Awareness and Practices of Rural Mothers Regarding COVID-19 Prevention and their Role in Protecting their Families

Samia E. Khaton

Assistant professor of community Health Nursing, Faculty of nursing, Tanta University

Abstract:

Background: Coronavirus disease 2019 (COVID-19) is an emerging infection that becomes a pandemic health problem. **The aim of this study** is to assess the awareness and preventive practices of rural motherstowards COVID-19 and their role to protect their family members. **Study Design\ Setting**: descriptive study design was carried out in the Kafrcella-Elbab village, Elsanta district, Gharbia Governorate, Egypt. **Subjects**: All mothers attending rural health unit for a six weeks for any reason were included. A convenience sample of 500 mothers were selected. **Tool**: Interview questionnaire tool was developed by the researcher it contain four Parts,socio-demographic characteristics, mothers knowledge, attitudes and practices **Results:** about two thirds of the studied mothers had good knowledge and positive attitudes about COVID-19 and half of them had satisfactory practices.More than half of the mothers follow initiatives to protect their family members. **Conclusion and recommendations**: Nearly two thirds of the studied mothers had good knowledge and positive attitude scores and about one half of them had satisfactory practices score that helps in disease prevention and limit its spread. However half of them had unsatisfactory practices. So the study recommended that there is a necessity to improve the rural mothers practices, awareness and attitude toward this pandemic disease and conduct mass education to convey a message that anyone can catch the disease and the only chance is that following healthy protective practices and life style from all family members.

Key words: Mothers, COVID-19, Awareness, Practices, Pandemic

Introduction

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 30 in 2020 and called for collaborative efforts of all countries to prevent the rapid spread of it [1].COVID -19 caused by the severe acute respiratory syndrome, novel coronavirus 2 (SARS-CoV-2) [2].

Coronavirus was first described in China[3]. On 13th September 2020 WHO reported Over 28 637 952 cases of COVID-19 and 917 417 deaths worldwide [4].Egypt's Ministry of Health, announced the first case in the country on 14 February 2020. Preventive measures were undertaken to monitor contacts of this case [5]. In late June there were 53,758 confirmed cases reported in Egypt [6]. In late November the confirmed cases reaches to 114475 from which 102268 recovered from the disease and 6596 deaths[7]. Most of cases experience only mild illness however; it can cause severe fatal illness in some people. The elderly and people with chronic medical conditions (e.g. hypertension, cardiac diseases and diabetes) are more vulnerable [8].

Up till now, there are no effectivevaccines or highly effective treatments for COVID-19. So theeffective control is essential protocols for control include hand washing using water and soap or alcohol-based rinses, wearing facemasks, cough etiquette,avoiding overcrowding , remaining at home,avoiding touching the nose, mouth or eye with unclean hands [9]. Adherence and commitmentto preventive and control measures is influenced by peoples knowledge and attitude toward COVID-19[10]. Assessing awareness about the disease help to identify factors influencing adoption of healthy practices and behavior [11].

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[12].

Community health nurse can help, as a trusted health profession, in assessing awareness and practices of different

populations in different community health care setting. She can presenting and reinforcing preventive measures among different populations and provide a better insight about this pandemic health problem especially in rural areas [13,14].

The Aim of the Study

This study aims to assess the awareness and preventive practices of rural motherstowards COVID-19 and their role to protect their family members during the epidemic.

Research questions:-

1-What is the level of awareness (knowledge and attitudes) and preventive practices of rural mothers towards COVID-19 during the epidemic?

2-To what extent the rural mothers follow initiatives to protect their families from attracting COVID-19 infection?

Subjects and methods:

Study Design: This is a descriptive study design.

Study Setting: This study was carried out in the Kafrcella-Elbab villagewhich is the largest villagein Elsanta district, El-Gharbia Governorate, Egypt.**Subjects**: All mothers attending rural health unit for asix weeks for any reason and agreed to participate in the study were included. A convenience sample of500 motherswere selected.The criteria included

(beingmother and living with her family members).

