



EFFECTIVENESS OF VIDEO-ASSISTED TEACHING PROGRAM ON KNOWLEDGE REGARDING TELEMEDICINE AMONG ADULTS

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ABSTRACT

Telemedicine/E consultation has been the most adopted method of medical consultation, which has been more useful even in the time of COVID. However, the utilization of the service has been questioned due to the decreased awareness of the public in the community. Hence, the study aimed to assess the effectiveness of the Video-assisted teaching Program on knowledge regarding e-consultation in Chennai. The quantitative approach, pre-experimental group pre and post-test design were adopted. A non-probability convenient sampling technique was used to enroll 50 participants. A self-structured questionnaire was used to assess the knowledge level on Tele medicine. Succeeding the pretest a video-based explanation of e-consultation was demonstrated after which a post-test was conducted. The findings of the study were analyzed using an independent student paired t-test using the mean differences of the level of knowledge in the pre and post-test. The mean difference was found as 3.6 and the calculated t-value was 12.79 and showed highly significant at $p=0.05$. Income, Occupational status, and source of information of the participants had been associated with the level of knowledge. Video-assisted teaching had been found effective in developing knowledge regarding e-consultation. However, the attitude and practice can be tested further.

Keywords: Effectiveness, knowledge, e-consultation / Telemedicine, video-assisted teaching program.

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Article Info

Received 22/02/2023; Revised 25/03/2023

Accepted 29/04/2023

INTRODUCTION

Jay Robbins says that telemedicine allows to connect a patient to a doctor and it allows to erase time and distance 'Tele' is a Greek word meaning 'distance' and 'modern' is a Latin word meaning 'to heal'. Time magazine called telemedicine 'healing by wire'. Although initially considered futuristic and experimental, telemedicine is today a reality and has come to stay. Telemedicine has a variety of applications in patient care, education, research, administration, and public health [1]. Telemedicine is the branch of medicine in which electronic media is utilized for communication between healthcare workers like doctors, nurses, and paramedical staff and patients. It has been in practice for ages that the patients undergoing some treatment may contact their physicians through a third party [2]

Telemedicine is the use of electronic information and communication technologies to provide and support health care when distance separates the participants. It focuses on improving health outcomes by overcoming geographical barriers. Remote regions around the world face barriers in providing healthcare services, but recent advances in technology have made telemedicine possible [3] Telemedicine is the use of electronic information and communication technologies to provide and support healthcare when distance separates the participants. It focuses on improving health outcomes by overcoming geographical barriers. Remote regions around the world face barriers in providing healthcare services, but recent advances in technology have made telemedicine possible. Its popularity in resource-poor countries has been rising lately. The use of telemedicine has been



constantly growing, with a 44% increase in the years 2015 to 2019. During the first quarter of 2020, its use peaked by 50% in the United States compared with the same period in 2019.

Telemedicine is an emerging field in healthcare arising out of the synergistic convergence of Information Technology with Medical Science having enormous potential in meeting the challenges of healthcare delivery to rural and remote areas besides several other applications in education, training, and management in the health sector. Telemedicine is the ability of healthcare providers to meet with patients remotely via telephone or video. This practice has been around almost as long as telephones but has become more popular and practical during the COVID-19 pandemic [5] It involves the distant exchange of medical information between health providers and patients *via* a telecommunication device with/without the aid of audiovisual interactive assistance. The current COVID-19 pandemic impact on health services mandated an utmost readiness to implement telemedicine which in part is dependent on healthcare providers' willingness to adopt such platforms. This practice has been around almost as long as telephones but has become more popular and practical during the COVID-19 pandemic. As telemedicine has become widespread, professionals and patients have grown more comfortable connecting virtually [6]

Objectives

1. To assess the pretest and posttest level of knowledge on telemedicine among adults.
2. To assess the effectiveness of a video-assisted teaching program on telemedicine.
3. To find the association between the posttest level of knowledge on telemedicine with their demographic variables.

