Knowledge and Practice of Mother's Have Children with Covied-19

Aya Mohsen Sadeek Ahmed [(1)], Dr/ Magda Abd-Elstar Ahmed [(2)], Dr/ Shimaa Fathy Miky[(3)]
1) Bsc. Of nursing El-fayoum university of nursing2014
2) Professor of Community Health Nursing Faculty of Nursing – Ain Shams University
3) Lecturer of Community Health Nursing Faculty of Nursing – Ain Shams University

Abstract

Background: Corona virus is one of the major pathogens that mainly target the respiratory system of humans. **Aim:** this study Aimed to assessing mother`s knowledge and practices of mother`s have children with covied19. **Research design:** Descriptive research design will be used to achieve the aim of this study. **Study setting:** the study will be conducted at El fayoum health insurance Outpatient clinics affiliated to El fayoum governorate. **Subjects**: A purposive sample of 200 (out of 1000 - 1200) mothers attending the previous mentioned setting.**Tools of data collection: A structure Interview Questionnaire Sheet:** consists of four part: **Part 1:** Socio-demographic characteristics of children and their mothers. **Part II:** child past history and health status. **Part III:** knowledge of mothers about covied 19.**Part IV:** Mothers reported practices about covied 19 include 4 part: 1-General procedures. 2-Home isolation.3-Clean and disinfection 4-Practice to increase child immune system**: Results:** 72.0% of the studied mothers were unsatisfactory level of total knowledge about covid-19 disease. While, 28.0% of them were satisfactory level and 78.0% of the studied mothers had inadequate practices toward the covid-19 disease. While, 22.0% of them had adequate practices**.** Moreover, there is statistically significant relation between the total knowledge of the studied mothers and health history of children and infectious diseases at (P= < 0.05). While, there is no statistically significant relation with their history from genetic diseases, birth defects, previous operations, problems during birth and chronic disease at (P= > 0.05) and there is highly statistically significant relation between total knowledge of the studied mothers and their total reported practices toward covid-19 disease at (P < 0.01). **Conclusion:** Less than three quarters of the studied mothers were unsatisfactory level of total knowledge about covid-19 disease. While, more than one quarter of them were satisfactory level, and more than three quarters of the studied mothers had inadequate practices toward the covid-19 disease. While, less than one quarter of them had adequate practices regarding covied19. Additionally there is statistically significant relation between the total knowledge of the studied mothers and health history of children and infectious diseases. While, there is no statistically significant relation with their history from genetic diseases, birth defects, previous operations, problems during birth and chronic disease. Also there is highly statistically significant relation between total knowledge of the studied mothers and their total reported practices toward covid-19 disease. **Recommendation:** The study highlights the need for an educational program, workshops, and videos \booklets conducted for mothers to improve their knowledge and practice for their children regarding COVID-19 pandemic. Increase awareness and improve knowledge related to COVID-19, health regulators should enhance women's knowledge by using multiple communication approaches, digital, paper, social media, phone messages, etc

Key wards: Knowledge, Practice, Mother`s, Children, Covied19

Introduction

Coronaviruses are a family of viruses that can cause respiratory illness in humans. It is contagious disease which an infectious disease that is readily spread by transmission of a pathogen through contact with an infected person. The first case of covied19 was reported Dec 2019, may have originated in an animal and changed so it could cause illness in humans infectious disease outbreaks have been traced to viruses originating in birds, pigs, bats and other animals that mutated to become dangerous to humans ***(Page .et al 2021).***

World Health Organization reported In January 2020, more than 6 million cases have been confirmed, with more than 3.83 million deaths attributed to covied19 in the world. And in

June 2020 close to177 million individuals have reported being affected by the virus and more than 367,000 who have succumbed to this attack globally. Egypt is showing considerable resistance in limiting the total number of positive cases to about 23,000 cases and 913 reported cases of death on account of covied19.Children below 18 years of age constituted approximately 8% of all covied19 cases reported by countries in 2020, despite representing 29% of the global population 4,064,365 children with covied19 were reported, which represented 14.2% of the total 28,645,258 cases until July 8, 2021***(WHO, 2020)***.

SARS-CoV-2 is mainly transmitted from human to human by infectious droplets and that direct contact, rather than airborne spread, is the main transmission route as supported by evidence from contact tracing. The average incubation period between infection and onset of symptoms is about 4 to 6 days while 95% of individuals will develop symptoms within 14 days from infection. Viral load in the upper respiratory tract is highest 1 day before and the first days after onset of symptoms ***(Grantz et. al2020).***

Spread of covied19 occurs via **Airborne transmission and droplets**. People who are infected with covied can release particles and droplets of respiratory fluids that contain the virus into the air when they exhale (e.g., quiet breathing, speaking, singing, exercise, coughing, sneezing). The droplets or aerosol particles vary across a wide range of sizes from visible to microscopic. Once infectious droplets and particles are exhaled, they move outward from the person. These droplets carry the virus and transmit infection. Indoors, the very small droplets and particles will continue to spread through the air in the room or space and can accumulate ***(Salzman, et al2021).***

The risk of infection by breathing in particles carrying the virus generally decreases with distance from infected people and with time, some circumstances increase the risk of infection. Surface transmission when touch surfaces that someone who has the virus has coughed or sneezed on. Touch a countertop or doorknob that's contaminated and then touch nose, mouth, or eyes. The virus can live on surfaces like plastic and stainless steel for 2 to 3 days. Should be clean and disinfect all counters, knobs, and other surfaces shows that the virus can live to 3 hours ***(Stadnytskyi, 2021).***

