Mothers Perception Regarding Preventive Measures of COVID-19

Samah Magdy Ahmed[(2)], Nawal Mahmoud Soliman[(2)], Mona Abo-Bakr Abdlelatif[(3)]
(1) B.Sc., Banha University.
(2) Professor of Community Health Nursing, Faculty of Nursing, Ain Shams University-Cairo-Egypt.
(3) Assisstant professor of Community Health Nursing, Faculty of Nursing, Ain Shams University - Cairo-Egypt.

Abstract

Background: 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 for protection against the infection with COVID-19. **The study aimed to:** assess mothers perception regarding preventive measures of COVID-19. **Research design:** descriptive design was utilized to achieve the aim of this study. **Setting:** The study was conducted at Elamiria Medical Center in Elzaton Zone affiliated to Ministry of Health . **Sample:** A Purposive sample of 264 enrolled at the above mentioned setting was involved in this study. **Tools: structural interviewing questionnaire: It was included three parts as following: Part (1):** Socio demographic data of mothers**. Part (2):** Mothers Knowledge related to preventive measures of COVID-19**. Part 3**: Mothers reported practices regarding prevention of COVID-19 virus **The second tool:** Mothers attitude regarding preventive measures of COVID-19 virus infection assessed through Likert Rating scale. **Results:** Findings of the present study showed that 63.6% of the studied mothers, had satisfactory level of total knowledge regarding COVID-19 ,68.9% of the studied mothers had healthy reported practices regarding their total reported practices about preventive measure for COVID-19 while31.1% of their total reported practices were unhealthy,71.6% of the studied mothers had positive attitude regarding preventive measure for COVID-19 . **Conclusion** there was a highly statistical significant difference between studied mother's total attitude and their reported practices regarding preventive measure of COVID-19 .Also, there was highly statistical significant difference between studied mother's total knowledge and total reported practices regarding preventive measure of COVID-19. **Recommendation:** Design educational program by family and community health nursing to increase mothers perception in MCH center in order to upgrading mothers knowledge, practices and attitude regarding preventive measures of COVID-19. disseminate multiple communication approaches, digital, paper, prochures , phone messages, etc **.**

Keywords: COVID-19, Preventive measures, Mothers Perception

Introduction:

Coronaviruses are a family of viruses that can cause respiratory illness in humans. They are called “corona” because of crown-like spikes on the surface of the virus. Severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS) and the common cold are examples of coronaviruses that cause illness in humans. The new strain of coronavirus - SARS-CoV-2 - was first reported in Wuhan, China in December 2019. It has since spread to every country around the world ***(Zoumpourlis et al., 2020)***.

Coronavirus disease 2019 (COVID -19) is an emerging public health threat nowadays. It has evolved to be a pandemic crisis around the world. World Health Organization (WHO) reported COVID-19 as an emergency international concern on January 2020 and called fo collaborative efforts of all countries to prevent the rapid spread of it. COVID -19 caused by the severe acute respiratory syndrome, novel coronavirus 2 (SARSCoV-2) ***(World Health Organization {WHO}, 2020***.

The risk of transmission of COVID- 19 multiplies with the lack of appropriate knowledge, negative attitudes and dangerous practices. Practices of the recommended preventive measures, such as maintaining personal hygiene and safe physical distancing, are associated with a dramatic reduction in morbidity and mortality due to COVID-19. Hence, knowledge and practices about COVID-19 are crucial in determining compliance to the behavioral change measures ***(Centers for Disease Control and Prevention, 2019)***.

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 ***(Lu, Stratton and Tang, 2020)***.

Perception is a subjective, active, and creative process through which mothers assign meaning to sensory information to understand themselves and others. It also includes how the mothers respond to the information. Through the perceptual process, can gain information about the properties and elements of the environment that are critical to the survival. Perception not only creates the experience of the world around mothers; it allows mothers to act within their environment ***(Freeman, 2019)***."

Perception is very important in understanding mothers behavior regarding preventive measures of COVID -19 because every mother perceives the world and approaches life problems differently. With the help of perception, the needs of various mothers can be determined, because mother's perception regarding preventive measures of COVID-19is influenced by their needs. Thus, for understanding mothers behavior, it is very important to understand their perception, that is, how they perceive the different situations. mother's behavior is based on their perceptions of reality regarding preventive measures of COVID-19, not reality itself. The world as it is perceived is the world that is important for understanding mothers behavior regarding preventive measures of COVID-19.Mothers are important agents of change and so a good knowledge of the mode of spread and preventive measures of COVID-19 among mothers will impact the family and the community, and thereby reduce spread .***(Soltani et al., 2019)***.