Tools for Data Collection:

Interview questionnaire tool was used to collect the data. It was developed by the researcher based on infection prevention and control measures for COVID-19 by World Health Organization[15] and guidelines of the Institute of Epidemiology Disease Control and Research (CDC) [16]. It included four parts:-

Part I:**Socio-demographic dataof studied mothers**such as age, education and family income.

Part II:**Mothers knowledge about COVID-19**including symptoms**,** methods of transmission,incubation period, risk groups, prevention and control. The responses to the questions wasgiven either "Yes ", "No", or "Do not know". one point was given for correct answer and zero point for incorrect or do not know answers. Total knowledge score was classified as good (>75% of total score), faire (60-75% of total score) and poor (<60 % of total score).

-   The mothers asked also about the problems they faced to create awareness among their family members and sources of their information.

Part III:Mothersattitude towards COVID-19.There were 8 attitude statements. Positive response (agree on the statement) wasgiven(1) and negative response (disagree on the statement) wasgiven (0). The total attitude score classified as Positive attitude ($\geq$ 70% of total attitude score) and negative attitude (<70% of total attitude score)

Part IIII :**Mothers practices and behaviors towards COVID-19 prevention** and control measures. The participants were asked to answer with "yes" or "no" to each item of practice questions. A score of one and zero was given to Yes and NO responses respectively. The total practice was classified as satisfactory practice ($\geq$ 75% of total practice score) and unsatisfactory practice (< 75% of total practice score).

The content validity and Reliability of the tool:

The content validity of the study tool was tested by a jury of 10 experts in community health nursing. The content validity index per item ranged from 85% to 100%. The final questionnaire was distributed to 30 women as a pilot sample and the result of the pilot study was used to test reliability of the tool. Cronbach's alpha coefficient was 0.74.

Ethical considerations: the consent of the Research Ethics Committee, Faculty of Nursing, Tanta University was taken on the proposal of the study. Also, an ethical approval was obtained from the participants before answering the questionnaire. Explain the purpose of the study to the mothers and that the study not cause any harm and assure the confidentiality of their reported data.

Collecting data: data was collected during May and June2020. The researcher meet the available mothers who fulfill the criteria and come to the unit all over the week's days for continuous 6 weeks to collect as large number as possible to increase the reliability of the study.The purpose of the study was explained to mothers to take their acceptant to participate then fillthe interview questionnaire sheet according to the mother's.responses.

Statistical Analysis: Data were analyzed using SPSS program version 23. Categorical variables were presented as number and percent. Correlation between variables was evaluated using Pearson's Correlation Coefficient (r). Significance was adopted at $P<0.05$ and highly significant was adopted at $p<0.01$.

Results:-

The study includeda total of 500 mother. Their ages ranged between 22-52 years. Slightly less than half (45%) of them had secondary education and about one third (34%) of them had a bachelor's level of education while 21% of them were illiterates or read and write.In relation to family income about two fifth (38.4% and 43.7%) of them mentioned that the income was not sufficient and had just sufficient respectively.

Table (1) illustrated awareness of studied mothers regarding the COVID-19 mode of transmission, incubation period, symptoms, risk groups, and prevention. In relation to mode of transmission, the majority of studied sample (95% and 96%) reported coughing & sneezing of infected person and close contact with an infected person respectively. Less than three quarters (70%) of them reported touching contaminated surface.

Regarding Incubation period**,** 40 % of them know that incubation period of COVID-19 is from 2-14 days and 45% report 2-7 days. As regard to signs and symptoms, the majority (98%,97%,97%and 95%) of studied mothers aware that fever &fatigue, dry cough, difficulty breathing & shortness of breathing and sore throat are signs and symptoms for COVID-19 respectively. 85% reported loss sense of taste and smell and 75% reportedheadache. Only 18% of them reported diarrhea and abdominal pain.

