

Behavioral problems among children in Al-Kharj City, Kingdom of Saudi Arabia, due to COVID-19 lockdown

Reham Hassen^{a1}, College of Tourism and Hospitality, King Khalid University, Saudi Arabia, rehamanwar2000@gmail.com

Suggested Citation:

Hassen, R. (2024). Behavioral problems among children in Al-Kharj City, Kingdom of Saudi Arabia, due to COVID-19 lockdown. *Cypriot Journal of Educational Science*, 19(2), 183-197. <https://doi.org/10.18844/cjes.v19i2.7219>

Received from October 14, 2023; revised from December 5, 2023; accepted from March 1, 2024.

Selection and peer review under the responsibility of Prof. Dr. Hafize Keser, Ankara University, Turkey (retired) ©2024 by the authors. Licensee United World Innovation Research and Publishing Center, North Nicosia, Cyprus. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

iThenticate Similarity Rate: 9%

Abstract

The purpose of this study was to explore the behavioral problems among children in Al-Kharj City, Kingdom of Saudi Arabia, due COVID-19 lockdown. The study sample consisted of 154 children, 83 boys and 71 girls, randomly chosen. The ages of the selected sample population range between 2-6 years. A questionnaire of 36 paragraphs was prepared by the researchers outlining the following dimensions. The results of the study showed the following that the level of behavioral problems resulting from quarantine among children in Al-Kharj city is low, however, there are differences in the behavioral problems of children attributed to the mother's occupation, no differences in the behavioral problems of children due to the age of the child in all dimensions except for "Sleep and emotional problems dimensions" which were in favor of age category (2-6) years. There is also a positive relationship between the children's behavioral problems and the level of the mother's education, while there is no such relationship in the case of the father's education level. Mental health must be supported by implementing the three mental health approaches: developmental, preventive, and curative, especially in times of public crises.

Keywords: Behavioral problems; COVID-19; lockdown; quarantine.

* ADDRESS FOR CORRESPONDENCE: Reham Hassen, Saudi Arabia. E-mail address: rehamanwar2000@gmail.com

1. INTRODUCTION

Childhood is considered to be one of the most important stages of human life, as it has a significant impact on building human capabilities, acquiring different behavioral patterns, and personality formation. This has been emphasized by many psychologists and educators, as the progress and development of any society depend to a large extent on the level of its interest in the children segment and focusing on the aspect that provides the children with a healthy and happy upbringing. However, opportunities for natural growth and proper upbringing are affected positively or negatively by several factors. Similarly, children react differently according to the various cultural and environmental influences to which they are exposed. Providing the child with a healthy conducive environment, where tranquility and care prevail, will enhance his personality to growth, his behavior become normal, more stable, and adapt to the quality of his current life; ultimately, he will be able to face any later emergency. However, if the child grows up in an environment that lacks stability, there is no doubt that he will fall prey to turmoil and conflicts, which would be reflected in his behavior aspects in general and changes in his physical and psychological health in particular.

A person faces many situations, undesirable and painful experiences, that may pose a real threat to his life. As a result, his well-being and psychological integrity are at risk, and there is no doubt that chronic diseases, epidemics, and risks, including the spread of dangerous and deadly viruses that threaten human life, are considered one of the most stressful life events that have a strong connection to the occurrence of mental and physical disorders (Jing et al., 2024).

In early 2020, the World Health Organization website reported the outbreak of (COVID-19), This virus is a new coronavirus that has spread throughout the world. Countries have taken several precautionary measures to curb the associated pandemic health effects on individuals and society, which are characterized mainly by fever and cough, shortness of breath; sometimes the infection develops into pneumonia and is capable of progressing to severe symptoms and in some cases death, especially in older people and those with underlying health conditions, compromised immune system, and people with chronic diseases (Al-Juhani, 2020).

The situation resulting from the coronavirus pandemic is an epidemiological and psychological crisis (Ahmed et al., 2021). The enormity of living in isolation, changes in our daily life routines, job loss, financial hardship, and grief over the death of loved ones have the potential to affect the mental health and well-being of many (Ma et al., 2022).

The measures that were taken by the relevant authorities in the world to stop the spread of the pandemic, such as closing schools and keeping children at home, caused unprecedented health and psychological havoc, especially in young children, as they are more sensitive to, psychological and physical changes, resulting in more complex problems, however, children at this stage are undergoing drastic changes in a state of development and growth in which the child needs to be in school to develop, cognitive and social capabilities, especially through his direct interaction with his peers and teachers (Mahmoodi et al., 2023).

The Corona pandemic presents an unprecedented challenge to public health that affected the whole world. The economic, social, security, and political disruption caused by the pandemic is devastating worldwide. However, one of the groups most affected by the outcomes of the Corona pandemic is children. The health restrictions caused by the pandemic, represented in quarantine and its multiple strategies such as social distancing, undoubtedly may affect the behavior of individuals, especially children, because these restrictions are modern and unfamiliar to many societies, and among these societies are Arab and African societies.