There is a call to reinforce community awareness of practices to stop the nationwide spread of the virus. Nurses during COVID-19 pandemic will continue to perform their role by keeping a positive attitude towards the present situation, and by involving themselves in all activities related to patient care ***(Huy et al., 2018)***.

Significance of the Study:

Mothers perception of knowledge, practices and attitude are important in controlling the spread of the disease. Knowing the cause of the disease, signs/symptoms, and the possible methods of prevention can facilitate the proactive application of preventive measures ***(Elgzar et al., 2020)***.

In Egypt, from January 2020 to September 2022, there have been 515,371 confirmed cases of COVID-19 with 24,797 deaths, reported to WHO. As of 11 September 2022, a total of 98,019,706 vaccine doses have been administered ***(World Health Organization {WHO}, 2022)***.

Aim of the study:

This study aims to assess mother's perception regarding preventive measures of COVID-19 through.

- Assessing knowledge of mothers regarding preventive measures of COVID-19.
- Assessing reported practices of mothers regarding preventive measures of COVID-19.
- Assessing attitude of mothers regarding preventive measures of COVID-19

Research questions:

1. Is there a relation between mother's attitude and their reported practices to prevent the infection?
2. Is there a relation between mother's attitude and their sociodemographic data regarding preventive measures of COVID-19?
3. Is there a relation between knowledge of mothers and their sociodemographic data regarding preventive measures of COVID-19?
4. Is there a relation between knowledge of mothers and their reported practices to prevent the infection?

Subjects and Methods:

Research design:

A descriptive design was utilized to achieve the aim of this study.

Setting:

The study was conducted at Elamiria Medical Center in Elzaton Zone affiliated to Ministry Of Health..

Subjects:

Sample type:

A Purposive sample technique used to conduct the study.

Systematic random sample

Sample Size:

Sample size of total families attended in Elamiria Medical Center 15600 mothers at 2020-2021 will be 264 mothers' needs to be recruited to achieve confidence level 90%.

Data collection tools:

Two tools were used for data collection to achieve the aim of the present study:

- Tool I. Interviewing questionnaire.
- Tool II. Attitude Rating Scale.

Tool I. interviewing questionnaire

It was designed by the investigator in the Arabic language after reviewing the related literature and consisted of 79 questions. It was utilized into three parts:

Part (1): Socio demographic characteristic it was designed to assess mothers (11questions).

Mothers Socio demographic characteristics as {age, residence, mother's education ,Family type ,number of family rooms, number of family members, mother's job, Religion ,monthly income family members suffer from a chronic health problem, mothers had respiratory disease}it included questions from (1-11).

Part (2): Mother's knowledge about the emerging COVID 19 (33 question):

A- M other's knowledge about COVID-19 as {Definition, signs and symptoms, mode of transmission, diagnosis, complications, treatment, vaccination, incubation period and source of knowledge about COVID-19} it included 19questions from (12-30).

B- M other's knowledge about preventive measures of the emerging COVID 19 as{ type of antiseptic used in cleaning, The correct way to cough or sneeze in the absence of tissue paper is, the correct way to clean hands . maintaining social distancing when dealing with others, the places where the rate of infection with the COVID 19 increase, material can be used to clean fruits and vegetables } it included 14questions from(31-44).

Scoring system: Each question was evaluated as 1 score for correct answer and 0 score fore incorrect The total score for all questions related to knowledge was 16 point which represents 100% and categorized into two level as following:

- Satisfactory knowledge: 50% or more. (9-16)
- Unsatisfactory knowledge: less than 50%. (0-8) -
- Question no. 30 was excluded from the scoring

Part (3): mother's reported practices regarding preventive measures of COVID 19 it was adapted from ***(World Health Organization (WHO), 2020 & Center for Disease Control and Prevention (CDC), 2020***.

A- Mother's reported practices to prevent COVID 19 as {use face mask, remove all clothing before start touching things inside the house, Disinfect used shoes, ventilate the home, wash hands well, maintain the etiquette} it included 13questions from (45-57).

Scoring system: each statement will be evaluated as 1 score for done and 0 score for not done. The total score of practices was 13points, which represent 100%.

-Healthy practice: 60 % or more. (8-13)

-Unhealthy practice: less than 60%. (0-7)

B- Mother's reported Practices about home cleaning and disinfections as {use disinfectants, use vinegar to disinfect food utensils, everyone has his own personal tools inside the house Prevent entering foreign animals inside the house , Cleaning the children's toys and sanitize it ,isolate ill person} it included13 questions from(58-70).

C- Scoring system: each statement will be evaluated as 1 score for done and 0 score for not done. The total score of practices was 13points, which represent 100%.