In relation to their knowledge about the most risk groups, more than three quarters (83%,85%,80%,91%) know that elderly people, individuals with chronic diseases, chronic respiratory diseases and peoples with low immunity are risk groups respectively. 73% reported pregnant women and only 30% reported children. As regard to mothers' knowledge about methods of prevention of COVID-19, the table shows also that most of studied sample know that washing hands with water and soap, maintaining social distance, avoid touching the eyes, nose with contaminated hands andavoid contacts with infected peoplewere preventive methods. However less than three quarters (73% and 70%) of them reported self-quarantine and taking all family members into home quarantine as a preventive methods respectively.

Table (2) illustrates problems that faced by mothers to create awareness among their family members and their sources for information. More than half (54%) of

the studied mothers reported problems such 'cannot able to stop family members from leaving the house'. Negligence about the severity of the disease (32%), reluctance to use masks (22%) and had no problems (18%). The table shows also that most (90% and 81%) of studied sample report mass media and social media respectively as a source for their information about COVID-19. This followed by 45% and 42% of them reported friends and relatives and health staff in rural health units respectively.

Table (3) illustrates practices of studied mothers and initiatives that they took to protect their family members. It shows that less than two thirds (62%) of them maintain using face masks. More than three quarters (80 % and 90%) of them use hand kerchief\ tissues during coughing/sneezing and wash hands frequently using water and soaps respectively. 69% of them maintain social distance, 60% maintain home quarantine and 70% maintain a healthy lifestyle focusing on outbreak and obey all government rules related to the COVID-19. The table shows also that 53% of the studied mothers take the initiative of temporary and absolute restricted access to visitors coming inside the home to protect their families. 76% of them arrange for hand washing with soap inside or outside the home (assure that every family member wash hands frequently inside and outside home and the availability of soap) and 61% wash hands with soap after touching pets.

Table (4) illustrates mothers' attitudes toward COVID-19. It shows that the majority (85%,90% and 85%) of studied mothers agreed that using a face mask in a crowded place is important, reporting a suspected case to health authorities is crucial, and health education can play a role in preventing COVID-19 respectively. Also about three quarters (75%, 80%, and 74.2%) of them agreed that **COVID-19** is a dangerous disease, washing face and hands after coming from outside is important and mothers have a role in preventing infection among their family members respectively. 61% and 62% of them agreed that COVID-19 is a preventable disease and can be treated at home respectively.

Table (5) represents the total knowledge score of the studied mothers about COVID-19 and its prevention. The table shows about two thirds (64.2%) had good total knowledge score. Also 27.6% of them had fair total knowledge score. Only 8.2% of them had poor total knowledge score**.**

Table (6) represents the total Attitude score of the studied mothers regarding COVID-19. It shows that about two thirds (64.4%) of studied sample had positive total attitude score toward COVID-19. While slightly more than one third (35.6%) of them had negative total attitude score.

Table (7) represents the total practice score of the studied mothers regarding COVID-19 prevention. It shows that about half (50,6%) of studied sample had satisfactory total practice score. While the other half (49.4) of them had unsatisfactory total practice score.

Table (8) represents the correlation between total scores of knowledge, attitudes and practice of studied mothers. It shows that there was highly significance correlation between total scores of knowledge, attitude and practice(p = 0.000).

Table (9) represents the correlation between total scores of knowledge, attitude and practice of studied mothers and their age, education and family income. It shows that there was highly significance correlation between total scores of knowledge, attitude and practice and the mothers' education and family income (p = 0.000). However, there was no correlation found between total scores of knowledge, attitude and practice and the mothers' age.