To determine the impact of the Corona pandemic in terms of lockdown and remote study on children, a medical team at Mediclinic City Hospital in Dubai conducted an analytical study on a sample of more than 650 children of different nationality (performed by the parents on behaviors of their

children). The study showed multiple negative effects on children's health brought about by lockdown and remote learning. The study showed the following: 72% of the children experienced lockdown-related changes in behavior, while 57% had mental symptoms that were not present before. The pandemic has affected 14% financially and economically due to the loss of one or both parents of their jobs or a decrease in their salary. 36% of the children suffered from hyperactivity, while 36% suffered from loneliness and isolation, and 18% suffered from attention disorder and lack of concentration. Likewise, 72% of the parents admitted that the lockdown affected their child's physical and sports activity, due to the lack of sufficient space (50%).

Lockdown affected children's sleep patterns, showing increased difficulty in falling asleep, anxiety at bedtime, sleep terrors, and parasomnia (Hashem et al., 2023). The effects of eating were one of the most important issues parents and children experienced. It appeared that 50% of children suffered from eating disorders such as binge eating disorder of fast food and sweets or even Anorexia nervosa (refusing to eat), all of which did not exist before the pandemic. More than 75% of children frequently suffer from loneliness and nostalgia for friends and school, the severity of suffering increases when one of the family members contracted this disease, the above-mentioned percentages doubled in behavior, attitude, eating, and sleeping impairments.

In a similar context, an initiative has been launched by the United Nations Organization (#CovidUnder19) together with other partners aimed to conduct a consultative survey study to determine the impact of the Coronavirus on children's lives, where (26258) children from (137) countries covering the five regions of the United Nations participated in the questionnaire, the following results were revealed: Many children stated that they were not affected by these developments, and some of them even reported that things were better during the virus outbreak. Many children enjoyed spending more time with their families. Where children reported that being away from the school gave them opportunities to learn new hobbies and more leisure time. As for the negative aspects of the pandemic, some children reported having negative experiences at the beginning of the pandemic outbreak, many children, reported that they missed school, their friends, and other members of their family, which had a great impact on their mental health of some children. Fifty-six (56%) of children stated that communicating with friends and peers has been limited remarkably since the outbreak. Concerning communication between mothers and children aged 8-10 years, 41% reported that they communicate better with their mothers, 44% reported no change, while 30% of children aged 13-17 years reported improved communication, whereas 57% reported that they did not notice any change.

As for the questionnaire that related to emotions, it showed that there is a diversity in the emotions among most children according to their living conditions at home: Feeling bored 44%, feeling happy 39%, feeling anxious 38%. As for feeling safe, 36% of children have felt safer at home "or where they live" since the outbreak of the Coronavirus; however, for the ages category (8 – 10 years), expressed that they feel safer at home. Conversely, 9% of children felt less safe at home. However, most children reported hearing, witnessing, or experiencing violence less than 52%, or the same levels of violence 39%, as was the case before the pandemic outbreak. During COVID-19, children relied on social media to keep in touch with families and friends using social media at the following percentages: (WhatsApp, 75%, Facebook, 41%, Instagram, 33%, Snapchat, 12%, text messages, 10%, did not use any of the above messages, 10%).

In the study conducted by Yoshikawa et al., (2020), which aimed to identify the effects of the global coronavirus pandemic on early childhood development, the results indicated that there are immediate and long-term negative consequences for many children, with special emphasis on early childhood risk factors, where most children undergo rapid brain development, and highly sensitive to severe environmental effects. Data also predict an increase in maternal and child mortality in low- and middle-income countries. A much higher proportion of children are at risk of devastating physical, social, emotional, and cognitive impairments unless there is a commitment to support coordinated,

Hassen, R. (2024). Behavioral problems among children in Al-Kharj City, Kingdom of Saudi Arabia, due to COVID-19 lockdown. *Cypriot Journal of Educational Science*, 19(2), 183-197. <https://doi.org/10.18844/cjes.v19i2.7219>

multisectoral approaches in which governments of low and middle-income countries receive international support to scale up essential interventions.

OECD (2020) aimed to identify the impact of COVID-19 on children's health behavior, the study revealed the following results: COVID-19 harms the health, social and material well-being of children in all countries of the world, severely hitting the poorest children, including homeless children and those in (home lockdown). School closures, social distance, and confinement increase children's risks of malnutrition, exposure to domestic violence, anxiety, and stress, and limit access to vital family and care services.

The study also revealed that the spread of digitization mitigates the learning losses caused by school closures. However, the poorest children are the least likely to live in good home-school environments with an Internet connection. Moreover, the increase in uncensored internet use has increased issues related to sexual exploitation and cyberbullying (OECD, 2020; Becker et al., 2024).

A similar study conducted by Al-Shanawani (2020), explores the parents' role in educating and protecting children from the Corona pandemic in Riyadh, where the study was applied to a random sample of (400) parents. The study concluded that the degree of sample estimates on the items of the first and second axis "the preventive and psychological role of parents in educating and protecting children from the Corona pandemic" was 93.6%-92.2%, which indicates a high degree of the parents' preventive and psychological role in protecting and educating children from Corona.