D- Healthy practice: 60 % or more. (8-13- Unhealthy practice: less than 60%. (0-7) -

E- Mother's reported practices to strengthen the immune system as {eating more fruits and vegetables, avoid fast food ,avoid antibiotics without consulting a doctor, Maintain personal hygiene, Do exercise regularly, Sleep enough time} it included 9 questions from (71-79).

Scoring system: each statement will be evaluated as 1 score for done and 0 score for not done. The total score of practices was 9points, which represent 100

-Healthy practice: 60 % or more. (6-9) Unhealthy practice: less than 60%. (0-5)

Total Scoring system: each statement will be evaluated as 1 score for done and 0

score for not done. The total score of practices was 35 points, which represent 100%.

The total reported practices will be summed up and classified into:

- Healthy practice: 60 % or more. (22-35)
- Unhealthy practice: less than 60%. (0-21)

Tool II. Attitude Rating Scale: to Assess Mothers attitude Regarding COVID -19 Likert Rating scale adopted and modified from ***(Batterton & Hale, 2017)*** to assess mother's attitude regarding preventive measures of COVID-19 virus infection the scale was converse 18 clear simple statements. It included questions from (1-18).

Mothers had three possible responses for each statement.

agree =2, **to some extent** =1,**disagree**=**(0)** This scoring will be reversed for negative statements where disagree scored as and so on. . The total score of attitude was 36 points, which represent 100%.

The total will be summed up and classified as the following:

-Negative attitude: Less than 60% (0-21)

-Positive attitude: more than 60% (22-36)

Validity:

It was tested by 5 experts from family and community health nursing, faculty of nursing Ain Shams University to review the tools for clarity, relevance, comprehensiveness, understanding and applicability.

Reliability:

Reliability is the consistency of measurement tool. The degree to which the instrument measures the same way each time, it is used under the same condition with the same subjects and it was done by using an alpha Cronbach test. The Cronbach's alpha model which is a model of internal consistency was used in the analysis of mother's knowledge , reported practices and attitude and each part : knowledge = 0.876, reported practices =0.771 , attitude=0.731

I. Ethical considerations:

The research approval was issued from the Scientific Research Ethical Committee in the Faculty of Nursing at Ain Shams University before starting the study. The researcher clarified the importance and aim of the study to all mothers included in the study. Written consents were obtained from all mothers. A clear and simple explanation was given according to their level of understanding, physical and mental readiness. All mothers were informed that they are allowed to choose to participate or not in the study and that they have the right to withdraw from the study at any time without giving any reason and confidentiality of the information was assured. All mothers were informed that the collected data would be used only for the present study, as well as for their benefits.

Pilot study:

It was carried out on 5% from the total sample (14 mother) for one week to evaluate the feasibility, applicability and time needed to fill the tool to find the possible obstacles that might be faced during data collection. The sample was chosen randomly from the previously mentioned setting. There were modifications found after the pilot study. The sample of pilot study was excluded from the research.

Field work:

This study started from beginning of April 2022, till the end of September 2022, covering six months for data collectionAn official approval letter clarifying the purpose of the present study was issued from the Dean of the Faculty of Nursing at Ain Shams University to the Director of Elamiria Medical Center, and Scientific Research Ethical Committee in the Faculty of Nursing as an approval to conduct this study The previously mentioned setting was attended by the investigator two days/week (Sunday and Wednesday) from 9.00 a.m. to 1 p.m.

Firstly, The investigator introduced herself and explained the purpose of the study to the mothers before starting the interview. The investigator distributed questionnaire to mothers in order to collect the required data by the investigator to assess knowledge of mothers regarding COVID-19 and protective measures of COVID-19.

The investigator assessed reported practices of mothers regarding protective measures to prevent COVID 19 the questionnaire took about 10-20 minutes to be completed.

Administrative design:

An official permission was issued from the Dean of the Faculty of Nursing at Ain Shams University to the to the Director of Elamiria Medical Center, and Scientific Research

Ethical Committee in the Faculty of Nursing as an approval to conduct this study.

Statistical analysis:

Data collected from the studied sample was revised, coded and entered using Personal Computer (PC) using Statistical Package for Social Sciences (SPSS) version. Computerized data entry and statistical analysis were fulfilled using the SPSS version 22. Data were presented using descriptive statistics in the form of frequencies, percentages and Mean Standard Deviation (SD). The Chi Square statistic is used for testing relationships between categorical variables.

Significance of the results:

- Highly significant at p-value < 0.01.
- Statistical significant was considered at p-value <0.05.
- Non-significant at p-value ≥ 0.05.

