# **Original Research Article**



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# THE INFLUENCE OF THE COVID-19 PANDEMIC ON CHILDREN IN THE KINGDOM OF SAUDI ARABIA

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# ABSTRACT

**Background:** COVID-19 spread globally in 2020, resulting in the coronavirus pandemic. The lockdown, closure of schools, and the change in sleeping habits have created many burdens and interrupted the lifestyle of children.

**Objectives:** The main objective is to determine the psychosocial and lifestyle effect of COVID-19 and the quarantine on children of both sexes aged (4-12) years. Also, to evaluate if children have acquired new skills, the mental impact on children, the changes in children's physical activity and eating habits, the changes in children's interactions with their family, and their communication skills.

**Methods:** A cross-sectional study was applied in the Kingdom of Saudi Arabia. The samples of 1247 participants were collected from guardians of children aged 4-12 years who lived in Saudi Arabia from October 2020 to March 2021.

It was collected using an online questionnaire and distributed via social media embedded in Microsoft Excel.

**Results:** (65.2%) of children acquired new skills during the quarantine period, especially those in the kindergarten stage. (56.6%) of parents noticed changes in their child's physical activity. For (17.9%) this change was playing alone on electronic devices. For (78.5%) of children who stayed up late, (59.3%) developed the habit of eating late. The majority (78.3%) of children experienced frustration, and (37.1%) developed fears. Children in middle school had decreased interest in communicating with others than before home quarantine (p=<0.05).

**Conclusion:** The COVID-19 pandemic impacted children's mental, social, and physical health. Thus, our findings highlight the need to support children's physical and psychological health during pandemics.

Keywords: COVID-19, Lockdown, Quality of Life, Psychosocial, Children.

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#### **INTRODUCTION**

SARS-CoV-2, commonly known as COVID-19, is a novel strain of large family viruses that causes various degrees of diseases, from the common cold to severe illness and death [1]. The disease was first recognized at the end of December 2019 in Wuhan, the capital of Hubei, China, as acute pneumonia [2]. The novel strain spread globally in 2020, resulting in the coronavirus pandemic, which became a global concern as a public health emergency [3]. For this reason, the World Health Organization (WHO) labeled it a pandemic on 11 March 2020 [4]. A recent study suggested that (SARS-CoV-2) might have emerged from zoonotic sources and rapidly spread from human to human via respiratory droplets during coughing or sneezing. However, the primary source of COVID-19 has not been identified yet [5].

The pandemic created a significant burden on children due to the closure of schools and entertainment zones that caused stress and anxiety among all age groups. Parents have been subjected to a great deal of stress, anxiety, and misunderstanding from their children on how to answer distressing questions. Anxiety and restlessness grew among children, making them isolate themselves and feel like they were a burden [6,7].

Children who are more likely to have mental health problems than adults may be more vulnerable to the adverse effects of isolation, which can be in the form of school closures and global lockdown. This affected their physical activity and social engagement [8]. Some children are avid listeners and behave according to the responses surrounding them. It is hard for them to hide their behavior, and it is difficult for parents to manage their anxiety levels [8].

Recent evidence showed that the pandemic might have detrimental effects on children's physical and mental health in the present and the long term. Those who are being quarantined because of the virus are exposed to a greater psychological burden than those who were able to go outside their houses [9,10]. Closure of schools, lack of outdoor activity, new nutritional regimes, and changes in sleeping habits are likely to interrupt the everyday lifestyle of children and can contribute to boredom, impatience, restlessness. agitation, anxiety. and neuropsychiatric manifestations [9,11]. In the initial stages of the pandemic, these interlaced challenges of heightened health anxiety disrupted routines, school closures, family stress, and reduced access to physical and psychosocial support were difficult to overcome [9,11]. On the other hand, in Saudi Arabia (KSA), a recent study published reported that the utilization of drawing, painting, humor, physical activity, nutrition, magic tricks, and music helped children cope with psychological disorders such as stress and anxiety during the COVID-19 pandemic [12].

A careful literature search has found that studies assessing the impact of the COVID-

19 pandemic on Saudi children are very few. Thus, our study will help to increase knowledge on the effects of COVID-19 and the quarantine on Saudi children of both sexes aged (4-12) years.

# ETHICAL CONSIDERATION

Ethical approval was granted from the Ethical Research Committee at Taif University.

Permission was granted from the Administration of the College of Medicine before starting the study. The parents who participated in the study were given a brief overview of the nature of the study. After taking informed consent from them and guaranteeing their privacy, the data were interpreted confidentially during all the research stages.

