Parents and school-aged children’s mental well-being after prolonged school closures and confinement during the COVID-19 pandemic in Mexico: a cross-sectional online survey study

Daniela Leon Rojas,1 Fabiola Castorena Torres,1 Barbara M Garza-Ornelas,1 Angie Milady Castillo Tarquino,1 Cynthia Anahi Salinas Silva,1 José Luis Almanza Chanona,1 Julieta Rodriguez-de-Ita1,2

ABSTRACT

Objective This study aimed to determine parents’ and school-aged children’s mental well-being after experiencing confinement and prolonged school closures during the COVID-19 pandemic.

Design Using a cross-sectional design, an online survey was applied to parents of school-aged children inquiring about their mental well-being and COVID-19 pandemic changes in their home and working lives. To assess the presence of depression, anxiety and stress in parents, the participants responded to the Depression, Anxiety and Stress Scale - 21 scale. To assess psychosocial dysfunction and sleep disturbances in children, participants responded to the Pediatric Symptom Checklist and the Children Sleep Habits Questionnaire.

Results A total of 209 parents answered the questionnaire, most of them were female (87.1%) with a mean age of 40 years. The prevalence of anxiety, stress and parental depression symptoms were 35.9%, 28.2% and 25.4%, respectively. Children’s mean age was 8.9 years, the prevalence of children’s psychosocial dysfunction was 12%, while their sleep disturbance symptoms were 59.8%. 10.5% of children were suffering both outcomes. We found a bidirectional relationship between parents’ and children’s mental health outcomes. Parental depression symptoms were associated with experiencing COVID-19 infection within the household, having children with pre-existing medical diagnoses, children’s psychosocial dysfunction and sleep disturbances. Children’s psychosocial dysfunction was associated with parental depression and changes in their school routine. Children’s sleep disturbances were associated with parental anxiety, younger age, increased use of electronic devices, night-time wakenings and shorter sleep time.

Conclusion Our results support the impact of long confinement and school closure due to the COVID-19 pandemic in Mexican children and parents’ mental well-being. We advocate for specific mental health interventions tailored to respond to parents and children at risk of mental well-being distress.

INTRODUCTION

The COVID-19 pandemic has dramatically impacted life around the world. Globally, as the pandemic has unfolded, prevention strategies and social distancing interventions were established, including the closure of schools, offices, shops and recreational areas.1 As a result of the established measures, the routines of families and children were seriously affected.2,3

Studies conducted at the beginning of the COVID-19 pandemic reported the detrimental effects of social distancing measures on parents’ and children’s mental health. In
the USA, it was found that one in four parents experienced worsening in their mental health, while one in seven children in their behavioural health. In Hubei province in China, a prevalence of 22.6% for depressive symptoms and 18.9% for anxiety symptoms in elementary school students was observed.

Other studies carried out in countries such as Australia and England reported an increase in the presentation of depressive symptoms, as well as a lower rate of referral to mental health services in children and adolescents related to closure measures.

Specifically, studies that have investigated the impact of school closures on children’s well-being have found an increase in depressive symptoms and non-suicidal self-injury, while others have discussed the importance of school structure for adolescents in regions such as sub-Saharan Africa, who may be more exposed to domestic abuse related to school closures.

In Mexico, mandatory home confinement, social distancing and school closure were implemented in March 2020 and strictly lasted until August 2021. The closure of schools, offices and recreational parks was established, as well as restrictions on supermarket hours. The Mexican Ministry of Public Education adopted homeschooling and broadcast its school programme through television, while most private schools adopted online classes. The end of the school closure was heterogeneous throughout the country, starting with the areas with the least risk of COVID-19 infection. By November 2021, most schools had partially returned to face-to-face activities. The implementation of these restrictive policies led to both parents and children being exposed to confinement and school closure for at least one continuous year.

The findings of studies carried out in other countries and the prolonged confinement and school closure policies established in Mexico, underline the need to enhance our knowledge of the effects of those measures on parents and children. This study aimed to determine parents’ and children’s mental well-being after experiencing prolonged school closure and confinement in Mexico during the COVID-19 pandemic.

