

The Extent of Knowledge, Preparedness and Perception of Telemedicine among Family Medicine Residents in Cebu City during COVID-19

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Abstract

Telemedicine is providing healthcare services using electronic means at a distance including the diagnosis, treatment, and prevention of diseases as well as the research and evaluation, and education of healthcare providers. Its role in the time of the pandemic is vital, especially to the practice of medicine. This study is a descriptive, cross-sectional, survey research study conducted in four hospital training institutions in Cebu City. A total of 41 respondents gave their consent and were given the online survey questionnaire about the extent of knowledge, preparedness and perceptions of telemedicine. Out of the 41 respondents, 56.10% were young adults (26-30 years old), mostly females (70.73%), single (68.29%), first-year residents (43.90%), employed at a government hospital (70.73%) and are in the traditional residency pathway (82.93%). On relevant experience, 82.93% experienced telemedicine during residency, with 100% on follow-up consultations, and 95% were consulted due to infections. Respondents' extent of knowledge was average while the extent of preparedness and perception were high. Problems with low connectivity (80.48%) were noted by most of the respondents. Resident physicians moderately understood the information about telemedicine but with a high extent of preparedness and perception. Challenges to low connectivity and handling patients' data privacy were the major concerns met by the resident physicians in the use of telemedicine.

Keywords: COVID-19, family medicine, resident physicians, telemedicine

Tingkat Pengetahuan, Kesiapsiagaan dan Persepsi tentang Pengobatan Jarak Jauh pada Residen Kedokteran Keluarga di Kota Cebu selama COVID-19

Abstrak

Pengobatan jarak jauh adalah penyediaan layanan kesehatan menggunakan sarana elektronik dari jarak jauh termasuk diagnosis, pengobatan, dan pencegahan penyakit serta penelitian dan evaluasi serta pendidikan penyedia layanan kesehatan. Perannya di masa pandemi sangat vital terutama bagi praktik kedokteran. Penelitian ini merupakan penelitian deskriptif, cross-sectional, penelitian survei yang dilakukan di empat lembaga pelatihan rumah sakit di Kota Cebu. Sebanyak 41 responden memberikan persetujuan dan diberikan kuesioner survei *online* yang berkaitan dengan tingkat pengetahuan, kesiapan dan persepsi tentang pengobatan jarak jauh. Dari 41 responden, 56,10% adalah dewasa muda (26-30 tahun), sebagian besar perempuan (70,73%), belum menikah (68,29%), residen tahun pertama (43,90%), bekerja di rumah sakit pemerintah (70,73%) dan residensi tradisional (82,93%). Pada pengalaman yang relevan, 82,93% mengalami pengobatan jarak jauh selama residensi, dengan 100% pada konsultasi lanjutan, dan 95% dikonsultasikan karena infeksi. Tingkat pengetahuan responden rata-rata sedangkan tingkat kesiapsiagaan dan persepsi tinggi. Masalah konektivitas rendah (80,48%) dialami oleh sebagian besar responden. Dokter residen cukup memahami informasi tentang pengobatan jarak jauh tetapi dengan tingkat kesiapan dan persepsi yang tinggi. Tantangan pada konektivitas rendah dan penanganan kerahasiaan data pasien adalah perhatian utama yang dihadapi oleh dokter residen dalam penggunaan pengobatan jarak jauh.

Kata Kunci: COVID-19, dokter residen, pengobatan keluarga, pengobatan jarak jauh

INTRODUCTION

Telemedicine or “healing at a distance” signifies the use of Information and Communication Technology (ICT) to improve patient outcomes by increasing access to care and medical information.¹ It is the providing health care services using electronic technology including the diagnosis, treatment, and prevention of diseases as well as the research and evaluation, and education of health care providers.²