# MATERIALS AND METHODS

Study Design and Setting:

A cross-sectional study was undertaken using a pre-tested online questionnaire distributed via electronic social media applications, as it was the most accessible way to achieve the study's goal. The samples were collected from the guardians of children aged (4-12) who lived in Saudi Arabia from October 2020 to March 2021. Children who have any preexisting medical conditions and/or genetic disorders and children less than 4 years or older than 12 years were excluded from the study.

# Study participant and Sample Size:

The total number of participants was 1247, with a minimum sample size of 385. It was calculated with a confidence interval of 95% and a margin of error of 5 %. The

questionnaire was pre-tested on samples of 25 parents for validity and reliability. It consists of two parts with five sections. Part included the first section Α (sociodemographic characteristics). Part B contained sections 2-5 (the impact of the pandemic on the children's skills, the psychological effect of home quarantine, how children interact with their family members, and the child's physical activity and diet during the pandemic). The questionnaire is filled out by Google forms.

# Statistical Analysis:

The responses were downloaded and coded in Microsoft Excel and then were transferred to Statistical Package for Social Sciences, Version 25 (SPSS Inc., Chicago, IL, USA) for statistical analysis. Qualitative data were expressed as numbers and percentages, and the Chi-squared test (22) was applied to test the relationship between variables. A p-value of <0.05 was considered statistically significant.

# RESULTS

Our analysis included responses from 1247 parents where (39.9%) of children were aged (10- 12) years. (51.7%) among them were male, and (48.3%) were female. Most of the participants (52%) were the youngest in the family, (34.2%) were in the elementary grades, (60.8%) were from the Western region of KSA, and (34.3%) had a monthly family income of >10,000. 47.7% were part of a family with 4-6 members. [Table 1].

Our study found that (65.2%) of children acquired some skills during the home quarantine period. (20.4%) of them acquired

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skills like cooking, drawing, and some kinds of art. The most common source for acquiring these skills was self-learning (26.9%), and for most children (54.5%), the learned skill was useful. It was reported by (38.3%) of parents that their child's interests changed from what they were in the past [Table 2].

When we assessed the relationship between children's sociodemographic characteristics and acquiring new skills, we found that children aged (4-6) are the highest age group (72%), while children aged (10-12) are the lowest (57.4%). Females are the most prominent gender (71.1%) in acquiring new skills compared to males (59.7%). On the other hand, kindergarten was found to be the most academic stage for acquiring new skills (73.5%), while those at the beginning of middle school developed fewer skills (58.6%) during the pandemic (p< 0.05) [Figure 1].

It was reported by (37.1%) of parents that their children had feared at the beginning of the pandemic, which was the children's strongest reaction to home quarantine. (7.1%)had anxiety and aggression, (6.8%) reported their reaction was joy and happiness. Only (17.4%) of parents reported their child had dreams/nightmares because of the pandemic. (40%) reported that the pandemic affected the child's sleep, (10%) stated that the child experienced panic attacks during the home quarantine. Most parents (78.3%) noticed frustration or hopelessness or nothing to look forward to in the future or deserved attention and support during the pandemic. In addition, (32.9%) of parents mentioned that they

Variable	No. (%)
Child (s) age	
4-6 years	336 (26.9)
7-9 years	413 (33.1)
10-12 years	498 (39.9)
Child's Gender:	
Female	602 (48.3)
Male	645 (51.7)
What is the academic stage of the	
child:	230 (18.4)
Kindergarten stage	426 (34.2)
Elementary (Early Grades 1-2-3)	417 (33.4)
Elementary (4-5-6)	174 (14)
Beginning of middle school	
The geographical area:	
North	60 (4.8)
South	76 (6.1)
East	123 (9.9)
West	758 (60.8)
Central	230 (18.4)
Family income per month (Saudi	
riyals):	
<3000	52 (4.2)
3000-6000	143 (11.5)
6000-10000	227 (18.2)
>10.000	428 (34.3)
Prefer not to answer	397 (31.8)
Number of family members:	
(including all residents of the	
house)	
2-3	123 (9.9)
4-6	595 (47.7)
7-9	436 (35)
>9	93 (7.5)
The order of the child among his	
siblings:	292 (23.4)
First	307 (24.6)
Middle	648 (52)
Last	

Table 1. Distribution of the participants according to the child age, gender, academic stage, order, geographical area, family income, and number of family members (No.: 1247)