METHODS

Study population and sample
We conducted a cross-sectional web-based study during the COVID-19 pandemic in Mexico from February to May 2021. After obtaining authorisation from group administrators, an open invitation for parents to participate was made through three active Facebook closed school groups. Participants were eligible for the study if they were aged 18 years or over, lived in Mexico during all the COVID-19 pandemic development, and were parents or guardians to a school-aged child (6–12 years). The exclusion criterion was an incompletely answered form. The minimum sample size required for the study was 200 (with a base proportion of 0.15, a confidence level of 95%, and a 5% margin of error). The total sample of the study included 209 predominantly middle-class Mexican parents, with a mean age of 40.2 years, 87.1% were female, 83.8% were married, 46.6% had a college degree and 72.3% were employed. Children’s mean age was 8.91 years, 54.1% of them were females.

Rating instruments
We developed a questionnaire to assess sociodemographic information and changes within the family’s house and working lives related to confinement due to the COVID-19 pandemic. The items included questions about parents’ occupation, confinement status, working modality during the COVID-19 pandemic, perceived changes in time spent with their children and perceived difficulties to adjust to changes in their routine. They were also asked about their children’s current state of activity, schooling and media use. Finally, they were asked to answer validated scales to assess their mental well-being.

To measure the presence and degree of depression, anxiety and stress symptoms in parents, the participants responded to the Depression, Anxiety and Stress Scale-21 (DASS-21). Its items are rated on a 4-point scale and are equally divided to form three subscales: stress, anxiety and depression. The total score for each subscale ranges from 0 to 21 and can rank the severity of symptoms as below the threshold, mild, moderate, severe and extremely severe. Scores ranging from 0 to 4 for depression, 0–4 for anxiety and 0–7 for stress are considered normal.

To assess sleep, emotions and behaviour in children, the participants were asked to respond to the Children’s Sleep Habits Questionnaire (CSHQ) and the Pediatric Symptom Checklist (PSC). The CSHQ is a 45-item parent-rated questionnaire designed to examine sleep behaviour in school-aged children. The CSHQ includes 33 scored questions rated on a 3-point scale according to the frequency of presentation (usually, sometimes or rarely). The total score ranges from 33 to 99, with higher scores representing more sleep disturbances. A score over 41 can indicate a paediatric sleep disorder.

The PSC is a 35-item screening questionnaire, designed to be completed by parents, to identify school-age children with difficulties in psychosocial functioning. All 35 items are rated on a Likert scale from 0 to 2, which sums to a total score range from 0 to 70. The cut-off score of 28 or higher indicates psychosocial difficulties. The questionnaire also provides 3 subscale scores for attention symptoms (normal score under 7), internalising/ anxiety/depression symptoms (normal score under 5), and externalising/conduct symptoms (normal score under 7).

Data analysis
We made a description of parents’ and children’s sociodemographic characteristics using mean and ±SD for quantitative variables and frequencies for qualitative variables.
For parents’ outcomes, binominal logistic regressions were performed to ascertain the effects of age, gender, marital status, education level, number of children, having children with medical diagnoses, confinement status, working modality, COVID-19 positive diagnoses and having children with psychosocial dysfunction and sleep disturbances on the likelihood that participants had depression, anxiety and stress.

For children’s outcomes, binominal logistic regressions were performed to ascertain the effects of age, gender, confinement status, schooling modality, electronic device use, total sleep time, night-time awakenings, parental depression, stress and anxiety on the likelihood that participants had psychosocial dysfunction and sleep disturbances.

For each model, the variable selection was made based on hypotheses and substantive previous knowledge on the subject. Linearity of the continuous variables with respect to the logit of the dependent variable was assessed via the Box-Tidwell procedure. A Bonferroni correction was applied using all terms in each model. All the logistic regression models were statistically significant. The data were analysed using SPSS V.20.0.

Patient and public involvement
No patients or members of the public were involved in the design of the study. After answering the questionnaire for the study, participants received feedback and contact information for specialised mental health attention if needed.

RESULTS
A total of 209 parents were recruited for the study. We found that 87.1% were female, 83.8% were married, 46.4% had a college degree and 52.6% had at least two children.

Parents reported experiencing drastic changes in both their activities and work routine. 93.3% of them were confined at home, only leaving for essential activities such as grocery shopping and face-to-face work. 45.9% described that just one person in the family was leaving the house regularly while other family members were mostly at home. 72.2% of parents were employed and 32.1% of them were working from home. 68.1% of parents reported that they were finding it hard to adapt to their routines.

Children’s mean age was 8.91 years; 54.1% of them were female, 93.8% of them were at home-school modalities (online platform, TV, email) while only 2.4% were attending school face to face. The demographics are shown in Table 1.

