G, Stanford K. COVID-19 Impact on Behaviors across the 24-Hour Day in Children and Adolescents: Physical Activity, Sedentary Behavior, and Sleep. <i>Children (Basel).</i> 2020;7:138.	Study design
Bellomo TR, Prasad S, Munzer T. The impact of the COVID-19 pandemic on children with autism spectrum disorders. <i>J Pediatr Rehabil Med.</i> 2020;13:349-54.	Study design
Berard M, Rattaz C, Peries M, et al. Impact of containment and mitigation measures on children and youth with ASD during the COVID-19 pandemic: report from the ELENA cohort. <i>J Psychiatr Res.</i> 2021;137:73-80.	Not relevant to PICO
Bertrand L, Schröder C, Bourgin P, et al. Sleep and circadian rhythm characteristics in individuals from the general population during the French COVID-19 full lockdown. <i>J Sleep Res.</i> Published Online First: 7 September 2021. doi: 10.1111/jsr.13480.	Not relevant to PICO
Biernesser C, Montano G, Miller E, et al. Social Media Use and Monitoring for Adolescents With Depression and Implications for the COVID-19 Pandemic: Qualitative Study of Parent and Child Perspectives. <i>JMIR Pediatr Parent.</i> 2020;3:e21644.	Not relevant to PICO
Bösselmann V, Amatriain-Fernández S, Gronwald T, et al. Physical activity, boredom and fear of COVID-19 among adolescents in Germany. <i>Front Psychol.</i> 2021;12:624206.	Not relevant to PICO
Breidokienė R, Jusienė R, Urbonas V, et al. Sedentary behavior among 6-14-year-old children during the COVID-19 lockdown and its relation to physical and mental health. <i>Healthcare (Basel).</i> 2021;9(6):756.	Not relevant to PICO
Cachón-Zagalaz J, Zagalaz-Sánchez M ^a L, Arufe-Giráldez V, et al. Physical Activity and Daily Routine among Children Aged 0-12 during the COVID-19 Pandemic in Spain. <i>Int J Environ Res Public Health.</i> 2021;18:703.	Not relevant to PICO
Chen CY, Chen IH, O'Brien KS, et al. CY. Psychological distress and internet-related behaviors between schoolchildren with and without overweight during the COVID-19 outbreak. <i>Int J Obes.</i> 2021;45:677-686.	Not relevant to PICO
Chen Y, Osika W, Henriksson G, et al. Impact of COVID-19 pandemic on mental health and health behaviors in Swedish adolescents. <i>Scand J Public Health.</i> Published Online First: 8 June 2021. doi: 10.1177/14034948211021724.	Not relevant to PICO
Chia S, Chang S, Roy C. Effects of nationwide lockdown and school closures during the COVID-19 pandemic on children's physical health and beyond. <i>Singapore Med J.</i> Published Online First: 2 December 2020. doi: 10.11622/smedj.2020172	Study design
Chugani CD, Houtrow A. Effect of the COVID-19 Pandemic on College Students With Disabilities. <i>Am J Public Health.</i> 2020;110:1722-3.	Study design

Cipolla C, Curatola A, Ferretti S, et al. Eating habits and lifestyle in children with obesity during the COVID19 lockdown: a survey in an Italian center. <i>Acta Biomed.</i> 2021;92(2):e2021196.	Not relevant to PICO
Clemens V, Deschamps P, Fegert JM. Potential effects of “social” distancing measures and school lockdown on child and adolescent mental health. <i>Eur Child Adolesc Psychiatry.</i> 2020;29:739-42.	Study design
Dave H, Yagnik P. Psycho-social impact of COVID-19 pandemic on children in India: The reality. <i>Child Abuse Negl.</i> 2020;108:104663.	Study design
De Figueiredo CS, Sandre PC, Portugal LCL. COVID-19 pandemic impact on children and adolescents' mental health: Biological, environmental, and social factors. <i>Prog Neuropsychopharmacol Biol Psychiatry.</i> 2021;106:110171.	Study design
Drogosz M, Pellegren J, Creegan E, et al. Implications of sports on COVID-19 cases in Rhode Island school-aged athletes. <i>R I Med J (2013).</i> 2021;104(5):51-54.	Not relevant to PICO
Dutta K, Mukherjee R, Sen D, Sahu S. Effect of COVID-19 lockdown on sleep behavior and screen exposure time: an observational study among Indian school children. <i>Biol Rhythm Res.</i> Published Online First: 14 October 2020. doi:10.1080/09291016.2020.1825284.	Error in reporting data
Eales L, Gillespie S, Alstat RA, et al. Children's screen and problematic media use in the United States before and during the COVID-19 pandemic. <i>Child Dev.</i> 2021;92(5):e866-e882. doi: 10.1111/cdev.13652.	Not relevant to PICO
Fidancı İ, Aksoy H, Yengil Tacı D, et al. Evaluation of the effect of the COVID-19 pandemic on sleep disorders and nutrition in children. <i>Int J Clin Pract.</i> 2021;75(7):e14170.	Not relevant to PICO
Fillon A, Genin P, Larras B, et al. France's 2020 report card on physical activity and sedentary behaviors in children and youth: results and progression. <i>J Phys Act Health.</i> 2021;18(7):811-7.	COVID-19 related data same with Chambonniere C, et al.