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Variable	No. (%)
Did the child acquire some skills during the home quarantine period?	
Yes	813 (65.2)
No	434 (34.8)
If your child acquires new skills during the pandemic, what skills did the	
child acquire:	
(You can choose more than one answer)	199 (16)
Reading books and stories or learning a new language.	254 (20.4)
Learning a craft (cooking, drawing, all kinds of art).	11 (0.4)
Developing a previous skill he/ she has.	33 (2.6)
The ability to solve problems.	11 (0.9)
Sports skills	13 (1)
Computer and internet skills	10 (0.8)
Religious skills	189 (15.2)
Social skills	93 (7.5)
More than one skill	
What is the child's source for these skills? (You can choose more than	
one answer)	
Internet	238 (19.1)
Books	34 (2.7)
Television	38 (3)
From a family member	161 (12.9)
Self-learning	336 (26.9)
More than one source	6 (0.5)
Did the skills acquired have any benefit in the child	
Yes	680 (54.5)
No	131 (10.5)
Have the child's interests changed from what they were in the past?	
Yes	477 (38.3)
No	770 (61.7)

Table 2. Distribution of the participants according to the impact of the pandemic on the children's skills

observed a change in the child's behavior after quarantine, while (21.5%) of them said that the child became kind and cooperative, while (18.9%) were too noisy [Table 3].

There was a significant relationship between observing new behavioral changes after

quarantine and the child's age, gender, and academic stage. Where all the children had around (67.4%) (p=> 0.05) [Figure 2].

The assessment of child behavior with family members during the pandemic showed that (41.4%) of parents noticed a reaction in their

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Figure 2. Relationship between observing any new change in your child behavior after quarantine and child's age, gender and academic stage

children when one of their family members left the house or came back during the home quarantine. Also, during the quarantine (86.6%) of parents spent more time with their children. For 78.8%, this contributed to strengthening the relationship between them. 50.7% of parents reported that their child gets involved in helping family or doing household tasks more than before. As reported by 77.9% of parents, their child shared with them his/ her questions and fears. Meanwhile, (25.8%) of children were not affected by their parents' mood changes during the quarantine period. (78.3%) stated that their child became more careful in dealing with strangers when going out after the quarantine ended. On the other hand, it was described by 63.9% of parents that their

Variable	No. (%)
Have you observed any new change in your child behavior after quarantine?	
Yes	410 (32.9)
No	837 (67.1)
If you observed any new change in your child behavior afterQuarantine, what kind of	
change?	
(If applicable, you can choose more than one answer)	25 (2)
Unprecedented silence	236 (18.9)
Too much noisy	109 (8.7)
Become social and fun	54 (4.3)
Introverted and always anxious	120 (9.6)
Aggressive, irritable and stubborn	268 (21.5)
Kind and cooperative	25 (2)
More than one change	
Did your child gain more dreams / nightmares because of this pandemic?	
Yes	217 (17.4)
No	1030 (82.6)
Did the pandemic (quarantine) affect the child's sleep?	
Yes	499 (40)
No	748 (60)
Did the child experience any panic attacks during the home quarantine	
period?	125 (10)
Yes	1122 (90)
No	
Did you notice any frustration and/or hopeless and/or nothing to look forward to in the future	
and/or deserved attention and support during this pandemic?	
Yes	977 (78.3)
No	270 (21.7)
How was your child's reaction at the beginning of the Corona pandemic and the home	
quarantine?	
Jov and happiness	85 (6.8)
Fear	463 (37.1)
Anxiety and aggression	89 (7.1)
No expression or reaction	503 (40.3)
More than one reaction	107 (8.6)

Table 3. Distribution of the participants according to the psychological impact of children during home quarantine

child was excited and happy to go out when the quarantine ended [Table 4].

It was found that those at the beginning of middle school (44.3%) and those in the age range (10-12) years old had a significantly

decreased interest in communicating with others than they used to have during the home quarantine period (37.3%) This is slightly the case more in males (32.7%) than females (29.4%) (p=> 0.05) [Figure 3].