Results:

Table (1) show that ,39.0% of the studied mothers less than30 years old with mean age33.71±7.47, 79.9% of them were from urban residence. while 60.6% had Intermediate level of education, In relation to job, 74.6% doesn't work also 78.4% had enough monthly income.

Table (2) show that ,67.4% of the studied mothers had correct knowledge about definition of COVID-19, 67.4% had incorrect knowledge about the transmission throw animals, while 87.5%& 89.8% had correct knowledge about the Possibility of transmission of COVID-19 and Possibility to reduce infection with COVID-19respectively.

Table (3) reveal that the total 100.0% of the studied mothers reported practices regarding wash hands well with soap and water and Avoid direct contact with the infected persons were satisfactory respectively while (52.7%,54.5%,73.9%) of their practices regarding avoid touching eyes, nose and mouth with hands, Stay at home to protect themselves from COVID 19 and disinfect used shoes by placing them on a towel moistened with chlorine were unsatisfactory respectively.

Table (4) demonstrates that there was a highly statistical significant difference between studied mother's total attitude and their reported practices regarding preventive measure of COVID-19 (p-value‹0.01).

Table (5) show that there was highly statistically significant difference between studied mother's total knowledge regarding preventive measure of COVID-19 and their age, education level and Crowding Index Moreover, there was statistically significant difference between studied mother's total knowledge and their family type, mothers job monthly income On the other hand, there was no statistically significant difference between studied mothers total knowledge and their residence and religion.

Figure (1) illustrate that, 63.6% of the studied mother had satisfactory knowledge regarding COVID-19 and the preventive measures.

Figure (2) illustrate that, 62.1% of the studied mother's total reported practices to improve immunity system were healthy practices while more than one 37.9% of their practices were unhealthy practices.

Figure (3) illustrate that ,68.9%of the studied mothers regarding their total reported practices about preventive measure for COVID-19 were healthy practices while31.1% of their total practices were unhealthy.

Figure (4) illustrate that, 71.6% of the studied mothers attitude toward COVID-19 was positive attitude while 28.4% of their attitude was negative attitude.

Table (1): Frequency distribution of studied mothers regarding demographic characteristics (n=264).

	No	%
Age		
<30	103	**39.0**
30-<35	56	21.2
35-<40	51	19.3
40+	54	20.5
Mean ±SD	33.71±7.47	
Residence		
Rural	211	**79.9**
Urban	53	20.1
Education		
Not Read and Write	11	4.2
Read and write	33	12.5
Intermediate	160	**60.6**
University	60	22.7
Family type		
Nuclear	225	**85.2**
Extended	27	10.2
Single parent family	12	4.5
Number of family members		
Three	33	12.5
Four	95	**36.0**
Five	70	26.5
More than fife	66	25
Number of rooms		
Two	121	45.8
Three	127	**48.1**
Four	10	3.8
Five	6	2.3
Crowding Index		
< 2	115	43.6
≥ 2	149	56.4
Mothers Job		
Doesn't work	197	**74.6**
Work	67	25.4
Religion		
Moslem	256	97.0
Christian	8	3.0
Monthly income		
Not enough	52	19.7
Enough	207	**78.4**

Table (2): Frequency distribution of studied mothers regarding their general knowledge about COVID-19 (n=264).

	Correct		Incorrect		Don't know	
	No	%	No	%	No	%
Definition of C0VID-19	178	**67.4**	61	23.1	25	9.5
Serious symptoms of COVID-19.	166	62.9	72	27.3	26	9.8
COVID 19 is transmitted from animal to human	60	22.7	178	**67.4**	26	9.8
Possibility of transmission of COVID-19	231	**87.5**	0	0.0	33	12.5
Rate of transmission of the COVID-19 in gatherings	225	85.2	0	0.0	39	14.8
Mechanism of corona virus disease	151	57.2	90	34.1	23	8.7
Age groups that can be infected with COVID-19	228	86.4	10	3.8	26	9.8
High risk group to be infected with COVID-19.	211	79.9	27	10.2	26	9.8
Places where COVID -19 can lives	106	40.2	134	50.8	24	9.1
Possibility to reduce infection with COVID-19	237	**89.8**	1	.4	26	9.8

Table (3): Frequency distribution of studied mothers regarding their reported practices to prevent personal transmission of COVID-19 (n=264).

