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Effects of Nurse Led Education Programme on Knowledge Regarding Telemedicine among Health Care Workers

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ABSTRACT
In a developing country such as India, most of the 620 million rural Indians lack access to basic health care facilities. Additionally, according to research from the Indian Institute of Public Opinion, 89% of rural Indian patients must travel more than 8 kilometres to receive basic medical care, and the remaining patients must travel even farther. Nearly 75% of the population of India lives in rural areas. The study's objectives were to assess the level of knowledge regarding telemedicine among health care workers, evaluate effects of nurse led education programme on knowledge regarding telemedicine among health care. An evaluation method and a quasi-experimental one group pre-test post-test research design were used to perform the study. A non-probability convenient sampling technique was used to select 108 healthcare workers for the sample. Self-structured knowledge questionnaires were distributed to gauge the level of telemedicine knowledge before and after the introduction of the nurse-led educational programme. To analyse the collected data, descriptive and inferential statistics were health care workers. The pre-test and post-test knowledge scores differed significantly, as shown by the paired t-test value of 37.50. Therefore, a nurse-led educational programme may be a helpful way to improve healthcare workers' understanding of telemedicine, according to statistical inference. The introduction of Nurse Led Educational Program, according to the study's results, significantly improved topic knowledge.
Keywords- Effects, knowledge, nurse led education programme, telemedicine, health care workers

INTRODUCTION

Telemedicine is the use of automatic figures to communicate machineries to provide and support healthcare when distance separates the members.[1]

In the Indian setting, telemedicine offers the potential to improve all Indians' access to high-quality healthcare. With only one doctor for every 1,445 Indians, India has a low doctor-to-patient ratio. Due to the fact that many doctors like working in cities, this inequality is much more prominent in rural areas. In a research by the WHO, it was discovered that 40.8% of all health workers were found in rural areas, where 72.2% of the population lives, while 59.2% of all health workers were found in urban areas, where 27.8% of the population lives. By enabling urban physicians to consult with the rural population and, if necessary, provide specialist care, telemedicine can assist to reduce these disparities. [2]

In a developing country such as India, most of the 620 million rural Indians lack access to basic health care facilities. Additionally, according to research from the Indian Institute of Public Opinion, 89% of rural Indian patients must travel more than 8 kilometre's to receive basic medical care, and the remaining patients must travel even farther.[3]

Due to advancements in medicine, a lack of resources, and shifting demographics, the number of people requiring Care in primary care has increased.[4]

To promote long-distance professional health services, disseminate medical safety reports, provide health-related education to the general public, and conduct public health monitoring, telemedicine is defined as the use of web-based resources and electronic information along with cutting-edge digital network technology.[5]

The delivery of medical care, diagnosis, consultation, and treatment through interactive audio-visual and information exchanges is referred to as telemedicine, according to the World Health Organization (WHO). It also covers the dissemination of medical records and medical education.[6]

MATERIAL AND METHODS

This study used a quantitative research Approach and a quasi-experimental pre-test-post-test research design to assess the effects of nurse-led education programmes on health care workers' understanding of telemedicine. The sample size for this study was 108. For sample selection, a preference sampling method with nonprobability convenience sampling technique was employed. The expertise of healthcare professionals is the dependent variable, and the nurse-led telemedicine education programme was the independent variable. In this research, the population was health care workers at parul Sevashram hospital of WaghodiaTaluka, Vadodara.The study's sample criteria included all healthcare workers, including nurses, doctors, and paramedics, while its exclusion criteria only included professionals who had already received telemedicine training. The self-structured Telemedicine Knowledge Questionnaire was a tool used in this research. Utilizing both descriptive and inferential statistics, the collected data were examined. The study was approved by the ethical committee at Parul University in Vadodara. PUIECHR/PIMSR/00/081734/4911 is the number for the ethical clearance. The medical director of Parul Sevashram Hospital in WaghodiaTaluka and Vadodara, the relevant authority, gave approval for the data collection. Participants were asked for their written permission while being assured of privacy. This study's conception was based on the general paradigm of Bartanffy (1968).