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For age ( $\chi 2=22.88$ , p-value=< 0.05), Gender ( $\chi 2=7.67$ , p-value=0.022), and Academic stage ( $\chi 2=25.53$ , p-value=< 0.001)



Figure 3. Relationship between observing a decreased interest in the child in communicating with

For age (χ2=1.06, p-value=0.588), Gender (χ2=0.009, p-value=0.925), Academic stage (χ2= 9.96, p-value=0.019)

Figure 4. Relationship between observing a change child's activity during the home quarantine period and child's age, gender and academic stage

The assessment of children's physical activity showed that (56.6%) noticed a change in the child's movement patterns during the home quarantine period compared to before. For most of them (17.9%), this change was playing alone on electronic deceives. With home quarantine and the limitations of movement, (35.8%) of parents reported that their child's activity was increased, and (27.7%) reported an increase in the child's

Variable	No. (%)
Did you notice any reaction in your child when one of his/her family members left the house or	
came back during the home quarantine period?	
Yes	516 (41.4)
No	731 (58.6)
In Corona pandemic and quarantine period, did parents spend longer time with their children?	
Yes	1080 (86.6)
No	167 (13.4)
If 'yes', did this contribute to strengthening the relationship between you and your child?	
Yes	983(78.8)
No	97 (7.8)
Did the child share with you his\ her questions and fears?	
Yes	971 (77.9)
No	276 (22.1)
Has the child become more careful in dealing with strangers when going out after the quarantine	
period ended?	
Yes	977 (78.3)
No	270 (21.7)
Did the child get involved in helping family or doing household tasks?	
As usual, it has not changed	553 (44.3)
More than before	632 (50.7)
Less than before	62 (5)
How did the child react to the parents' mood swings or mental stress (if present) during the home	
quarantine?	
No such mood swings or stress experienced by parents	470 (37.6)
Aggression	36 (2.9)
Anxious	135 (10.8)
Mood Swings	142 (11.4)
Isolation	32 (2.6)
Calm	75 (6)
More than one reaction	36 (2.9)
No reaction appeared	231 (25.8)
After the quarantine has ended, when trying to go out door, what has your child been doing?	
Excited and happy	797 (63.9)
Frightened and anxious	232 (18.6)
Don't want to leave home	189 (15.2)
No reaction	29 (2.3)

Table 4. Distribution of the participants according to the degree how children, interact with their family members in the new Corona pandemic

sleeping hours. For most parents (78.5%), their child stayed up late during home quarantine, and for 43.6%, the pandemic has increased the child's playing hours on electronic devices, which was difficult to control. As for children's dietary habits, 68% of parents reported that the primary source of

their child's food during home quarantine was home cooking. For 21.7%, there was a noticeable increase in the child's weight, 59.3% of the child developed the habit of eating late, and only 7.9% of the child started taking nutritional supplements (such as

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For age ( $\chi$ 2=8.12, p-value=0.229), Gender ( $\chi$ 2=4.09, p-value=0.251), Academic stage ( $\chi$ 2=19.22, p-value=0.023)

Figure 5. Relationship between observing a change child's diet during the home quarantine period and child's age, gender and academic stage

vitamin D or multiple vitamins) during the pandemic [Table 5].

It was found that in about half of the children (56.6%), there was a significant association between the change in the child's physical activity during home quarantine in relation to the child's age, and gender. Furthermore, the academic stage was the most highlighted variable, with elementary school children showing a comparatively higher percentage (61.9%) of physical activity changes than the other stages (p<0.05) [Figure 4].

Regarding the relationship between the child's dietary change during home quarantine and the child's academic stage, the children attending middle school had a higher percentage of switching to an unhealthy diet (21.3%). Otherwise, the dietary habits of the majority remained the same as before. No significant statistical difference was apparent concerning the child's age and gender (p<0.05) [Figure 5].

#### DISCUSSION

To the best of our knowledge, very few studies have been undertaken in Saudi Arabia that explored the influence of the COVID-19 lockdown on children. Recent evidence showed that the COVID-19 pandemic had caused a prodigious impact on children's physical and mental health [13-15]. Children suffered the most during the lockdown as it rendered more restrictions on their activities and free space. The forced homestay