The main goal of telemedicine is to bridge the gap between high demands and limited access to health care in rural and urban areas. The successful adoption of telemedicine technology relies mainly on the recognition of barriers to telemedicine. Physician’s knowledge, attitude and acceptance are considered some of the main challenges for telemedicine. To overcome these issues and facilitate the adoption of innovative technologies, these factors must be understood by the healthcare staff for telemedicine to succeed.³

The study of Judi et al showed that these factors such as lack of technical expertise, initial costs, and reimbursement issues, are important barriers to the use of telemedicine. On the other hand, a proper understanding of telemedicine technology, especially by physicians, is an important requirement for the successful

implementation and deployment of the technology.⁴

In the Philippines, the Department of Health (DOH) and the National Privacy Commission (NPC) have developed a framework for telemedicine services in a bid to improve access to health services during the Enhanced Community Quarantine of the SARS COV-19 pandemic to improve the quality and accessibility of health care services among patients and healthcare providers.⁵

With the need of using telemedicine as the new normal in the Philippines, this study focused on the extent of knowledge, preparedness and perception among Family Medicine Resident Physicians in tertiary hospitals in Cebu City especially in the time of the COVID-19 pandemic.

METHOD

The researcher used the descriptive cross-sectional survey research design. The research design involves a survey testing method, questionnaire survey method, and Interview survey method. This study was conducted in four (4) training hospitals based in Cebu City implementing the family and community medicine residency training programs.

A total of 41 licensed resident physicians undergoing family medicine training from the targeted population of 53 from the four hospitals in Cebu City during

the calendar year 2020-2021 were considered as the respondents.

These family medicine resident physicians are both learners and providers of medical care. They are involved in caring for patients under the supervision of more experienced physicians. Their responsibilities include initial and ongoing assessment of the patient's medical, physical, and psychosocial status, performing rounds, recording progress notes, ordering tests, examination, medication, and therapies, arranging for discharge and aftercare, writing/dictating admission notes/discharge summaries, perform procedures and assist in surgery. An official list of resident family medicine physicians from each institution was gathered from the Office of Cebu Family Medicine Residents Association (CEFRA) and through the different representatives of each institution.

In this study, the sample size was determined using stratified random sampling. It is a process of selecting a random sample from strata wherein different hospitals are considered as stratifying variables. From the total population of 53 family medicine resident physicians, 41 of them were considered as the total sample size of the entire study which was obtained using Slovin's formula. The sample size of family medicine resident physicians per training hospital

was drawn through a proportionate sampling method. This allows the investigator to divide a finite population into sub-populations and then apply a lottery technique to each sub-population.⁶

This technique gives every member of the population an equal chance to be selected as a sample. Names of each family medicine resident physician were written on a piece of paper, rolled individually and put in a box and jumbled. Samples were drawn one at a time until the desired number of samples will be attained (Table 1).

Table 1. Distribution of Sample Respondents Per Hospital, CY 2020-2021

Institution/Training Hospital	Population (N)	Sample (n)
A	9	7
B	6	5
C	35	27
D	3	2

A modified questionnaire checklist for family medicine resident physicians comprises three (3) parts. Part I gathered the demographic characteristics of the respondents such as sex, age, civil status, residency level, institution currently employed, type of residency pathway, and experience on telemedicine.

Part II solicited information on the extent of knowledge, preparedness and perceptions of telemedicine among family medicine resident physicians. It has three sub-areas: the extent of knowledge on telemedicine, the extent of preparedness on

telemedicine, and the extent of perceptions on telemedicine. Each sub-area consists of a five-item indicator.

The items were based on Albarrak et al and were modified to suit the needed data and local settings.⁷ There were choices provided to answer each item, namely: high, average, and low with their corresponding weight of 3, 2, and 1, respectively. The respondents were asked to check the column intended for their responses.

To describe the extent of knowledge, preparedness and perception of the family medicine resident physicians, it was processed and interpreted using the three-level Likert scale (Table 2).

Part III established the issues/problems encountered by the resident family medicine physicians in the adoption of telemedicine and their solutions to the problems. There are 11 items included in this section. The

respondents were asked to check the items in the box applicable to their responses.