Covied19 can provisionally be diagnosed on the basis of symptoms and confirmed using reverse transcription polymerase chain reaction (RT-PCR) or other nucleic acid testing of infected secretions. Along with laboratory testing, chest CT scans may be helpful to diagnose covied19 in individuals with a high clinical suspicion of infection. Detection of a past infection is possible with serological tests, which detect antibodies produced by the body in response to the infection ***(Li et al 2021).***

The symptoms of covied19 in children are variable depending on ranging from mild symptoms to a potentially fatal illness ***(Niazkar 2021)***. Common symptoms include coughing, fever, loss of smell, headaches, nasal congestion and runny nose, muscle pain, sore throat, diarrhea, eye irritation,[and toes swelling or turning purple . In moderate cases pneumonia, abdominal pain, vomiting, and diarrhea. develop severe symptoms dyspnea, hypoxia, develop critical symptoms respiratory failure, septic shock and multiorgan dysfunction ***(CDC,2021).***

Breaking the chain of virus transmission is generally considered to be one of the most effective strategies. Hand washing by soap and water and wash for at least 20 seconds. wash after you cough or sneeze, before you eat, after you use the bathroom, and after you touch common surfaces. If you do not have access to soap and water, use a hand sanitizer with at least 60% alcohol***(Banerjee A, et al.2020).***Spread the hand sanitizer on both sides of your hands and rub them together until they are dry, Wear a facemask, vaccine and Social distancing outbreaks have occurred in prisons due to crowding and an inability to enforce adequate social distancing ***(McCormick,2020).***

Most common complication in children multisystem inflammatory syndrome in children (MIS-C) is a condition where different body parts can become inflamed, including the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs***(Jiang SY, et al2021).*** Kawasaki disease is a syndrome of unknown cause that results in a fever. It is a form of vacuities, where blood vessels become inflamed

throughout the body, the skin from the hands and feet may peel, after which recovery typically occurs. In some children and coronary artery aneurysms form in the heart ***(Brogan, 2020).***

Primary health care is the first level of contact that individuals, families and communities have with the healthcare system. Incorporates personal care with health promotion, the prevention of illness and community development. Understanding of the social, economic, cultural and political determinants of health. General measures to help reduce the introduction and spread of covied -19 in nursing homes, certain general measures should be implemented. These include vaccination of residents and staff, implementing certain visitor restrictions, use of source control (e.g, masks), symptom screening, and testing of both residents and health care personnel. It is important that these general measures be put in place, since asymptomatic and presymptomatic transmission can occur and symptom screening alone may not detect all cases of covied -19 ***(Arons et al., 2020).***

Secondary prevention is early detection of infectious disease is important to mitigate the spread of disease by increasing self-isolation and early treatments. Routine screening and testing and early identification of cases of covied -19 is particularly important in long-term care facilities since rapid spread of infections associated with high case fatality rates has been repeatedly reported. Repeated point prevalence testing can identify asymptomatic residents and help guide efforts to reduce transmission ***(McMichael,2020).***

Tertiary prevention Treat the symptoms of covied19 at home a mild illness as having any of the various signs and symptoms of covied19 (e.g., fever, cough, sore throat, malaise, headache, muscle pain) without shortness of breath, dyspnea, or abnormal chest imaging. Most people who become sick with covied19 will only have mild illness and can get better at home. Symptoms might last a few days. People who have the virus might feel better in about a week. Treatment is aimed at relieving symptoms and includes: Rest, Fluids and Pain relievers ***(CDC, 2021).***

Significance of the study

Global spread of covied 19 in April 2020, the coronavirus disease 2019 (COVID-19) pandemic has resulted in **>890,000** cases and **>45,000** deaths worldwide. The first case was recorded in Egypt on February 2020 (Ministry of health.,2020). Coronavirus Cases in Egypt until march 2021 about **133,970,545** and Deaths about **2,905,296** and Recovered about **107,987,016**.

The total number of confirmed children cases on May 2020 was **5895**case in Egypt, with case fatality rate of 6.9%. Children were affected like other age groups, but total incidence was less than 10% . Confirmed cases had a positive real-time reverse transcription–polymerase chain reaction (RT-PCR) test result for SARS-CoV-2, the virus that causes COVID-19 **(WHO2021).**

Aim Of Study

This study Aims to assessing mother`s knowledge and practices of mother`s have children with covied19 through;

- Assessing child health history.
- Assessing knowledge of mother`s have children with covied19.
- Assessing mother`s reported practices toward their children with covied19.

Research question

1.What is the mother's knowledge regarding COVID 19?

2.What is the mother's reported practices toward their children with covied19?

3.Is there a relation between mother's knowledge and health history of children?

4.Is there a relation between mother's knowledge and their reported practices?

1- Subjects and Methods

This study will be conducted under the form main design as:-

I. Technical Design.

Includes research design, setting, subject and tools for data collection

A-Research design

Descriptive research design will be used to achieve the aim of this study.

B- Study setting

The study will be conducted at El fayoum health insurance Outpatient clinics

affiliated to El fayoum governorate which divided into two part Elfayoum El-shamla clinical and Azza zidan clinical . elfayoum El-shamla clinical selected because it was high density and follow up covied child come with our mother was selected from total number by using systematic sample .