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Variable	No. (%)
Physical activity	
Did you notice any change in the child's movement pattern during the home guarantine compared to before?	
Yes	706 (56.6)
No	541 (43.4)
If the answer is yes then, what did he/she do most of his/her time during the guarantine? (You can choose more	
than one answer)	38 (3)
Doing Exercises (running swimming etc.)	21(17)
Practice on dancing, struming, etc.)	191 (15 3)
Playing with family members (whether with electronic devices or family interactive games, etc.)	1)1 (10.0)
Playing alone on electronic devices	223 (17.9)
Providence of the control of the second se	43(34)
Platting with toys and more	+3(3.+)
Lague with toys and more	2(0.2)
Lazy More than one activity	2(0.2)
White the barries and the limitations of movement in the barries barry was your skild's activity?	123 (9.9)
In an one quarantine and the minitations of movement in the house, now was your clind's activity?	116 (25 8)
Increased	440 (35.8)
Decreased	325 (26.1)
Did not change	476 (38.2)
what change did you notice in child's sleeping hours?	
Increased	346 (27.7)
Decreased	239 (19.2)
Did not change	662 (53.1)
Does your child stay up late during home quarantine?	
Yes	979 (78.5)
No	206 (16.5)
The opposite (sleep early)	62 (5)
Do you feel that the pandemic has increased the child's playing hours on electronic devices in a way that is difficult	
to control?	
Yes	544 (43.6)
Yes, but it can be controlled	537 (43.1)
Not at all	166 (13.3)
Dietary habits	
What was the main source of the child's food during home guarantine?	
Restaurants	18 (1.4)
House	848 (68)
Both	381 (30.6)
Have you noticed a change in your child's weight?	501 (50.0)
Ves a noticeable increase in weight	271 (21.7)
Ves a slight increase in weight	193 (15.5)
No the child's weight is constant (or growing at a steady rate)	662 (53 1)
Vac slight weight is constant (of growing at a steady fac)	002(33.1) 02(7.4)
Ves, significant decrease in weight	$\frac{1}{20}(7.4)$
I es, a significant decrease in weight	29 (2.3)
	740 (50 2)
1 CS	740 (39.3)
INU Har many shild started tables a sutsidianal supplements (such as a siterais D, an supplied a site (site) 20	507 (40.7)
rias your clinic started taking nutritional supplements (such as; vitamin D, or multiple vitamins)?	00 (7.0)
r es, started during the quarantine	98 (7.9)
Yes, but started before the quarantine /COVID-19	1001(80.3)
No.	148 (11.9)

Table 5. Distribution of the participants according to child's physical activity and diet during the Corona pandemic

worsened the child's lifestyle and may have had a negative impact on their health as a result of the psychosocial stress that developed during the lockdown [16,17].

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In Saudi Arabia, schools were closed nationwide to contain the pandemic, and this has had a detrimental effect on children's normal routines [18]. Focusing on children and acquiring new skills, many parents reported that their children gained some special skills during the lockdown period, including learning craftwork, spending more time reading books than before, solving problems, etc. Interestingly, Our research has shown that children learned more about themselves and discovered what makes them feel happy as more time passed during the pandemic period [19]. Our results support the conclusions of studies completed Switzerland, Canada, and Estonia on how the lockdown inspired some of our children to discover new skills that helped them adapt to the pandemic routine [19]. Conversely, Ofsted (2020) reported that the closure of schools and the lockdown affected the children in such a way that they lost or regressed their basic skills and learning [20].

Children should be encouraged to learn new skills and do other productive activities. These positively influence their physical and mental health [21]. A study conducted by the United Nations International Children's Emergency Fund (UNICEF) recommended indoor play ideas to engage children in activities during the lockdown [22].

Our study showed that some parents reported how their children had fared, experienced frustration or hopelessness, and became aggressive, stubborn, and noisy. Others reported that they became kind and cooperative. Also, a study in South Korea found that the interruption of social

necessities, the restrictions in participating in social activities, and the inhibitions from children's daily activities might lead them to become noisy, aggressive, and frustrated during the lockdown period [23]. It should be noted that sometimes parents might not have responded to or recognized their children's cues because distress or of their preoccupation with COVID-19-related issues [24]. Arising from the isolation created by the pandemic, children became more likely to experience these emotional and behavioral changes that negatively impacted them and their families [25]. This indicates a strong correlation between the lockdown period and the child's behavioral changes that deserved attention and support during this pandemic. These results are similar to a study completed in Canada [25].

The present study noted that the sleep patterns of some children were disturbed. (17.4%) of parents reported that their children had more dreams and nightmares due to COVID-19. This result matches those observed in earlier studies by Zreik and Cellini el al [26,27]. During the lockdown crisis, changes in sleep patterns among parents could be disturbed due to later bedtimes and wake-up times. These could also impact children's sleep patterns [28]. There are also strong links to state that a child's sleep quality is linked to its parents', especially its mother's [29,30].

Our study findings show that the frequency and duration of electronic device use were significantly high (43.6%) among children during the pandemic. This finding corresponds with studies from Taiwan and

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China. They found that the use of the internet and its addiction increased during the pandemic [31,32]. Due to the lockdown and the restrictions on movement, we believe that children became less active, played less outside, and became more sedentary. Thus, they spent more time on screen-based leisure activities.