The researcher used content validity to ascertain the correctness of the parts of the questionnaire checklist. This essentially involves a systematic examination of the instrument content to determine whether it covered a representative sample of the behavior domain to be measured.⁶

In this study, the questionnaire was submitted for suggestions and approval to panel members. It was further validated and refined by three (3) experts in research, medicine and statistics. They were requested to scrutinize the research instrument, particularly on the extent of knowledge, preparedness and perception of telemedicine among family medicine resident physicians to determine whether the questions measure the behavior domain being considered. Based on their suggestions, the researcher developed the final draft of the questionnaire and was submitted for reliability testing.

Table 2. Likert Scale for Extent of Knowledge of Family Medicine Residents

Likert Scale	Interval	Verbal Description	Interpretation for Extent of Knowledge	Interpretation For Extent of Preparedness	Interpretation for Extent of Perception
3	2.34 – 3.00	High	The physician fully understood the information.	The physician is always prepared for telemedicine modality	The physician is fully aware of telemedicine.
2	1.67 – 2.33	Average	The physician moderately understood the information.	The physician is sometimes prepared for telemedicine modality.	The physician is sometimes aware of telemedicine.
1	1.00 – 1.66	Low	The physician poorly understood the information	The physician is rarely prepared for telemedicine modality	The physician is rarely aware of telemedicine.

Pre-testing was administered to five (5) family medicine resident physicians from the other hospitals to determine the consistency of the instrument. They were not included in the study. This was done to determine which part of the questionnaire needs to be enhanced/modified. The responses generated were analyzed using Cronbach's alpha available in the IBM SPSS package. The overall coefficient result of 0.70 showed that the level of consistency of the questionnaire is reliable. According to Fraenkel and Wallen, the reliability coefficient of 0.60 or higher, determines that the questionnaire is reliable.⁸

After the questionnaire was found valid and reliable, the researcher proceeded to an actual gathering of data. The first step was to secure a permit to conduct the study from the VSMC PETRU-Research Office, Family and Community Medicine Department Chair and noted by the research adviser. Upon the approval of the permit, the researcher sent the informed consent form to the target respondents for their acceptance or rejection to be one of the respondents to the official email addresses.

For those target respondents who affirmed their participation, the modified questionnaire checklist was transcribed as a Google survey questionnaire and was sent through the official email addresses of the

resident physician respondents listed in CEFRA. A non-response follow-up was done via email. No sensitive information was collected for the study. Only the email address of the respondents was collected.

Retrieval of the accomplished questionnaires was done from the Google forms after three days to give ample time for the respondents to answer the form. The accomplished survey forms were then reviewed, and if found that there were items that were not answered or missed by the respondents, the researcher followed up with the concerned individual. All data were collected from the consolidated survey responses in Google Forms.

After the data was collected, data cleaning or editing was done to discover omissions, inconsistency of responses or incompleteness of information. If there were omissions, inconsistencies in responses or missing data, the researcher followed up with the concerned respondent for any clarification or additional information using the email address provided by the respondent.

Coding was done after data cleaning. This is the process of converting all possible response categories to unique numerical codes. These codes may be marked in a specially prepared coding sheet. Likewise, a coding manual was prepared which included the variable number, variable name, item number in the

instrument, variable description, and codes for the responses. and categories of responses.

After the raw data was coded, data files were created. The coded data was entered, stored and saved in a datasheet of Microsoft Excel, on a computer desktop ready for processing and statistical computations.

Initial descriptive tables per variable were generated before statistical computations and analysis. This preliminary view of the data allowed the researcher to identify and correct errors in coding and data entry.

Descriptive statistics such as frequency, percentage and median were used to describe the categorical variables such as age, sex, civil status, residency level, type of current hospital affiliation, type of residency pathway, whether obtained relevant experience on telemedicine or not. Mean and standard deviation were used to summarize the extent of knowledge, preparedness and perception of physicians toward telemedicine. The problems encountered by the family medicine resident physicians in Cebu City in the adoption of telemedicine were ranked according to its frequency and percentage.