Many global studies have focused on childhood problems caused by coronavirus, as these studies have shown that Coronavirus affects the mental health and behavior of children and adolescents. A study conducted by Francisco et al., (2020), aimed to study psychological prognosis and behavioral changes in children and teenagers during the early phase of lockdown in three European countries, Italy, Spain, and Portugal; the study results revealed an increase in psychological and behavioral symptoms for children. In general, the Italian children showed fewer psychological and behavioral symptoms compared to Portuguese and Spanish children, and multiple hierarchical regressions revealed that the presence of an external exit such as the garden contributed to the decrease in the levels of psychological and behavioral symptoms. In a similar context, Davico et al., (2021) conducted a study to find out the psychological impact of the Corona epidemic on adults and children, targeting (2419) adults and (786) children, and the results of his study revealed that 33.2% reported severe psychological impact with 30.9 % of children are at risk of developing PTSD, and the risk is greater for health care workers who are directly involved with coronavirus patients and their children.

The study of Vallejo Slocker et al., (2020) also aimed to identify the psychological well-being of vulnerable (459) children and teenagers during the Corona, in residential care homes, foster or kinship families in Spain, the results of the study concluded that: children and teenagers suffered severe mental health during the lockdown than that in the Spanish reference for the year (2017), before the outbreak of the Coronavirus. Where the results of the study revealed that most of the children and teenagers do not comply with all requirements by a percentage lower than (7.43%), Isolated children and adolescents experienced greater psychological stress than children and adolescents who were not subject to quarantine.

As for the studies that aimed to determine the impact of the Coronavirus on the psychological well-being of parents and children, the study by Gassman-Pines et al., (2020) carried out in America, on children in age category ranged between (2-7) years, in a large American city, and the results of the study resulted in the existence of a relationship between the well-being of both parents and children in the post-crisis period, with a close relationship to the number of hardships associated with the crisis experienced by the family, deterioration of mental health for both parents and children, who have experienced multiple difficulties related to the coronavirus crisis.

In the same context, the study of Imran et al., (2020) aimed to determine the mental health considerations for children and adolescents during the outbreak of the Coronavirus pandemic; the results of the study showed that children are not indifferent concerning the psychological impact of the Coronavirus, they also experience fears, doubts, fundamental changes in their routines, physical and social isolation, and a high level of parental stress. This means that quarantine has very detrimental effects on the behavior of children and adults.

There are numerous studies conducted in different countries that have resulted in the direct impact of quarantine on children's mental health and well-being, such as Millar, et al (2020); Schmidt et al., (2021); Zemrani et al., (2021); Data & Racial (2020) Liu, et al., (2020); Lee, et al., (2020) Wang, et al., (2020) Jiao, et al., (2020).

The problem of the current study is that the Kingdom of Saudi Arabia, like other countries, has resorted to quarantine as a preventive medical measure to limit the spread of the Corona epidemic, in the absence of any medicine. There is no doubt that this precautionary measure has repercussions that affect the personal, educational, social, and economic aspects of individuals in general and children in particular. The restrictions imposed by the quarantine rules will place the child in house confinement, unable to carry out his daily activities, and unable to interact with the social environment around him. This confinement may result in many behavioral issues, such as general adaptation problems, cognitive and emotional problems, and problems related to eating, sleeping, and playing disorders. The persistence of these problems may undoubtedly affect the child's personality development, as the physical and psychological formation of the child is sensitive and pliable it is rapidly affected by changes in environmental conditions, such as emergency health conditions.

An investigative US survey conducted in January 2020 revealed that 79% of Generation Z (millennials generation), 71% of the twentieth century, and 50% of post-World War II baby boomers suffer from loneliness, on the other hand, the percentage of this attitude among individuals who belong to any social group, such as a hobby club, sports league or voluntary group, decreased from 75% to 57% over the past decade (Kelly, 2020).

1.1. Purpose of study

Hence the idea of the current study is to identify the behavioral repercussions resulting from quarantine on the behavior of children and determine the differences in children's behavioral problems resulting from quarantine as per the following variables (mother's profession, child's chronological age, parents' education level).

2. METHOD AND MATERIALS

2.1. Participants

The study population was represented by children aged between (2-6) years, of both sexes, in Al-Kharj city, Saudi Arabia, the study was conducted at the researchers' own expense, and the study was applied to the city of Al-Kharj. The sample size of the current study was (154) children, (83 corresponding to 53.9%) males, and (71 corresponding to 46.1%) females, randomly selected. The ages of the children in the sample ranged between (2-4 years, at 22.1%), and (4-6 years, at 77.9%), and the mothers' educational levels in the sample were as follows (primary = 2.5%, secondary = 15.6%, university = 63.6%), post-graduate = 15.6%), while father's education levels in the sample were as follows: (primary = 8.4%, secondary = 28.6%, university = 52.6%, postgraduate = 10.4%). As for the professions of mothers in the sample, they were as follows (teacher = 24.0%, housewife = 49.4%, government work = 13.6%, student = 1.9%, university professor = 5.8%, medical field = 3.9, self-employment = 1.3). Father's occupation (teacher = 14.9%, government employee = 22.7%, private sector employee = 13%, military = 30.5%, retired = 6.5%, medical field = 5.8%, self-employment = 3.2, university professor 1.3, unemployed = 1.9).

2.2. Data collection tools

Questionnaire: Behavioral problems resulting from children quarantine

Upon the literature review of the theoretical framework and psychometric heritage by the researcher, no tool was found that measures all dimensions of the current study. Therefore, the researchers designed a questionnaire consisting of (6) dimensions, including: (general adaptation problems, cognitive problems, eating problems, sleep problems, play and movement problems, and emotional and mood problems), the initial questionnaire consisted of 30 statements distributed on (6) dimensions as follows: (general adaptability problems (6) cognitive problems (5) eating problems (4) sleep problems (4) play and movement problems (6) emotional and mood problems) 5).