Regarding children's dietary habits, we found that 59.3% of children developed the habit of eating late. ALMughanis et al. reported a significant number of participants snacking at night (44%) [33]. We believe there is a correlation between boredom, lockdown, anxiety, and spending time in isolation with late-night snacking and unhealthy dietary habits. This finding is similar to the findings of a study undertaken in Kuwait [34]. Based on our findings and according to the parents' responses, there was (21.7%) noticeable increase in the child's weight. Moreover, a lot of articles suggest a relationship between changes in dietary habits and becoming overweight [35,36,37].

From our evaluation, we discovered that during the Covid-19 pandemic (86.6%) of parents spent increased time with their children, (78.8%) of them contributed to strengthening the relationship between parent and child. Meanwhile, (77.9%) of parents reported that their child shared with them his/ her questions and fears. Families were ordered to lockdown and stay in the same house for a period of time to prevent the virus from spreading [38]. Accordingly, family members spent more time together by doing different activities together to help them cope with the stress caused by the pandemic [39]. This result matches those observed in other studies conducted in Saudi Arabia and Turkey. They found a positive change in the parent-child relationship, which helped them increase their care for their children and get to know them better more during the Covid-19 pandemic [39,40]. The quality of family relationships is important. It is generally a good thing that children and their parents become closer and develop a strong bond. There's evidence that those whose families are supportive have a greater sense of selfworth, which promotes well-being [41].

# LIMITATIONS

There were numerous limitations to the current study that must be addressed. One of the study's limitations is that using a selfreported questionnaire may have resulted in respondent bias and social desirability bias. Additionally, there is а lack of standardization of anthropometric measurements, physical activity assessments, and dietary intake assessments. The answers were self-reported and subject to the reliability of memory and bias associated with social desirability. Also, the crosssectional design of the study may have resulted in inadequate applicability of the findings to the entire Saudi population, as well as a lack of a causal association between the variables.

# CONCLUSION AND RECOMMENDATIONS

The findings of this study indicate that the COVID-19 pandemic had an impact on children's mental, social, and physical health. It was observed that some children have also learned new skills and developed some new hobbies like reading, physical activities,

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helping parents with domestic work, cooking, and spending quality time with their familieswhich may have been lacking due to their hectic schedule before lockdown. Children's well-being depends on proper parental companionship and not just on nutritional and medical care. Thus, it is recommended to have a national policy and appropriate preventive measures involving parents, teachers, pediatricians, psychologists, school authorities, and governmental organizations supporting directed toward children's physical and mental health during any future pandemic.

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#### **CONFLICTS OF INTEREST**

None of the authors have any conflicts of interest.

#### REFERENCES

- Fani M, Teimoori A, Ghafari S. Comparison of the COVID-2019 (SARS-CoV-2) pathogenesis with SARS-CoV and MERS-CoV infections. Future Virol. 2020 ; 15(20): 317-24. DOI: 10.2217/fvl-2020-0050.
- Zhu N, Zhang D, Wang W, Li Z, Yang B, Songet J, et al. A novel coronavirus from patients with pneumonia in China, 2019. N Engl J Med. 2020; 382: 72733. doi: 10.1056/NEJMoa2001017

- Valencia DN. Brief Review on COVID-19: The 2020 Pandemic Caused by SARS-CoV-2. Cureus. 2020 24;12(3):e7386. doi: 10.7759/cureus.7386
- Cucinotta D, Vanelli M. WHO Declares COVID-19 a Pandemic. Acta Biomed. 2020;91(1):157-60. doi: 10.23750/abm.v91i1.9397
- Singhal T. A Review of Coronavirus Disease-2019 (COVID-19). Indian J Pediatr 2020;87(4):281-86. doi: 10.1007/s12098-020-03263-6
- Imran N, Aamer I, Sharif MI, Bodla ZH, Naveed S. Psychological burden of quarantine in children and adolescents: A rapid systematic review and proposed solutions. Pak J Med Sci. 2020;36(5):1106-16. doi: 10.12669/pjms.36.5.3088
- Nurunnabi M. The preventive strategies of COVID-19 pandemic in Saudi Arabia. J Microbiol Immunol Infect. 2020; 7;S1684-1182(20)30180-8. doi: 10.1016/j.jmii.2020.07.023
- Saxena R, Saxena SK. Preparing Children for Pandemics. Coronavirus Disease. 2019 (COVID-19) 2020;30:1878. doi: 10.1007/978-981-15-4814-7\_15
- 9. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: a rapid review of the evidence. Lancet. 2020;395: 912-0. doi: 10.1016/S0140-6736(20)30460-8
- Taylor MR, Agho KE, Stevens GJ, Raphael B. Factors influencing psychological distress during a disease epidemic: Data from Australia's first outbreak of equine influenza. BMC Public Health. 2008;8(1):347. doi: 10.1186/1471-2458-8-347
- Lee J. Mental health effects of school closures during COVID-19. Lancet Child Adolesc Health. 2020;4:421. doi: 10.1016/S2352-4642(20)30109-7

