Mothers` Preventive Strategy for Their Primary School Children during COVID -19

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Abstract

Background: Corona Virus Disease 2019 (COVID-19) outbreaks and lockdown measures have a negative impact on Egyptian mothers. Back to school planning will look different for mothers this year than it has in previous years that cause an increase of mothers' preventive strategy for their primary school children during COVID-19). **Aim of the study**: Was to identify mothers` preventive strategy for primary school children during COVID_19.**Research design**: A descriptive research design was utilized to conduct this study. **Sample**: A simple random sample 327 children. **Setting:** The study was conducted at 6 Primary Governmental School from all 109 school in Benha City which represents 5% which selected randomly. **Tools**: Three tools were used for data collection. **Tool I:** An interview questionnaire that consisted of three parts; A) mothers' socio-demographic characteristic. B) Personal characteristics of the studied children. C) Mothers' knowledge about COVID -19. **Tool II:** Mothers' preventive strategy regarding COVID-19. **Tool III:** Mothers' attitude regarding preventive strategy about COVID-19. **Results**: 56.0% of studied mothers had average knowledge about COVID-19, 63.0% of studied mothers had satisfactory preventive strategies level about COVID-19and 67.3% of the studied mothers had positive attitude regarding preventive strategy about COVID-19. **Conclusion**: There was a highly statistically significant relation between total attitude of mothers and their total knowledge level regarding COVID-19. **Recommendations:** Develop and implement training program regarding preventive strategy of COVID -19 to improve mothers' knowledge and attitude to protect their children.

Keywords: Corona virus, Preventive strategy, Primary school children

Introduction

Coronaviruses designated severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV2), the causative agent of coronavirus disease 2019 (COVID-19), which carries a high infectious rate in humans. The infectious nature of the disease, rising numbers of cases, especially in crowded areas such as schools (**Angeletti et al., 2022).**

The extent to which COVID-19 was able to spread all over the world brings upon extensive social and economic changes and restrictions. The primary goal of counteractive public health strategies such as lockdown, containment and social distancing is to prevent a dynamic, exponential spreading of the virus in the children in the schools, which would result in an overstretching of the healthcare system **(Lu, 2021).**

A primary school children is a range from 6 to 12 years of age. During this period observable. Differences in height, weight and build of children may be prominent. The language skills of children continue to grow and many behavior changes occur as they try to find their place among their peers. As always, safety is important in school age children and proper safety rules should be enforced in and out of the school area **(Kyle, 2022).**

Preventive strategy of COVID-19:- Strategies for preventing transmission of the disease include maintaining overall good personal hygiene, washing hands, avoiding touching the

eyes, nose, or mouth with unwashed hands and coughing or sneezing into a tissue and putting the tissue directly into a waste container. Those who may already have the infection have been advised to wear a surgical mask in public. Physical distancing measures are also recommended to prevent transmission. Health care providers taking care of someone who may be infected are recommended to use standard precautions, contact precautions and eye protection **(Roozenbeek et al., 2020).**

The importance of COVID 19 prevention strategies is to help the school children to acquire and apply all knowledge and skills related to infection prevention. Preventive strategies allow the children to adhere to infection control measures, decrease the risk of infection transmission to classmate, school teachers so that minimizing the absenteeism during COVID 19 pandemic and get the maximum benefit from educational courses **(Kar et al., 2021).**

Knowledge and attitudes of mothers should be directed towards strict preventive practices to prevent the spread of the corona virus infection. Facts about mothers' perceptions and practices can be gained by assessing their knowledge about corona virus which helps to identify attributes that affect the mothers' adoption of healthy practices and responsive behaviors **(Ayad et al., 2020).** The need to understand the children's knowledge, attitudes, and practice toward COVID-19 at this critical moment is necessary to reduce the stress, depression and anxiety level of mothers **(CDC COVID-19 Response Team, 2020).**

Community Health Nurse (CHN) play an important role for applying the principles of primary, secondary and tertiary prevention for optimizing the maximal physical, psychological, mental and social health for the community at all. So, several approaches for promotion of health of students are recommended. Through intervening at the peer group level through educational programs, alternative recreational activities and peer counseling is most effective. Coaching in values clarification, social skills and assurance help to give students the skills to cope with situations in which students are pressured by peers. Assistance is a program that uses team effort by teachers, parents, community leaders. The program helps students by building self-concept, putting positive examples and working to include the students in the community activities **(WHO, 2021).**

Aim of the study

This study aimed to identifying mothers' preventive strategy for their primary school children during COVID-19.

