

RESEARCH ARTICLE

The Knowledge, Attitudes and Practices of Primary Pediatric Caregivers towards COVID-19 in a Tertiary Hospital

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ABSTRACT

Background: Coronavirus disease 2019 (COVID-19) is a respiratory disease that causes remarkable morbidities and mortalities worldwide. Public health measures have been implemented to control the spread of the disease. Knowledge, attitudes, and practices (KAP) of the community have to be optimum for the successful implementation of the prevention and control measures.

Objective: Cognizant that children may possibly contribute to community transmission and that primary caregivers are the main educators of their children and implementers of preventive measures at the household level, the study aimed to determine the KAP of primary caregivers towards COVID-19 in a private tertiary hospital in Metro Manila, Philippines.

Methodology: The study utilized a descriptive, cross-sectional design employing a web-based self-administered survey to determine the KAP of primary caregivers towards COVID-19 in a tertiary hospital.

Results: There were a total of 149 respondents. Participants had a generally high knowledge of COVID-19, its symptomatology, and its prevention. Most of the respondents agreed that vaccination, quarantine, and community quarantine are necessary to prevent transmission. Primary caregivers responded that they protected their children by avoiding exposure and observing good hygiene measures. Despite the ongoing pandemic, most respondents would still bring their children to the doctor for routine vaccinations and consultations at the hospital when sick.

Conclusion: The findings of the study revealed a generally good KAP among the primary caregivers of pediatric patients which can help ensure the prevention and control of COVID-19. A strong health education campaign is needed to provide accurate information that will help sustain and/or increase compliance with COVID-19 prevention and control measures.

Keywords: COVID-19, pediatric caregivers, knowledge, attitude, practices, Philippines

Introduction

Coronavirus disease 2019 (COVID-19) is a respiratory disease caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) [1]. The disease that started as an outbreak in Wuhan, China in December 2019 – was declared a pandemic in March 2020 [3] and remains as such today [2]. As of June 5, 2021, there are 172 million confirmed cases of COVID-19 worldwide, including 3.7 million deaths, with the Philippines contributing 1.2 million cases and 21.7 thousand deaths[4,5].

Although older age groups and those with comorbidities (such as hypertension, heart and lung problems, diabetes, or

cancer) are at higher risk of severe disease or death, children may potentially contribute to disease transmission [6,7]. Additionally, as children generally have less severe illness and symptoms, cases may be undetected [8].

Public health measures have been implemented by every nation to control the spread of the disease. With the formulation of several vaccines against COVID-19, countries race to immunize their populations. In the Philippines, the main public health measure in place is community quarantine, while vaccine coverage is slowly moving forward.

The people's compliance with public health interventions is affected by their knowledge, attitudes, and practices (KAP) with regards to COVID-19. Thus, the KAP of the community has to be optimum for the successful implementation of these prevention and control measures [9]. To measure these, KAP surveys are conducted to determine baseline knowledge, myths, misconceptions, attitudes, beliefs, and behaviors on a specific health-related topic and to provide information on needs, issues, and barriers related to the development of effective, locally relevant public health interventions [10]. These studies are often utilized to inform health communication and education strategies which aim to improve compliance to public health measures including vaccination coverage.

Cognizant that children may possibly contribute to community transmission and that primary caregivers are the main educators of their children and implementers of preventive measures at the household level, there is a need to determine the KAP of primary caregivers towards COVID-19. Hence, this study was conducted.

Methodology

Study Design

The study utilized a descriptive, cross-sectional study design.

Study Site and Population

Primary caregivers with children aged 0 months to 18 years who sought pediatric consultation at the Outpatient Department of the Asian Hospital and Medical Center were included in the study. Primary caregivers are persons who have the greatest responsibility for the daily care and rearing of a child, whether parent or non-parent.

Sampling

Convenience sampling was employed among mothers who consulted the outpatient department clinic for one month.

Data Collection

Data collection was done through a web-based survey in consideration of the mobility restrictions imposed by the government due to COVID-19 pandemic. The questionnaire used by Erfani *et al.* [11] was modified and adapted for online data collection. It was initially developed by the World Health

Organization as a training material for the detection, prevention, response, and control of COVID-19. The questionnaire consisted of 27 knowledge questions, 13 attitude questions, and 14 practice questions. The modified questionnaire was pre-tested. Face validation was done. Reliability test was done through estimation of Cronbach's alpha.

