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Are malaysian ready to adopt telepharmacy services during the new norm? A cross-sectional survey

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Abstract

While lowering the danger of transmission, remote healthcare services have drawn increasing attention during the coronavirus disease 2019 (COVID-19) epidemic by bridging the gap between healthcare professionals and the general population. The purpose of this study was to look at Malaysian residents' knowledge, attitudes, and practices (KAP) about telepharmacy services during the COVID-19 epidemic. During the third wave of COVID-19, a descriptive cross-sectional research was carried out among Malaysia's general population.Using several social networking platforms, including Facebook, WhatsApp, Facebook, Telegram, and course networking, therespondents gathered information using the convenience sampling approach.To evaluate their current knowledge, attitude, and practices, they completed a self-administered questionnaire. To report demographic information, descriptive statistics were employed. The variable's differentiation, association, and correlations were reported using inferential statistics.

A total of 384 respondents participated in this survey. Nearly half of the participants had poor knowledge (49.0%), negative attitudes (44.5%), and poor practices (46.4 %) of telepharmacyservices during the pandemic. There was a significant association between the level of knowledge and practice of telepharmacy ($p < 0.001$). The majority of the participants (67.45%) with poor knowledge of telepharmacy were less likely to use telepharmacy services. Most of the participants learned about it through different social media platforms. Although 55.7% of the respondents found that telepharmacy services are feasible and convenient but only 18.5% of the participants have received any health services via telepharmacy during a pandemic. In brief, this study was able to provide an understanding of the knowledge, attitude, and practice among individuals in Malaysia towards telepharmacy services during covid-19 epidemic. The application of the telepharmacy opens a different as well as new stance of healthcare facilities for the patients and it can restrict the problem of less attainability of pharmacists.

Keywords: Telepharmacy, COVID-19, Pandemic

Introduction

A new coronavirus was discovered in the Chinese province of Hubei in December 2019. At first, mitigating techniques including social withdrawal and mask use were employed in an effort to slow the spread(1). Some countries faced COVID-19 with restrictive measures, such as health quarantine, early detection, and infection control measures. Healthcare institutions started to see an increase in the number of patients who tested positive for COVID-19 prior to the vaccine's availability in 2020, which put a strain on hospitalisation rates (2). The availability of non-essential medical treatments and elective procedures was

restricted (3). Anxiety and fear were pervasive, especially among people who needed medical attention for crises other than COVID-19(4). Due to orders to stay at home or fear of the spreading infection, many opted not to get hospital care(5).

In response to the outbreak of the COVID-19 pandemic,pharmacies have taken protective steps, such as the need for a pharmacist to wear face masks, positioningphysical barriers in the doorways or at the pharmacy counter, and minimizing consultation time when dispensing medicines.All these measures could reduce the risk of transmission, but the interaction and communication between measures could reduce the risk of transmission, but the interaction and communication between the pharmacist to the patient will also be reduced. Consequently, a lack of communication may cause a lack of understanding. Thus, the patient may not be able to take their medication directed accordingly. The healthcare system and public health were both benefited by remote medical care services. Greater social isolation and reduced risk of infectious exposure are made possible by access to telehealth services. Moreover, lessening patients' urge to attend institutions reduced the stress of escalating social distance. Additionally, telepharmacy can help guarantee that patients in disadvantaged areas have access to medications. (5). The provision of telehealth services, such as telepharmacy, has attracted increased attention in this context as a potent instrument to enhance access to chemists and pharmaceutical treatment among isolated or rural communities. Telepharmacy helps ease the strain of the COVID-19 epidemic on the healthcare system by ensuring that those in need of medicine have access to them and by enhancing the safety of drug distribution(6).

To adjust to the changing societal norm of social distance, some private hospitals in Malaysia, including Sunway Medical Centre, Pantai Hospitals, and Gleneagles Hospitals, have implemented telehealth or telepharmacy services. Doc 2US ‘e Pharmacy is a service introduced at COVID-19 that connects customers to a doctor from DOC2US for a virtual consultation. Alpro Pharmacy, the largest chain of prescription pharmacies in Malaysia, issues and fills e-prescriptions. Then, within 2 hours, medication will be delivered by their chosen delivery partners. (7).

Since 2001, telepharmacy has been popular around the world. However, several nations greatly improved their telepharmacy services during this COVID-19 epidemic. One of the first Middle Eastern nations to offer such services was United Arab Emirates (UAE), particularly during the COVID-19 pandemic (8). In UAE, a prospective, observational study was conducted in 52 community pharmacies and it was found that telepharmacy services improve patient access to pharmaceutical care and increase patient compliance (9). One of the studies done in Vietnam showed that 86.7% of the pharmacist used telepharmacy services and the practice of telepharmacy become more prevalent and more practical during the COVID-19 outbreaks (10).

