



A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING TELEMEDICINE AMONG STUDENTS FROM SELECTED NURSING COLLEGES OF NAVI MUMBAI

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Abstract

Aim: 1. To assess the knowledge regarding Telemedicine before Structured Teaching Programme among students. 2. To assess the effectiveness of Structured Teaching Programme on knowledge regarding Telemedicine. 3. To compare the knowledge before and after Structured Teaching Programme regarding Telemedicine among students. 4. To find out the association between the pre-test knowledge score regarding Telemedicine with selected socio-demographic variables.

Material and method: Investigator adopted quantitative research approach with pre-experimental one group pre-test-post-test design. The subjects were 152 students of final year Basic B.sc Nursing and non-probability purposive sampling method was used for selection criteria. Data was collected using demographic data profile and self-structured knowledge questionnaire regarding Telemedicine. Data were analyzed using descriptive and inferential statistics.

Results: The result showed that pre-test mean knowledge score was 11.78 (29.46%) and after giving Structured Teaching Programme mean knowledge score enhanced to 27.95 (69.88%) which clearly showed mean difference of 16.17 (40.42%). The calculated 'p' value was 0.000 which is less than 0.05 level of significance, which shows that there was highly significant difference between knowledge score regarding Telemedicine before and after Structured Teaching Programme among students. **Conclusion:** The finding of study reveals that Structured Teaching Programme is very effective in improving the knowledge of students about Telemedicine. There was no association between level of knowledge and selected socio demographic variables.

Keywords: Assess, Structured teaching programme, Telemedicine, students

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INTRODUCTION

“Tele means ‘at a distance’ and the word ‘Medicine’ which derived from Latin word ‘Mederi’ means healing. Time magazine has defined Telemedicine as healing by wire. Information and communication technology has made revolution in health care system globally.¹ Developing countries like India has 138 crores of the population and out of which two third of its population predominantly lives in rural area with immense health care needs has limited care facilities. And to tackle that the Indian government who is committed to strengthening the healthcare system of entire country lays a significant focus on the Telemedicine services.²

Goal of Telemedicine is to satisfy the requirement of today’s health care customers and has the potential to revolutionize the delivery of health care services. It supports efforts to improve the standard of health care by increasing accessibility and potency through reducing the necessity to travel, providing clinical support, for long term management and patient satisfaction, overcoming geographical barriers, offering various types of communication devices (e.g. via e-mail and interactive chats or video or audio) and improving patient outcomes. It is a captivating tool to use for fulfilment in health domain.³

On 13th April 2020, The union Health Ministry of India launched “e-Sanjeevani” OPD platform which has completed more than 5 lakhs tel-consultation within 6 months, as of October 12, 2020 has completed the 6 lakhs consultation. In the midst of the COVID-19 pandemic, “e-Sanjeevani” OPD (Out patient Department) services has enabled patient-to-doctor Telemedicine⁴ Initially in the Indian healthcare system recommended to provide speciality services like cardiology, Gynaecology, Pediatrics. The platforms of Telemedicine and Tele-Nursing is gradually shaping into a parallel stream.. It is equally accepted by the patients and health care providers all across the nation.⁵

Telemedicine can be enabling the availability of vital parameters of the patient available to the physician with the help of medical devices such as blood pressure, blood glucose, heart beats etc management.³ Superfluous and avertable exposure to the individuals concerned in delivery of health care are often avoided by using Telemedicine and patients can be screened remotely. Some of the initiative of Telenursing in India includes in COVID-19 pandemic scenario like webinars, providing training and conducting patient case discussion and education.⁶

The current problem came to know that the need of digitalisation in nursing system is necessary. Being frontline health care profession, Nurses are the first point of contact to provide necessary care. A lot of positive and dynamics changes in ICT will take nursing practices, nursing skills and nurse’s knowledge and studies to the next level where nurses can provide medical services and comprehensive care to patient’s comfort regardless of any barriers of language and location. Telemedicine will be consider as super speciality nursing services in all aspects of health care delivery system. Tele-Nursing is a novel initiative to provide efficient, reliable and more accessible health care.⁷

HYPOTHESIS:

H01: There is no significant difference between knowledge score regarding Telemedicine before and after structured teaching programme among students at 0.05 level of significance.