Peer review credibility: The questionnaire, in its initial form, consisting of (30) paragraphs, was presented to (5) professors and associates of psychology in Saudi, Sudanese, and Libyan universities to assess the validity of the questionnaire to measure the behavioral problems for children resulting from quarantine, where they unanimously agreed on the validity of the questionnaire to measure behavioral problems with an approval rate of (80%), however, they recommended additional paragraphs to some dimensions of the questionnaire.

Upon the recommendation of peers, some questionnaire paragraphs were modified and the final numbers of (36) paragraphs were distributed over several (6) dimensions differently.

5-point Likert scales were used: strongly agree (5), agree (5), neutral (3), disagree (2), and strongly disagree (1) respectively, taking into consideration the opposite of the positive-oriented paragraphs, where the option is given, such as: strongly disagree (5), disagree (4), neutral (3), agree (2), strongly agree (1)

2.3. Procedure

To determine the psychometric properties of the dimensions on the scale of behavioral problems resulting from quarantine in the current study population, according to peers' directions, the researchers used the modified questionnaire that consisted of (36) paragraphs on an initial sample of (40) randomly selected respondents in the current study population. Finally, the questionnaire responses were monitored and electronically entered into the computer.

1) The validity of the internal consistency of the paragraphs on a scale of dimensions, on the scale of behavioral problems resulting from quarantine:

2.4. Analysis

To determine the paragraph's consistency with the total scores of the dimensions

On the scale of the behavioral problem resulting from quarantine applied to the current study, therefore, the researchers calculated the Pearson correlation coefficient between the scores of each of the items with the total score of the scale, where the correlation coefficients of all items for all dimensions with the total score ranged between (.230-.861.). The coefficients of the correlations of all items for all dimensions are statistically significant at the level of significance (0.05), and all items are positive and have strong internal consistency with the total scores of the scale when applied in the current research community.

2.4.1. Reliability/consistency factors

To calculate the reliability for this study, Cronbach's alpha and Spearman-Brown equations were used, on the date of the initial sample, the coefficients of stability of the total degree of the scale of the behavioral problem ranged between .964-.898, which confirms the appropriateness of this scale in its final form for measuring behavioral changes resulting from quarantine in the current research population.

2.4.2. Peripheral comparison validity

The two researchers relied on discriminative validity, so they took (27%) of the lowest questionnaire scores for the sample that consisted of (30) individuals and (27%) of the highest questionnaire scores. After arranging the scores in ascending order, each group had (08) members from the lower group, and (08) members from the higher group, then the researchers used the statistical method t-test (t) to indicate differences, using the statistical package for social sciences (SPSS), and the results were as shown in the following table 2:

Table 2

The validity of the peripheral comparison to identify behavioral problems.

	Mean	Standard deviation	(t) value	d.f	Significance
Upper Group	138.25	20.927	11.726	14	.000
Lower group	46.25	7.382			

Table (3) shows that the value of (T) the difference between the means is statistically significant, which indicates that the identification of behavioral problems can distinguish between high and low scores on the scale of the behavioral problem.

3. RESULTS

The purpose of the current study is to know the behavioral problems of children resulting from the quarantine in Al-Kharj City, Saudi Arabia: To verify the objective of the study, the researchers conducted a t-test for the average of one community, and the following table 3 shows the results of this procedure.

Table 3

T-test for the mean of one population (degree of freedom = (153))

Dimension	mean	S. D	Simulated value	(t) calculated value	p.value
General adaptability problems	16.16	7.274	21	-8.253	0.000
Cognitive problems	12.64	6,835	18	-10.425	0.000
Eating problems	15.49	5.511	18	-4.971	0.000
Sleep problems	12.94	4.074	15	-6.274	0.000
Playing and movement problems	18.90	7.072	21	-3.681	0.000
Emotional Problems	12.18	2.587	15	-6.274	0.000
Total scores for behavioral problems	88.61	31.147	108	-7.725	0.000

From Table (6) it is clear that the mean of the general adaptability problems was (16.16), with a standard deviation (of 7.274), the mean of cognitive problems amounted to (12.64), with a standard deviation (of 6.385), and the mean of eating problems was (15.79), with a standard deviation (5.511). The mean of sleep problems was (12.94), with a standard deviation of (4.072), and the mean of mood and emotional problems was (12.18), with a standard deviation of (7.072). All behavioral problems resulting from quarantine are statistically significant at a significant level (000.), and by comparing the

arithmetic mean with the hypothetical mean, it becomes clear that all behavioral problems in children resulting from quarantine are low.