	Don		Not don	
	No	%	No	%
Wash hands well with soap and water.	264	**100.0**	0	0.0
use tissues when sneezing and coughing	251	95.1	13	4.9
Maintain the etiquette of sneezing and coughing, and use your bent elbow if the cover is not available, such as a tissue.	259	98.1	5	1.9
Wash hands well after sneezing or coughing and dispose of used tissues in a covered basket.	243	92.0	21	8.0
Avoid touching eyes, nose and mouth with hands.	125	47.3	139	**52.7**
Keep your home well ventilated to reduce spread the COVID 19.	260	**98.5**	4	1.5
Wash hands well or rub them with alcohol before eating.	252	95.5	12	4.5
Avoid direct contact with the infected persons.	264	**100.0**	0	0.0
Avoid sharing personal items	241	91.3	23	8.7
Wear mask in crowded places.	236	89.4	28	10.6
Stay at home to protect yourself from COVID 19.	120	45.5	144	**54.5**
Immediately remove all clothing before you start touching things inside the house.	153	58.0	111	42.0
Disinfect used shoes by placing them on a towel moistened with chlorine.	69	26.1	195	**73.9**

According to research question No (1)

Table (4): Statistically relation between total attitude and reported practices among studied mother regarding preventive measure of COVID-19

	Total practices					
	Unsatisfactory (n=82)		Satisfactory (n=182)		X^2	P-value
	No	%	No	%		
Total attitude						
Negative (n=75)	49	59.8	26	14.3	57.46	.000**
Positive (n=189)	33	40.2	156	85.7		

****Highly significant at p ‹0.01**

According to research question No (3)

Table (5): Statistically relation between total knowledge and demographic characteristics among studied mother regarding preventive measure of COVID-19

	Total knowledge				X^2	P-value
	Unsatisfactory (n=96)		Satisfactory (n=168)			
	No	%	No	%		
Age						
<30	28	29.2	75	44.6	17.71	.001**
30-<35	24	25.0	32	19.0		
35-<40	13	13.5	38	22.6		
40+	31	32.3	23	13.7		
Residence						
Rural	72	75.0	139	82.7	2.28	0.131
Urban	24	25.0	29	17.3		
Education						
Not Read and Write	11	11.5	0	0.0	28.398	0.000**
Read and write	17	17.7	16	9.5		
Intermediate	55	57.3	105	62.5		
University	13	13.5	47	28.0		
Family type						
Nuclear	72	75.0	153	91.1	12.61	0.002*
Extended	17	17.7	10	6.0		
Single parent family	7	7.3	5	3.0		
Crowding Index						
Two	40	41.7	81	48.2	18.257	.000**
Three	44	45.8	83	49.4		
Four	10	10.4	0	0.0		
Five	2	2.1	4	2.4		
Mothers Job						
Doesn't work	82	85.4	115	68.5	9.284	.002*
Work	14	14.6	53	31.5		
Religion		0.0		0.0		
Moslem	92	95.8	164	97.6	0.663	0.416
Christian	4	4.2	4	2.4		
Monthly income						
Not enough	27	28.1	25	14.9	10.365	0.006*
Enough	69	71.9	138	82.1		

***Significant at p ‹0.05. **Highly significant at p ‹0.01. Not significant at p>0.05**

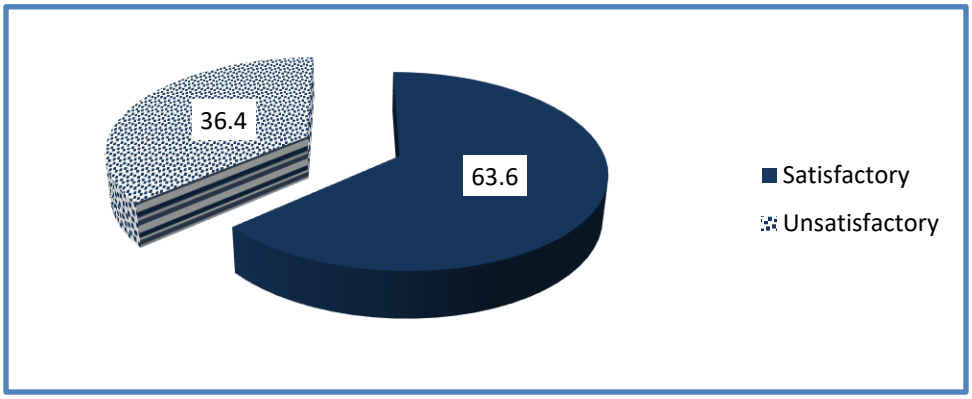

Figure (1): Percentage distribution of studied mothers regarding their total knowledge about COVID-19 and preventive measure (n=264).