In the conduct of this study, the researcher followed the following ethical considerations: firstly, obtained informed

consent. The respondents were informed about the purpose of the study, the methods being used and the possible outcomes. The purpose of which is to provide the target respondents with any information that could influence their decision to participate in the research. They were given the freedom to choose and take part without being coerced or deceived.

Secondly, observe anonymity and confidentiality. Likewise, the respondents were informed that all the responses provided in the questionnaire were treated professionally and with high confidentiality and the right to privacy. Confidential information was stored appropriately usually by the use of codes known only to them. Likewise, to keep their records secure, they use passwords for protected files, locked doors and drawers as well.

The data was retained under the custody of the Family Medicine Office and it can be used as secondary data for future researchers. All respondents were informed that if some information might be published and presented in public, it would be on aggregate findings, not individual-level data.

RESULTS

Fourty-one family medicine resident physicians participated in this survey. As shown in Table 3, the respondents' demographic characteristics were

described as follows: the majority of the respondents (56.10%) belonged to 26-30 years old as opposed to 43.90% of them whose ages fell from 31-46 years old. The computed median was 29.96.

Table 3. Demographic Characteristics of the Family Medicine Resident Physicians (N=41)

Indicators	N	%
Age (median)	29.96	
26 – 30 years old	23	56.10
31 – 46 years old	18	43.90
Sex		
Male	12	29.27
Female	29	70.73
Civil Status		
Single	28	68.29
Married	13	31.71
Residency level		
1st year	18	43.90
2nd Year	12	29.27
3rd Year	9	21.95
4th year	2	4.88
Type of Hospital Institution currently employed		
Government	29	70.73
Private	12	29.27
Type of Residency Pathway		
Practice-based	7	17.07
Traditional	34	82.93

With regards to sex, the majority of the respondents were females (70.73%) than males (29.27%). As to the civil status, a higher percentage of the respondents were single (68.29%) than married (31.71%) respondents. Nearly one-half of them, 18 or 43.90% were on their first level of residency while few of them, four or 4.88% were on their fourth level of residency.

As to their present employment, the majority of the respondents, 29 or 70.73% were currently connected in government hospitals while the rest, 12 or 29.97%

established themselves in private hospitals. With regards to the type of residency pathway, most of the respondents, 34 or 82.93% were under practice-based pathway while seven or 17.07% were following the traditional pathway of residency.

Table 4. Relevant Experience in Telemedicine (N=41)

Indicators	N	%
Source of Telemedicine experience*		
Moonlighting	5	12.20
Residency training	34	82.93
Private Patients	4	9.80
Doctor to the Barrio (DTTB)	6	14.63
Medical services provided through telemedicine*		
Birth control counseling	8	19.51
Follow-up consultation	41	100.00
Behavioral counseling	12	29.27
Video call with patients to discuss laboratory results	15	36.59
Call or chat with patients to discuss signs or symptoms of illness	28	68.29
Prescribe medicines and instructions to patients	39	95.12
Common illnesses of patients treated through Telemedicine*		
Allergies	37	90.24
Colds and flu	38	92.68
Diarrhea	35	85.37
Insect bites	15	36.58
Rashes	36	87.80
Sinusitis	14	34.15
Infections	39	95.12
Vomiting	29	70.73
Animal bite	6	14.63
Anxiety	2	4.87
Hypertension/diabetes	2	4.87
Contact dermatitis	3	7.32

Note: *Multiple response

This variable on relevant experience on telemedicine was indicated by three indicators namely: source of telemedicine experience, medical services provided and different illnesses treated using telemedicine.