Hypothesis

H₀₁: There is no significant association between post-test knowledge scores on telemedicine among adults with selected demographic variables.

Research Methodology

A quantitative, *pre-experimental one-group pre and post-test* design was adopted. Formal permission was obtained. Informed consent was taken from each sample after giving all information about the study. All adults between 21-59 years of age and residing in selected areas of Chennai were included as a sample. The non-probability convenient sampling technique was used to select 50

samples. A pre-test was done by using a self-structured questionnaire (32 knowledge questions) and followed by a video-assisted teaching awareness program on telemedicine conducted by the participants. After one week the post-test was done with the same tool. The collected data were analyzed by descriptive and inferential statistics.

Description of Tool

The tool is developed by the researcher after reviewing a series of literature and in consultation with experts. It includes 3 sections, **Section A:** Demographic variables include age, gender, education, occupation, religion, type of family, monthly income, and background variables like any chronic disease and source of information. **Section B:** Self-Structured Questionnaires were used to assess the knowledge of telemedicine among adults. It includes 32 questions with *Multiple choice* types regarding General information, Telemedicine applications, and health problems. Each question scored as positive as 1 and negative as 0 and summed as Inadequate knowledge (1-10), moderate knowledge (11-21), and adequate knowledge (22-32)

Results

Among 50 participants, the majority of the adults 32% belonged to the age group of 41-50 years, 52% were female, 64% were belongs to the nuclear family, 60% were Hindus, 64% had completed their college level of education, 30% were professionals and 50% were above 30,000 income. In regard to background variables, 52% had no chronic diseases, and 60 were not received any information about telemedicine and which is shown in Table I. According to the first objective to assess the pretest and posttest level of knowledge on telemedicine/e-consultation among adults, in the pretest, 2 % had adequate knowledge, 38 % had moderate knowledge and 60% had inadequate knowledge, and regarding the posttest 98% had adequate knowledge, 2% had moderate knowledge and no one had inadequate knowledge.

Regarding the third objective, to associate the post-test level of knowledge on tele medicine/e-consultation among adults with their selected demographic and background variables had a significant association with occupation, income, and source of information with a P value of 0.05% and revealed in Table 3. Hence the null hypothesis H₀₁ is rejected in the occupation, income, and source of information and accepted for other demographic variables like age, gender, type of family, religion, educational status, and chronic disease.

Figure 1: Frequency and percentage distribution of demographic and Background variables of Adults n=50

S.NO	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
1	AGE (Years)	21-30	30
		31-40	28



		41-50	16	32
		51-60	5	10
2	GENDER	Male	24	48
		Female	26	52
3	TYPE OF FAMILY	Joint family	32	64
		Nuclear family	16	32
		Others	2	4
4	RELIGION	Hindu	30	60
		Muslim	8	16
		Christian	12	24
5	EDUCATION	Primary	12	24
		High school	06	12
		Graduate	32	64
6	OCCUPATION	Unemployment	10	20
		Professionals	20	40
		Business	10	20
		Others	10	20
7	INCOME	10,000-20,000	15	30
		21,000-30,000	10	20
		Above 30,000	25	50
8	CHRONIC DISEASES	Yes	24	48
		No	26	52
9	SOURCE OF INFORMATION	Yes	20	40
		No	30	60

Table 2: Effectiveness of video-assisted teaching program on telemedicine/ e-consultation among adults n=50.

KNOWLEDGE	NUMBER OF INDIVIDUALS	MEAN +/- SD	MEAN DIFFERENCE	PAIRED “t” TEST
Pre test	50	21.42+/- 3.45	3.6	t=12.729 P=0.05 S
Post-test	50	35.26+/- 1.72		

**p<0.05, S – Significant

Table 3: Association between Levels of risk factors of breast cancer among married women with selected demographic and background variables