González-Rábago Y, Cabezas-Rodríguez A, Martín U. Social inequalities in health determinants in Spanish children during the COVID-19 lockdown. <i>Int J Environ Res Public Health.</i> 2021;18(8):4087.	Not relevant to PICO
Hudimova A, Popovych I, Baidyk V, et al. The impact of social media on young web users' psychological well-being during the COVID-19 pandemic progression. <i>AMAZONIA Investiga.</i> 2021;10(39):50-61.	Not relevant to PICO
Judge M. Covid 19, school closures and the uptake of a digital assessment for learning pilot project during Ireland's national lockdown. <i>Irish Educational Studies.</i> 2021;40(2):419-29.	Not relevant to PICO
Kerekes N, Bador K, Sfindla A, et al. Changes in adolescents' psychosocial functioning and well-being as a consequence of long-term COVID-19 restrictions. <i>Int J Environ Res Public Health.</i> 2021;18(16):8755.	Not relevant to PICO
Kim D, Lee J. Addictive Internet gaming usage among Korean adolescents before and after the outbreak of the COVID-19 pandemic: a comparison of the latent profiles in 2018 and 2020. <i>Int J Environ Res Public Health.</i> 2021;18(14):7275.	Not relevant to PICO
Kim SJ, Lee S, Han H, et al. Parental mental health and children's behaviors and media usage during COVID-19-related school closures. <i>J Korean Med Sci.</i> 2021;36(25):e184.	Not relevant to PICO
Larsen L, Helland MS, Holt T. The impact of school closure and social isolation on children in vulnerable families during COVID-19: a focus on children's reactions. <i>Eur Child Adolesc Psychiatry.</i> 2021;26:1–11.	Not relevant to PICO
Latino F, Fischetti F, Cataldi S, et al. The impact of an 8-weeks at-home physical activity plan on academic achievement at the time of COVID-19 lockdown in Italian school. <i>Sustainability.</i> 2021;13:5812.	Not relevant to PICO
Lecuelle F, Leslie W, Huguélet S. Did the COVID-19 lockdown really have no impact on young children's sleep? <i>J Clin Sleep Med.</i> 2020;16:2121.	Study design
Levante A, Petrocchi S, Bianco F, et al. Psychological impact of COVID-19 outbreak on families of children with Autism Spectrum Disorder and typically developing peers: an online survey. <i>Brain Sci.</i> 2021;11(6):808.	Not relevant to PICO

Li X, Vanderloo LM, Maguire JL, et al. Public health preventive measures and child health behaviours during COVID-19: a cohort study. <i>Can J Public Health.</i> 2021;112(5):831-842.	Not relevant to PICO
Lian Q, Zuo X, Zhong X, et al. The effect of COVID-19 school closures on adolescent sleep duration: an uncontrolled before-after study. <i>BMC Public Health.</i> 2021;21(1):1528.	Not relevant to PICO
Liu Q, Zhou Y, Xie X, et al. The prevalence of behavioral problems among school-aged children in home quarantine during the COVID-19 pandemic in China. <i>J Affect Disord.</i> 2021;279:412–6.	Not relevant to PICO
López-Gil JF, Reis Gaya A, Reuter CP, et al. Sleep-related problems and eating habits during COVID-19 lockdown in a southern Brazilian youth sample. <i>Sleep Med.</i> 2021;85:150-156.	Not relevant to PICO
Lorch M, Fuchs D. COVID-19: Effects of the Shutdown on Children and Families in Child and Youth Care Services in Germany. <i>Child Youth Serv.</i> 2020;41:290-2.	Study design
Lukavská K, Burda V, Lukavský J, et al. School-based prevention of screen-related risk behaviors during the long-term distant schooling caused by COVID-19 outbreak. <i>Int J Environ Res Public Health.</i> 2021;18(16):8561.	Not relevant to PICO
Maltoni G, Zioutas M, Deiana G, et al. Gender differences in weight gain during lockdown due to COVID-19 pandemic in adolescents with obesity. <i>Nutr Metab Cardiovasc Dis.</i> 2021;31:2181-5.	Not relevant to PICO
Margaritis I, Houdart S, El Ouadrhiri Y. How to deal with COVID-19 epidemic-related lockdown physical inactivity and sedentary increase in youth? Adaptation of Anses' benchmarks. <i>Arch Public Health.</i> 2020;78:52.	Study design