C-Subjects

A purposive sample of 200 (out of 1000 - 1200) mothers attending the previous mentioned setting at 2019-2020 combined with their children according to the following criteria

- Child age between 4:11 years old.
- Both sexes.
- Child with positive swab of covied19 CT with patches of covied19.
- Attending for follow up.

Selected according to equation

$$n = \frac{N \times p\,(1-p)}{\left[[N-1 \times (d^2 \div z^2)] + p\,(1-p)\right]}$$

n= sample size

P= standard normal variation

Z= standard score corresponding to significance level

D= absolute error

D= Tools of data collection

N= size of total population

D- Tools of data collection

Data will be collected through the following tools:

A structure Interview Questionnaire Sheet designed by investigator and written simple Arabic language to great data which concerned the aim of study and consists of four parts:

Part 1: Socio-demographic characteristics of children and their mothers .it include (age, sex, birth order and school age) of children. And (Age, education level, occupation) of mothers, residence, family monthly income, number of family member and crowding index.

Scoring system of crowded index

This measure depended on divided the person number by room number and crowding occur if there is more than one person per room; not crowding occur.

Part II: child past history and health status include (Genetic diseases, Birth defects, parasitic diseases, Infectious disease, previous operations and any chronic disease), and include the current medical histories include appearing symptoms and medication during infection of covied 19.

Part III: knowledge of mothers about covied 19 include (define, mode of transmission, incubation period, signs and symptoms, diagnosis, methods, complication and danger signs).

Scoring system knowledge of mothers about covied 19.

The questionnaire was contained of 7 questions, the total scores of the questionnaire were 14 grades, the complete correct answer was scored as two points, the incomplete correct answer was scored as a single point and the wrong answer was scored as a zero point. These scores were summed and were converted into a percent score. It was classified into 2 categories:

- **Satisfactory** knowledge if score ≥ 60%.
- **Unsatisfactory** knowledge if score from <60%.

Part IV: Mothers reported practices about covied 19 include 4 parts:

- **(A) General procedures:** It included (hand wash times, methods, steps, alcohol rub and wear mask).
- **(B) Home isolation:** It included condition for home isolation.
- (**C) Clean and disinfection:** It included (tool of disinfection, methods of disinfection, things can be cleaned and method of disposal of waste).
- **(D) Practice to increase child immune system:** It included (nutrient and other things).

Scoring system of mothers reported practices about covied 19

The total score of mother's practice were 68 grades, each item was evaluated as "Done" was taken one score and "not done" was taken zero score. These scores were summed up and were converted into a percentage score. It was classified into 2 categories:

- **Adequate** practices if score ≥ 60%.
- **Inadequate** practices if score from <60%.

Content validity:

Face and content validity of the study tool was assessed by group of experts in

community health nursing department at faculty of nursing, Ain – shams university to check content validity, relevance and comprehensive.

Reliability of tool:

Testing the reliability of the tools through Alpha Cronbach reliability analysis: Alpha Cronbach of Assessing knowledge of mothers about covied 19 disease was 0.815. and Assessing mothers reported practices about covied 19 disease was 0.831

II. Operational Design.

Operational design includes preparatory phase, content validity, pilot study and field work.

(A) Preparatory phase:-

Investigator as review current, post, local and international related literature various aspect of study using textbooks, articles, internet, periodical and magazines. It necessary for the investigator to get aquatinted with and oriented aspects of the research problem, as well as to assist in development of data collection tools

(B) Pilot study: -

Pilot study will be carried out on 10 % (20) of mothers combined with their children to test applicability, clarity of the tools and assessment of feasibility of field work, identification of suitable place for interviewing of mothers combined with their children and to detect any obstacles that might face the investigator and interfere with data collection . A necessary modification was done according to the result of pilot study. The sample of pilot study was excluded from the total study sample.

(C) Field Work: -

It will include the following:-

- Approval was obtained from the research and ethics committee at faculty of nursing Ain – shams university, also an official permission was sent to director of el Fayoum health insurance to conduct study.
- The actual field work of this study was carried out by investigator was complete the tool by interview of mothers combined with their children during 4 day of weekly to complete tool of data collection .
- Investigator was visited each clinical (Sundays, Mondays, Wednesday and Thursday) of each week during the morning from 9 am to 2 pm and take time for each mother 30 : 45 minutes, meet average 5-6 mother per day .
- It take about four months from benign of September 2022 to December 2022 at directorate of elfayoum el-shamla clinical.
- Investigator introduce your herself to mothers firstly and explained the purpose of the study was done before each interview
- Each mother interview individually after the oral approval for participant in the study according ethical issues.
- Investigator role in completing questionnaire was to facilitate understanding of any confusing or difficult question for mothers.

III. Administrative Design.

A approval was obtained from the research and ethical committee at faculty of nursing of Ain-shams University, also an official permission was sent to director of el Fayoum health insurance to conduct study. Total confidentiality of any obtain information was ensured. Also the study maneuvers conduct harm the participants.

Ethical Considerations:

Verbal approval was obtained from the studied mothers before inclusion in the study, the mother as had the right to accept or refuse participation at any time, ensuring that privacy and confidentiality of all data and personal information was used only for research purpose . Moreover, participation were informed that the data not refused for any research purpose without any permission. The research approval was obtained from ethical committee before starting study.