Table 5. Extent of Knowledge in Telemedicine of Family Medicine Resident Physicians

Indicators	Mean	SD	Interpretation
Extent of Knowledge			
Knowledgeable with telemedicine technology	2.37	0.54	High
Acquainted with the medical applications of telemedicine technology	2.37	0.49	High
Accustomed with telemedicine tools	2.12	0.50	Average
Aware of telemedicine guidelines	2.29	0.64	Average
Comfortable with the use of telemedicine in other countries	1.95	0.67	Average
General Mean	2.22		Average
Extent of Preparedness			
Acquired and applied knowledge and skills in using telemedicine	2.41	0.50	High
Conducted telemedicine consultations with your patients	2.53	0.55	High
Followed telemedicine guidelines and ethics	2.43	0.64	High
Available internet access, facilities/equipment and technology	2.37	0.58	High
Willingness to help those less capable and not hesitant to ask or accept help from others related to medicine	2.39	0.59	High
General mean	2.43		High
Extent of Perception			
Telemedicine is a viable approach to providing medical care services to patients during a pandemic	2.80	0.40	High
There is a potential role for ICT in the healthcare	2.65	0.48	High
Using a telemedicine system can save time and money	2.65	0.48	High
Telemedicine systems can save efforts	2.54	0.55	High
There is an opportunity for telemedicine to be fully integrated in Health care system in the country	2.61	0.49	High
General mean	2.65		High

A higher percentage of the respondents, 82.93% took their telemedicine experience during their residency training while few of them (9.80%) experienced it through attending their private patients. Worth also mentioning that some respondents experienced telemedicine training during their moonlighting (12.20%) and DDTB (14.63%) duty.

A greater proportion of respondents who rendered medical services using telemedicine were to follow-up consultations (100%), prescribe medicines and instructions to patients (95.12%), and call or chat with patients to discuss signs or symptoms of illness (68.29%). The least

proportion of the medical service extended through telemedicine was related to birth control counseling (19.51%).

A greater proportion of respondents were treated in line with infections (100%), colds and flu (92.68%), allergies (90.24%), rashes (87.80%) and diarrhea (85.87%). The least proportion of the illnesses treated were anxiety (4.87%) and hypertension/diabetes (4.87%).

In this study, knowledge refers to the acts, information and skills on telemedicine acquired by family medicine physicians through experience or education. Table 5 exhibits the extent of knowledge of telemedicine as assessed by the family medicine resident physicians' respondents.

Overall, the extent of knowledge in telemedicine of family medicine resident physicians as assessed by them was Average as indicated by a general mean of 2.22. This indicates that the physician respondents moderately understood the information about telemedicine.

Looking at the details, the respondents rated high extent on indicators stating that they were “knowledgeable with telemedicine technology” and “acquainted with the medical applications of telemedicine technology” with mean ratings of 2.37, respectively. This data implies that the respondent physicians believed that they fully understood the telemedicine information. On the other hand, the indicator stating that they were “comfortable with the use of telemedicine in other countries” got the lowest rating of 1.95 and yet described as average extent.

In this study, preparedness is the state of being prepared or ready the family medicine resident physicians in telemedicine. Table 5 also depicts that the overall assessment of the FAMED resident physicians concerning the extent of preparedness in telemedicine was high extent (mean = 2.43). Thus, it could be stated that physicians are always prepared for telemedicine modality.

Among the five indicators which were rated all high extent, the indicator stating “conducting telemedicine

consultation to patients” got the highest mean rating of 2.53. This denotes that physicians are always prepared to conduct consultations with their patients which can be done online. The indicator stating that “availability of internet access, facilities/equipment and technology” received the lowest mean rating of 2.37 but was described as high extent.

Table 5 also presents the data on the extent of perception in telemedicine among family medicine resident physicians. In general, the physicians assessed a high extent on their perception of telemedicine as revealed by the general mean of 2.65. This shows that physicians are fully aware of telemedicine.