Figure 1
Behavioral problems in children resulting from quarantine

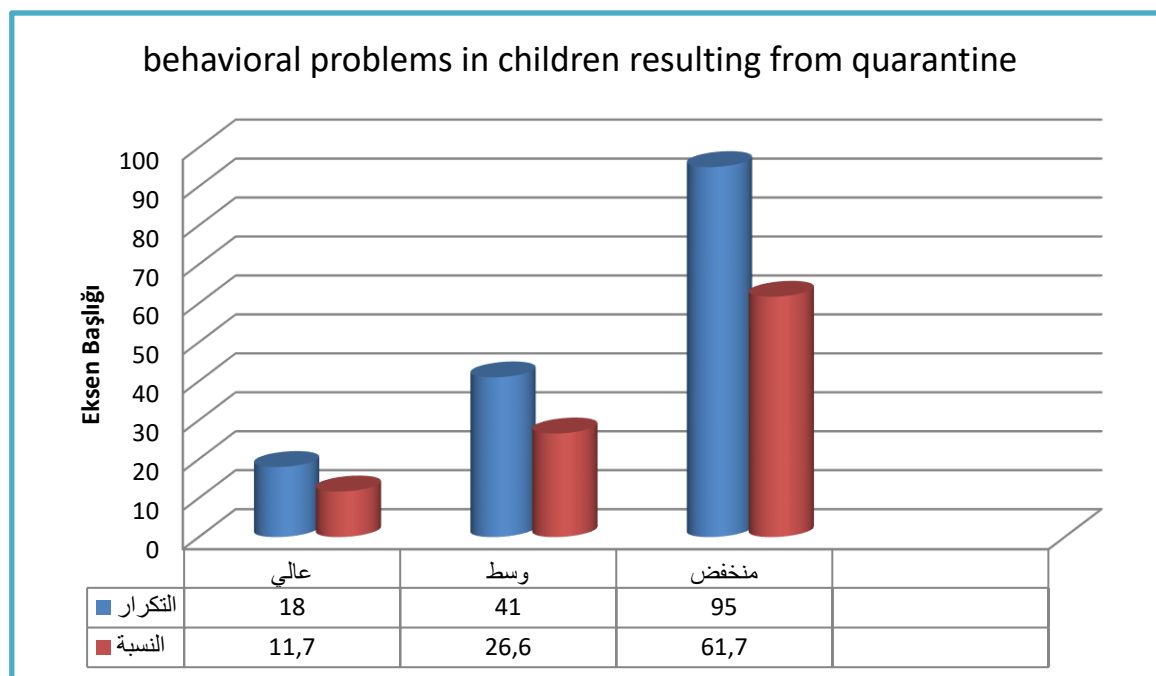


Figure No. (1) shows that (95) of the sample members with a percentage of (61.7%) had low problems, whereas (41) (26.6%) had middle problems, while (18) of the sample members with a percentage of (11.7%), having high behavioral problems, which confirms the result of Table (6).

3.1. Presenting the result of the second objective

To verify the second objective of the current study, which states: “Knowing the differences in behavioral problems in children resulting from quarantine according to the mother’s profession.

Table 4

Results of the (Kruskal-Wales) test for the independent rank variables

Axis	occupation	N	Salary means	Calculated chi-square	Degree of freedom	p.value
	teacher	37	92.69	14.148	6	0.028

Children's general adaptability problems	Housewife	76	78.53			
	Government employee	21	65.43			
	student	3	35.17			
	University lecturer	9	43.22			
	Medical field	6	81.33			
	business	2	90.50			
Cognitive problems	teacher	37	98.73	15.893	6	0.014
	Housewife	76	73.07			
	Government employee	21	62.55			
	student	3	48.67			
	University lecturer	9	61.22			
	Medical field	6	80.33			
	business	2	118.00			
Eating problems	teacher	37	92.00	5.668	6	0.641
	Housewife	76	73.03			
	Government employee	21	70.29			
	student	3	87.00			
	University lecturer	9	72.06			
	Medical field	6	71.33			
	business	2	83.50			
Sleep problems	teacher	37	88.05	6.714	6	0.348
	Housewife	76	70.24			
	Government employee	21	89.79			
	student	3	54.17			
	University lecturer	9	72.11			
	Medical field	6	79.33			
	business	2	82.75			
Playing and motion problems	teacher	37	95.03	12.062	6	0,061
	Housewife	76	69.01			
	Government employee	21	78.62			
	student	3	96.17			
	University lecturer	9	56.83			
	Medical field	6	84.67			

	business	2	107.75			
Emotional problems	teacher	37	97.00	12.361	6	0.054
	Housewife	76	70.66			
	Government employee	21	81.50			
	student	3	49.17			
	University lecturer	9	56.33			
	Medical field	6	76.67			
	business	2	74.75			

3.2. Presenting the result of the third objective

To verify the validity of the third objective of the current study, which states: "Knowing the differences in behavioral problems in children resulting from quarantine in Saudi society according to the child's age.

Table No. (5): Shows the results of the (Mann Whitney) test to determine the differences in the level of behavioral problems in children resulting from quarantine, that are attributed to the age of the child.