Matovu JKB, Kabwama SN, Ssekamatte T, et al. COVID-19 awareness, adoption of COVID-19 preventive measures, and effects of COVID-19 lockdown among adolescent boys and young men in Kampala, Uganda. <i>J Community Health.</i> 2021;46(4):842-853.	Not relevant to PICO
Miclea B, Trifu NR, Herta DC. Psychosocial features in children and adolescents during the COVID-19 pandemic. <i>Psihiatru.ro.</i> 2020;63:16-8.	Study design
Montag C, Elhai JD. Discussing digital technology overuse in children and adolescents during the COVID-19 pandemic and beyond: On the importance of considering Affective Neuroscience Theory. <i>Addict Behav Rep.</i> 2020;12:100313.	Study design
Morres ID, Galanis E, Hatzigeorgiadis A, et al. Physical activity, sedentariness, eating behaviour and well-being during a COVID-19 lockdown period in Greek adolescents. <i>Nutrients.</i> 2021;13(5):1449.	Not relevant to PICO
Nakachi K, Kawabe K, Hosokawa R, et al. Differences in psychological and behavioral changes between children following school closure due to COVID-19. <i>Psychiatry J.</i> 2021:5567732.	Not relevant to PICO
Nakayama H, Matsuzaki T, Mihara S, et al. Change of Internet use and bedtime among Junior High School students after long-term school closure due to the Coronavirus Disease 2019 pandemic. <i>Children (Basel).</i> 2021;8(6):480.	Not relevant to PICO
Nithya, G, Damodaran V, Mythili V. A study on impact of Corona Virus Disease 2019 Pandemic on activities of daily living, play, and sensory behaviors of children with autism spectrum disorder: a cross-sectional survey study. <i>The Indian Journal of Occupational Therapy.</i> 2021,53(2):p.64.	Not relevant to PICO
Pinchoff J, Santhya K, White C. Gender specific differences in COVID-19 knowledge, behavior and health effects among adolescents and young adults in Uttar Pradesh and Bihar, India. <i>PLoS One.</i> 2020;15:e0244053.	Not relevant to PICO
Pombo A, Luz C, Rodrigues LP, et al. Correlates of children's physical activity during the COVID-19 confinement in Portugal. <i>Public Health.</i> 2020;189:14-19.	Not relevant to PICO
Passanisi S, Pecoraro M, Pira F, et al. Quarantine due to the COVID-19 pandemic from the perspective of pediatric patients with type 1 diabetes: a web-based survey. <i>Front Pediatr.</i> 2020;8:491.	Not relevant to PICO
Roggio F, Trovato B, Ravalli S, et al. One year of COVID-19 pandemic in Italy: effect of sedentary behavior on physical activity levels and musculoskeletal pain among university students. <i>Int J Environ Res Public Health.</i> 2021;18(16):8680.	Not relevant to PICO

Sama BK, Kaur P, Thind PS, et al. Implications of COVID-19 induced nationwide lockdown on children's behaviour in Punjab, India. <i>Child Care Health Dev.</i> 2021;47:128-35.	Study design
Sancho NB, Mondragon NI, Santamaria MD, et al. The well-being of children with special needs during the COVID-19 lockdown: academic, emotional, social and physical aspects, <i>Eur J Spec Needs Educ.</i> 2021. doi: 10.1080/08856257.2021.1949093.	Not relevant to PICO
Segre G, Campi R, Scarpellini F, et al. Interviewing children: the impact of the COVID-19 quarantine on children's perceived psychological distress and changes in routine. <i>BMC Pediatr.</i> 2021;21(1):231.	Not relevant to PICO
Selden TM, Berdahl TA, Fang Z. The risk of severe COVID-19 within households of school employees and school-age children. <i>Health Affairs.</i> 2020;39:2002–9.	Not relevant to PICO
Spaull N, Van Der Berg S. Counting the cost: COVID-19 school closures in South Africa and its impact on children. <i>South African Journal of Childhood Education.</i> 2020;10:a924 doi:10.4102/sajce.v10i1.924.	Not relevant to PICO
Štveráková T, Jačisko J, Busch A, et al. The impact of COVID-19 on physical activity of Czech children. <i>PLoS One.</i> 2021;16(7):e0254244.	Not relevant to PICO