Table (1) Awareness of studied mothers regarding the COVID-19 and its prevention

Variable	N (500)	%
Mode of transmission of COVID-19(can be transmitted through:-		
coughing & sneezing of infected person	475	95
Close contact with an infected person	480	96
Touching surfaces and objects contaminated and then touch mouth nose or eye	350	70
Contact with infected animals	95	19
Eating infected animal meat or milk	95	19
Incubation period of COVID-19		
2-4 days	75	15
2-7 days	225	45
2-14 days	200	40
Sings & symptoms of COVID-19		
Fever &fatigue	490	98
dry cough	485	97
difficulty breathing & shortness of breathing	485	97
sore throat	475	95
loss sense of taste and smell	425	85
headache	375	75
diarrhea	90	18
abdominal pain	90	18
Risk groups for COVID-19		
Elderly people	415	83
Children	150	30
individuals with chronic diseases (cancer, diabetes, hypertension)	425	85
chronic respiratory diseases	400	80
pregnant women	365	73

peoples with low immunity	**455**	**91**
Prevention of COVID-19		
washing hands with water and soap	**470**	**94**
maintaining social distance	**450**	**90**
using a face mask	**480**	**96**
avoid touching the eyes, nose with contaminated hands	**460**	**92**
self-quarantine	**365**	**73**
taking all family members into home quarantine	**350**	**70**
avoid contacts with infected people	**495**	**99**

Table (2) Distribution of studied mothersregarding problems they faced to create awareness among their family members and Source of their information about COVID-19

problems faced by mothers to create awareness among their family members	N(500)	%
negligence about the severity of the disease	160	32
cannot able to stop them from leaving the house	270	54
reluctance to use masks	110	22
had no problems	90	18
Source of their information about COVID-19	**N**	**%**
Mass Media (TV, Radio)	450	90
Friends & Relatives	225	45
Social media	405	81
Health staff in rural health unit	210	42

Table (3) Distribution of studied mothersaccording to their reported practices followed to prevent COVID 19 and The initiatives that mothers took to protect their family members

Reported practices of mothers	N(500)	%
Do you maintain using masks	310	62
Do you use hand kerchief\ tissues during coughing/sneezing?	400	80
Do you wash hands frequently using water and soaps?	450	90
Do you maintain social distance	345	69
Do you maintain home quarantine	300	60
Do you maintain a healthy lifestyle focusing on outbreak?	350	70
Do you obey all government rules related to the COVID-19?	350	70
The initiative that mothers took to protect their family members	**N(500)**	**%**
temporary and absolute restricted access to visitors coming inside the home	265	53
Arrange for hand washing with soap inside or outside the home (assure that every family member wash hands frequently inside and outside home and the availability of soap)	380	76
wash hands with soap after touching pets	305	61

Table (4) Distribution of studied mothersaccording to their attitudes toward COVID-19

Mothers attitude toward COVID-19	N(500)	%
Do you think that	Agree	
COVID-19 is a dangerous disease	375	75
washing face and hands after coming from outside is important	400	80
using a face mask in a crowded place is important	425	85
COVID-19 is a preventable disease	305	61
reporting a suspected case to health authorities is crucial	450	90
mothers have a role in preventing infection among their family members	371	74.2
Health education can play a role in preventing **COVID-19**	425	85
COVID-19 can be treated at home	310	62

Table (5) Total knowledge score of the studiedmothersregarding COVID-19

Total knowledge score	The total studied mothers (n=500)	
	N	%
Good	321	64.2
fair	138	27.6
Poor	41	8.2

Table (6) Total Attitude score of the studied mothersregarding COVID-19

Total attitude score	The total studied mothers(n=500)	
	N	%
Positive	322	64.4
Negative	178	35.6

Table (7) Total practice score of the studiedmothersregarding COVID-19 prevention

Total practice score	The total studied mothers(n=500)	
	N	%
Satisfactory	253	50.6
Unsatisfactory	247	49.4

Table (8)Correlation between total scores of knowledge, attitude and practice of studied mothers

	Knowledge	Attitude
Attitude	0.287**	
Practice	0.406**	0.600**

**. Correlation is significant at the 0.01 level (2-tailed)

Table (9)Correlation between studied motherstotal scores of knowledge, attitude and practice and their age, education and family income