Table 5
Mann Whitney test

Dimension	Child age	Average Salary	Total salary	(z) value	Significance level
General adaptability problems	2-4	84.19	2862.50	-0.993	.321
	4-6	75.60	9072.50		
Cognitive problems	2-4	78.62	2673.00	-0.167	.867
	4-6	77.18	9262.00		
Eating problems	2-4	80.24	2728.00	-0.406	.685
	4-6	76.72	9207.00		
Sleep problems	2-4	91.07	3096.50	-2.017	.044
	4-6	73.65	8838.50		
Playing and motion problems	2-4	88.21	2999.00	-1.589	.112
	4-6	74.47	8936.00		
Emotional problems	2-4	92.60	3148.50	-2.245	.025
	4-6	73.22	8786.50		
Total score for behavioral problems	2-4	87.32	2969.00	-1.455	.146
	4-6	74.72	8966.00		

3.3. Presenting the result of the fourth objective

Which states: Knowing the relationship between behavioral problems in children resulting from quarantine in Saudi society and the level of parental education: To verify the validity of the objective, the researchers used the Spearman test, which showed the following results (table 6):

Table 6

The relationship between behavioral problems in children resulting from quarantine in Saudi society and the level of parent's education

Dimensions of behavioral changes	Correlation value with mother's education	Correlation value with father's education
General adaptability problems	0.004	0.065
Cognitive problems	0.110	0.006
Eating problems	.250**	0.111
Sleeping problems	.253**	0,092
Playing and motion problems	0,174*	.016
Emotional problems	0.181*	0.010
The total score of behavioral problems	0.168*	0,020

4. DISCUSSION

As shown in Table (2), the researchers noted that this result is in total agreement with the result of the study (#CovidUnder19), where the children expressed that they were neither affected by the developments of Corona nor the resulting quarantine. The children reported that things were better off during the spread of the Coronavirus. Many of them enjoyed spending more time with their families, and staying at home gave them opportunities to learn new hobbies and relax. Additionally, the presence of parents gives the children safety, despite the risks of physical closeness, as the majority of parents in the sample have different professions.

This result is disparity with the result of the study conducted by Hussain et al., (2020), which showed that 72% of the children suffered from changes in behavior as a result of the lockdown, while mental symptoms appeared in 75% of the sample members that were not present before the outbreak.

The researchers might attribute this disparity to the difference in the environment. One of the studies predicting the seriousness of the pandemic on early childhood development is the study of Yoshikawa et al, (2020), which indicated that there are immediate and long-term negative consequences for many children, especially among children in developing countries. Saudi Arabia is undoubtedly among the developed countries worldwide, therefore the Ministry of Health has put forward a preventive program to raise the awareness of the public at the onset of the pandemic. This program has contributed in many ways to raising society's awareness regarding the risks of the Coronavirus, the importance of quarantine, and the strategy to confront the health, psychological, and social repercussions of quarantine.

The researchers may also attribute the decrease in behavioral problems resulting from quarantine in children to the spread of digitization and electronic games, which may distract children from the effects of quarantine, especially under the supervision of parents. The study (OECD, 2020) found that the spread of digitization mitigates the losses caused by school closures due to children's preoccupation with games, however, it warned against the availability of unsupervised digitization, as

it has dangerous health and behavioral effects on the child. Concerning the decrease in cognitive problems in children as a result of lockdown e, the researchers find that the result is from the one conducted by Hussain et al., (2020), where (57%), of the children in the sample suffered from the emergence of mental symptoms due to quarantine, and that (18%) of the children suffered from a lack of attention and concentration.

However, the researchers may attribute the decline in the cognitive problems of the sample members to several factors, including the level of parents' education, and the preventive and psychological role they play in educating and protecting children from the effects of the pandemic, where the parents' protective role in the Kingdom of Saudi Arabia reached (93.6%).

As for the decrease in eating problems among the children of the sample, the researchers may attribute it to the fact that they are affected by the problems of general adaptability, which was low, or perhaps due to the presence of parents at home. The result conducted by Hussain et al., (2020) revealed that (50%) of the children in the sample suffered from eating problems, ranging from eating too much fast food and sweets, or even refusing to eat at all, which did not exist before the pandemic. The result of the current study agreed with the result of the study (CovidUnder19#), which revealed that (20%) of children have had less food since the outbreak of the pandemic, while in return (65%) of children said that the situation has not changed. As for the decline in sleeping problems among the members of the study sample, the decrease may be due to the presence and supervision of parents at home, providing them with continuance guidance and direction, occupying their free time, and regulating their playing, sleeping, and eating hours. Concerning the decline in play and motion problems among the children of the sample, the researchers may attribute it to the presence of other available alternatives that children use to alleviate the effects of the lockdown, for example, children are preoccupied with electronic games, paintings, the availability of games in their rooms and televised children's programs, as the duration stayed at home before the lockdown was long as well. Some studies confirmed that quarantine affects children's play, such as the one conducted by Hussain et al., (2020), which resulted in (72%) of parents acknowledging that quarantine affected the physical and sporting activity of the children, this can be attributed to the lack of sufficient space (50%).

Generally, the decrease in mood and emotional problems, is closely related to the child's situation, psychological state, and needs, as well as the living conditions at home. boredom 44%, feeling happy 39%, feeling anxious 38%. As for feeling safe, 36% of children have felt safer at home "or where they live" since the outbreak of the pandemic; Younger children, between the ages of 8 and 10, which is the age category that feel safer at home. Conversely, 9% of children felt less safe in their homes. Also, most children reported hearing, witnessing, or experiencing less violence 52%, or the same levels of violence 39%, as was the case before the pandemic.

