RESEARCH ARTICLE

Acceptance in Telehealth of Community Health Nurses

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ABSTRACT

During pandemic, telehealth is an important medium for providing patients with remote access to high-quality healthcare without increasing the risk of transmitting infections. Assessment of nurses' readiness to participate in telehealth is crucial and should begin with awareness and understanding of telehealth. The purpose of this study is to examine the factors that influence community health nurses' decision to accept and use Telehealth. The study is a descriptive-correlational quantitative design, uses convenient and purposive sampling involving 35 community health nurses, and based on Unified Theory of Acceptance and Use of Technology model. Data analyzed by Pearson Chi-square. The study found that Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions were identified to be factors that affect the decision of nurses to use telehealth while Performance expectancy is found to be the greatest influence to nurses to use telehealth. Indeed, telehealth is accepted by community health nurses to be used in practice and shows positive attitude towards it. Moreover, this study draws attention to the key role of education of nurses in influencing their efficiency, ease of use, and intention to use telehealth.

Keywords: telehealth; information technology; nurses

INTRODUCTION

Telehealth is an evolving service of healthcare in the world. Telehealth is defined as the delivery of health care services, where patients and providers are separated by distance[1]. Telehealth can be achieved through various platforms such as telephonic or video interactive technologies to provide health advice and real-time video to facilitate patient education[2]. While the COVID-19 has altered not only the healthcare delivery system but the entire society, telehealth has been helping both health care providers and patient to be connected. The Department of Health has been encouraging the public to maximize the use of technology to connect with medical professionals to prevent the spread of the virus. Indeed, telehealth systems are an important medium for providing patients with remote access to high-quality healthcare without increasing the risk of transmitting infections[3]. Though some nurses are already experienced in the used of telehealth, there are still a number of nurses perceives lack of preparation and suitable technology to support its use[4].

The benefits of utilizing Telehealth innovation in epidemics incorporate keeping healthy individuals absent from likely infected centers such as hospitals or clinics by remotely screening additionally expanding secure access to care for individuals[5]. However, these benefits can only be attained if nurses accept and intend to fully use them[6]. Assessment of nurses' readiness to participate in telehealth is deemed crucial and it should begin with an awareness and understanding of telehealth and e-health applications[7]. The acceptance of the nurse and their individual characteristics can also positively impact on learning about telehealth. However, telehealth awareness has been found to be still very limited among nurses not already exposed to it[8]. Telehealth has yet to become a

common part of work for healthcare professionals' day-to-day work – with 39% saying they do not currently use telehealth in their practice or hospital in the Philippines[9].

Due to the COVID-19 pandemic, the Philippine health care industry is urged to transition in the use of telehealth services to provide continuous nursing and medical care. The purpose of this study is to examine the factors that influence nurses' decision to accept and use Telehealth in Metro Manila, its extent, and its relationship to nurses' demographic profile. The result of this study can be a basis for development of a telehealth training program for nurses.

METHODS

This study used a non-experimental, descriptive-correlational quantitative design. No potential ethical issues are foreseen in the study. Ethics approval from the Research and Publication Department of Manila Tytana Colleges was obtained. The study was conducted in March – April 2021 in Metro Manila. The respondents were chosen using non-probability sampling technique, specifically convenience and purposive sampling. The inclusion criteria for the respondents are: registered nurses and works as a community health nurse in Metro Manila.

The research instrument used was adapted Unified Theory of Acceptance of Using Technology (UTAUT) to explain nurses perception and acceptance behavior towards telehealth. Some of the questions in the questionnaire were modified to meet the objectives of the study and to answer the research questions. The scope of telehealth used in this study includes (1) video conferencing, (2) telephone triage of patients, (3) SMS and Email for transmission of health data or remote monitoring of patient's condition, and (4) telephone counselling. The tool was validated by a nursing informatics professor, an eHealth research expert, and a community health nurse. Reliability testing was done and obtained a cronbach alpha value of 0.9.

An invitation to participate to the study was sent to city health offices in Metro Manila. An informed consent was given to each respondent along with the questionnaire via SurveyMonkey.com. Confidentiality of data was maintained all throughout the research process. However, because of the community restrictions and ongoing vaccination program of the government which limits the availability of the community health nurses, the researchers decided to limit the respondents to 35.

The statistical treatment that were used to interpret and analyze the data gathered are frequency, percentage, weighted mean, standard deviation, and Pearson Chi-Square. Statistical Package for the Social Sciences (SPSS) was used to analyze the data.

RESULTS

Demographic Profile of Respondents

Based on Table 1, community health nurses who participated in the study were mostly "Female" which is 62.9% while "Male" respondents were 37.1% of the sample size.

Table 1. Distribution of respondents' demographic profile in terms of sex

Sex	Frequency	Percentage
Female	22	62.9
Male	13	37.1

Based on Table 2, shows a very diverse age group of community health nurses. However, it shows that majority or 54.3% of the sample size are ages 30-39 years old. This shows that there is indeed a diversity in terms of age from the respondents.