Since telepharmacy is a new and essential technology for all the healthcare sectors either private or government based in Malaysia to comply with the standards of COVID-19 as well as future advancement. Evidence about individuals in Malaysia's knowledge, perception, and desire to utilisetelepharmacy, however, is still lacking. This data is crucial for creating strategies that will increase telepharmacy’s acceptance. The purpose of this study is to evaluate public perceptions of telepharmacy services in Malaysia as well as their knowledge, attitudes, and practices.

Material and Methods

Study design and setting

The knowledge, attitude, and practices of the populace in Malaysia about telepharmacy services were assessed using a cross-sectional survey. Conveniently, the volunteers were chosen from a variety of social media sites.

Sampling Method and Sampling Size

The participants were engaged conveniently as the questionnaire was

distributed from several Social Media Platforms like Facebook, WhatsApp, Telegram, and Course Networking from July 2021 to September 2021. Inclusion criteria include adults age 18 and above, Malaysian citizens, and able to read and understand English and Malay language. Exclusion criteria include individuals who cannot comprehend English, Malay Languages, foreigners, and ones who refused to participate.

The sample size for this study was determined using the 2020 population projections for Malaysia, which put that country's population at 32.37 million. Using the Rao soft calculator, the sampling size was estimated with a 95% confidence level, a 5% margin of error, and a 50% response rate. This computation determined that a minimum of 384 subjects was needed for this investigation.

Study Tool

The questionnaire was adopted from previous studies 11-12). The questionnaire consists of four different sections: The sociodemographic information of the respondents was gathered in Section A, including their gender, age, education level, district and state of residence, occupation, religion, family income, marital status, and race. Section B consisted of items to evaluate the respondent's knowledge of telepharmacy services during COVID – 19 pandemic. Section C and Section D compromised the questions to evaluate the respondent's attitudes and practices of telepharmacy services during the COVID-19 pandemic respectively. The research tool was translated from English to Malay (Bahasa Melayu/Malaysia) by a reputable translating agency. After that, a registered proofreading company conducted both forward and backward translations of the questionnaire. Subsequently, the translated forms were reviewed by two bilingual scholars and a practicing pharmacist.

Validation of Questionnaire and Pilot Study

To validate the content, the questionnaire underwent examination by five experts, including physicians, academicians, and pharmacists. These professionals evaluated the questionnaire's content for its relevance, clarity, simplicity, and potential ambiguity. To ensure the reliability of the questionnaire a pilot study was carried out among the 30 participants Cronbach's alpha coefficient was used to calculate the internal consistency. The results show a Cronbach's alpha of 0.764 for knowledge, 0.858 for attitude, and 0.764 for practice sections.

Data collection

The UCSI University ethics committee approved this study (Ref. number. IEC-2020-FPS - 043). Online platforms were used to collect the data from the respondents. Each participant received information about the study's goals and their participation rights. Along with the survey form, informed consent was given. Before sending the respondents the link to the survey's English and Malay language versions, a standard survey description was supplied in the WhatsApp message and social media posts. Respondents did not pay anything or get compensation for participating in this survey.

Data Analysis

Using IBM SPSS Statistics Version 20, descriptive and inferential data analysis was performed.

The demographic characteristics, knowledge, attitude, and practice scores were analyzed descriptively using frequency, percentage, mean, and standard deviation. The knowledge section comprised seven items, each offering two choices (true and false). A score of 1 was assigned to the correct answer, while an incorrect answer received a score of 0. Attitude items were based on a rating of five points Likert Scale (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). For the practice items, each item had 2 choices including true and false answers which were given scores of 1 and 0. The mean and SD of the total score of knowledge (4.953+ 2.10), attitude (24.95 + 4.742 and practices (2.96 4.74) were used to determine the midpoint. The categories of "good knowledge,"

"positive attitude," and "good practices" were assigned to those who scored higher than the midpoint. To examine the differentiation and association correlations of the research variables, such as attitude, practice, and knowledge, the data were analysed using ANOVA, Pearson's correlation, and the Chi-square test.

Results and Discussion

A total of 384 participants in this study, female participants of 59.3% of (n=267) are dominant. More than half of the respondents (58.3%, n = 224) were in the age group of 18-29. The majority of the participants (51.6 %, n = 198) were from health-related backgrounds. The mean – SD of knowledge, attitude, and practice scores were 4.953 = 2.19, 24.95 = 4.742, and 2.96 = 4.74 respectively. In this study, 49.0 % of individuals had poor knowledge. Apart from that, 44.5 % 9 n = 171) of participants and negative attitudes, and 46.4% (n= 178) had poor practices. The details of the frequency and percentage of knowledge, attitude, and practice scores are shown in (Table 1).