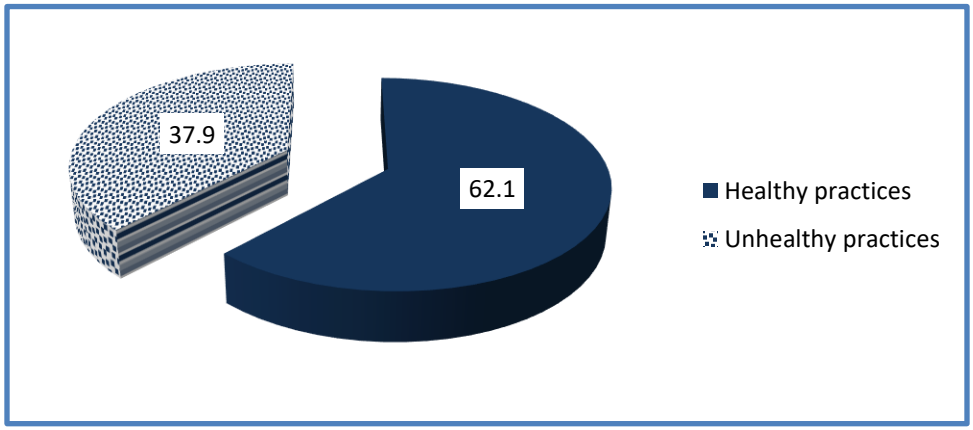

Figure (2): Percentage distribution of studied mothers regarding their total reported practices to improve immunity system (n=264).

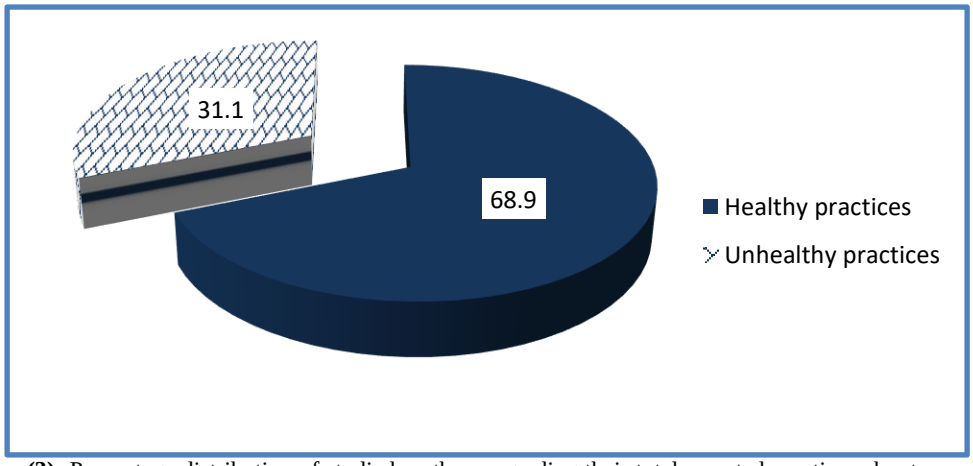

Figure (3): Percentage distribution of studied mothers regarding their total reported practices about preventive measure for COVID-19 (n=264)

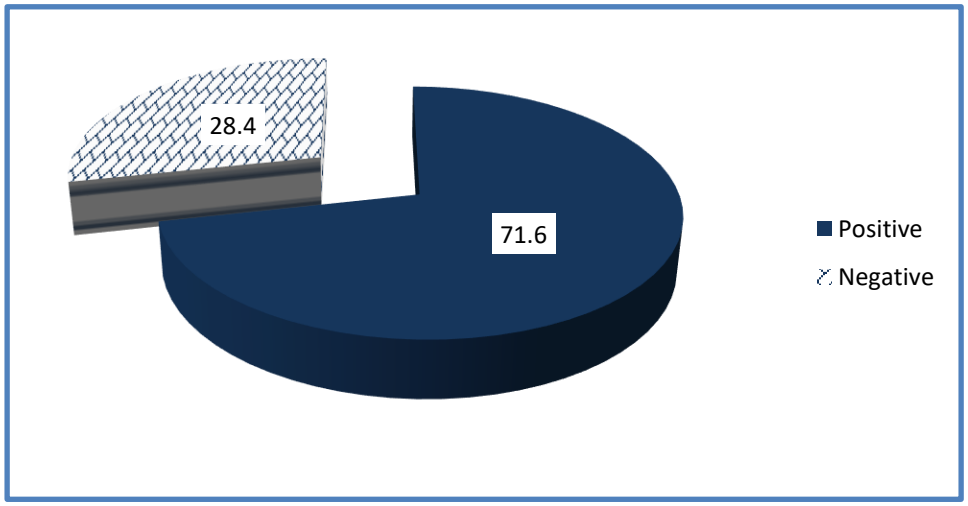

Figure (4): Percentage distribution of studied mothers regarding their total attitude toward COVID-19 (n=264).