From Table (3), the researchers noted that the value of the chi-square in the dimensions of behavioral problems in children resulting from quarantine ranged between (15.893-5.668), at a significance level less than (0.05). In the following problems: (general adaptation problems, cognitive problems, mood, and emotional problems), which indicate that there are differences, regarding the average ranks of mothers' occupations, it is noted that the average ranks of mothers' occupations (teachers and housewives) are greater. As for the rest of the following behavioral problems (eating, sleeping, playing, and movement problems), they are not statistically significant, as the significance level is greater than (0.05), this indicates that there are no differences that can be attributed to the mother's occupation, the researchers did not find anything that confirms or supports this result from the previous results of the scientific research. Perhaps there are differences in (general adaptation, cognitive problems, mood, and emotional problems), which were greater among the children's teachers and housewives, as these mothers are close for a longer period with their children, hence their ability to accurately discover these problems are better than the rest of other mothers. The researchers did not find anything that confirms or disapproves of this result from the previous results of the scientific research. The researchers may attribute the rise in sleep mood and emotional problems

Hassen, R. (2024). Behavioral problems among children in Al-Kharj City, Kingdom of Saudi Arabia, due to COVID-19 lockdown. *Cypriot Journal of Educational Science*, 19(2), 183-197. <https://doi.org/10.18844/cjes.v19i2.7219>

among children at the age of (2-4), to their inability to face the pressures resulting from lockdown, as the material and emotional demands are higher than those children of other age groups, they are also more affected by living conditions, due to the weakness of their physical and psychological capacity, and their dependence to a large extent on their parents.

The researchers noted from Table (5), that the values of the correlation coefficient for all dimensions of behavioral problems in children due to lockdown connected to the mother's education level ranged between (0.04.- 0.253.) at a significance level less than (0.05), in the following dimensions (problems); Eating, sleep problems, play and movement problems, emotional problems, the total score of problems) which indicates a positive relationship between these problems and the mother's education level. As for the relationship between the behavioral problems due to lockdown and the father's education level, the researchers noted that it is not statistically significant in all dimensions of behavioral problems with a significant level greater than (0.05).

5. CONCLUSION

Regarding the existence of a positive relationship between the following problems: (eating problems, playing problems, emotional problems, and the total degree of problems) and the mother's education level, in other words, the higher the educational level of the mother, the more accurately she was able to show the size of her child's problems compared to mothers with a low educational level. Because they are fully aware of children's behavior and changes in their children's behavior. As for the absence of a relationship between children's behavioral problems and the father's level of education, the child is more influenced by the mother, especially in meeting his physical and emotional needs.

As implied from the result of the current study and the results of previous studies, the lockdown measures to limit the paramedics have a mild effect on the behavior of children in the Kingdom of Saudi Arabia, compared to the rest of the countries, and the studies conducted in those countries showed that the quarantine has negative behavioral effects which require more preventive measures and support to address the effects of the Coronavirus or any future epidemic.

Conflict of Interest: The authors declare no conflict of interest.

Ethical Approval: The study adheres to the ethical guidelines for conducting research.

Funding: This research received no external funding.

REFERENCES

- Ahmed, G. K., Elbeh, K., Gomaa, H. M., & Soliman, S. (2021). Does COVID-19 infection have an impact on children's psychological problems? *Middle East Current Psychiatry*, 28, 1-9. <https://link.springer.com/article/10.1186/s43045-021-00155-z>
- Al-Juhani, A. H. (2020). Corona pandemic Anxiety in the Saudi society, College of Education. *Journal Sohag University*, 1(82)
- Al-Shanwani, H. M. (2020). The Role of Parents in Awareness and Protection of Children from the Corona Pandemic in Riyadh. *Al-Manhal Journal for Research and Studies*, 148, 37.
- Becker, T. D., Leong, A., Shanker, P., Martin, D., Staudenmaier, P., Lynch, S., & Rice, T. R. (2024). Digital media-related problems contributing to psychiatric hospitalizations among children and adolescents before and after the onset of the COVID-19 pandemic. *Child Psychiatry & Human Development*, 1-8. <https://link.springer.com/article/10.1007/s10578-024-01670-w>
- Data, N., & Racial, M.(2020). Mental Health status among children in Home Confinement During the CoronaVirus Disease 2019 Outbreak in Hubei Province China. 2020-2022.