RESULTS

SECTION-I ANALYSIS AND INTERPRETATION OF SOCIO-DEMOGRAPHIC VARIABLES

The result shows thatAccording to the age, 81 (75%) of health care workers belong to 21-30 years, 25 (23.14%) of health care workers belong to 31-40 years, 2 (1.8%) of health care workers belong to 41-50 years, Where in gender variable, the majority of health care workers falls in to male category that was 62 (57.40%) and where 46(42.60%) of health care worker's fall in to female category. As mentioned of qualification status of health care workers 36(33.33%) are nurses, 36(33.33%) are nurses are doctors and 36(33.33%) are nurses are paramedical., In year of experience variable of health care workers 21(19.40) have less than 1 years of experience ,26(24.10%) of health care workers have less than 2 years of experience ,38(35.20%)of health care workers have less than 3 years of experiences,23(21.30%) of health care workers have more than 3 years of experience, As stated of income status of heath care workers 0 (0%) of their income was below Rs.10000, 22(20.40%) of their income was Rs10001-Rs.15, 000, 22 (20.40%) of their income was Rs.15, 001-Rs.20000, 64 (59.20%) of their income was more than Rs.20001,As per the marital status 46 (42.60%) of health care workers were Married, 62 (57.40%) of health care workers were Un-Married, 0 (0%) of health care workers were transgender, In types of residential area variable, 44(40.70%) of health care workers belong from urban and 64(59.30%) of health care workers belong from rural., In previous knowledge about telemedicine variable, 67(62.00 %) of health care workers have knowledge and 41(38.00%) of health care workers don't have knowledge, In source of the knowledge variable,26(24.10%) of health care workers have knowledge through mass media,41(38%) of health care workers have knowledge though books ,0% of health care workers don't have any knowledge through friends and family members source and 41% of health care workers fall in to the not applicable.

SECTION 2: ANALYSIS AND INTERPRETATION OF KNOWLEDGE REGARDING TELEMEDICINE AMONG HEALTH CARE WORKERS.

Table1: Frequency And Percentage Distribution Regarding Knowledge On Telemedicine Among Health Care Workers

n=108

LEVEL OF KNOWLEDGE	FREQUENCY(f)		PERCENTAGE (%)	
	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
POOR	22	0	20.4%	0%
AVERAGE	78	28	72.2%	25.9%
GOOD	8	80	7.4%	74.1
TOTAL	108	108	100%	100%

Table 1 Shows that before given nurse led education programme 22(20.4%) of health care workers had poor knowledge, 78(72.2%) of health care workers had Average knowledge and 8(7.4%) of health care workers had Good knowledge regarding telemedicine. After giving nurse led education programme that

0(0%) of health care workers had poor knowledge, 28(25.9%) of health care workers had Average knowledge and 80(74.1%) of health care workers had Good knowledge regarding telemedicine.

SECTION 3: **ANALYSIS AND INTERPRETATION OF EVALUATE THE EFFECTS OF NURSE LED EDUCATIONAL PROGRAMME ON KNOWLEDGE REGARDING TELEMEDICINE AMONG HEALTH CARE WORKERS.**

Table-2 Mean Score, Standard Deviation, Degree Of Freedom, Calculated "t" value, Tabulated' Value and Level Of Significance Of Pre-Test And Post-Test Knowledge Score About Telemedicine

n=108

KNOWLEDGE SCORE	MEAN SCORE	STANDARAD DEVIATION(SD)	DEGREE OF FREEDOM(df)	CALCU-LATED "t" VALUE	"t" VALUE TABULATED	LEVEL OF SIGNIFICANCE
PRE-TEST	12.99	3.146	107	37.504	1.98	0.00*
POST-TEST	20.48	3.670				

Data presented in Table 2 pre-intervention level of knowledge mean was 12.99 and standard deviation (SD) was 3.146.After given nurse led education programme (post intervention) Level of knowledge means was 20.48 and standard deviation (SD) was 3.670 . As per the paired 't' test, at 107 degree of freedom .The calculated' value 37.504 was higher than the table value of 1.98,p0.05, indicating that the nurse-led education programme was successful in raising the samples overall knowledge. As a result, the H1 hypothesis was accepted, indicating that there is a significant diffence between the samples knowledge scores on the pre-test and post –test.