Discussion:

The rapid spread of the COVID-19 virus throughout the world has come as a complete shock, and it is causing serious concerns. The COVID-19 virus can be prevented with the help of a simple yet highly successful method called "clean and healthy living behavior" ***(Afrizal, & Adinda, 2022*** As regard to age of the studied mothers, the current study result showed that about two fifths of the studied mothers less than30 years old with mean age33.71±7.47 **(Table, 1)**. This result was similar 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 two fifths of them their aged ranged between 18 to 30 years and only minority of them their aged ranged between 60 years and above with the mean age of the participants was 29.545 ± 12.009 years (range: 18–86 years).

As regard to residence, the current study result showed that most of them were from urban residence **(Table, 1)**. This result was similar with study done by **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 highly percentage of the studied mothers were from urban residence

As regard to level of education, the current study result showed that less than two thirds of them had intermediate level of education **(Table, 1)**. This result was contrasted with **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

In relation to job, the current study result showed that about three quarters of the studied mothers were doesn't work also more than three quarters of them had enough monthly income **(Table, 1)**. This result was contrasted with **Anwar et al., (2020)** who found that slightly more than one fifth of the studied women were housewives.

Concerning to general knowledge of the studied mothers about COVID-19, the current study result showed that more than two thirds of the studied mothers had correct knowledge about definition of COVID-19, and had incorrect knowledge about the transmission throw animals respectively, while the majority of them had correct knowledge about the Possibility of transmission of COVID-19 and Possibility to reduce infection with COVID-19 respectively **(Table, 2)**

The present study result was similar 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 studied mothers had correct knowledge about concept of COVID-19, while most of them had knowledge about transmitted through contact with contaminated surfaces, also transmitted through contact with an infected person.

This study result was accordance with **Abuidhail et al. (2022)** who conducted study in Jordan among 370 mothers to assess Knowledge and practices of breastfeeding mothers towards prevention of the emerging corona virus (COVID-19) and found that the participating mothers had basic knowledge about COVID-19.

According to the investigator point of view this result may be due to speed of spread epidemic infection among population and spread knowledge through of different sources that enhance mothers knowledge related to COVID19.

As regard to reported practices to prevent personal transmission of COVID-19, the current study result revealed that all of the studied mothers reported practices regarding wash hands well with soap and water and avoid direct contact with the infected persons were satisfactory respectively while more than half of their reported practices regarding avoid touching eyes, nose and mouth with hands, Stay at home to protect themselves from COVID 19 respectively and less than three quarters of them reported practices regarding disinfect used shoes by placing them on a towel moistened with chlorine were unsatisfactory **(Table 3)** This study result was accordance with **Abuidhail et al. (2022)** who found that highly percentage of the studied women reported to reduce the risk of developing corona disease, frequent washing of hands with soap and water after contacting things or people or returning from outside to the home is necessary, and reported stay at home for the entire period of Corona disease. While this result was contrasted with **Badr et al.**

(2020) who applied study among 200 mothers in Egypt entitled "Mothers' Protective Measures toward their Children Against COVID-19 Pandemic" and found. found that most of the studied mothers never avoid touching eyes, nose, and mouth with hands.

From the investigator point of view this result proves the effectiveness of social media and Ministry of Health to mothers knowledge and practices about COVID-19 infection

As regard to relation between total attitude and reported practices among studied mother regarding preventive measure of COVID-19, the current study result demonstrated that there was a highly statistical significant difference between studied mother's total attitude and their reported practices regarding preventive measure of COVID-19 (p-value‹0.01) **(Table 4)** this result was similar with **Afzal et al.,(2020)** who applied a cross-sectional survey in Pakistan among 1004 participants entitled "Community-based assessment of knowledge, attitude, practices and risk factors regarding COVID-19 among Pakistanis residents during a recent outbreak" and reported that there was significantly associated with both attitude and practice.

Regarding to relation between total knowledge and demographic characteristics among studied mother regarding preventive measure of COVID-19, the current study result showed that there was highly statistically significant difference between studied mother's total knowledge regarding preventive measure of COVID-19 and their age, education level and Crowding Index Moreover, there was statistically significant difference between studied mother's total knowledge and their family type, mothers job monthly income On the other hand, there was no statistically significant difference between studied mothers total knowledge and their residence and religion **(Table 5).**

This result was in accordance with **Abdelhafiz et al. (2020)** who conducted study in Egypt among 559 participants to assess Knowledge, perceptions, and attitude of Egyptians towards the novel Coronavirus Disease (COVID-19) and found that knowledge towards COVID-19 was significantly lower among age, level of educated, rural residents, and income.