H02: There is no association between pre interventional knowledge score regarding Telemedicine with selected demographic variable at 0.05 level of significance.

METHODOLOGY:

The research design were pre-experimental one group pre-test-post-test and research approach was quantitative. The subjects were 152 students of final year Basic B.Sc Nursing.

The study conducted with the aim to assess the knowledge regarding Telemedicine before Structured Teaching Programme among students, to assess the effectiveness of Structured Teaching Programme on knowledge regarding Telemedicine, to compare the knowledge before and after Structured Teaching Programme regarding Telemedicine among students, to find out the association between the pre-test knowledge score regarding Telemedicine with selected socio-demographic variables.

SECTION I: This section includes 9 items on demographic profile of sample such as age, gender, family monthly income, type of family, other characteristics like family member from health sciences, if yes which background, known to definition of Telemedicine, if yes source of information regarding Telemedicine, whether telenursing need to be included in nursing curriculum.

SECTION II: This is of assessing the knowledge prepared self-structured knowledge questionnaire on Telemedicine. The tool includes 40 questions

from Structured Teaching Programme and its included domains like general knowledge of Telemedicine, importance of Telemedicine, purpose of Telemedicine, type of Telemedicine, mode of communication, etiquette of telenursing practices, advantages and disadvantages of Telemedicine. Knowledge score was interpreted as each question had four option with one accurate answer. The score for correct response to each item was 1 and incorrect response carry 0. Maximum obtained score was 40 and minimum was 0.

VARIABLES UNDER STUDY:

Independent variable: Structured Teaching Programme

Dependent variable: Knowledge on Telemedicine among students

SETTINGS OF THE STUDY:

The investigator conducted the study in selected B. Sc nursing colleges at Navi Mumbai.

Population: B. Sc nursing students of Navi Mumbai.

Sample: Sample consisted of final year B.Sc nursing students of Navi Mumbai who are fulfilling inclusion criteria.

Sample size: The pilot study was conducted on 15 students of final year Basic B. Sc nursing and the main study was performed on 152 students of final year Basic B.sc Nursing.

Sampling technique: Non-probability sampling method (purposive sampling technique) was used.

Sampling criteria:

Inclusion criteria:

1. The students those who are studying in final year Basic B.Sc Nursing
2. The students who are willing to participate in the study

Exclusion criteria:

1. Who are not present at the time of the data collection
2. Students who have already attended session on Telemedicine

ETHICAL CONSIDERATIONS:

Permission was taken from the institutional research recognition committee and approved by institutional ethics committee. Formal permission was taken from the respective B. Sc nursing college's principals of Navi Mumbai. Informed consent from the participant through online google form.

RESULTS:

A) Pre-test and Post-test knowledge score regarding Telemedicine among students

Section- I (a): Knowledge regarding Telemedicine before Structured Teaching Programme among students by using frequency and percentage

PRE-TEST SCORE	FREQUENCY	PERCENTAGE
POOR (0-10)	102	67.11%
AVERAGE (11-20)	35	23.03%
GOOD (21-30)	15	9.87%
EXCELLENT (31-40)	0	0%
TOTAL	152	100%

Section I (b): Knowledge regarding Telemedicine after Structured Teaching Programme by using frequency and percentage

POST TEST SCORE	FREQUENCY	PERCENTAGE
POOR	4	2.63%
AVERAGE	15	9.87%
GOOD	52	34.21%
EXCELLENT	81	53.29%
TOTAL	152	100%

Section – II: Effectiveness of Structured Teaching Programme on knowledge on Telemedicine among students

RESULTS:

67.11% of the students had poor knowledge (0-10), 23.03% had average knowledge (11-20), 9.87% had good knowledge (21-30) and none of the subject had excellent knowledge (31-40) regarding Telemedicine before Structured Teaching

Programme. It also compares with after knowledge score as, 53.29% of the students acquired excellent knowledge (31-40), 34.21% acquired good knowledge (21-30), 9.87% acquired average knowledge (11-20) and 2.63% had poor knowledge (0-10) regarding Telemedicine after Structured

Teaching Programme. Its shows effectiveness of
 Structured Teaching Programme.