Research Questions:

1. What is the mother's knowledge regarding COVID-19?
2. What is the mother's preventive strategy of COVID-19?
3. What is the mother's attitude regarding preventive strategy of COVID-19?
4. What is the relation between mother's knowledge and attitude regarding COVID-19?

Tools of data collection

Three tools used in this study:

Tool I: A structured interview questionnaire was used in this study. It comprised three main parts:

First part: Socio-demographic characteristics of the mothers was age, social status, educational level.

Second part: Personal characteristics of the studied children age, gender and ranking.

Third part: Mothers' knowledge about COVID -19which include 15 questions MCQ was meaning, causes, primary symptoms, secondary symptoms, incubation period, high risk persons, mode of transmission, clinical pictures, treatment in simple cases. Treatment in severe cases, vaccine type, complication,

preventive strategies, importance of preventive strategies and types of preventive strategies.

Scoring system:

The scoring system for studied mothers knowledge was calculated as follows (2) score given when the answer was complete correct answer, (1) score was given for incomplete correct answer, and (0) score was given for incorrect answer or don't know. The scores of items were summed-up and the total divided by the number of the items. These scores were converted into a percent score. The total knowledge scores were (30 points) which and total knowledge categorized as follow:

- Good when total score of knowledge was >75% (30>points).
- Average when the total score was 50 ≤ 75% (15-30≤points).
- Poor when the total score was <50% (15<points).

Tool II: Mothers' preventive strategy regarding COVID-19 Which included five main preventive strategies such as: Hand washing, Mask wearing, social distance, Surface disinfection procedures and Improvement immune system for their children.

Scoring system:

The scoring system for mothers' preventive strategies was calculated as follow score:

- 1 For done and (0) for not done.
- The total practices score =30, which considered:
- Satisfactory if the score of the total practices was 80% (24≥points).
- Unsatisfactory if total score was <80% (<24points).

Tool III: Mothers attitude scale about COVID-19 Likert scale which adopted from **(Zhang, et al., 2020) ;(Chen et al., 2020)** and modified by the researcher and revised by the supervisor. To evaluate the studied mothers attitude regarding preventive strategy about COVID-19.

Scoring system:

The scoring system fo r (2) for agree, (1) for uncertain, and (0) disagree the total attitude score was 28 point

The total attitude score was calculated as the following:

Positive attitude >80 % of total practice score (22>score)

Negative attitude <60 %of total attitude score (16< score).

Validity of the tools:

The tools validity was done by five of Faculties Staff Nursing Experts from the Community Health Nursing Specialty, who reviewed the tools for clarity, relevance, comprehensive and applicability.

Reliability of the tools:

The Reliability of the tool was assessed through Cornbrash's alpha test which revealed that the tool consisted of relatively homogenous items as indicated by high reliability of each tool. Equal 0.760 for knowledge, 0.854 for preventive strategy and 0.722 for attitude.

Ethical considerations:

An official permission was obtained through an issued letter from the Dean of Faculty of Nursing, Banha University to conduct this study. All ethical issues were assured; Oral consent has been obtained from each mother before conducting the interview and given a brief orientation of the purpose of the study. Mothers were also assured that all information gathered would be treated confidentially and used only for the purpose of the study. Mothers had the right to withdraw from the study at any time without giving any reasons. No names were required on the form to ensure anonymity and confidentially

Pilot study:

After development of the tool, a pilot study was conducted on 10% of the mothers (33 mothers) of children in the primary educational

level. It was included from the total sample. It was done to notice any ambiguity in the tools, to ensure transparency of the items, as well as, to determine the time devoted to data collection. The clarity and testing the feasibility of the research process needed for modifications were carried out based on the results of the pilot study to develop the final form of the tools.