S. No	Demographic Variables	Posttest Level of knowledge						χ ²
		Adequate	%	Moderate	%	Inadequate	%	
1	Occupation	0	0	2	4	8	16	50.53 ** S
	Unemployment							
	Professional	0	0	6	12	9	18	
	Business	1	2	4	8	6	12	
	others	0	0	7	14	8	16	
2	Income							32.07 ** S
	10,000-20,000	1	2	6	12	8	16	
	21,000-30,000	0	0	3	6	7	14	
	30,000 above	0	0	16	32	9	18	
3	Source of information							20.99 ** S
	Yes	1	2	6	12	13	26	
	No	0	0	14	28	16		

**p<0.05, S – Significant



DISCUSSION

Telemedicine offers prompt treatment in the comfort of their homes at the press of a button. Human-related components such as user's knowledge and attitude toward technology are of high importance. The purpose of this study was to measure the level of knowledge of the general population in Nanganallur regarding telemedicine. The present study revealed that the mean and standard deviation of pre and post-test scores with the mean difference of 3.6 of effectiveness was found with the knowledge level of telemedicine. Apart from this, findings also showed that the pre and post-test calculated 't' value was 12.73 which is larger than the p-value at 0.05 level. A similar cross-sectional study was conducted by Prateek Malhotra et al., (2020) to assess the knowledge, perception, and willingness of using telemedicine among healthcare students. The results showed 90.9% viewed telemedicine as a viable approach, and they were willing to use telemedicine and integrate it into their practice in the future. The study concluded that the majority of individuals reported positive perceptions and willingness toward using telemedicine in their careers [7]. Ayesha Zehra, et al., (2020) concluded that a total of 28.1% of them believed telemedicine to be effective in providing faster medical care, while 23.2% thought of it means of reducing the white coat syndrome. A total of 42.9% believed that telemedicine disrupts the doctor-patient relationship and causes a breach of patient privacy. The study concluded that the knowledge regarding telemedicine among doctors in Karachi was found to be average [8].

Regarding association with posttest level of knowledge in the present study, the following demographic and background variables like Occupation, Income, and source of information had a significant association with a P value of 0.05%. A similar study was conducted by Namarata Mohite et al., (2015), a maximum of the subjects 38% were in the age group of 41-50 years, and 42.5% were in the age group of $31 \leq 35$ yrs. The majority 65% of the respondent was males and the remaining 35% of respondents were females. Majority of people 49% monthly income between Rs.11,451 - Rs.17,150. majority of people, 58% live in joint families. The calculated chi-squared test value shows there is an association between the socio-demographic variables of the subject and the level of knowledge regarding Telemedicine among people residing in rural areas $p < 0.05$ level of significance [9].

CONCLUSION

Most of the participants had a good understanding and awareness of telemedicine services. The information

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source, IT support staff, information sharing culture, gender, and awareness were the most important factors for telemedicine service knowledge. E-health is an emerging field with little experience or guidance on evaluation frameworks for implementation. Therefore, the initiatives must be synthesized and information must be shared to ensure the availability of diverse resources on various aspects of project design, implementation, and management. With more people becoming aware of telemedicine and its many options, the world will soon be taken by storm by this growing industry. The trends prove that telemedicine has gained momentum and it shows no signs of slowing down anytime soon.

Implications

Telemedicine practice is one of the healthcare sectors that has revolutionized during the pandemic.

Eligibility to deliver Telemedicine, types and channels through which Telemedicine is to be delivered have been elaborated for the public. Nurse educators and administrators should supervise and guide nursing students to motivate and educate the public regarding telemedicine. The students need to be updated their knowledge and Nurse educators can periodically organize special training programs for the staff nurses in order to educate the patients regarding telemedicine.

Recommendations

- A similar study can be replicated with a large sample
- A similar study can be conducted for healthcare professionals
- Training and awareness created for people through providing booklets, and pamphlets regarding telemedicine apps.

Author Contributions

CN: Original draft and write-up, Tools construction **HM:** Conceptualization of the study **DM:** data analysis **SR:** Review and editing.

Funding

This research received no external funding.

Acknowledgment

The authors wish to thank all nurses who participated in this study.

Conflicts of Interest

The authors declared that there is no conflict between authors.



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