	Age		Education	Family income
	r	**P**	**r\p**	**r\p**
Knowledge	0.020	0.330	0.184**	0.359**
Attitude	0.028	0.264	0.666**	0.282**
Practice	0.046	0.150	0.318**	0.354**

**. Correlation is significant at the 0.01 level (2-tailed).

Discussion

Coronavirus disease 2019 (COVID-19) is an emerging infection that becomes a pandemic health problem. Prevention and control of such problem depends more on personal behaviors and adherence to preventive and control measures. Mothers have a crucial role to protect themselves and their family members. The aim of this study is to assess the awareness and preventive practices of rural motherstowards COVID-19 and their role to protect their family members during the epidemic.

Over all, the present study showed that about two thirds ofthemhad good general knowledge about corona virus disease and its preventive measures. This result is in agreement with other KAP survey studies in Egypt 2020 which study knowledge,attitude and practices of the public regarding COVID-19 [17,18].Also Abo-Elghet E and El-mesyen S 2020[19] conduct a survey on Gharbia governorate population and found that majority of the sample had good knowledge however,the mean knowledge score was lower among those living in rural areas. The majority of the present study sample reported also the most common mode of transmission and commonest symptoms. This results agree with the results of Ferdous et.al 2020

[20]study in Bangladesh and Zegarra et al 2020 study in Peruvian [21].

This result may be related to the sample level of education, as more than three quarters of studied mothers had secondary and university education. This is supported by the positive significant correlation which found between the studied mothers and their level of education. Also,the serious effect and high morbidity and mortality associated with this infection makesmothers search for knowledge about thisdisease to protect themselves and their families. Moreover, the study done during the peak of the pandemic in which mass media and social media provide much information.

The present study revealed that only 40% of studied mothers report the correct incubation period for COVID-19. This contradicting with Zegarra et al 2020[21] who reported that Knowledge of the Peruvian population about the incubation period was excellent. This may be due to that general survey that conduct online all over populations include young ages and students which concentrate to know everything rather than mothers who may concentrate on symptoms, mode of transmission and prevention rather than incubation period.

One of the concerned finding in this study is that 90% of the studied mothers get their information about COVID-19 from mass media and 81% of them from social media. 45% friends and relatives and 42% from health staff.This results disagree with El-Gilany et al 2020 [17] who reported that the main sources of information about COVID-19 are internet/social media (92.3%), mass media (78.4%), health care workers (64.3%) and family/friends (51.4%). Also Abdelhafez et al 2020[18] who conduct an Egyptian survey reported that the participants gain their information through social media (66.9%), and the internet (58.3%).

This result may be due to that usually mothers follow T.V and radio. However, a considerable percentage of them (81%) in this study get their information from social media. Misinformation or unverified information can spread quickly through social media and misguide population. Health authorities and scientists have warned that widespread misinformation about COVID-19 is a serious concern causing corona-phobia worldwide [22].

Mothers usually provide guidance, instructions and support to their family members. However, they may face problems to made them compliance with these instructions. The present study revealed that only 18% of the mothers had no problems to create awareness among their families. More than half (54%) reported 'cannot able to stop them from leaving the house'. Negligence about the severity of the disease (32%), reluctance to use masks (22%).

This result in accordance with that of Ferdous et.al 2020 [20] who showed that only 13.8% of the studied populations did not face any difficulty when they discussed and tried to convince their family members about COVID-19 severity. Most of the responses by the participants indicated negligence about the severity of the disease, the reluctance of complying with not being able to stop going out of the house and reluctance to use masks. The result of the present studymay implyless participation in the preventive measures that imposed by the government and direct toward the need for giving more attention to the rural families..