IV. Statistical analysis:-

The collected data were collected and encoded in special format to be suitable computer feeding. following data entry, check and verification process were carried out in order to avoid any error .

Statistical presentation and analysis of the present study was conducted, using the mean, standard Deviation, chi-square and Linear Correlation Coefficient **[r]** tests by (*IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.).*

Mean = $\frac{\sum x}{n}$

Where $\sum$ = sum & n = number of observations.

Standard Deviation [SD]:

$$SD = \sqrt{\frac{\sum(x - x)^2}{n-1}}$$

Chi-square

The hypothesis that the row and column variables are independent, without indicating strength or direction of the relationship. Pearson chi-square and likelihood-ratio chi-square. Fisher's exact test and Yates' corrected chi-square are computed for 2x2 tables.

Linear Correlation Coefficient [r]

$$r = \frac{\sum(x - x)(y - y)}{\sqrt{\{\sum(X - x)^2\}\ \{\sum(y - y)2\}}}$$

Where:

X= Independent variable.

Y= Dependent variable.

Linear Correlation coefficient was used for detection of correlation between two quantitative variable in one group .

Results

Table **(1)** shows that, 56.0% of the studied children were female. Also, 51.0% of the studied children their age between 10-<11 years, the Mean SD of age were 9.74 ± 2.01 years. Moreover, 49.0% of them birth order were the second. Furthermore, 84.0% of the studied children were at primary school.

Table **(2)** displays that, 52.5% of the studied mothers, their age were between 20-30 years, the Mean SD of age were 29.21±7.19 years. Also, 66.0% of them have intermediate education. Moreover, 60.0% of them were housewife. Furthermore, 56.0% of them reside at rural areas. Also, 59.0% of the studied mothers have insufficient income. Moreover, 52.0% of them have 3-<5 family members. Furthermore, 89.5% of them have not crowded rate. 50.5% of them have 1-2 crowding rate.

Figure (1) shows that, 72.0% of the studied mothers were unsatisfactory level of total knowledge about covid-19 disease. While, 28.0% of them were satisfactory level.

Figure (2) shows that, 78.0% of the studied mothers have inadequate practices toward the covid-19 disease. While, 22.0% of them have adequate practices

Table (3) displays that, there is statistically significant relation between the total knowledge of the studied mothers and health history of children and infectious diseases at (P= < 0.05). While, there is no statistically significant relation with their history from genetic diseases, birth defects, previous operations, problems during birth and chronic disease at (P= > 0.05).

Table (4): shows that, there is highly statistically significant relation between total knowledge of the studied mothers and their total reported practices toward covid-19 disease at (P < 0.01).

Table (1): Frequency Distribution of the Studied Children According to their Socio-Demographic Characteristics **(n =200).**

Items	No.	%
Gender		
Male	88	44.0
Female	**112**	**56.0**
Age (years)		
4 – 6	35	17.5
7 - 9	63	31.5
10 - 11	**102**	**51.0**
Mean SD	**9.74 ± 2.01**	
Birth order		
First	54	27.0
Second	**98**	**49.0**
Third	38	19.0
Fourth	10	5.0
School stage		
Nursery school	32	16.0
Primary	**168**	**84.0**

Table (2): Frequency Distribution of the Studied Mothers According to their Socio-Demographic Characteristics **(n =200).**

Items	No.	%
Age (years)		
< 20	8	4.0
20-30	**105**	**52.5**
31-40	66	33.0
> 40	21	10.5
Mean SD	**29.21±7.19**	
Educational level		
Not read or write	7	3.5
Read and write	12	6.0
middle education	**132**	**66.0**
University education	41	20.5
Post-University education	8	4.0
Occupational		
Government sector	48	24.0
Private sector	32	16.0
Housewife	**120**	**60.0**
Residence		
Rural	**112**	**56.0**
Urban	88	44.0
Monthly income		
Sufficient	82	41.0
Not sufficient	**118**	**59.0**
Number of family members		
3-<5	**104**	**52.0**
5-<7	80	40.0
≥ 7	16	8.0
Number of rooms		
1-2	**117**	**58.5**
3-4	73	36.5
>4	10	5.0
Crowding index		
Not crowded	**179**	**89.5**
crowded	21	10.5

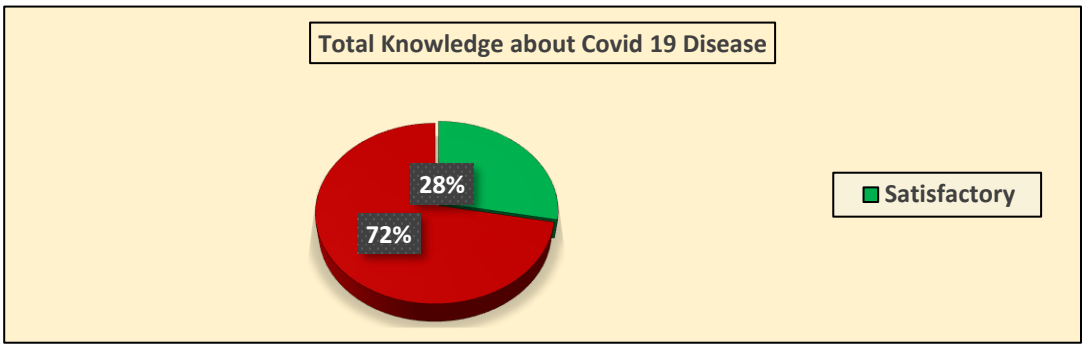

Figure (1): Frequency Distribution of the Studied Mothers According to their Total Knowledge about Covied 19 Disease **(n = 200).**