Field work:

The data was collected from studied mothers who attended in the previously selected setting through the interview with them. The study was conducted at a period of 4 months which started from the beginning of December 2021 to the end of March 2022. The researchers was attended four days/ week (Sunday &Monday Tuesday &Wednesday) from 7. 00 Am.: 12 pm., in attendance and pick up time to collect data and implement this study alternatively in each study setting.at the beginning of interview; the researchers were welcomed each mother. The title, objectives, tools and the study technique were illustrated for each mother to obtain their approval and cooperation which is needed for conducting this study. Each mother was individually interviewed using Arabic structured interviewing questionnaire. The average number of interviewed mothers was between 5-6 mothers/day depending on their responses to the interviewers, each interviewed mother takes about 20 minutes to fill the tool depending upon their understanding and response.

Statistical analysis:

All data collected were organized, tabulated and analyzed using appropriate statistical test. The data were analyzed by using statistical Package for Social Science (SPSS) version 21 which was applied to calculate frequencies and associations by using Chi – square test x2, and matix correlation to detect the relation between the variables (p value).

Significance levels were considered as follows:

Highly statistically significant $p < 0.001$

Statistically significant $p < 0.05$

Not significant $p > 0.05$

Results:

Table (1): Shows that, 48.9% of the studied mothers aged from 30 to <40 years with mean age SD 33.55±4.43, 56.3% of them had university education. 89.9% of mothers married, 53.5% of mothers were working and 67.0% of them lived in rural areas while 59.6 %of them had enough income and 63.6% of studied mothers had extended family**.**

Table (2): Reveals that 50.5% of studied children were male, 80.1% of them aged 6 years old with mean age±SD6.21±2.074 and 56.9 % of them were the second child in their family.

Figure (1): Displays that 56.0% of the studied mothers had average knowledge about COVID-19, while 23.2% had poor knowledge about COVID-19 and only 20.8% had good total knowledge level about COVID-19.

Figure (2): Reveals that: 63.0% of the studied mothers had satisfactory preventive strategies level about COVID -19 and 37.0% of them had unsatisfactory regarding their total preventive strategies level about COVID -19.

Figure (3): Reveals that, 67.3% of the studied mothers had positive attitude about their children during COVID -19 and 32.7% of them had negative attitude about their children during COVID -19.

Table (3): Shows that, there was a highly statistically significant relation between total attitude of studied mothers and their total knowledge level regarding COVID -19(**) High statistically significant at p<0.5

Table (1): Frequency distribution of studied mothers regarding their socio- demographic characteristics (n=327).

Socio-demographic item	No.	%
Age\ year		
20 < 30	128	39.1
30 < 40	160	48.9
40 +	39	11.9
Min –Max	**28-43**	
Mean ±SD	**33.55±4.43**	
Level of Education		
Don't read or write	2	.6
Basic education	18	5.6
Secondary education	120	36.6
University education	184	56.3
Postgraduate	3	.9
Marital status		
Married	294	89.9
Divorced	26	8.0
Widow	7	2.1
Occupation		
Working	175	53.5
House wife	152	46.5
Residence		
Rural	219	67.0
Urban	108	33.0
Income		
Not enough	195	59.6
Enough	102	31.2
enough and save	30	9.2
Family type		
Nuclear family	119	36.4
Extended family	208	63.6

Table (2): Frequency distribution of studied child regarding their personal characteristics (n=327).