The present study indicated that about two thirds of studied mothers had positive attitudes toward COVID-19 and the other one third had negative attitude. This result is accordance with a study done at Saudi Arabia, which participants showed a positive optimistic attitude toward COV`ID-19 [23]. Also this result in agreement with other studies in

Bangladesh and China [20.24]. On the other hand the present study result is contradicting with the results of El-Gilany et al 2020 [17] who reported that about half of participants showed a negative general attitude toward COVID-19. This difference may be due to that his participants may influenced by negative news about COVID-19 as most of them get their information from social media and internet.

Three quarters of the studied mothers in the present study consider COVID-19 as a dangerous disease. El-Gilany et al 2020 [17] reported also that more than three quarters of the participants considered that COVID-19 as a dangerous and fatal disease. This finding agreed also with the results of an Indian study, in which more than half of the participants strongly agreed that COVID-19 is a fatal condition [25].

Until now there is no highly effective treatment to COVID-19or vaccine to prevent it [26]. The present study revealed that slightly less than two thirds of mothers agreed that corona virus cannot be treated at home and that it is a preventable disease. However the majority of them agreed that reporting suspected cases to the authorities is crucial and that wearing masks in crowding place is important. These results in accordance with that of Ferdous et.al

2020 [20] and Zhong et al 2020 [24] who reported universal agreement among their participants towards reporting suspected cases to health authorities, and on the issue of wearing a face mask before going to a crowded place.

Globally, women usually are more likely to adopt preventive activities than men. The present study shows that half of thestudied \mothers had satisfactory total practice score. The majority of them were using hand tissue during coughing and sneezing and wash hands frequently with soup and water. Nearly two thirds of them maintain social distance and maintain home quarantine and using face mask. These findings is similar to other studies [17,20,24,27] that revealed that the majorities of participants follow some preventive measures as hand washing, stay at home and do not leave it less absolutely necessary, and be careful not to shake hands with others. However, Srichan et al [27] in Northern Thailand revealed that 54.8% of the participants did not regularly use soap during washing of hands.

Recently, the CDC recommended wearing cloth face coverings for the public, especially in localities with community transmission [28] and WHO recommended wearing face mask when there is respiratory symptoms[29]. Although there

were 62 % of the studied mothers reporting wearingface mask .On the other hand more than one third of the them did not maintain wearing a facemask. This may be due to that they are living in rural area and had a fault perception that they are not high risk for catching infection.Also this may be due to that their family income had just sufficient to essential needs of the family and this supported by the strong correlation that found between family income and practice score of the mothers. This results is similar to that of El-Gilany et al 2020 [17]who conduct a survey in rural district and found thatmore than half of the participants did not wear a facemask when leaving home. This finding in contrast with Zhong et al [24] who report that the majority of Chinese residents wears facemasks during going out. This may be due to that the his study done during the rapid rise period of the COVID-19 outbreak there.

Having good knowledge and good attitude may translates into good practices during the COVID-19 outbreak. The present study revealed a highly significant correlation between total scores of knowledge, attitude and practices.Also a significant correlation found between total scores of knowledge, attitude and practices of studied mothers and their educational level. This is in accordance with other studies Zhong et al[24], Saqlain et al.[30], and Hussain et al[31] who revealed that more frequent practice measures was associated with good knowledge scoreand having more positive attitudes and highly educated . This is supported also by the common consensus that a more educated population about any given disease will comply better with the preventive and treatment measures [32].

The present study findings revealed also that there were a valuable percentages 53%, 76% and 61% of the studied mothers take different initiatives to protect their families including temporary and absolute restricted access to visitors coming inside the home, arrange for hand washing with soap inside or outside the home and wash hands with soap after touching pets respectively. This ensure that the rural mothers are keen to protect their families as possible. On the other hand nearly half of them cannot follow the initiative of restricted access to vistors coming inside the home. This may be related to the culture of rural populations in Egypt that prevents them from do that and consider this act as a shameful behavior.