According to their DASS-21 scores, 25.4% parents reported depression symptoms, 35.9% anxiety symptoms and 28.2% stress symptoms. 28.2% had multiple symptoms, with 14.3% scoring positive for at least two outcomes and 13.8% scoring positive for all three outcomes (depression, anxiety and stress). The prevalence of psychosocial

| Table 1 | Parents’ and children’s demographics |
|-----------------|-----------------|
| **Parents’ demographic characteristics** |                |
| Gender |                |
| Female | 87.1% |
| Male | 12.9% |
| Age (years), mean (SD) | 40.18 (6.54) |
| Marital status |                |
| Single | 5.7% |
| Married | 83.8% |
| Divorced | 9.6% |
| Widowed | 1.0% |
| Parental education |                |
| High school | 6.7% |
| College | 46.4% |
| Master’s degree | 43.1% |
| PhD | 3.8% |
| Children living in the household |                |
| One child | 21.1% |
| Two children | 52.6% |
| Three or more children | 25.9% |
| Occupation |                |
| Housewife | 27.8% |
| Employee | 72.2% |
| Confinement status |                |
| Leaving the house just for essential activities (grocery shopping, pharmacy, work) | 93.3% |
| Leaving the house regularly, not only for essential activities | 6.7% |
| Working modality during COVID-19 pandemic |                |
| Working from home | 32.1% |
| Partial attendance (most days working from home) | 17.2% |
| Face-to-face attendance | 23% |
| COVID-19 confirmed cases within the family household |                |
| Yes | 35.9% |
| No | 64.1% |
| Children’s demographic characteristics |                |
| Gender |                |
| Female | 54.1% |
| Male | 45.9% |
| Age (years), mean (SD) | 8.91 (2.297) |
| Medical diagnosis |                |
| Asthma | 2.4% |
| Allergic rhinitis | 2.4% |
| Autism | 1.4% |

Continued
difficulties for children was 12% according to their PSC scores, 59.8% had sleep disturbances and 10.5% were experiencing both outcomes. Table 2 summarises parents' and children's findings.

Regarding parents' outcomes, being married (p=0.011, OR=6.571, 95% CI 1.536 to 28.107) and having children experiencing psychosocial dysfunction (p=0.016, OR=3.470, 95% CI 1.258 to 9.568) were related with higher odds of stress symptoms. Being married (p=0.011, OR=6.555, 95% CI 1.530 to 28.082), having COVID-19 confirmed cases within the family household (p=0.039, OR=2.225, 95% CI 1.040 to 4.761) and having children with medical diagnoses (p=0.014, OR=4.879, 95% CI 1.373 to 17.330), psychosocial dysfunction (p=0.001, OR=6.496, 95% CI 2.146 to 19.663) and sleep disorders (p=0.005, OR=3.721, 95% CI 1.502 to 9.217) were related with depression symptoms.

Leaving the house just for essential activities (p=0.05 OR=3.665, 95% CI 0.998 to 13.455) and having children with sleep disturbances (p=0.001, OR=3.550, 95% CI 1.720 to 7.328) were associated with increased odds of anxiety symptoms.

Homeschooling and parental depression were associated with children’s psychosocial dysfunction. Younger age, night awakenings, and the presence of parental anxiety were related to increased odds of having sleep disturbances, while longer total sleep time duration was associated with a reduction in the likelihood of sleep disturbances as shown in table 3.

**DISCUSSION**

Consistent with other studies’ findings, our data support that the influence of confinement and social distancing on families’ routines and mental well-being has been significant. Parents that participated in the study not only experienced drastic changes in their work and activities but also noted that they were experiencing anxiety, stress and depression symptoms. These findings agree with those reported by Cusinato et al, who documented increased levels of anxiety in parents and lower levels of well-being and perceived self-control, which could lead to risks in children’s well-being.16

Being married was associated with stress and depression symptoms. This could be related to married life...
roles and possible disproportionate caregiving distribution within the family household. Per the Organisation for Economic Co-Operation and Development during the COVID-19 pandemic, mothers were almost three times more likely than fathers to report that they took on most of the additional unpaid care work related to school closures and experienced stress.17

Considering most of the participants were mothers and almost half of them were working from home or with partial attendance, they may have experienced disproportionate burden during the pandemic as discussed by Douglas et al, who stated that mothers more often must manage their role as carers while being tasked with their children’s education and of managing their employment duties.18 Also, this could interact with their overall satisfaction with their partner’s participation in caregiving, as Park et al found that women who reported dissatisfaction with their partner’s participation in caregiving were more likely to report depressive symptoms.19