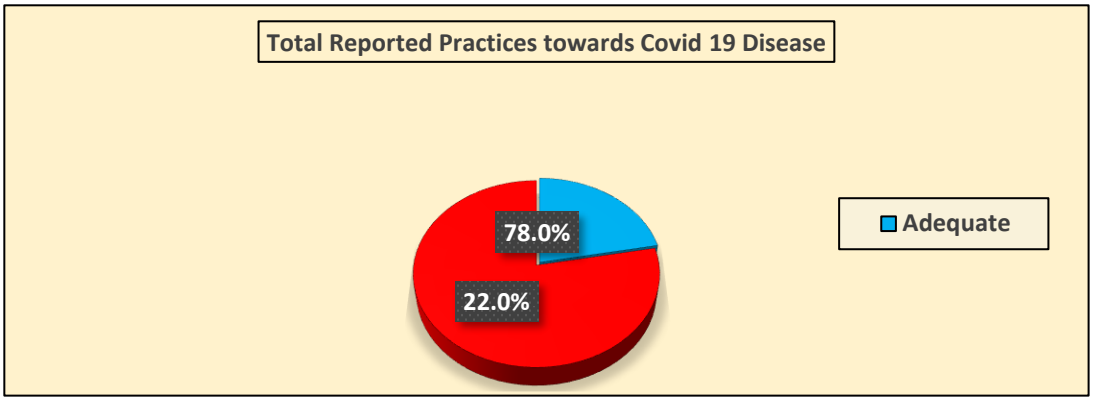

Figure (2): Percentage Distribution of the Studied Mothers According to their Total Reported Practices towards Covied 19 Diseases **(n=200).**

Table (10): Relation Between Total Mother's Knowledge About Covid-19 Disease and Health History of Children **(n=200).**

Health History of Children		Total knowledge about covid-19 disease				X^2	P-Value
		Satisfactory (n=56)		Unsatisfactory (n=144)			
		No.	%	No.	%		
History from genetic diseases	Yes	5	8.9	1	0.7	4.174	0.176
	No	51	91.1	143	99.3		
History from birth defects	Yes	6	10.7	2	1.4	4.208	0.175
	No	50	89.3	142	98.6		
History from parasitic diseases	Yes	3	5.4	25	17.4	8.528	0.047*
	No	53	94.6	119	82.6		
History from infectious diseases	Yes	6	10.7	50	34.7	10.76	0.015*
	No	50	89.3	94	65.3		
History of previous operations	Yes	12	21.4	6	4.2	5.240	0.105
	No	44	78.6	138	95.8		
Have problems during birth	Yes	16	28.6	100	69.4	6.011	0.101
	No	40	71.4	44	30.6		
History from chronic diseases	Yes	3	5.4	9	6.2	3.174	0.183
	No	53	94.6	135	93.8		

X^2 =chi-square test. No significant at p > 0.05. *Significant at p ‹ 0.05.

Table (11): Statistical Relation Between Total Knowledge of the Studied Mothers and their Total Reported Practices toward Covid-19 Disease **(n=200).**

Total reported practices	Total knowledge				X^2	P-Value
	Satisfactory		Unsatisfactory			
	No.	%	No.	%		
Adequate	44	78.6	0	0.0	41.91	0.000**
Inadequate	12	21.4	144	100.0		

****Highly statistically significant at p ‹ 0.01.**

Discussion

Mothers are primarily responsible for protecting and maintaining the health of their family members. They can be a role model for their family member and affect positively their health behaviors especially among rural residences. They can do that either through following protective home measures or through providing guidance to their family member regarding protective health behaviors that protect against the infection with COVID-19 **(Coronavirus (COVID-19) guide for parents, (2020).**This study aimed to assessing mother`s knowledge and practices of mother`s have children with covied19

According to gender of the studied children, the current study result showed that more than half of the studied children were female **(Table 1).** This result was similar with **An & Yoon, (2022)** who applied study among 191 mothers in Korea entitled "A study on determinants of COVID-19 preventive health behaviors of mothers with young children in South Korea" and found less than half of the studied children were males while more than half of them were female.

As regard to age of the studied children, the present study result found that more than half of the studied children their age between 10-<11 years (Table 1). This result was contrasted with **Badr et al., (2020)** who applied a study in Egypt among 200 mothers to assess mothers' protective measures toward their children against COVID-19 pandemic.

Concerning to birth order of the studied children, the current study result observed that about half of the children birth order were the second. Additionally most of the studied children were at primary school **(Table 1)**. This result was disagreed with **Talaat et al.,(2022)** who conducted a study among 104 mothers in Egypt to assess knowledge and practices of breastfeeding mothers regarding protective measures for their neonates against COVID-19 and observed less than one third of the studied children birth order were the second.

As regard to age of the studied mothers, the current study result showed that more than half of them their age were between 20-30 years **(Table 2).** This result was disagreed with **Anwar et al., (2020)** who applied study In Bangladesh among 1,869 participant entitled " Women's knowledge, attitude, and perceptions toward COVID-19 in lower-middle-income countries" and found that more than 40% two fifths of them their aged ranged between 18 to 30 years and only 5.6% minority of them their aged ranged between 60 years (range: 18–86 years).