Personal characteristics Items	No.	%
Gender		
Male	165	50.5
Female	162	49.5
Ranking		
First	57	17.4
Second	186	56.9
Third	51	15.6
Fourth	33	10.1
Age/years		
5	65	19.9
6 +	262	80.1
Mean ±SD	6.21±2.074	

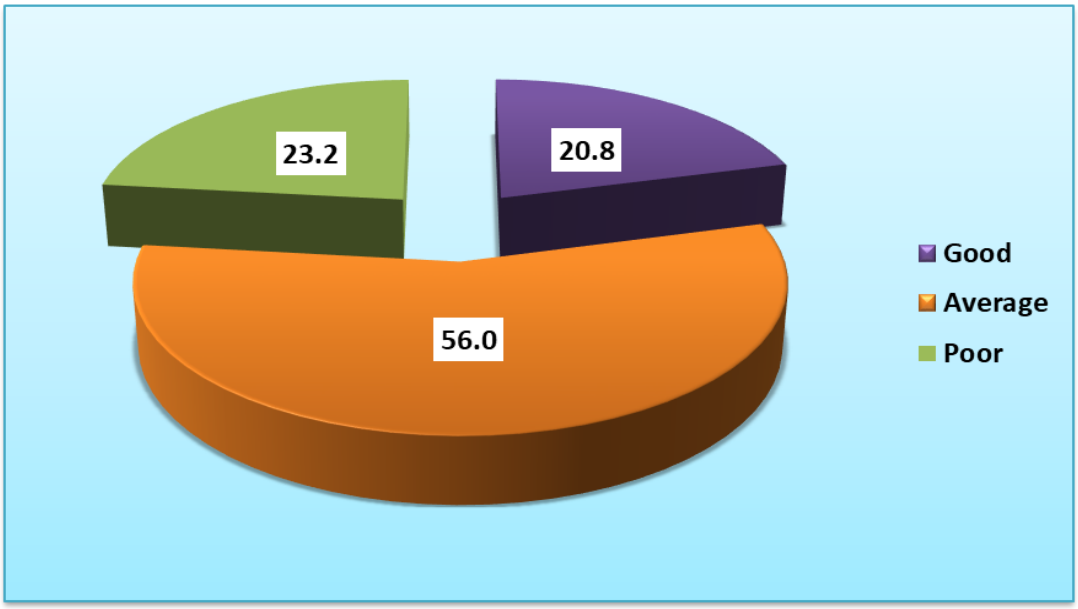

Figure (1): Percentage distribution of studied mothers regarding their total knowledge level about COVID-19 (n=327).

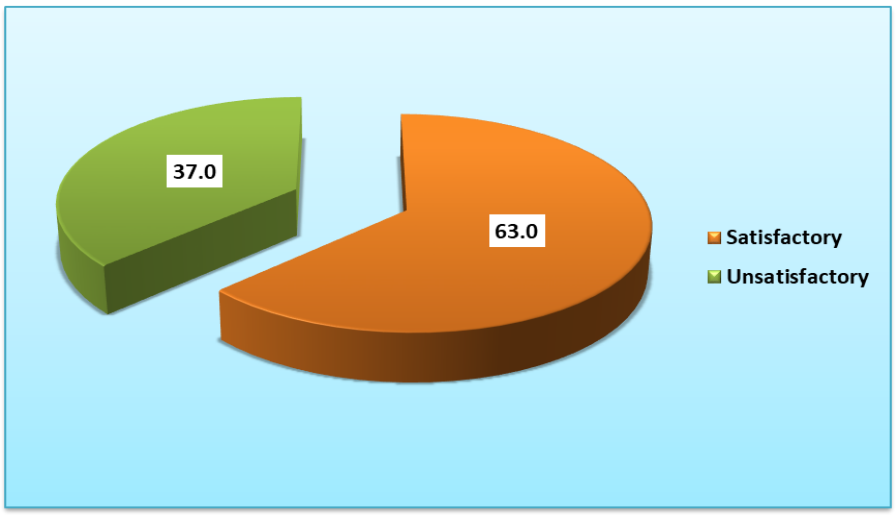

Figure (2): Percentage distribution of studied mothers regarding their total preventive strategies level regarding COVID-19 (n=327).