Leaving the house just for essential activities was associated with parents experiencing anxiety symptoms. This matches the finding reported in Italy, where a few days after the instalment of confinement measures, participants were experiencing lower psychological well-being, anxiety and depressive symptoms, perception of loss of control and less vitality.20

We evidenced an association between having COVID-19 confirmed cases within the household and depression symptoms. This was also similarly described by Coelho et al and could be related both to the burden related to the event and by the fear and uncertainty about the infection.21

Having children with any medical diagnoses was related to parents experiencing depression symptoms. This is consistent with previous literature, reporting that chronic health conditions in children can represent increased levels of stress in parents.22 Within the pandemic context, health conditions among children making them more vulnerable to infectious consequences could also represent a sizeable source of concern for parents that may lead to depression symptoms.

After being in confinement and online home-schooling for over a year, 12% of children were experiencing psychosocial dysfunction; attention symptoms were the most prevalent, followed by internalising/anxiety-depression and externalising/conduct symptoms. These outcomes represent a significant rate increase compared with pre-pandemic estimated prevalence in the country,23 but a slight decrease considering preliminary data of depression and anxiety symptoms reported at the beginnings of the pandemic in other countries.24 The differences in prevalence could be partially related to the difference in time adjustment to both confinement and school modality and the period of the pandemic being studied.

Children home-school status did influence the presence of psychosocial dysfunction. This agrees with the finding reported by Pizarro-Ruiz and Ordóñez-Camblor, which showed changes in the mental health of children during the first 8–10 days of confinement, noting consequences of confinement on children in the affective and behavioural areas.25 Additionally, 59.8% of children were experiencing sleep disturbances. Younger age, night awakenings, shorter total sleep time and increased use of electronic devices were significantly related to that outcome. This association is a finding also reported by MacKenzie et al study during the pandemic, which described that 40% of children were experiencing negative effects on their sleep approximately 5 months after the onset of the pandemic in Canada, also noting that those children were being more prone to demonstrate poorer physical and emotional well-being.26

---

### Table 3 Logistic regression analysis of children’s mental health outcomes

| Variable                  | Psychosocial dysfunction* | Sleep disturbances† |
|---------------------------|---------------------------|---------------------|
|                           | P value  | OR  | 95% CI for OR lower | Upper | P value  | OR  | 95% CI for OR lower | Upper |
| Age                       | 0.512    | 1.084 | 0.851              | 1.381  | 0.002    | 0.761 | 0.643              | 0.902  |
| Gender                    | 0.963    | 0.978 | 0.380              | 2.515  | 0.954    | 1.020 | 0.524              | 1.985  |
| Homeschooling             | 0.042    | 1.291 | 1.010              | 1.649  | 0.157    | 0.167 | 0.014              | 1.986  |
| Being confined at home    | 0.684    | 1.578 | 0.175              | 14.226 | 0.830    | 1.159 | 0.302              | 4.444  |
| Increase in electronic device use | 0.992 | 1.005 | 0.402              | 2.512  | 0.020    | 2.172 | 1.132              | 4.168  |
| Total sleep time          | 0.661    | 0.897 | 0.550              | 1.461  | 0.002    | 0.572 | 0.400              | 0.818  |
| Nighttime awakenings      | 0.928    | 1.003 | 0.942              | 1.067  | 0.012    | 1.086 | 1.018              | 1.159  |
| Parental depression       | 0.024    | 3.519 | 1.184              | 10.459 | 0.067    | 0.423 | 0.169              | 1.060  |
| Parental anxiety          | 0.447    | 1.597 | 0.478              | 5.337  | 0.040    | 2.406 | 1.043              | 5.550  |
| Parental stress           | 0.317    | 1.940 | 0.529              | 7.113  | 0.911    | 0.945 | 0.350              | 2.548  |

* The logistic regression model was statistically significant, χ²=25.421, p<0.04.
† The logistic regression model was statistically significant, χ²=54.229, p<0.001.
Mental well-being in parents and children demonstrated bidirectional associations, such that parents’ depression and anxiety affected children’s psychosocial functioning and sleep, and having children experiencing psychosocial dysfunction and sleep disturbances were related to parental stress, anxiety and depression. A significant relationship between caregiver depression and stress symptoms with increased levels of psychosocial dysfunction among children, was also observed by Spencer et al., suggesting that parents of children with better psychological adjustment experience fewer difficulties in their parental role, that could influence the presence of stress and mental health symptoms in them.