This result was in agreement with **MostZ et al. (2020)** a study done among 2017 respondents in Bangladesh, to assess Knowledge, attitude, and practice regarding COVID-19 outbreak and showed that knowledge was associated with age and residence. Also was accordance with The study done by **Haque et al. (2020)** studied among 2343 participants in China to identify Knowledge, attitude and practices (KAP) towards COVID-19 and assessment of risks of infection by SARS-CoV-2 among the Bangladeshi population and showed that knowledge was significantly different across genders, age-groups, categories of marital status, education levels, and residence. And supported with **Rugarabamu et al. (2020)** a study done among 400 respondents in Tanzania to assess Knowledge, attitudes, and practices (KAP) towards COVID-19: a quick online cross-sectional survey and showed that the education level was significantly associated with good knowledge

As regard to total knowledge of the studied mothers about COVID-19 and preventive measure, the present study result illustrated that less than two thirds of the studied mother had satisfactory knowledge regarding COVID-19 and the preventive measures **(Figure 1)**.

This result was supported 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 similar 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 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 highly percentage of the studied mothers had respondents had good knowledge, and more than two fifths of them had poor knowledge regarding COVID-19.

From the investigator point of view Knowledge is one of the main aspects that will define the extent of community awareness of public health concepts. Every woman has a different level of knowledge about COVID 19, its preventive measures. The availability of such information would allow health care providers to

plan preventive interventions to educate the community efficiently.

As regard to total reported practices to improve immunity system, the current study result illustrated that less than two thirds of the studied mothers total reported practices to improve immunity system were healthy practices while more than one more than one third of their practices were unhealthy practices **(Figure 2).**

This result was similar with the study conducted by **Al-Hanawi et al. (2020)** who conducted study in Saudi Arabia among 3,388 participants entitled "Knowledge, Attitude and Practice toward COVID-19 among the Public in the Kingdom of Saudi Arabia" and found that Saudi residents, especially women, have good practices toward COVID-19.

From the investigator point of view this result may be due to boring to follow healthy lifestyle and low of awareness related to its benefits.

As regard to total reported practices about preventive measure for COVID-19, the current study result illustrate that more than two thirds of the studied mothers regarding their total reported practices about preventive measure for COVID-19 were healthy practices while less than one third of their total practices were unhealthy **(Figure 3).**

This result was agree 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 majority of the participants had good practice towards COVID-19 preventive measures. And was in agreement with **Erfani, (2020)** who applied study in Iran entitled "Knowledge, Attitude and practice toward the novel coronavirus (COVID19) outbreak" and found that most of the participant had good practice towards COVID-19 preventive measures.

Additionally this result was similar 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 less than two thirds of the participants had good practice towards COVID-19 preventive measures. While this result was contrasted with **Rahmatillah et al. (2022)** who found that highly percentage of them had Poor Preventive Behavior Regarding COVID-19.

From the investigator point of view this result may be due to social media and TV enhance women knowledge and this reflects about their level of practices

As regard to total attitude toward COVID-19, the current study result illustrated that, less than three quarters of the studied mothers attitude toward COVID-19 was positive attitude while more than one quarter of their attitude was negative attitude **(Figure 4).**

From the investigator point of view this result may be because positive attitude is a result of satisfactory knowledge of the COVID-19 pandemic.

Conclusion:

Less than two thirds of the studied mothers satisfactory knowledge regarding COVID-19 and the preventive measures, Also more than two quarters of the studied mothers had healthy practices while near to one third of the studied mothers had unhealthy practices, more than two thirds of the studied mothers attitude toward COVID-19 was positive attitude while more than one quarter of their attitude was negative attitude .

There was a highly statistical significant difference between studied mother's total attitude and their reported practices regarding preventive measure of COVID-19 (p-value‹0.01). Additionally there was a statistically significant difference between studied mother's total attitude regarding preventive measure of COVID-19 and their demographic characteristics age, residence, education, Crowding Index and monthly income On the other hand, there was no statistical significant difference between studied mother's total attitude and their family type, mothers job, religion ,Moreover highly statistical significant difference between studied mother's total knowledge and total reported practices regarding preventive measure of COVID-19.(p ‹0.01).

Recommendation

- Design educational program by family and community health nursing to increase mothers perception in MCH center in order to upgrading mothers knowledge, practices and attitude regarding preventive measures of COVID-19.
- Disseminate multiple communication approaches, digital, paper, prochures , phone messages, etc

Further researches:

- Additional research using different training programs for mothers to be well prepared

with appropriate knowledge and practices about COVID-19 through verbal and written instructions.

- This study results should be repeated with a larger probability sample size in a different geographic location to confirm the findings

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