Concerning to level of education of the studied mothers, the present study result showed that two thirds of them have intermediate education **(Table 2).** This result was supported with **Ertiana, & Utami, (2022)** who applied a study In Indonesia among 228 mothers entitled "Mother's knowledge of efforts to prevent Covid 19 transmission in children Age 3 - 5 years old" and found that highly percentage of the studied mothers had intermediate level of education

While this result was contrasted with a study done by **Aronu et al.,(2021)** who applied study among 404 participant in Nigeria entitled "COVID-19: knowledge of mode of spread and preventive practices among mothers attending a tertiary health institution" and found that less than two fifths of them had secondary level of education

As regard to occupation of the studied mothers, the present study result revealed that less than two thirds of them were housewife **(Table 2).** On the same line with a study conducted by **Anwar et al., (2020)** who found slightly percentage of the studied women were housewives

As regard to residence, the current study result showed that more than half of them reside at rural areas **(Table 2).** This result was contrasted with **Abuidhail et al., (2022)** who applied study among 370 mothers in Jordan entitled "Knowledge and practices of breastfeeding mothers towards prevention of the emerging corona virus (COVID- 19)" and found that 89% highly percentage of the studied mothers were from urban residence

As regard to monthly income, the current study result showed that more than half of the studied mothers have insufficient income **(Table 2).** This result was disagreed with **Badr et al., (2020)** who observed that half of the studied mothers had sufficient income.

Concerning to family members, the current study result showed that more than half of them had 3-<5 family members. Furthermore, the majority of them have not crowded rate, half of them have 1-2 crowding rate **(Table 2).** On the same line with **Talaat et al., (2022)** who observed that highly percentage of the studied mothers had 3<5 family members

This result was contrasted with **Almutairi et al., (2021)** who applied study among 262 mothers in Saudi Arabia entitled assessment of mothers' knowledge, attitudes, and practices regarding childhood vaccination during the first five years of life and found that most of the mothers had 2–3 children, 33.2% one third of them had more than three children, and 32.4% less than one third of them had only one child

As regard to total knowledge of the studied mothers about Covied 19 disease**,** the present study result showed that less than three quarters of the studied mothers were unsatisfactory level of total knowledge about covid-19 disease. While, more than one quarter of them were satisfactory level **(Figure 1)**

This result was contrasted with **Abdelhafiz et al.,(2020)** who conducted study in Egypt among 559 participant to investigate knowledge, perceptions, and attitude of Egyptians towards the novel Coronavirus Disease (COVID-19) and observed that in general, participants had a good knowledge about the disease**.** And disagreed with **Mose, (2021)** who applied A cross-sectional study in Ethiopia among 420 mothers entitled "Willingness to receive COVID-19 vaccine and its determinant factors among lactating " and found that more than half of study participants had good knowledge about COVID-19. This result also contrasted with **Goshiye et al.,(2020)** who applied study in Ethiopia among 634 mothers entitled "Knowledge, attitude, and practice towards COVID-19 among mothers in Dessie Town, Northeast Ethiopia" and found that highly percentage of the respondents had good knowledge, **also** disagreed with **Singh & Jauhari, (2022)** who applied study among 652 participants in India entitled "Awareness about transmission and preventive measures of COVID-19 from mother to child" and found that less than one quarter of the them had unsatisfactory knowledge regarding COVID-19.

Also this result was disagreed with **Khaton, (2021)** who applied study in Egypt among 500 mothers to assess awareness and practices of rural mothers regarding COVID-19 prevention and their role in protecting their families and reported that 64% . Nearly two thirds of the studied mothers had good knowledge regarding COVID-19 Prevention. And this result in the same line with **Rahmatillah et al.,(2022)** who applied study among 1850 mothers in Indonesia to assess the preventive behavior, knowledge, and history of COVID-19 and found that 64% highly percentage of the studied mothers had respondents had good knowledge, and more 8% minority of them had poor knowledge regarding COVID-19.

From the investigator point of view this result may be due to increase sources of knowledge about Covid-19 through social media and advertise. And may be due to spread of supported pandemic knowledge to increase health team providers through ministry of health. And this deficit may be due to that mothers were not aware of scientific nature of COVID-19 as it was a newly pandemic disease and the majority of them were housewives

As regard to total reported practices towards Covied 19 diseases, the current study result revealed that showed that more than three quarters of the studied mothers had inadequate practices toward the covid-19 disease. While, less than one quarter of them had adequate practices **(Figure 3)**.

This result was in accordance with **Rahmatillah et al., (2022)** who found that highly percentage of them had Poor Preventive Behavior Regarding COVID-19. While this result was disagree with the study done by **Tomar et al., (2020)** who applied study in India entitled "Indian Community's Knowledge, Attitude & Practice towards COVID-19 preventive" and found that the 93% majority of the participants had good practice towards COVID-19. And was in disagreement with **Erfani, (2020)** who applied study in Iran entitled "Knowledge, Attitude and practice toward the novel coronavirus (COVID19) outbreak" and found that 89% the majority of

the participant had good practice towards COVID-19.