Conclusion and recommendations:-

The present study concluded that about two thirds of the studied mothers had good knowledge and positive attitude about

COVID-19 and half of them had satisfactory practicesthat helps in its prevention and limit its spread. However, the other half of the sample had unsatisfactory practices.More than half of mothers follow initiatives to protect their family members from infection. The studied mothers acquire their knowledge mainly from mass media and social media.There was a strong positive association between total knowledge, attitude and practice scores. Mothers' Level of education and their family income significantly correlated with their total knowledge, attitude and practice scores. So the study recommended that there is a necessity to improve the rural mothers practices, awareness and attitude toward this pandemic disease and conduct mass education to convey a message that anyone can catch the disease and the only chance is that to follow healthy protective practices and life style.

References:-

1.World Health Organization. 2019-nCoV outbreak is an emergency of international concern. 2020 [cited 2020 June 02]. Available from: http://www.euro.who. int/en/health-topics / health emergencies / international-health-regulations/news/ news /2020/2/2019 -ncov-outbreak-is-an-emergency -of-international-concern.

2. Ruan S. Likelihood of survival of coronavirus disease 2019. Lancet Infect Dis. 2020; S1473-3099(20):30257-7.

3. The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China. Chin J Epidemiol. 2020;41(2): 145-51.

4.World Health Organization. Coronavirus disease (COVID-19) Weekly Epidemiological Update. Available from: https://www.who.int/ docs/ defaultsource/coronaviruse/situation-reports/20200914-weekly-epi-update 5.pdf?sfvrsn=cf929d04_2

5. "Egypt announces first Coronavirus infection". Egypt Today. 14 February 2020. Archived from the original on 15 February 2020. Retrieved 14 February 2020.

6. Minstery of health and population, COVID 19 Update in egypt , Juan, 2020.

7-Minstery of health and population, Covide 19 Update in egypt , 27 November, 2020.

8- Lu H, Stratton CW, Tang YW. Outbreak of pneumonia of unknown etiology in Wuhan, China: The mystery and the miracle. J Med Virol. 2020;92 (4): 401-2.

9- Centers for Disease Control and Prevention. "Coronavirus Disease 2019 (COVID-19): Prevention & Treatment". Archived from the original on 15 December 2019. Retrieved 10 February 2020

10. Chirwa, G.C. Socio-economic Inequality in Comprehensive Knowledge about HIV in Malawi. Malawi Med J. 2019, 31(2):104–11.

11. Podder, D., Paul, B., Dasgupta A, Bandy, L., Pal, A., Roy S. Community perception and risk reduction practices toward malaria and dengue: a mixed-method study in slums of Chetla, Kolkata. Ind J Public Health.2019; 63(3):178-85. 10.4103/ijph.IJPH_321_19 [PubMed].

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

13. Ballard, Madeleine, et al. "Prioritising the role of community health workers in the COVID-19 response."BMJ Global Health. 2020:

14. Community Nursing and the COVID-19 Pandemic Available at: https://www.qnis.org.uk/community-nursing-and-the-covid-19-pandemic/

15.World Health Organization. Coronavirus disease (COVID-19) advice for the public: Myth busters. 2020. Available from: https://www.who.int/ emergencies /diseases/novel-coronavirus-2019/ advice-for-public/myth-busters.

16. Institute of Epidemiology Disease Control and Research (IEDCR). Interim infection prevention and control recommendations for suspected/confirmed patients with 2019 Novel coronavirus (2019-nCoV) in healthcare settings. 2020 [cited 2020 June 02]. Available from: https://www.iedcr.gov.bd/website/ima ges/files/nCoV/InfectionPrevention and Control Recommendations _v2.pdf.

17.El-Gilany H A, El-Bastawesy S, and Ali S A.Knowledge, attitude and practices (KAP) of rural population about COVID-19: a community-based study in Talkha District, Egypt. International Journal of Novel Research in Healthcare and

Nursing.May - August 2020; 7 (2): 525-32.