Table 2. Distribution of respondents' demographic profile in terms of age

Age	Frequency	Percentage
20-29 years old	8	22.9
30-39 years old	19	54.3
40-49 years old	5	14.3
50-59 years old	3	8.6

Based on Table 3, most of the participants, which is 48.6% of the sample size, had "10 years and more" clinical experience. Other respondents had a clinical experience of "At least 5 years but less than 10 years" that is 31.4% (11), "At least 1 year but less than 3 years" that is 11.4% (4), and "At least 3 years but less than 5 years" that is 8.6% (3) from the total. It shows that there is different level of proficieny in terms of clinical experience among respondents.

Table 3. Distribution of respondents' demographic profile in terms of years of clinical experience

Years of clinical experience	Frequency	Percentage
At least 1 year but less than 3 years	4	11.4
At least 3 years but less than 5 years	4	8.6
At least 5 years but less than 10 years	11	31.4
10 years and more	17	48.6

Based on Table 4, the results revealed that most of the respondents, for the past 12 months, had at least an hour of education in Telehealth. However, 40% of the respondents had received 0 hours of education or no education in Telehealth which implies that there is still a lack of provision in Telehealth education to community health nurses despite the trend and its critical role in health care delivery system.

Table 4. Distribution of respondents' demographic profile in terms of number of hours received on telehealth education in the last 12 months

Telehealth education	Frequency	Percentage
None	14	40.0
Less than 1 hour	7	20.0
1-2 hours	9	25.6
3-5 hours	3	8.6
6 or more hours	2	5.8

Acceptance Behavior

In terms of performance expectancy, which refers to the degree to which an individual believes that using telehealth will help him or her to attain gains in job performance, Table 5 shows that that the community health nurses moderately accept Telehealth as useful and can help them to be more productive and efficient in delivering health care needs.

Table 5. Assessment of acceptance behavior in terms of performance expectancy

Acceptance behavior	Mean	SD	Interpretation
I would find telehealth useful at my work	5.77	1.19	Moderately agree
Using telehealth would enhance my productivity in clinical practice	5.63	1.17	Moderately agree
Using telehealth would enhance my effectiveness in clinical practice	5.40	1.09	Moderately agree
Using telehealth would enable me to accomplish the task more quickly	5.51	0.85	Moderately agree
Composite mean	5.58	0.91	Moderately agree

In terms of effort expectancy, which refers to the degree of ease associated with the use of telehealth, Table 6 shows that community health nurses perceived telehealth as easy to use.

Table 6. Assessment of acceptance behavior in terms of effort expectancy

Acceptance behavior	Mean	SD	Interpretation
It will be easy for me to become skillful at using Telehealth	5.14	0.97	Agree
Learning telehealth is easy for me	5.09	1.17	Agree
My interaction with telehealth would be clear and understandable	5.34	0.94	Moderately agree
I would find telehealth easy to use	5.26	1.27	Agree
Composite mean	5.21	0.98	Agree

In terms of social influence, which refers to the degree to which an individual perceives that signifcant others believe he or she should use telehealth, Table 7 shows that community health nurses perceives that they use telehealth because most people who influence and/or are significant to them believes that they should use it in their practice.

Table 7. Assessment of acceptance behavior in terms of social influence

Acceptance behavior	Mean	SD	Interpretation
People who influence my behavior at work think I should use telehealth	5.31	0.83	Moderately agree
People who are important to me think I should use telehealth	5.46	1.04	Moderately agree
Composite mean	5.21	0.98	Moderately agree

Table 8. Assessment of acceptance behavior in terms of facilitating conditions

Acceptance behavior	Mean	SD	Interpretation
In general, the organization I work for supports the use of telehealth	5.34	1.03	Moderately agree
The senior managers of my organization have promoted the use of telehealth	5.06	0.91	Agree
A specific person "or group" is available for assistance if I experience difficulties with the telehealth system	4.71	1.27	Agree
Telehealth is not compatible with other systems I use in the workplace	4.31	0.96	Neutral
I have the resources necessary to use the telehealth system	5.06	1.06	Agree
I have the knowledge necessary to use the telehealth system	5.26	1.07	Agree
Composite mean	4.96	0.79	Agree

In terms of facilitating conditions, which refers to the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of telehealth. Table 8 shows that the

community health nurses perceives the encouragement of their superiors has influenced them to use telehealth in their workplace. Moreover, since the entire institution supports the use of telehealth, it has moderately influence their acceptance in the use of telehealth. The institution they are in has provided the necessary resources and knowledge for telehealth. However, community health nurses are uncertain if telehealth is compatible with other system or application they are currently using in their workplace.