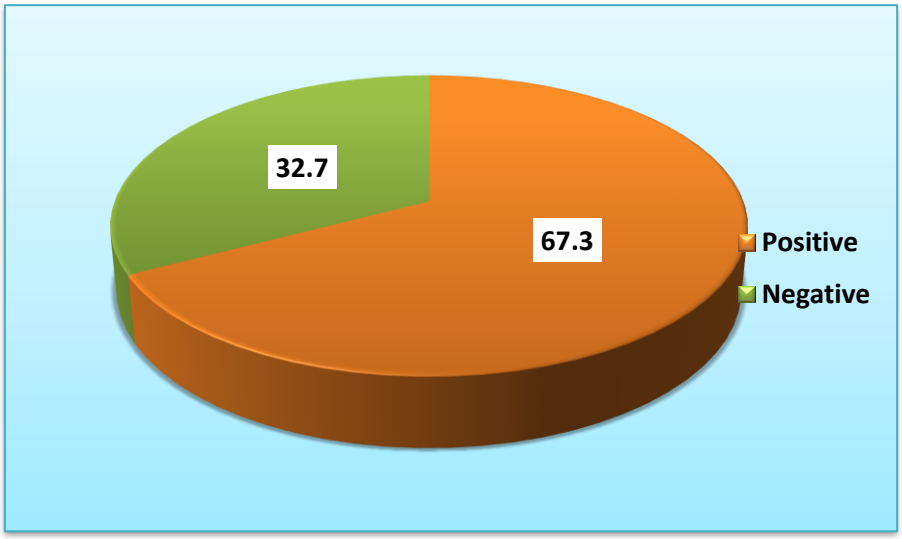

Figure (3): Percentage distribution of studied mothers regarding their total attitude level about preventive strategy of COVID-19 (n=327).

Table (3): Statistically relation between total attitude of studied mothers and their total knowledge level regarding COVID-19.

Total knowledge	Negative (n=107)		Positive (n=220)		X^2	p-value
	No.	%	No.	%		
Poor (n=76)	32	29.9	44	20.0	25.46	0.000**
Average (n=183).	70	65.4	113	51.4		
Good (n=68).	5	4.7	63	28.6		

Discussion

Corona Virus Disease has great impacts on children's general health, well-being, and development through exposure to the virus and consequent infection. Furthermore, some children have been infected do not have any symptoms. Despite infected children being asymptomatic, may have high viral loads in nasopharynx. (Therefore, it is important to protect children and youth as represent 52% of the Egyptian population and are considered among the vulnerable groups to COVID-19 (**United Nations International Children`s Emergency Fund, 2020).**

Mothers' adherence to protective measures plays an essential role in controlling the spread of the viruses. The adherence is affected knowledge, attitude and practices. Protective measures should include continuous hand washing, use of alcohol-based hand sanitizer with at least 60% alcohol before getting onto the bus and disinfecting any touched surfaces that contact with child in the transportation, and keeping doors and windows open in closed crowded area. Mothers must wash hands and children`s hands with soap and water for at least 20 seconds especially after blowing nose, coughing, sneezing, going to the bathroom and before eating or preparing food. Moreover, the mothers should wear personal mask and wear the children face shield in any crowded areas and during the contact with a healthcare provider (**World Health Organization, 2020).**

According to socio-demographic characteristics of the studied mothers, the current study showed that, less than half of the studied mother's aged; from 30<40years with mean age 33.55±4.43 years and more than half of studied mothers had university education. These findings were in the same line with **Brown et al., (2020)**, who studied " Stress and parenting during the global COVID-19 pandemic " and found that, more than half of their mothers aged 30<40 years with mean age 35.37 ± 7.30 and nearly one third of them had four years colleague education. In addition, these findings agreed with **Morgul et al. (2020),** who studied "Psychological Effects of The COVID-19 Lockdown on Children and Families in the UK" and found that, more than one third of mother had university education. These study findings also supported by **Aronu, (2020),** who studied "knowledge of mode of spread and preventive practices among mothers attending a tertiary health institution" and found that, the highest proportion of mothers aged 30-39 years old. Conversely, these results disagreed with **Fu et al. (2020)** who studied "Psychological health, sleep quality, and coping styles to stress facing the COVID-19 in Wuhan, China" and revealed that more than half of mothers aged <30 years old.