- 12. Samarkandy MM, Abbas OA. Reducing the Psychological Impact of Quarantine due to the COVID-19 Pandemic on Children in Saudi Arabia. Diversity and Equality in Health and Care. (2020);17(4): 153-7
- Ghosh R, Dubey MJ, Chatterjee S, Dubey S. Impact of COVID -19 on children: special focus on the psychosocial aspect. Minerva Pediatr. 2020;72(3):226-35. doi: 10.23736/S0026-4946.20.05887-9
- Tang B, Alam D, Rakib MU, Li M. COVID-19: Considerations for Children and Families During the Pandemic. Front Pediatr. 2021; 14;8:600721-9. doi: 10.3389/fped.2020.600721
- 15. Lonso-Martínez AM, Ramírez-Vélez R, García-Alonso Y, Izquierdo M, García-Hermoso A. Physical Activity, Sedentary Behavior, Sleep and Self-Regulation in Spanish Preschoolers during the COVID-19 Lockdown. Int J Environ Res Public Health. 2021 ; 15;18(2):693-101. doi: 10.3390/ijerph18020693
- 16. Fegert JM, Vitiello B, Plener PL, Clemens V. Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality. Child Adolesc Psychiatry Ment Health. 2020; 12(14):20-31. doi: 10.1186/s13034-020-00329-3
- López-Gil JF, Tremblay MS, Brazo-Sayavera J. Changes in Healthy Behaviors and Meeting 24-h Movement Guidelines in Spanish and Brazilian Preschoolers, Children and Adolescents during the COVID-19 Lockdown. Children (Basel). 2021;26;8(2):83-93. doi: 10.3390/children8020083
- 18. Almaghaslah D, Alsayari A. The Effects of the 2019 Novel Coronavirus Disease (COVID-19) Outbreak on Academic Staff Members: A Case Study of a Pharmacy School in Saudi Arabia. Risk Manag Healthc Policy. 2020;15;13:795-802 doi: 10.2147/RMHP.S260918

- Stoecklin D, Gervais C, Kutsar D, Heite C. Lockdown and Children's Well-Being: Experiences of Children in Switzerland, Canada and Estonia. Childhood Vulnerability Journal. 2021;3(1):41-59. doi: 10.1007/s41255-021-00015-2
- 20. Ofsted: Children hardest hit by covid-19 pandemic are regressing in basic skills and learning [Internet]. GOV.UK. [cited 2022Apr25]. Available from: https://www.gov.uk/government/news/ofsted-children-hardest-hit-by-covid-19-pandemic-are-regressing-in-basic-skills-and-learning
- National Academies of Sciences, Engineering, and Medicine; Division of Behavioral and Social Sciences and Education; Board on Children, Youth, and Families; Committee on Supporting the Parents of Young Children. Parenting Matters: Supporting Parents of Children Ages 0-8. Breiner H, Ford M, Gadsden VL, editors. Washington (DC): National Academies Press (US); 2016 Nov 21. doi: 10.17226/21868
- 22. Rich M. Indoor play ideas to stimulate young children at home [internet]. UNICEF Parenting. UNICEF; 2020 [cited 2021 Feb8]. Available from: https://www.unicef.org/parenting/coronavirus-covid-19-guide-parents/indoor-play-ideas-stimulate-young-children-home
- 23. Jeong H, Yim HW, Song Y-J, Ki M, Min JA, Cho J, et al. Mental health status of people isolated due to Middle East respiratory syndrome. Epidemiol Health. 2016; 38:e2016048. doi: 10.4178/epih.e2016048
- 24. Stein A, Lehtonen A, Harvey AG, Nicol-Harper R, Craske M. The influence of postnatal psychiatric disorder on child development. Is maternal preoccupation one of the key underlying processes?. Psychopathology. 2009;42(1):11-21. doi: 10.1159/000173699