There was a significant difference in mean, attitude, and knowledge scores between the races. Post –hoc analysis revealed that the difference is larger between the Malay and Indian races.

Figures 1, 2, and 3 below showed the detailed pie charts that represent the participant's overall knowledge, attitude, and practices.

The majority of the participants (n=317, 82.6%) knew the definition and description of telepharmacy. 77.3% (n=297) knew that telepharmacy helps the patients to consult with an expert (pharmacist) on patients' medication–related problems (MRP). More than half of the respondents (59.6%), n=229) were not aware of the services and field of application covered by telepharmacy. Around 78.1% (n=300) believed that telepharmacy can be used to educate the population on a wide scale during the global pandemic of COVID-19. More than half (60.9%), n=234) showed a willingness to use telepharmacyin getting medication-related problems (MRP) (Table 2).

In this study, 44.5% of respondents believed that telepharmacy is revolutionary for providing healthcare while visiting a hospital might potentially increase the chance of contracting Covid-19 and 43.0% of people reported that telepharmacy can save lives. Some

Table 1: The summary of frequency and Percentage in knowledge, attitude, and practices

No	Categories		No.of Participants n(%)
1	Knowledge	Poor	188(49.0)
		Good	196(51.0)
2	Attitude	Negative	171(44.5)
		Positive	213(55.5)
3	Practice	Poor	178(46.4)
		Good	206(53.6)

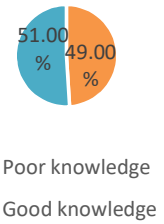

Figure: 1. Knowledge of participants towards Telepharmacy

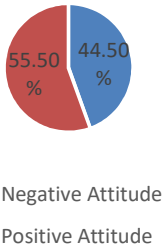

Figure: 2. Attitude towards Telepharmacy

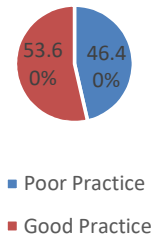

Figure 3: Practice of participants towards Telepharmacy

of the respondents (39.1) % reported that they will not be using telepharmacy in getting advice from a pharmacist regarding medication-related problems (Tables 3-5).

Only 18.5% of participants reported that they have received health care services through telepharmacy. 13.5% have attended the hands-on training on telepharmacy. However, the majority of respondents (90.1%) claimed that they will support an initiative to use the telepharmacyon a national level during the COVID-19 pandemic. There was a

Table 2: Socio-demographic data of participants (N=384)

No	Characteristics	Responses	No of Participants
1	Age	18-29	224(58.3)
		30-49	106(27.6)
		≥50	54(14.1)
2	Gender	Male	117(30.5)
		Female	267(69.5)
3	Race	Chinese	177(46.1)
		Malay	146(38.1)
		Indian	59(15.4)
4	Religion	Buddhist	151(39.3)
		Christian	40(10.4)
		Islam	163(42.4)
		Hindu	28(7.3)
5	Marital Status	Single	255(66.4)
		Married	115(29.9)
		Divorced	14(3.6)
7	Occupation	Retired	7(1.8)
		Self-employed	5(1.3)
		Un-employed	19(4.9)
		Student	194950.5)
		Government Employee	120(31.3)
		Private Employed	39(10.2)
8	Relation to studies/occupation	Health-care related	199(51.8)
		Not Health-care	199(51.8)
9	Level of education	Primary Education	4(1.0)
		Secondary Education	3(0.8)
		College /University	69(18.0)
		Certification /Matriculation	6(1.6)
		Post-Graduation Education	14(3.6)
		Master's Degree/PhD	128(33.3)

Table 3: Response of Participants to Telepharmacy Knowledge Questions

Questions	True n (%)	False n (%)
The provision of pharmaceutical treatment by licensed chemists and chemist's to patients who are located far away via telecommunication is known as telepharmacy.	317 (82.6%)	65(16.9)
Telepharmacy can be used to offer medication-related services in the event of a worldwide pandemic.	315(82.0)	69(18.0)
Patients have understanding of the services and areas of application that telepharmacy covers.	155(40.4)	229(59.6)
Patients have understanding of the telepharmacy's services and the applications it may be used for	237(61.7)	142(37.0)
Patient examination, management, investigation, and follow-up can be done through telemedicine during a pandemic.	297(61.7)	142(37.0)
Telepharmacy can be helpful to consult with an expert (pharmacist) on patient, medication–related problems (MRP).	237(61.7)	87(22.7)
Telepharmacy can be helpful to get medication counseling conveniently during this pandemic.	299(77.3)	85 (22.7)
Any kind of medical facility can use telepharmacy. (Community pharmacy, Health Clinic, hospitals).	250(65.1)	128(33.3)

significant association between the knowledge and practice components ($p<0.05$) and the attitude and the practice component ($p< 0.05$)