Under this variable, the respondents were asked to assess themselves on their perception regarding telemedicine as a viable approach for providing medical care services to patients during a pandemic, there is a potential role for ICT in health care, using telemedicine system can save time and money, telemedicine system can save efforts, and there is an opportunity for the telemedicine to be fully integrated in the health care system in the country. Of all these items, it is evident that the physicians were fully aware that telemedicine is a viable approach for providing medical care services to patients during the pandemic as indicated by a mean rating of 2.80, considered as the highest rating.

Table 6. Problems Encountered in Telemedicine by Resident Family Medicine Physicians

Problems*	N	%	Rank
Low connectivity	33	80.49	1
Concerns about patients' data privacy/confidentiality	31	75.61	2
Lack of consultations between information technology experts and clinicians	25	60.98	3
No adequate financial and technical support from the administration	24	58.54	4
Lack of suitable training for the use of the gadget	19	46.34	5
Lack of user-friendly software	15	36.59	6
High cost of the gadget	14	34.15	7
Not familiar with different modalities on the internet	12	29.27	8
Weak management in organizing telemedicine sessions	10	24.39	9
The additional workload of the staff	7	17.07	10
Negative attitude of staff involved	3	7.31	11

Note: *multiple response

The telemedicine system can save efforts was an indicator that received the lowest rating with a mean of 2.54, yet described as high extent.

This part of the study delineates the difficulties met by the respondents as they performed their medical service using telemedicine. Based on their experience that the respondents disclosed that the most pressing problems they encountered in the conduct of telemedicine were low connectivity (ranked 1), concerns about patients' data privacy/confidentiality (ranked 2), lack of consultations between information technology experts and clinicians (ranked 3), no adequate financial and technical support from the administration (ranked 4), and lack of suitable training for use of the gadget (ranked 5) (Table 6).

DISCUSSION

In today's world of information technology, telemedicine is one of the

leading areas in which information and technology have an important role. This technology offers a new method of providing healthcare services among patients across urban and rural areas. Although telemedicine provides several uses and benefits, it is very essential to explore the views of the users of telemedicine, particularly the healthcare workers.

The present study was conducted in four different training hospitals in Cebu City to assess the extent of knowledge, preparedness and perception of telemedicine among family medicine resident physicians during the COVID-19 pandemic.

In the current research paper, as illustrated in Table 5, in general, the extent of knowledge in telemedicine of family medicine resident physicians as assessed by them was average. This indicates that the physician respondents moderately

understood the information about telemedicine.

These findings suggest that family medicine resident physician respondents are not fully acquainted or adequately educated on the use of digital tools needed in the conduct of telemedicine as well as laws and regulations to address the ethical and legal barriers to managing the use of telemedicine. Moreover, the fact that prevalence of the use of this platform and system to treat patients by the respondents was fully adopted only at the time of the pandemic in the study areas.

These findings did not conform to the findings of Elhadi et al who found out that most healthcare workers reported high knowledge and high attitude toward telemedicine.⁹ Similarly, the present research results were not parallel to the findings generated by Biruk and Abetu in their study on the extent of knowledge and attitudes of health professionals towards telemedicine in resource-limited settings in North West, Ethiopia. It revealed that most of the respondents had poor knowledge of various aspects of telemedicine, and even fewer had ever heard of telemedicine.¹⁰

Likewise, the results of this study do not conform to the findings study conducted by Ayatollahi et al on clinicians' knowledge and perception of telemedicine where they found out that most of the 532

clinician participants had little knowledge about telemedicine.¹¹

In Table 5, it was observed that family medicine resident physicians possessed a high extent of preparedness for telemedicine. Thus, it could be stated that physicians are always prepared for telemedicine modality. The degree of preparedness on telemedicine of the family medicine resident physician respondents may be explained by the earlier findings that while the respondents were pursuing their residency training, they were exposed to telemedicine in all training venues: residency training, moonlighting, DTTB and private patients. The experience that developed among the respondents was presumed to have imparted their preparedness where the majority of them conducted consultation with their patients during this pandemic time.