Data Processing and Analysis

Data was encoded using Microsoft Excel. All statistical analyses were performed using STATA version 12 (STATA 12®, StataCorp, Texas, USA). Descriptive statistics was employed in determining the proportion of participants who responded with a specific level of categorical variables.

Ethical Considerations

The study was approved by the Asian Hospital and Medical Center Research Ethics Committee (AHMC REC 2020-028) and conforms with the Data Privacy Act of 2012 and the provisions of the Declaration of Helsinki. Consent was obtained prior to the conduct of the survey. The data was stored in a password-protected local file and access to data was limited to the authors.

Results

A total of 149 participants were included in the study. Majority of the primary caregivers (75.17%) who responded were mothers of pediatric patients. Most respondents came from the age groups of 31-40 years old (48.32%) and 18-30 years old (45.64%). Almost all participants (98.66%) attained tertiary education. Only 14.77% of the respondents were healthcare workers (Table 1).

Knowledge

In terms of general knowledge on the disease, all respondents were aware of COVID-19 and that it is a contagious disease. Majority of the participants knew that it is a viral disease (92.62%) and that its incubation period is 3-14 days (77.18%).

In terms of knowledge on COVID-19 transmission, all respondents were aware that the pathogen can be transmitted through cough and/or direct contact with infected individuals. Some participants (4.03%) were not aware that the disease can be transmitted through contact with contaminated surfaces. Notably, almost half of the participants (45.64%) believed that the pathogen can be transmitted via ingestion of contaminated dairy and meat,

while all participants believed that the disease can be transmitted from pets to humans (Table 2).

In terms of knowledge on COVID-19 signs and symptoms, all respondents knew that fever and cough were signs and symptoms of COVID-19. Few were unaware that sore throat (0.67%), body pain (0.67%), diarrhea/constipation (8.06%), and headache (2.01%) were symptoms of COVID-19.

In terms of their knowledge on the risk of contracting the severe disease, all respondents knew that individuals with weakened immune systems and those with chronic comorbidities were more at risk. Most respondents (90.60%) knew that those beyond 50 years of age were more at risk. Additionally, most respondents (92.62%) knew that younger children were more at risk than older children. Moreover, almost all respondents (99.33%) knew that COVID-19 affects more adults than children.

Although most respondents (73.83%) knew that COVID-19 treatment is through symptomatic therapy, some (20.13%) believed it can be treated by antibiotics (Table 3).

In terms of knowledge on what to do when they suspect that their child has COVID-19, respondents answered that they will measure fever (99.33%), visit their doctors (98.66%), and avoid unnecessary daily activities (100.00%). Additionally, respondents were aware that avoiding COVID-19 suspects (100.00%) and handwashing (99.33%) were precautionary measures against infection.

Attitudes

Almost all participants (99.33%) believed that COVID-19 is a serious disease. A number of participants (44.30%) believed that COVID-19 results in death in all cases, while some

Table 1. Socio-demographic characteristic of the participants, February 2021 (n=149).

Socio-demographic Characteristics	n (%)
Relationship to patient	
Mother	112(75.17)
Father	21(14.09)
Grandmother	1(0.67)
Others	15(10.07)
Age Group	
18-30	68(45.64)
31-40	72(48.32)
41-50	9(6.04)
Educational Attainment	
Vocational	2(1.34)
College	127(85.23)
Post-graduate	20(13.42)
Occupation	
Healthcare worker	22(14.77)
Non-healthcare worker	127(85.23)

Table 2. Knowledge on COVID-19 transmission among primary caregivers of pediatric patients, February 2021 (n=149).

Items	Correct n (%)	Incorrect n (%)
The disease can be transmitted directly through cough	149(100.00)	0-
The disease can be transmitted directly through contact with infected individuals (handshaking, hugging, kissing)	149(100.00)	0-
The disease can be transmitted directly through contact with infected surfaces	143(95.97)	6(4.03)
The disease can be transmitted directly through the consumption of contaminated dairy and meat	81(54.36)	68(45.64)
The disease can be transmitted through household pets to humans	0-	149(100.00)

Table 3. Perceived treatment for COVID-19 among primary caregivers of pediatric patients, February 2021 (n=149).