Correlation of Demograhic Profile and Acceptance in Telehealth

Based on Table 9, education is significant for community health nurses to be able to use telehealth in their workplace effectively. It also shows that age, sex, and years of clinical experience is not significant in the effective use of telehealth.

Table 9. Correlation of demographic profile and acceptance in telehealth in terms of performance expectancy

Demographic profile	Pearson Chi-Square	p-value	Interpretation
Age	14.139	0.292	Not significant
Sex	2.902	0.574	Not significant
Years of clinical experience	17.967	0.805	Not significant
Education	55.917	0.000	Significant

Based on Table 10, the age, sex, and years of clinical experience are significant for community health nurses' ease of use of telehealth. On the other hand, sex is not significant for the ease of use of telehealth.

Table 10. Correlation of demographic profile and acceptance in telehealth in terms of effort expectancy

Demographic profile	Pearson Chi-Square	p-value	Interpretation
Age	28.283	0.020	Significant
Sex	2.774	0.735	Not significant
Years of clinical experience	45.210	0.037	Significant
Education	47.162	0.024	Significant

Based on Table 11, education remains significant for a community health nurses perception to influence on the utility of telehealth.

Table 11. Correlation of demographic profile and acceptance in telehealth in terms of social influence

Demographic profile	Pearson Chi-Square	p-value	Interpretation
Age	13.708	0.320	Not significant
Sex	1.061	0.900	Not significant
Years of clinical experience	23.295	0.5020	Not significant
Education	76.834	0.000	Significant

Based on Table 12, demographic profile of the community health nurses is not significant in their acceptane and decision to use telehealth in terms of organizational and technical infrastructure.

Table 12. Correlation of Demographic Profile and Acceptance in Telehealth in terms of Facilitating Conditions

Demographic profile	Pearson Chi-Square	p-value	Interpretation
Age	6.905	0.864	Not significant
Sex	2.054	0.726	Not significant
Years of clinical experience	22.677	0.539	Not significant
Education	32.706	0.110	Not significant

DISCUSSION

The study reveals that despite having more clinical experience of nures, it shows that they receive less or no training and education for telehealth. A study suggest that since integration of telehealth involves a significant change for every nurses who are used to traditional practice of patient engagement, the provision of relevant knowledge, skills, and competencies to telehealth practitioners is an important way to address this transition[10].

The study found that Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC) were identified to be factors that affect the decision of community health nurses to use Telehealth hence acceptance. Furthermore, among the four factors, it was the performance expectancy which makes the greatest influence to nurses to use telehealth. Various research studies show that the usefulness of technology (PE) and ease of use (EE) are considered to be the main influences affecting an individual's technology acceptance[11].

Gender has consistently shown to be not significant to all predictors of acceptance in telehealth. Age, however, show signifi cance in the ease of use of telehealth. According to Venkatesh et al. (2003), all the four predictors of accepatance in telehealth hypothesized to moderate the influence on behavioral intention by age[12]. Yang et al.(2017), also found out that for digital immigrants who perceive themselves to be as old as or order than their chronological age

(cognitive age> = 34 years old), only perceived performance expectancy is significant[13]. However, this study found out that it was only effort expectancy of community health nurses to influence by age their acceptance in telehealth.

The years of clinical experience was found to be significant for effort expectancy. It was found that the more tenured the community health nurses is, the more that are comfortable in using telehealth. The study found that the years of clinical experience is not significant in other predictors of acceptance. This is congruent to a study that results to negative relationships between years of nursing faculty experience and attitudes toward the value of obtaining increased skills for technology integration within the curriculum[14]. Hence, regardless of work experience, nurses find telehealth useful in their work and have a positive attitude in seeking for new information about telehealth though their years of experience greatly influence their comfortability in using telehealth.

Education remains significant in most of the predictors of acceptance in telehealth which means the prior learning of community health nurses affects their perception to find telehealth useful, ease of use, and intention to use. This is consistent with the study conducted in 2017 that the provision of adequate, appropriate, and systematic education and training for practitioners has been emphasized as a requirement for widespread adoption of Telehealth[10]. On the other hand, the study found that community health nurses received less number of education to telehealth. Hence, it is evitable for managers to plan and implement training and education program for community health nurses to improve their efficiency on the use of telehealth.

CONCLUSION

Despite the challenges in the health care delivery system, telehealth is indeed accepted by community health nurses to be used in practice and shows that they have positive attitude towards it. This study founds that the telehealth's usefulness and ease of use highly influence their perception and acceptance to telehealth. Moroever, the results of this study strongly suggest that community health nurses' acceptance is critical to the implementation of telehealth and its success. Telehealth is widely used in practice nowadays but this study concludes that its users, specifically nurses, still needs more training and education in telehealth. This draws attention to the key role of education of community health nurses in influencing their efficiency, ease of use, and intention to use telehealth. Hence it is a must for nurse leaders to consider providing nurses a continuous professional development through training and education to ensure their participation and efficiency in the use of telehealth.

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