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- 25. Moore SA, Faulkner G, Rhodes RE, Brussoni M, Chulak-Bozzer T, Ferguson LJ, et al. impact of the COVID-19 virus outbreak on movement and play behaviours of Canadian children and youth: a national survey. International Journal of Behavioral Nutrition and Physical Activity. 2020;17(1):85. doi: 10.1186/s12966-020-00987-8
- 26. Zreik G, Asraf K, Haimov I, Tikotzky L. Maternal perceptions of sleep problems among children and mothers during the coronavirus disease 2019 (COVID-19) pandemic in Israel. J Sleep Res. 2021;30(1):e13201. doi: 10.1111/jsr.13201
- 27. Cellini N, Canale N, Mioni G, Costa S. Changes in sleep pattern, sense of time and digital media use during COVID-19 lockdown in Italy. J Sleep Res. 2020;29(4):e13074. doi: 10.1111/jsr.13074
- 28. Liu Z, Tang H, Jin Q, Wang G, Yang Z, Chen H, Yan H, Rao W, Owens J. Sleep of preschoolers during the coronavirus disease 2019 (COVID-19) outbreak. J Sleep Res. 2021;30(1):e13142. doi: 10.1111/jsr.13142
- 29. Timothy L, Sadeh A, Volkovich E, Manber R, Meiri G, Shahar G. Infant sleep development from 3 to 6 months postpartum: links with maternal sleep and paternal involvement. Monogr Soc Res Child Dev. 2015;80(1):107-24. doi: 10.1111/mono.12147
- 30. Volkovich E, Ben-Zion H, Karny D, Meiri G, Tikotzky L. Sleep patterns of co-sleeping and solitary sleeping infants and mothers: a longitudinal study. Sleep Med. 2015;16(11):1305-12. doi: 10.1016/j.sleep.2015.08.016
- 31. Lin MP. Prevalence of Internet Addiction during the COVID-19 Outbreak and Its Risk Factors among Junior High School Students in Taiwan. Int J Environ Res Public Health. 2020;17(22):8547-95. DOI: 10.3390/ijerph17228547

- 32. Dong H, Yang F, Lu X, Hao W. Internet Addiction and Related Psychological Factors Among Children and Adolescents in China During the Coronavirus Disease 2019 (COVID-19) Epidemic. Front Psychiatry. 2020;11:751-60. doi: 10.3389/fpsyt.2020.00751
- 33. AlMughamis N, AlAsfour S, Mehmood S. Poor eating habits and predictors of weight gain during the covid-19 quarantine measures in Kuwait: A Cross Sectional Study. F1000Research. 2020;9:914. Doi: 10.12688/f1000research.25303.1
- Husain W, Ashkanani F. Does COVID-19 change dietary habits and lifestyle behaviours in Kuwait: a community-based cross-sectional study. Environmental Health and Preventive Medicine. 2020;25(1):61. doi: 10.1186/s12199-020-00901-5
- 35. Zachary Z, Brianna F, Brianna L, Garrett P, Jade W, Alyssa D, et al. Self-quarantine and weight gain related risk factors during the COVID-19 pandemic. Obes Res Clin Pract. 2020;14(3):210-6., doi: 10.1016/j.orcp.2020.05.004
- 36. Al Hourani H, Alkhatib B, Abdullah M. Impact of COVID-19 Lockdown on Body Weight, Eating Habits, and Physical Activity of Jordanian Children and Adolescents. Disaster Medicine and Public Health Preparedness. 2021:1-9, doi:10.1017/dmp.2021.48
- 37. Okada C, Imano H, Muraki I, Yamada K, Iso H. The Association of Having a Late Dinner or Bedtime Snack and Skipping Breakfast with Overweight in Japanese Women. Journal of Obesity. 2019;2019:2439571. doi: 10.1155/2019/2439571
- Henderson MD, Schmus CJ, McDonald CC, Irving SY. The COVID-19 pandemic and the impact on child mental health: a socio-ecological perspective. Pediatric Nursing. 2020;46(6):267-90.

- 39. Öngören S. The pandemic period and the parentchild relationship. International Journal of Contemporary Educational Research. 2021;8(1):94-110. doi: 10.33200/ijcer.800990
- Andejany N, Qutah K, Alwajeeh S, Msallam R, Alyamani D. Parent child relationship during covid-19 in Saudi Arabia. 2020; doi: 10.21203/rs.3.rs-93850/v1
- 41. Thomas PA, Liu H, Umberson D. Family Relationships and Well-Being. Innov Aging. 2017;1(3):igx025-igx. doi: 10.1093/geroni/igx025



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