SECTION 4: **ANALYSIS AND INTERPRETATION OF ASSOCIATION BETWEEN PRE-INTERVENTIONAL KNOWLEDGE REGARDING TELEMEDICINE WITH THEIR SELECTED DEMOGRAPHIC VARIABLES OF HEALTH CARE WORKERS.**

Table 3: Association between the Pre-Interventional Knowledge and their Selected Demographic Profiles

n=108

Demographic Variable		Poor f	Average f	Good f	Total	χ^2 Value	df	Value
Age	21-30	18	57	6	81	2.403	4	.662 NS
	31-40	3	20	2	25			
	41-50	1	1	0	2			
Gender	Male	13	46	3	62	1.400	2	0.496 NS
	Female	9	32	5	46			
	Others	0	0	0	0			
Qualification	Nurses	15	20	1	36	23.767	4	0.00 *
	Doctors	0	30	6	36			
	Paramedical	7	28	1	36			
	Others	0	0	0	0			
Experience In Years-	Less Than 1 Year	10	11	0	21	24.027	6	0.001 *
	Less Than 2 Year	9	16	1	26			
	Less Than 3 Year	3	31	4	38			
	More Than 3 Year	0	20	3	23			
Income Status	Below Rs 10000	0	1	0	1	36.390	6	0.00*
	Rs 10001-Rs15000	14	8	0	22			
	Rs15001-Rs20000	5	16	1	22			
	More Than Rs20001	3	53	7	63			
Marital Status	Married	12	47	3	62	1.629	2	0.443 NS
	Un-Married	10	31	5	46			
	Widow	0	0	0	0			
Types Of	Urban	17	43	4	64		2	0.150 N

Residential Area	Rural	5	35	4	44	3.792		S
Previous Knowledge	Yes	1	58	8	67	40.800	2	**0.00 ***
	No	21	20	0	41			
Source Of Information	Mass-Media	0	23	2	25	45.080	4	**0.00 ***
	Books	0	34	6	40			
	Friends	0	0	0	0			

NS- Non Significance *Significance at p<0.05 level

Table 3 shows the findings shows association of association between of pre-interventional knowledge scores with their selected socio-demographic variables such as Qualification(χ^2=23.767,df=4,p=0.00), Experience in years (χ^2=24.027, df=6, p=0.001), Income Status (χ^2=36.390, df=6, p=0.00) and Previous Knowledge (χ^2=40.800, df=2, p=0.00) and Its Source of Information Regarding Telemedicine(χ^2=45.080,df=4,p=0.00) were found statistically significant association with knowledge score in samples was found significant at p ≤0.05 level of significance. Thus, the H_2 hypothesis was accepted. Other socio-demographic variables such as age, gender, marital status and types of residential area were statistically not- significant at p ≤0.05 level of significance.

DISCUSSION

The similar study conducted by Baby Swanngaihlun [2017] investigated how an educational program led by nurses affected ANMs' understanding of telemedicine at a selected community health center. Pre-interventional mean values were 9.96, mean percentages were 33.28% and 2.76, and post-interventional mean values were 19.96, mean percentages were 66.71% and 3.31, according to M.P. results, where mean differed.[7]

CONCLUSION

The study concluded that the data collected from 108 health care workers by using self-structured knowledge questionnaire with used of non-probability convenience technique and the before the nurse-led education program was implemented, the majority of healthcare workers had an average understanding of telemedicine. However, after the nurse-led education program was implemented, healthcare workers understanding of telemedicine increased. Pre-interventional knowledge was significantly associated with socio-demographic factors like qualification, years of experience, income level, previous knowledge, and its source with respect to telemedicine.

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