We consider the found associations within our data to be generalisable to our target population; however, the interpretation should be done considering certain limitations. First, the cross-sectional study design represents a short-time lapse of exploration, limiting the possibility to draw more robust conclusions and establish causality. Second, all data were obtained by parental report, leaving a need for direct children’s assessment. Third, the use of Facebook groups could contribute to a selection bias, being not inclusive of parents that are not present on social media. Fourth, the open invitation for parents to participate could have drawn more concerned individuals about their children’s mental health, influencing reported symptoms. Finally, the study sample did not include representation of vulnerable groups within the society, leaving the need for further exploration.

CONCLUSION
Prolonged school closures and confinement during the COVID-19 pandemic are having a remarkable impact on parents’ and children’s mental well-being. There is a need to further explore the long-term consequences for them and establish structured strategies to support families and children at higher risk.

Acknowledgements The authors would like to thank Dr. María de Lourdes Rojas Armadillo and Dr. David Yee Trejo who helped in the distribution of the invitation to participate in the study and style correction respectively.

Contributors DLR: Guarantor, protocol design, data collection, data analysis, writing paper. JR-d-l: Concept, protocol design, writing paper. JAC, AMCT and CASS: Data collection. BMG-C: Protocol design, data collection, writing paper. FCT: Protocol design, writing paper. All authors approved the final version.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests No, there are no competing interests.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Ethics approval The study was approved by the Institutional Review Board and Ethics Committee from Tecnológico de Monterrey School of Medicine (ID: P000499-IPSCOVIDN-CEIC-CR003). All participants gave their informed consent to participate in the study, anonymity and confidentiality were assured. The procedures of this study complied with the Declaration of Helsinki standards regarding research on human subjects.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. Data are available on reasonable request through the corresponding author, JR-d-l, julryrdz@tec.mx.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: http://creativecommons.org/licenses/by-nc/4.0/.

ORCID iDs
Daniela Leon Rojas http://orcid.org/0000-0002-1020-2488
Barbara M Garza-Ometes http://orcid.org/0000-0001-5620-6110

REFERENCES
1 Singh S, Roy D, Sinha K, et al. Impact of COVID-19 and lockdown on mental health of children and adolescents: a narrative review with recommendations. Psychiatry Res 2020;283:113429 https://pubmed.ncbi.nlm.nih.gov/32882598/.
2 Oliva S, Russo G, Gili R, et al. Risks and Protective Factors Associated With Mental Health Symptoms During COVID-19 Home Confinement in Italian Children and Adolescents: The #UnderstandingKids Study. Front Pediatr 2021;9:664702 /pmc/articles/PMC8225997/.
3 Yoshikawa H, Wuemeli AJ, Britto PR, et al. Effects of the global coronavirus Disease-2019 pandemic on early childhood development: short- and long-term risks and mitigating program and policy actions. J Pediatr 2020;233:188–93 /pmc/articles/PMC722341/.
4 Patrick SW, Henkhaus LE, Zickafoose J, et al. Well-Being of parents and children during the COVID-19 pandemic: a national survey. Pediatrics 2020;146:e200016824 https://pubmed.ncbi.nlm.nih.gov/32709738/.
5 Xie X, Yue Q, Zhou Y, et al. Mental health status among children in home confinement during the coronavirus disease 2019 outbreak in Hubei Province, China. JAMA Pediatr 2020;174:898 http://www.ncbi.nlm.nih.gov/pubmed/32329784.
6 Rajmil L, Hjern A, Boran P, et al. Impact of lockdown and school closure on children’s health and well-being during the first wave of COVID-19: a narrative review. BMJ Paediatr Open 2021;5:e001043 https://bmjpaedsopen.bmj.com/content/5/1/e001043.
7 Magson NR, Freeman JYA, Rapee RM, et al. Risk and protective factors for prospective changes in adolescent mental health during the COVID-19 pandemic. J Youth Adolesc 2021;50:44–57 https://pubmed.ncbi.nlm.nih.gov/33108542/.
8 Tromans S, Chester V, Harrison H, et al. Patterns of use of secondary mental health services before and during COVID-19 lockdown observational study. BJPsych Open 2020;6:e117 https://pubmed.ncbi.nlm.nih.gov/33040771/.
9 Zhang L, Zhang D, Fang J, et al. Assessment of mental health of Chinese primary school students before and after school closing and opening during the COVID-19 pandemic. JAMA Netw Open 2020;3:e2002148 https://pubmed.ncbi.nlm.nih.gov/32915233/.
10 Oppong Asante K, Quarsahie EN-B, Andoh-Arthur J. COVID-19 school closure and adolescent mental health in sub-Saharan Africa. Int J Soc Psychiatry 2021;67:956–60 https://journals.sagepub.com/doi/abs/.
11 Redacción. Publica DOF acuerdo de suspensión de clases a nivel nacional por Covid-19 - Sociedad y Justicia - La Jornada, 2020. Available: https://www.jornada.com.mx/ultimas/sociedad/2020/03/16/publica-dof-acuerdo-de-suspension-de-classes-a-nivel-nacional-por-covid-19-5707.html.
12 Román F, Santibáñez L, Pérez E V. Uso de las Escalas de Depresión Ansiedad Estrés (DASS-21) como Instrumento de Técnicas de Asesoría Personal. Salud Ment 2000;23:1–9.
13 Yezzi J, Spintto J, Quinn M. The Children’s Sleep Habits Questionnaire (CSHQ). Psychometric Properties of A Survey Instrument for School-Aged Children. Sleep 2000;23:1–9.
14 Jellinek MS, Murphy JM, Robinson J, et al. Pediatric symptom checklist: screening school-age children for psychosocial dysfunction. J Pediatr 1988:112:201–9.
15 Flor P L, Development N, Institutes R. Stepwise and similar selection methods are bad and what you should use 2007.
16 Cusinato M, Iannattone S, Spoto A, et al. Stress, resilience, and well-being in Italian children and their parents during the COVID-19 pandemic. *Int J Environ Res Public Health* 2020;17:8297–17 /pmc/articles/PMC7696524/