18. Abdelhafz, A.S., Mohammed, Z., Ibrahim, M.E., Ziady, H.H., et al.. Knowledge, Perceptions, and Attitude of Egyptians towards the Novel Coronavirus Disease (COVID-19). Journal of Community Health. 2020;45(5):881-90 . Available on (https://doi.org/10.1007/ s10900-020-00827-7).

19.Abo-elgheit E El and El-mezayan S E.Public's Knowledge, Attitude and Practices regarding COVID-19 Pandemic in Al Gharbia Governorate, Egypt. Tanta Scientific Nursing Journal.November , 2020; 19 (2)8-25

20. Ferdous MZ, Islam MS, Sikder MT, Mosaddek ASM, Zegarra-Valdivia JA, Gozal D Knowledge, attitude, and practice regarding COVID-19 outbreak in Bangladesh: An online-based cross-sectional study. PLoS ONE 2020, 15(10): e0239254. https://doi.org/10.1371/journal.pone.0239254

21. Zegarra A, Chino B, Ames R. Knowledge, perception and attitudes in Regard to COVID-19. Pandemic in Peruvian Population. 2020. Available from: https://www.researchgate. net/publication/340694053_Knowledg e_perception_and_attitudes_in_Regard_to_COVID19_Pandemic_in_Peruvian_Population

22. Shimizu K. 2019-nCoV, fake news, and racism. Lancet .2020; 395 (10225):685-6.

23. Al- Hanawi,,M.K, Angawi, K., Alshareef, N., Qattan, A. M., et al. . Knowledge, Attitude and Practice toward COVID-19 among the Public in the Kingdom of Saudi Arabia: A Cross-Sectional Study. Front. Public Health. 2020; 8: 217. | https://doi.org/10.3389/fpubh.2020.00217. Published online 2020. doi: 10.3389/fpubh.2020.00217.

24.Zhong BL, Luo W, Li HM, et al. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. Int J Biol Sci. 2020;16(10):1745- 52.

25. HaryanaS, India: A cross-sectional study. Journal of Health Sciences and Biomedical Research KLEU. http://www.ijournalhs.org on Tuesday, June 23, 2020,

26.The Medical Syndicate is investigating with a doctor for prescribing medications to treat Covid-19 .

Retrieved April 4, 2020, from https://bit.ly/2x34wIH

27. Srichan P, Apidechkul T, Tamornpark R, Yeemard F, Khunthason S, Kitchanapaiboon S, et al. Knowledge, Attitude and Preparedness to Respond to the 2019 Novel Coronavirus (COVID-19) Among the Bordered Population of Northern Thailand in the Early Period of the Outbreak: A Cross-Sectional Study WHO South-East Asia Journal of Public Health.2020; 9 (2): 118 – 25.

28. Recommendation Regarding the Use of Cloth Face Coverings, Especially in Areas of Significant Community-Based Transmission (2020). Retrieved April 4, 2020, from https://www.cdc.gov/ coronavirus /2019-ncov/prevent-getting-sick/cloth-face-cover .html.

29. Coronavirus disease (COVID-19) advice for the public: When and how to use masks. Retrieved April 4, 2020, from https://www. who.int/emergencies/diseases/novel-coronaviru s-2019/advice-for-public/ when-and-how-to-use-masks.

30. Saqlain M, Munir MM, Ur Rehman S, Gulzar A, Naz S, Ahmed Z, et al. Knowledge, attitude, practice and perceived barriers among healthcare professionals regarding COVID-19: A Cross-sectional survey from Pakistan. medRxiv. 2020; 105(3): 419–23.

31. Hussain R, Hassali MA, Hashmi F, Farooqui M. A qualitative exploration of knowledge, attitudes and practices of hospital pharmacists towards adverse drug reaction reporting system in Lahore, Pakistan.Journal of Pharmaceutical Policy and Practice. 2018;11:16 .

32. Hocking A, Laurence C, Lorimer M. Patients' knowledge of their chronic disease: The influence of socio-demographic characteristics. Australian Family Physician. 2013;42(6):411.