Table 4: Response of study participants toTelepharmacyattitude questions

Questions	Positive n (%)	Negative n (%)
I think that with the current global COVID-19 epidemic, the utilisation of telepharmacy is revolutionary for healthcare.	171(44.5)	213(55.5)
I think that telepharmacy can save lives at a time when visiting a hospital may put one at danger of contracting COVID-19.	165(43.0)	219(57.0)
I would be open to using telepharmacy to consult a chemist about medication-related issues.	150(39.1)	234 (60.9)
I think telepharmacy is useful in a global pandemic.	160(41.7)	224(58.3)
I think that a practical way to provide patients with pharmacological treatment is through telepharmacy.	183(47.7)	201(52.3)
I believe that telepharmacy can be used to educate the public on a larger scale in a global pandemic.	300(78.1)	84 (21.9).

Discussion

The survey was carried out to access the knowledge, attitude, and practice of the Malaysian public during the covid-19 towards telepharmacy services. This study found that the majority of participants were familiar with telepharmacy's concept and description. The respondents were aware that telepharmacy enables patients to consult with specialists at a distance. Our study also stated that more than half of the population is willing to use telepharmacy in getting advice from pharmacists regarding medication-related

Table 5: Response of the participants toTelepharmacyPractice questions

Questions	Good n (%)	Poor n (%)
I have received health care services through telepharmacy during this pandemic.	71(18.5)	313(81.5)
I found that telepharmacy services are feasible and convenient.	214(55.7)	170(44.3)
I have found that using telepharmacy has been very beneficial.	217(56.5)	167(43.5)
I have attended hands-on training on telepharmacy.	52(56.5)	332(86.5)
I would recommend this service (telepharmacy) to others.	238(62.0)	146(38.0)
During the COVID-19 epidemic, I will support a national effort to adopt telepharmacy.	346(90.1)	38(9.9)

problems (MRP). This study showed that there is a significant association between the level of knowledge and practice of the telepharmacy. It defines that when patients have a high level of knowledge towards telepharmacy, they willbe more likely to involve in good practices. A study that is conducted in Malaysia showed that pharmacy services were largely unaffected during the MCP period as the virtual platform allowed monitoring or counselingof the patients which indicated that during covid-19 pharmaceutical practices were carried through different modes of telepharmacy. The same study also concluded that outpatient pharmacy, inpatient pharmacy, and clinical pharmacy were conducted as usual while taking extra cases when handling patients. (13). The comprehensive findings of this study showed that Malaysians have an overall admissible knowledge, positive attitude, and practices towards the telepharmacy during covid-19. Our study explained clearly thatrespondents believe that telepharmacy is a convenient form of pharmaceutical care delivery to the patient 41. (n=160) of the participants agree with this statement, however 58.3% (n=224) did not agree with this statement. There was a significant association between the knowledge and practice components ($p<0.05$). Bulgarian pharmacists noted the positive attitude and knowledge of respondents towards telemedicine (14). There was a significant association between the attitude and the practice component< 0.05) that may specify the positive attitude of the people towards telepharmacy services. Study done in Malaysia showed government policies, support from top management, perception of usefulness, and computer self-efficiency have a positive and significant impact on telemedicine in public hospitals in Malaysia (15). A study by Elizabeth et al reported that 82 student participants, able to successfully provide pharmacy consultation via telepharmacy without prior practice (16). Qualified and equipped pharmacists can employ telepharmacy to remotely handle distribution, clinical, analytical, and management services while also supervising pharmacy operations (17). research by Boon et al. suggests that educational training, such as setting up and deploying an online web conferencing platform, should be taken into consideration for enhancing the accessibility of telehealth to vulnerable groups. (18).

Conclusion

There was a significant association between the level of knowledge and practice of telepharmacy ($p<0.001$). The majority of the participants (67.45%) with poor knowledge of telepharmacy were less likely to use telepharmacy services. Acceptance of telepharmacy in this era is a challenge that Involves cooperation between public and private sectors as well as educating the general public on the use of these technologies.

Conflict of interest

The authors declare no conflict of interest.

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