- Hassen, R. (2024). Behavioral problems among children in Al-Kharj City, Kingdom of Saudi Arabia, due to COVID-19 lockdown. *Cypriot Journal of Educational Science*, 19(2), 183-197. <https://doi.org/10.18844/cjes.v19i2.7219>
- Davico, C., Ghiggia, A., Marcotulli, D., Ricci, F., Amianto, F., & Vitiello, B. (2021). Psychological impact of the COVID-19 pandemic on adults and their children in Italy. *Frontiers in psychiatry*, 12, 572997. <https://www.frontiersin.org/articles/10.3389/fpsy.2021.572997/full>
- Francisco, R., Pedro, M., Delvecchio, E., Espada, J. P., Morales, A., Mazzeschi, C., & Orgilés, M. (2020). Psychological symptoms and behavioral changes in children and adolescents during the early phase of COVID-19 quarantine in three European countries. *Frontiers in psychiatry*, 11, 570164. <https://www.frontiersin.org/articles/10.3389/fpsy.2020.570164/full>
- Gassman-Pines, A., Ananat, E. O., & Fitz-Henley, J. (2020). COVID-19 and parent-child psychological well-being. *Pediatrics*, 146(4). <https://publications.aap.org/pediatrics/article-abstract/146/4/e2020007294/79655>
- Hashem, M. M., Yousof, S. M., Tesen, H. S., Ahmed, A. G., Fawzy, F., Elsemelawy, R., ... & Mekky, J. F. (2023). Children sleep habits and their knowledge during COVID-19: the impact on quality of life. *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery*, 59(1), 92. <https://link.springer.com/article/10.1186/s41983-023-00693-9>
- Hussain, M. W., Mirza, T., & Hassan, M. M. (2020). Impact of COVID-19 pandemic on the human behavior. *International Journal of Education and Management Engineering*, 10(8), 35-61. <https://www.mecs-press.org/ijeme/ijeme-v10-n5/IJEME-V10-N5-5.pdf>
- Imran, N., Zeshan, M., & Pervaiz, Z. (2020). Mental health considerations for children & adolescents in COVID-19 Pandemic. *Pakistan journal of medical sciences*, 36(COVID19-S4), S67. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7306970/>
- 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.
- Jing, J. Q., Yang, C. J., Wang, Y., Su, X. Y., & Du, Y. J. (2024). Impact of COVID-19 on emotional and behavioral problems among preschool children: a meta-analysis. *BMC pediatrics*, 24(1), 455. <https://link.springer.com/article/10.1186/s12887-024-04931-8>
- Kelly, S. (2020). I spent a year in space, and I have tips on isolation to share. *The New York Times*. https://bbk12e1-cdn.myschoolcdn.com/ftpimages/434/misc/misc_184948.pdf
- Lee, J. (2020). Mental health effects of school closures during COVID-19. *The Lancet Child & Adolescent Health*, 4(6), 421. [https://www.thelancet.com/journals/lanchi/article/PIIS23524642\(20\)30109-7/fulltext](https://www.thelancet.com/journals/lanchi/article/PIIS23524642(20)30109-7/fulltext)
- Liu, J. J., Bao, Y., Huang, X., Shi, J., & Lu, L. (2020). Mental health considerations for children quarantined because of COVID-19. *The Lancet Child & Adolescent Health*, 4(5), 347-349. [https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642\(20\)30096-1/abstract](https://www.thelancet.com/journals/lanchi/article/PIIS2352-4642(20)30096-1/abstract)
- Ma, C. H., Jiang, L., Chu, L. T., Zhang, C. C., Tian, Y., Chen, J. J., & Wang, Y. (2022). Mental health problems of preschool children during the COVID-19 home quarantine: A cross-sectional study in Shanghai, China. *Frontiers in Psychology*, 13, 1032244. <https://www.frontiersin.org/articles/10.3389/fpsyg.2022.1032244/full>
- Mahmoodi, Z., Rostami, M., Bahrami, G., Rasouli, F., & Ghavidel, N. (2023). Predictor factors affecting emotional and behavioral problems in school-aged (6–12 years) children during the COVID-19 pandemic: a cross-sectional study. *BMC psychiatry*, 23(1), 633. <https://link.springer.com/article/10.1186/s12888-023-05125-9>
- Millar, R., Quinn, N., & Cameron, A. (2020). Considering the evidence of the impacts of lockdown on the mental health and wellbeing of children and young people within the context of the individual, the family, and education.
- OECD. (2020). Combatting Covid-19's Effect on Children
- Schmidt, S. J., Barblan, L. P., Lory, I., & Landolt, M. A. (2021). Age-related effects of the COVID-19 pandemic on the mental health of children and adolescents. *European journal of psychotraumatology*, 12(1), 1901407. <https://www.tandfonline.com/doi/abs/10.1080/20008198.2021.1901407>

- Hassen, R. (2024). Behavioral problems among children in Al-Kharj City, Kingdom of Saudi Arabia, due to COVID-19 lockdown. *Cypriot Journal of Educational Science*, 19(2), 183-197. <https://doi.org/10.18844/cjes.v19i2.7219>
- Vallejo Slocker, L., Fresneda Sánchez, F. J., & Vallejo Pareja, M. Á. (2020). Psychological well-being of vulnerable children during the COVID-19 Pandemic. *Psicothema*. <https://redined.educacion.gob.es/xmlui/handle/11162/203147>
- Wang, G., Zhang, Y., Zhao, J., Zhang, J., & Jiang, F. (2020). Mitigate the effects of home confinement on children during the COVID-19 outbreak. *The Lancet*, 395(10228), 945-947. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30547-X/fulltext?dm_i=JAQ%2C6U4T8%2CSYMFFT%2CRJ7AG%2C1](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30547-X/fulltext?dm_i=JAQ%2C6U4T8%2CSYMFFT%2CRJ7AG%2C1)
- Yoshikawa, H., Wuermli, A. J., Britto, P. R., Dreyer, B., Leckman, J. F., Lye, S. J., ... & Stein, A. (2020). Effects of the global coronavirus disease-2019 pandemic on early childhood development: short-and long-term risks and mitigating program and policy actions. *The Journal of Pediatrics*, 223, 188-193. [https://www.jpeds.com/article/S0022-3476\(20\)30606-5/abstract](https://www.jpeds.com/article/S0022-3476(20)30606-5/abstract)
- Zemrani, B., Gehri, M., Masserey, E., Knob, C., & Pellaton, R. (2021). A hidden side of the COVID-19 pandemic in children: the double burden of undernutrition and overnutrition. *International Journal for Equity in Health*, 20, 1-4. <https://link.springer.com/article/10.1186/s12939-021-01390-w>