Additionally this result was disagreed with **Ngwewondo et al.,(2020)** who applied study in Cameroon entitled "Knowledge, attitudes, practices of/towards COVID-19 preventive measures and symptoms: a cross-sectional study during the exponential rise of the outbreak in Cameroon," and showed that 60.8% less than two thirds of the participants had good practice towards COVID-19 preventive measures.

From the investigator point of view the majority of social media information was not shared from referenced sources. Therefore, governments must strategically use this platform to establish standards and reliable information sources

Concerning relation between total mother's knowledge about Covid-19 disease and health history of children, the current study result displays that there is statistically significant relation between the total knowledge of the studied mothers and health history of children and infectious diseases. While, there is no statistically significant relation with their history from genetic diseases, birth defects, previous operations, problems during birth and chronic disease at (P= > 0.05).(**Table 10)** . This result was supported with **An & Yoon, (2022)** who found that there was positive correlation between child's current health status and mother's knowledge regarding covid 19

Concerning to relation between total knowledge of the studied mothers and their total reported practices toward Covid-19 disease, the current study result showed that there is highly statistically significant relation between total knowledge of the studied mothers and their total reported practices toward covid-19 disease **(Table 11).** This result was similar with the study done by **Rahmatillah et al.,(2022)** who applied study among 1850 mothers in Indonesia to assess the preventive behavior, knowledge, and history of COVID-19 and found that there was a significant correlation between knowledge regarding COVID-19 and preventive behavior

From the investigator point of view this may be due to highly statistically significant relation between mothers' total knowledge and their total practice, where decreased knowledge lead to deceased level of practice about COVID-19, its associated serious consequences so their level of practice regarding COVID-19 was decreased

Conclusion

In the light of the current study findings, it can be concluded that,

Less than three quarters of the studied mothers were unsatisfactory level of total knowledge about covid-19 disease. While, more than one quarter of them were satisfactory level. and more than three quarters of the studied mothers had inadequate practices toward the covid-19 disease. While, less than one quarter of them had adequate practices regarding covied19. Additionally there is statistically significant relation between the total knowledge of the studied mothers and health history of children and infectious diseases. While, there is no statistically significant relation with their history from genetic diseases, birth defects, previous operations, problems during birth and chronic disease. Also there is highly statistically significant relation between total knowledge of the studied mothers and their total reported practices toward covid-19 disease

Recommendations

Based on the current study finding the following recommendations were proposed:

- The study highlights the need for an educational program, workshops, and videos \booklets conducted for mothers to improve their knowledge and practice for their children regarding COVID-19 pandemic.
- Increase awareness and improve knowledge related to COVID-19, health regulators should enhance women's knowledge by using multiple communication approaches, digital, paper, social media, phone messages, etc
- Enhance women knowledge, practices and attitude regarding to COVID19 through design educational program, brochure and booklets
- Additional research using different training programs for nurses to be well prepared to provide women with appropriate knowledge and practices about COVID-19 through verbal and written instructions

- Nurses should follow evidence-based practices and guidelines regarding COVID-19 and these guidelines should be integrated into the women's care
- This study results should be repeated with a larger probability sample size in a different geographic location to confirm the findings.

References

Abdelhafiz, A. S., Mohammed, Z., Ibrahim, M. E., Ziady, H. H., Alorabi, M., Ayyad, M., & Sultan, E. A. (2020): Knowledge, perceptions, and attitude of Egyptians towards the novel coronavirus disease (COVID-19). *Journal of community health*, *45*, 881-890.

Abuidhail, J., Tamim, F., Abdelrahman, R. Y., & Al-Shalabi, E. (2022): Knowledge and practices of breastfeeding mothers towards prevention of the emerging corona virus (COVID-19). Global Pediatrics, 2, 100024.

Almutairi, W. M., Alsharif, F., Khamis, F., Sallam, L. A., Sharif, L., Alsufyani, A., ... & Alqasimi, R. (2021): Assessment of mothers' knowledge, attitudes, and practices regarding childhood vaccination during the first five years of life in Saudi Arabia. Nursing Reports, 11(3), 506-516.

An, H. G., & Yoon, C. M. (2022): A Study on Determinants of COVID-19 Preventive Health Behaviors of Mothers with Young Children in South Korea. In *Healthcare* (Vol. 10, No. 10, p. 2111). MDPI.

Anwar, S., Araf, Y., Newaz Khan, A., Ullah, M. A., Hoque, N., Sarkar, B., ... & Hosen, M. J. (2020): Women's Knowledge, Attitude, and Perceptions Toward COVID-19 in Lower-Middle-Income Countries: A Representative Cross-Sectional Study in Bangladesh. Frontiers in Public Health, 8, 571689

Aronu, A. E., Chinawa, A. T., Nduagubam, O. C., Ossai, E. N., & Chinawa, J. M. (2021): COVID-19: Knowledge of mode of spread and preventive practices among mothers attending a tertiary health institution. International Journal of Medicine and Health Development, 26(1), 56-56.

Badr, E. A., Fouda, M. E., Elshater, M. H., & Arafa, N. M. (2020): Mothers' Protective Measures toward their Children Against COVID-19 Pandemic. Children.

Centers for Disease Control and Prevention (CDC),(2021): Archived from the original on 4 March 2021. Retrieved 4 March 2021.