On the other hand, as seen in Table 5, the family medicine resident physicians assessed themselves with a high extent of perception of telemedicine. This shows that physicians are fully aware of telemedicine.

These findings lead to the interpretation that the family medicine resident physician respondents were fully aware that telemedicine is a viable approach for providing medical services to patients during a pandemic. They believe that through telemedicine they can deliver timely health care, and save efforts, and

money while minimizing exposure to protect both parties.

These findings were parallel to the findings of Albarrak et al, who found out that the highest perception (90%) among their respondents regarding telemedicine is that it is a viable approach for providing medical services to patients because it can save time and money.⁷

Table 6 exhibited the major constraints encountered by the respondents in the adoption of telemedicine in the conduct of their professional practice. These were low connectivity, concerns about patient data privacy/ confidentiality, and lack of consultations between information technology experts and clinicians.

These findings implied that although the majority of the respondents were using telemedicine in the conduct of consultations with their patients or it can help the continuity in the provision of medical care, there are many constraints along the process.

These findings were consistent with the findings conducted by Albarrak et al in their study on the assessment of physicians' knowledge, perception and willingness to telemedicine in the Riyadh Region, Saudi Arabia where they found out the major barriers in the conduct of telemedicine include privacy issues, lack of training, cost

and issues related to information and communication technology.⁷

Moreover, Almathani et al also identified barriers that influence telemedicine. These include slow internet speed, poor audio quality, poor video quality, internet access issues, and poor signal coverage.¹²

This study was concerned with the extent of knowledge, preparedness and perception of telemedicine among family medicine resident physicians in different training institutions in Cebu City during the COVID-19 pandemic. The variables included in the study covered the demographic characteristics of the respondents, their extent of knowledge, preparedness and perception of telemedicine, as well as their problems encountered in embracing telemedicine practice. This investigation involved only 53 family medicine resident physicians currently employed at the hospitals which offer a family and community medicine training program in Cebu City namely: Cebu Velez General Hospital, Chong Hua Hospital, Vicente Sotto Memorial Medical Center and Visayas Community Medical Center. Moreover, the respondents were selected through stratified sampling and samples per strata were determined through proportionate sampling

Because of the financial and time constraints on the part of the researcher, the

descriptive cross-sectional survey research design was utilized with a questionnaire checklist as the main instrument to be distributed through Google Forms. In measuring the variables knowledge, preparedness and perception of the residents, were measured using a three-level Likert scale. It is a device designed to appropriate interval scales. This interval scale is the distance between points on the measuring instruments are known and the equal numerical distances represent equal distances along the continuum being measured. Such scales enable the respondent to compare differences or changes in attitude because the difference between points in the continuum is the same.

On the other hand, for non-participant residents, a follow-up strategy and/or ensuring a detailed survey orientation was done to minimize the non-participation of randomly selected residents among the different hospitals covered in the study.

CONCLUSION

Generally, the extent of knowledge on telemedicine among family medicine resident physicians was average but noted with high extent regarding knowledge of telemedicine technology and acquainted with the medical applications of telemedicine technology. The extent of preparedness on telemedicine of the family

medicine resident physicians was high. They have a high extent of preparedness of conducting telemedicine consultations with their patients which can be done online. The family medicine resident physicians assessed the high extent of their perception of telemedicine. They were fully aware that telemedicine is a viable approach to providing medical care services to patients during a pandemic.

With the increasing demand for telemedicine, greater efforts are needed in the training and capacitation of family medicine resident physicians regarding telemedicine and legal awareness of data privacy. Improvement of internet connectivity should be attended to by the government and hospital administrators to facilitate faster and quality connections between physicians and patients. This strategy will lead physicians to be highly motivated to treat patients using telemedicine. Future studies may be conducted by the resident physicians in other fields of specialization covering wider regional geographical areas, using other variables not included in this study to verify more comprehensively the status of the telemedicine platform.

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