Perceived treatments for COVID-19	n (%)
Symptomatic therapy	110(73.83)
Antibiotics	30(20.13)
No treatment	5(3.36)
No opinion	4(2.68)

(34.90%) believed that it is not curable. Other respondents did not believe (6.71%) or were unaware (10.74%) that it can be treated at home. Most respondents agreed that vaccination, quarantine, and community quarantine are necessary to prevent transmission. While only 44.30% of respondents believed that there is sufficient community awareness on COVID-19, all respondents agreed that health education can help prevent COVID-19 transmission (Table 4).

Practices

Primary caregivers responded that they protected their children from exposure by avoiding going out and using public transportation. They also responded that they practiced good personal hygiene through frequent handwashing and use of disinfectants for COVID-19 prevention. A number of respondents had their children take vitamins (97.99%) or herbal supplements and traditional medicines (63.09%) to prevent contracting the disease. All participants reported that they, along with their children, wear face masks in public and crowded places at the least. Despite the ongoing pandemic, most respondents would still bring their children to the doctor for routine vaccinations (95.30%) and for pediatric consultations at the hospital when their child is sick (97.2%) (Table 7).

Discussion

The results of the study revealed that participants had a generally high knowledge of COVID-19, its symptomatology, and its prevention. Although most participants were aware of the transmission routes of COVID-19, some participants believed that transmission may occur through ingestion of contaminated dairy and meat, while all believed that it may be transmitted by their pets. Currently, there is no evidence that transmission occurs through ingestion of contaminated dairy and meat or that animals play a major role in transmission to people [12,13]. However, the WHO recommends that food such as meat, poultry, and eggs should always be thoroughly cooked to at least 70°C as COVID-19 can be killed at temperatures similar to that of other known foodborne viruses and bacteria [12,14]. On the other hand, the US Centers for Disease Control and Prevention recommends the use of a One Health Approach to mitigate potential risks in the

event that a companion animal tests positive for COVID-19 [15]. However, to the knowledge of the authors, there are no testing services available for household pets in the Philippines.

Most participants had correct knowledge on which individuals are most at risk for contracting severe disease. Additionally, primary caregivers of pediatric patients were aware that the disease affects primarily adults than children. Knowledge of a disease affects choices in one's behavior in practices which in turn helps limit disease spread. The actual risk of infection is always uncertain, hence, behaviors adjust to the perceived risk as an individual sees fit. The generally high knowledge may be attributed to the level of education of the participants. A study in China noted a positive correlation between knowledge on COVID-19 and level of education [16]. The time elapsed from the start of the pandemic to the conduct of the study may be another reason for the high knowledge among participants through the increasing data generated on COVID-19 along with the increasing health information disseminated via multiple platforms, as discussed elsewhere [17].

Although most participants responded correctly that symptomatic therapy is the treatment of COVID-19, some believed it was treated by antibiotic therapy. Since COVID-19 is of viral origin, antibiotics will not work against the disease. This misinformation may contribute to the growing burden of antimicrobial resistance, which is driven by the misuse and overuse of antibiotics, among others [18].

All participants reported that they agreed to the implementation of public health measures such as community quarantine, lockdown, restriction of travel, and closure of schools. Compliance with public health measures such as these is important to halt the further spread of the contagion by limiting movement. A study in France revealed that lockdowns are not only successful in preventing uncontrolled epidemics in other regions but are also successful in alleviating the burden on the healthcare system [19]. Additionally, most participants agreed that COVID-19 vaccination should be done if there is already an available vaccine. This is important as vaccine hesitancy has been a challenge in the past in the Philippines [20]. A computational

model study in the US revealed that waiting for a vaccine with a higher efficacy leads to additional hospitalizations and costs throughout the pandemic. From the epidemiologic, clinical, and economic perspectives, it does not pay to wait to be vaccinated. Additionally, vaccinating early on when there is an available vaccine is both ethical, utilitarian, and morally necessary to protect the greatest number of people, mutually saving lives and costs [21].

Almost all primary caregivers reported that they practiced proper preventive measures among their children. Furthermore, they had a positive outlook on pediatric hospital consultations and routine vaccination despite the pandemic. Continuance of routine childhood vaccination is vital to the prevention of further outbreaks caused by vaccine-preventable diseases. A study in Africa revealed that deaths

prevented by sustaining routine childhood immunization outweigh the excess risk of COVID-19 deaths associated with immunization visits, especially for vaccinated children [22].