Chakrabarti SS, Kaur U, Banerjee A, (2020): COVID-19 in India: are biological and environmental factors helping to stem the incidence and severity? Aging Dis. 2020; 11:480–488. [PMC free article] [PubMed] [Google Scholar] [Ref list]

Coronavirus (COVID-19) guide for parents,(2020): What you need to know to keep your loved ones safe. https://www.unicef.org/parenting/coronavirus-covid-19-guide-parents 202

Edwards DA, Ausiello D, Salzman J, (2021): Exhaled aerosol increases with COVID-19 infection, age, and obesity. Proc Natl Acad Sci U S A. Feb 23 2021;118(8)doi:10.1073/pnas.2021830118

Erfani A, Shahriarirad R and Ranjbar K(2020): "Knowledge, Attitude and practice toward the novel coronavirus (COVID19) outbreak: a population-based survey in Iran," PLoS One, vol. 15, 2020.

Ertiana, D., & Utami, S. (2022): Mother's Knowledge of Efforts to Prevent Covid 19 Transmission in Children Age 3-5 Years Old. *JURNAL KESEHATAN POLTEKKES KEMENKES RI PANGKALPINANG*, *10*(2), 115-124.

Goshiye D, Abegaz Z, Gedamu S(2020): Knowledge, Attitude, and Practice towards COVID-19 among Mothers in Dessie Town, Northeast Ethiopia, 2020. Interdiscip Perspect Infect Dis. 2022 Oct 19;2022:4377460. doi: 10.1155/2022/4377460. PMID: 36313383; PMCID: PMC9605845

Hawks L, Woolhandler S, McCormick D (2020): "COVID-19 in Prisons and Jails in the United States". JAMA Internal Medicine. 180 (8): 1041–1042. doi:10.1001/jamainternmed.2020.1856. PMID 32343355.

Khaton, S. (2021): Awareness and Practices of Rural Mothers Regarding COVID-19 Prevention and their Role in Protecting their Families. *Tanta Scientific Nursing Journal*, *20*(1), 255-276.

Lauer SA, Grantz KH, Bi Q, (2020): The incubation period of coronavirus disease 2019 (COVID-19) from publicly reported confirmed cases: estimation and application. Ann Intern Med 2020; 172:577–582.

Li C, Zhao C, Bao J, Tang B, Wang Y, Gu B (2020): "Laboratory diagnosis of coronavirus disease-2019 (COVID-19)". Clinica Chimica Acta; International Journal of Clinical Chemistry. 510: 35–46. doi:10.1016/j.cca.2020.06.045. PMC 7329657. PMID 32621814.

Mose A(2021): Willingness to Receive COVID-19 Vaccine and Its Determinant Factors Among Lactating Mothers in Ethiopia: A Cross-Sectional Study. Infect Drug Resist. 2021 Oct 14;14:4249-4259. doi: 10.2147/IDR.S336486. PMID: 34703251; PMCID: PMC8523808

Ngwewondo A, L. Nkengazong, L. A. Ambe (2020): "Knowledge, attitudes, practices of/towards COVID-19 preventive measures and symptoms: a cross-sectional study during the exponential rise of the outbreak in Cameroon," PLoS Neglected Tropical Diseases, vol. 14, no. 9, Article ID e0008700, 2020.

Niazkar HR, Zibaee B, Nasimi A, Bahri N (2020): "The neurological manifestations of COVID-19: a review article". Neurological Sciences. 41 (7): 1667–1671. doi:10.1007/s10072-020-04486-3. PMC 7262683. PMID 32483687.

Page J, Hinshaw D, McKay B (2021): "In Hunt for Covid-19 Origin, Patient Zero Points to Second Wuhan Market – The man with the first confirmed infection of the new coronavirus told the WHO team that his parents had shopped there". The Wall Street Journal. Retrieved 27 February 2021.

Rahmatillah Razak,Anggun Budiastuti, Nurmalia Ermi,(2022): DETERMINANT OF PREVENTIVE BEHAVIOR COVID-19 AMONG MOTHERS IN OGAN ILIR REGENCY, SOUTH SUMATERA INDONESIA Jurnal Ilmu Kesehatan Masyarakat, Mar2022, 13(1):62-72 e-ISSN 2548-7949 DOI: https://doi.org/10.26553/jikm.2022.13.1.62-72

Singh, N., & Jauhari, S. (2022): Awareness about transmission and preventive measures of COVID-19 from mother to child: A cross-sectional study among pregnant women. *Asian Pacific Journal of Reproduction*, *11*(6), 261

Stadnytskyi V, Bax CE, Bax A, Anfinrud P(2020): The airborne lifetime of small speech droplets and their potential importance in SARS-CoV-2 transmission. Proc Natl Acad Sci U S A. Jun 2 2020;117(22):11875-11877. doi:10.1073/pnas.2006874117

Talaat Amer, S., Salah Eldin Al-Rafay, S., Nader Sadek, B., & Ragab Mohamed, H. (2022): Knowledge and Practices of Breastfeeding Mothers regarding Protective Measures for their Neonates against COVID-19. Egyptian Journal of Health Care, 13(4), 964-981.

Tomar B, P. Singh, S. Suman, P. Raj, and D. Nathiya(2020): Indian Community's Knowledge, Attitude & Practice towards, BMJ, Noida, India, 2020

World Health Organization (WHO), 2020: WHO Coronavirus Disease (COVID-19) Dashboard. [online] Covid19.who.int. Available at: [Accessed 6 June 2020].