17 Data - OECD [Internet]. Available: https://www.oecd.org/gender/data/addressing-femicide-in-the-context-of-rampant-violence-against-women-in-latin-america.htm [Accessed 24 Feb 2019].

18 Douglas M, Katikireddi SV, Taulbut M, et al. Mitigating the wider health effects of covid-19 pandemic response. *BMJ* 2020;369:m1557 /pmc/articles/PMC7184317/

19 Park M, Jang J, Joo HJ, et al. Association between unequal division of caregiving work and South Korean married women’s depressive symptoms. *Front Public Health* 2022;10:739477 /pmc/articles/PMC9002231/

20 Favieri F, Forte G, Tambelli R, et al. The Italians in the time of coronavirus: psychosocial aspects of unexpected COVID-19 pandemic. *SSRN Journal* 2020 https://papers.ssrn.com/abstract=3576804

21 Coelho CM, Suttiwan P, Arato N, et al. On the nature of fear and anxiety triggered by COVID-19. *Front Psychol* 2020;11:3109.

22 Wood BL, Miller BD, Lehman HK. Review of family relational stress and pediatric asthma: the value of biopsychosocial systemic models. *Fam Process* 2015;54:376–89 https://onlinelibrary.wiley.com/doi/full/

23 Caraveo-Anduaga JJ, Martínez-Vélez NA, Caraveo-Anduaga JJ. Salud mental infantil: Una prioridad a considerar. *Salud Publica Mex* 2019;61:514–23 http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0036-36342019000400514&lng=es&nrm=iso&tlng=es

24 Tang S, Xiang M, Cheung T, et al. Mental health and its correlates among children and adolescents during COVID-19 school closures: the importance of parent-child discussion. *J Affect Disord* 2021;279:353–60 /pmc/articles/PMC7550131/

25 Pizarro-Ruiz JP, Ordoñez-Camblor N. Effects of Covid-19 confinement on the mental health of children and adolescents in Spain. *Sci Rep* 2021;11:11713 /pmc/articles/PMC8175710/

26 MacKenzie NE, Keys E, Hall WA, et al. Children’s sleep during COVID-19: how sleep influences surviving and thriving in families. *J Pediatr Psychol* 2021;46:1051–62 /pmc/articles/PMC8522399/

27 Spencer AE, Oblath R, Dayal R, et al. Changes in psychosocial functioning among urban, school-age children during the COVID-19 pandemic. *Child Adolesc Psychiatry Ment Health* 2021;15:73 /pmc/articles/PMC8637516/