Since the study was limited by its sample size and pandemic restrictions, future studies will benefit from increasing the sample size and including other variables such as income class, source of medical and health information to generate possible association hypotheses among the KAP questions.

Conclusion

The findings of the study revealed a generally high knowledge, positive attitude, and good practice among primary caregivers of pediatric patients. However, efforts must continue to provide a strong health education among

Table 4. Attitudes of primary caregivers of pediatric patients towards COVID-19, its prevention, and its treatment, February 2021 (n=149).

Items	True n (%)	False n (%)	No Opinion n (%)
It is my opinion that COVID-19 is a serious disease	148(99.33)	1(0.67)	0-
It is my opinion that COVID-19 results in death in all cases in children and adults	66(44.30)	80(53.69)	3(2.91)
It is my opinion that COVID-19 is a curable disease	97(65.10)	52(34.90)	0-
It is my opinion that early detection of COVID-19 can improve treatment and outcome	148(99.33)	1(0.67)	0-
It is my opinion that COVID-19 can be treated at home	123(82.55)	10(6.71)	16(10.74)
It is my opinion that if there is an available vaccine for the disease, it should be used	143(95.97)	3(2.01)	3(2.01)
It is my opinion that authorities should restrict travel to and from COVID-19 disease areas to prevent contamination	145(97.32)	3(2.01)	1(0.67)
It is my opinion that authorities should be prepared to restrict access to religious sites, shrines, and mosques if the number of COVID-19 cases increases	149(100.00)	0-	0-
It is my opinion that in the event of an increase in the number of cases of COVID-19, authorities should be ready to close educational centers (kindergartens, schools, and universities)	149(100.00)	0-	0-
It is my opinion that if the number of COVID-19 cases continues to increase, authorities should be ready to continue the lockdown and quarantine of the areas	149(100.00)	0-	0-
It is my opinion that authorities should quarantine COVID-19 patients in special hospitals	149(100.00)	0-	0-
It is my opinion that the awareness on COVID-19 disease in society is sufficient	66(44.30)	83(55.70)	0-
It is my opinion that health education can help prevent COVID-19	149(100.00)	0-	0-

Table 5. Practices on COVID-19 prevention of primary caregivers among their children, February 2021 (n=149)

Items	True n (%)	False n (%)	No Opinion n (%)
I avoid taking my child/children out of my home	149(100.00)	0-	0-
I avoid my child/children from going to school, daycare centers, and universities	149(100.00)	0-	0-
I avoid unnecessary vacations with my child/children	145(97.32)	4(2.68)	0-
I avoid my child/children from using public transportations (taxi, bus, trains, plane, jeeps, tricycle)	149(100.00)	0-	0-
I avoid my child/children from engaging in handshaking, hugging and kissing	149(100.00)	0-	0-
I avoid my child with consuming outdoor food	109(73.15)	18(12.08)	22(14.77)
I pay more attention to my personal, and my child/children's hygiene than usual	149(100.00)	0-	0-
I see to it my child/children frequently wash their hands	149(100.00)	0-	0-
I use disinfectant and solutions on areas that my child/children are in contact with	149(100.00)	0-	0-
I allow my child/children to take vitamin supplements	146(97.99)	1(0.67)	2(1.34)
I use herbal products and traditional medicine on my child/children	94(63.09)	24(16.11)	31(20.81)

Table 6. Frequencies of wearing of facemasks by primary caregivers and their children, February 2021 (n=149)

Frequencies	n (%)
Always	13(8.72)
Most of the time	43(28.86)
Only in public and crowded places	93(62.42)
Never	0-

Table 7. Pediatric consultations among primary caregivers in time of COVID-19, February 2021 (n=149)

Items	Always n (%)	Never n (%)	No Opinion n (%)
Will you bring your child to the doctor for routine vaccinations despite the ongoing pandemic?	142(95.30)	3(2.01)	4(2.68)
Will you seek consult at a hospital if your child is ill?	145(97.32)	4(2.68)	0-

primary caregivers to help sustain and increase compliance with COVID-19 prevention and control measures that will contribute to the decrease of cases, inching closer to the end of the pandemic.

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