The current study also revealed that majority of studied mothers were married, more than half of studied mothers had occupation these findings were in the same line with **Aronu, (2020),** who found that, the majority of mothers were employee and more than three quarters of them were married**.** From the researcher point of view, more than half of mothers were working this might be due to their university education which facilitate acquiring job and their desire to assist the husband in meeting the family financial needs increased today life burden.

Regarding studied mothers residence, the results of the current study illustrated that almost two thirds of studied mothers were from rural areas, and nearly three fifths of them had enough income. These study results were supported by **Fu et al. (2020)** who revealed that less than half of parents had sufficient income and more than one third of them were from rural areas. On the other hand, these study results disagreed with **Utamayasa, (2021),** who studied "Effect of Physical Activity and Nutrition during COVID-19 Pandemic, England", found that the majority of their

participants were from urban areas. From the researcher point of view, this study was conducted at Benha city and its' surrounding rural areas that considered rural areas and depend in agriculture.

According to personal characteristics of studied child, the current study showed that, slightly more than half of studied child were males, the majority of them aged 6years old with mean age was ±SD 6.21±2.074. these study findings were supported by **Dong et al., (2020)** who studied "Epidemiological characteristics of 2143 pediatric patients with 2019 coronavirus disease in China" and revealed that nearly one quarter of children aged 6 <8 years old moreover more than half of them were boys. These study results were more than study finding of **Keeling et al., (2021),** they studied "The impact of School Reopening on The Spread of COVID-19 in England" and found that ages ranged from 6 to 13 years, 52.75% of their participants were boys, 33.82% of the total study participants were in grade 1. These study results were more than study finding of **Abd El-Baset., (2022),** who studied "Health Preventive Program Regarding COVID19 among Primary School Age Students at Banha City" found that slightly more than half of the studied students were females and aged from 10 < 11 years old, ranking between brothers, one third of the studied students were the second, majority of them lived in urban areas, and half of them were in the fourth grade.

This study findings were in disharmony with the study done by **Radwan et al., (2020),** they studied "The role of Social Media in Spreading Panic among Primary and Secondary School Students during The COVID-19 pandemic: An online Questionnaire Study from the Gaza Strip, Palestine" and found that nearly two thirds of sample were females and more than half of the students aged between 10 to 14 years old.

Concerning the child ranking between brothers, the result of the current study revealed that more than half of them were the second child this study finding was supported by **Utamayasa, (2021),** found that the target population is primary school children aged 6-10 years and more than one third of their studied children were the second regarding ranking between brothers.

Concerning total mothers' knowledge about COVID 19, revealed that more than half of the studied mothers had average knowledge about COVID-19, while nearly one quarter of them had poor knowledge about COVID-19, The current study was supported by **Talukder et al., (2022)** who studied "Knowledge and practices related to COVID-19 among mothers of under-2 children and adult males: a cross-sectional study in Bangladesh" and revealed that slightly more than one third of studied participants had adequate knowledge about COVID-19. However, the study was incongruent with **Abuhammad, (2021)** who revealed that, the knowledge of parents about COVID19 in children was considered good as they have good background knowledge on the clinical signs of the disease, modes of transmission of the virus and protection measures against the disease. Moreover, they are satisfied with the governmental measures that are in place to combat COVID-19 in children. From the researcher point of view, this could be related to COVID 19 is the most recent discovered disease that didn't clearly identified and there was ambiguity about certain aspects related to the disease such as mode of transmission, well known researches about the disease.

Concerning studied mothers regarding their total preventive strategies, the current study revealed that more than one third of the studied mothers had unsatisfactory total preventive strategies level about COVID-19 and nearly two thirds of them had satisfactory preventive Strategies level about COVID-19,

From the researcher point of view, this could be related to the effect of mother internal need to protect her children against infection and school authorities with respected responsible health authorities need to identify, meet and coordinate the implementation of preventive strategies at schools. Also this might be due to the worldwide raising awareness about the new fatal pandemic disease that resulted in the death of large number of people globally and due to the effect off ministry of health program in raising people awareness against COVID-19 infection in addition.