Theis N, Campbell N, De Leeuw J, et al. The effects of COVID-19 restrictions on physical activity and mental health of children and young adults with physical and/or intellectual disabilities. <i>Disabil Health J.</i> 2021;14:101064.	Not relevant to PICO
Telford DM, Signal DM, Hofman PL, et al. Physical activity in adolescents with and without type 1 diabetes during the New Zealand COVID-19 pandemic lockdown of 2020. <i>Int J Environ Res Public Health.</i> 2021;18(9):4475.	Not relevant to PICO
Torres González, C, Galindo-Aldana, G, García León, et al. COVID-19 voluntary social isolation and its effects in sociofamily and children's behavior. <i>Salud Mental.</i> 2020;43:263-71.	Not relevant to PICO
Wang L, Zhang Y, Chen L, et al. Psychosocial and behavioral problems of children and adolescents in the early stage of reopening schools after the COVID-19 pandemic: a national cross-sectional study in China. <i>Transl Psychiatry.</i> 2021;11(1):342.	Not relevant to PICO
Wang S, Zhang Y, Ding W. Psychological distress and sleep problems when people are under interpersonal isolation during an epidemic: A nationwide multicenter cross-sectional study. <i>European Psychiatry.</i> 2020;63:e77.	Not relevant to PICO
Wang X, Chen H, Liu L. Anxiety and Sleep Problems of College Students During the Outbreak of COVID-19. <i>Frontiers in Psychiatry.</i> 2020;11:588693.	Not relevant to PICO
Wearick-Silva LE, Richter SA, Viola TW, et al. Sleep quality among parents and their children during COVID-19 pandemic in a Southern - Brazilian sample. <i>J Pediatr (Rio J).</i> Published Online First: 23 August 2021. doi: 10.1016/j.jped.2021.07.002.	Not relevant to PICO
Wright LJ, Williams SE, Veldhuijzen van Zanten JJCS. Physical activity protects against the negative impact of coronavirus fear on adolescent mental health and well-being during the COVID-19 pandemic. <i>Front Psychol.</i> 2021;12:580511.	Not relevant to PICO
Xiang M-Q, Tan X-M, Sun J. Relationship of physical activity with anxiety and depression symptoms in Chinese college students during the COVID-19 outbreak. <i>Front Psychol.</i> 2020;11:582436.	Not relevant to PICO
Xiao S, Yan Z, Zhao L. Physical activity, screen time, and mood disturbance among Chinese adolescents during COVID-19. <i>J Psychosoc Nurs Ment Health Serv.</i> 2021;59(4):14-20.	Not relevant to PICO
Yuan YQ, Ding JN, Bi N, et al. Physical activity and sedentary behaviour among children and adolescents with intellectual disabilities during the COVID-19 lockdown in China. <i>J Intellect Disabil Res.</i> Epub 2021 Nov 3. doi: 10.1111/jir.12898.	Not relevant to PICO
Yeasmin S, Banik R, Hossain S, et al. Impact of COVID-19 pandemic on the mental health of children in Bangladesh: A cross-sectional study. <i>Child Youth Serv Rev.</i> 2020;117:105277.	Not relevant to PICO
Zago M, Lovecchio N, Galli M. Players at home: physical activity and quality of life in 12–17 years-old football (soccer) players during the Covid-19 lockdown.	Not relevant to PICO

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Zhang X, Zhu W, Kang S, et al. Association between physical activity and mood states of children and adolescents in social isolation during the COVID-19 epidemic. <i>Int J Environ Res Public Health</i> . 2020;17:7666.	Not relevant to PICO
Zhang X, Dimitriou D, Halstead EJ. Sleep, anxiety, and academic performance: a study of adolescents from public high schools in China. <i>Front Psychol</i> . 2021;12:678839.	Not relevant to PICO
Zhou J, Sie X, Guo B, et al. Impact of COVID-19 Lockdown on Physical Activity Among the Chinese Youths: The COVID-19 Impact on Lifestyle Change Survey (COINLICS). <i>Front Public Health</i> . 2021;9:592795.	Not relevant to PICO
Zhu S, Zhuang Y, Lee P, et al. Leisure and problem gaming behaviors among children and adolescents during school closures caused by COVID-19 in Hong Kong: quantitative cross-sectional survey study. <i>JMIR Serious Games</i> . 2021;9(2):e26808.	Not relevant to PICO