These study results were congruent with **Hamadneh et al., (2021)** who studied "Knowledge and attitudes regarding COVID-19 among Syrian refugee women in Jordan" revealed that the majority of mothers had adequate preventive measures such as measures that should be taken when outside home, when returning home, need to wear gloves and masks when outside home, social distancing, avoidance of large gatherings, and handshaking, procedures that should be taken when returning home, taking-off shoes outside home, hand sanitation before touching any objects upon returning home, disposal of the outer shopping bags, washing of vegetables and fruits, hand washing with soap and water for 30 seconds, taking off outside clothes and washing them separate. Moreover, these study results were congruent with **Zhou et al., (2021)** who studied "Chinese parental awareness of Children's COVID-19 protective measures" and revealed that most parents had satisfactory practice regarding preventive measures.

Concerning total mothers' attitude regarding COVID-19 revealed that more than two thirds of the studied mothers had positive attitude about their primary school children during COVID-19 and nearly of them had negative attitude about their primary school children during COVID-19. This study result was consistent with **Abuhammad, (2021)** who illustrated that most mothers had positive attitude regarding COVID-19in order to avoid getting the serious infection. In addition, the study was supported with **Putri , (2021)** who showed that most of studied mothers had positive attitude toward COVID-19.

Concerning the relation between total attitude of studied mothers and their total knowledge level regarding COVID-19, the current study revealed that there was highly statistically significant relation between total attitude of studied mothers and their total knowledge level regarding COVID-19. The study was congruent with **Hamadneh et al., (2021)** who illustrated that there was significant relation between total mothers' knowledge and attitude. From the researcher point of view, this could be interpreted that high knowledge level of studied mothers is associated with positive attitude.

Conclusion

More than half of studied mothers had average knowledge about COVID-19. Less than two thirds of the studied mothers had satisfactory preventive strategies level. Nearly two thirds of the studied mothers had positive attitude regarding preventive strategies about COVID-19. There was highly statistically significant relation between total knowledge of studied mothers and their level of education, there was statistically significant relation between total preventive strategies level of studied mothers and their socio demographic characteristics for level of education and occupation. There was highly statistically significant relation between total attitude of studied mothers and their total knowledge level regarding COVID-19at (p= <0.001**).

Recommendations

- Mothers' classes and educational programs about COVID -19 preventive strategy.
- Booklets, brochures and posters containing sufficient knowledge about COVID-19 preventive strategy should be printed and kept in clinics and schools.

- Further studies are recommended to continue or extend this study towards the discovery of other relevant data or information that could support in expanding the awareness about COVID -19 and other infectious diseases.

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الاستراتيجيه الوقائيه للامهات لاطفال المدارس الابتدائيه اثناء فيروس كورونا

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تفشي مرض كورونا وإجراءات اغلاق المدارس لها تأثير سلبي علي الأمهات المصريات.لذلك هدفت الدراسه الي التعرف علي الاستراتيجيات الوقائيه للامهات لاطفالهن في المدارس الابتدائيه خلال فيروس كورونا .وقد اجريت الدراسه علي عينه عشوائيه بسيطه327طفلا.وقد اجريت الدراسه بنسبه 5%من جميع المدارس الابتدائيه الحكوميه بمدينه بنها والتي تضمنت 6 مدارس ابتدائيه من 109 مدرسه تم اختيارهم بطريقه عشوائيه .وقد كشفت النتائج ان هناك علاقه ذات دلاله احصائيه عاليه بين الموقف الكلي للامهات الخاضعات للدراسه ومستوي معرفتهن الكلي فيما يتعلق ب كوفيد-19.كما اوصت الدراسه بتطوير وتنفيذ برنامج تدريبي فيما يتعلق بالاستراتيجيه الوقائيه للامهات لتحسين معرفتهم وموقفهن لحمايه اطفالهن كم فيروس كورونا.