**Section – III: comparison of level of knowledge between before and after implementation Structured
 Teaching Programme regarding Telemedicine among students by using paired ‘t’ test**

	MEAN (%)	SD	Mean Difference(%)	Df	t value	P value	Significance
PRE-TEST	11.78 (29.46%)	5.32	16.17 (40.42%)	151	28.18	0.00 (0.00)	Highly Significant
POST-TEST	27.95 (69.88%)	6.95					

**Section IV: Analysis of the association between the pre-test knowledge regarding Telemedicine with
 selected demographic variables by using chi-square test**

Demographic variables	Chi-square value	p- value	Significance
Age			
20-22 year	0.85	0.65	Not significant
23-25 year			
Gender			
Male	3.12	0.2	Not significant
Female			
Family monthly income			
<6174	4.79	0.09	Not significant
6175-18496			
18497-30830			
30831-46128			
46663-61,662			
61,663-123,321			
>123322			
Type of family			
Nuclear	7.99	0.11	Not significant
Joint			
Extended nuclear			
Separated			
Family member from health science			
Yes	0.65	0.95	Not significant
No			
If yes, which background			
Medical	0.63	0.95	Not significant
Nursing			
Pharmacy			
Information about definition of Telemedicine			
No	1.63	0.44	Not significant
Yes			
If yes source of information regarding Telemedicine			
Internet	3.92	0.41	Not significant
Hospital			
Social media			
Other			
Inclusion of telenursing in nursing curriculum			
No	7.96	0.13	Not significant
yes			

Demographic data

Demographic data depicts that, there was total
 152 final year Basic B.Sc nursing students

involved. It reveals that majority of the students 128 (90.7%) belongs to age group of 20-22 years. Maximum of the students were 117 (76.97%) female. Majority of the students 120 (78.9%) were from nuclear family. Maximum of the student's 57 (37.5%) had Rs. 6175-18496 monthly family income. Majority of 109 (71.7%) student's family member were not from health science background and 43 (28.3%) were from health science background out of them majority of 22 (51.16%) of student's family members were from nursing background. Majority 125 (82%) students were unknown about the definition of Telemedicine while minimum 27 (17.8%) students were knowing definition of Telemedicine out of them majority 14 (51.85%) of students got the information from internet. Maximum 126 (82.9%) responded to include the Telemedicine in nursing curriculum.

DISCUSSION:

Similar study done by David Bhawna (2018, Indore MP) conducted quantitative descriptive study to assess the knowledge regarding Telemedicine among staff nurses. Out of 30 staff nurses 47% staff nurses had good knowledge regarding Telemedicine, 33.30% staff nurses had average knowledge, 13.30% staff nurses had excellent knowledge and 7% staff nurses had poor knowledge regarding Telemedicine.⁸ Another study conducted by Shinde A, Vaishali Mohite, N R Kakade, A V katti (2017, Karad) a interventional study to evaluate effectiveness of Structured Teaching Programme on knowledge regarding Telemedicine among rural population. Finding of the study revealed that comparison of pre-test and post-test knowledge of subjects. The pre-test depicts majority of subjects 49 (49%) had good level of knowledge, 39 (39%) had poor knowledge and only 12 (12%) of subjects had excellent knowledge regarding Telemedicine before administration of structured teaching programme. The post-test depicts majority of subjects 52 (52%) acquired good level of knowledge, 33 (33%) of subjects acquired poor knowledge and 15 (15%) acquired excellent knowledge regarding Telemedicine after administration of Structured Teaching Programme. It shows Structured Teaching Programme was effective to increase the knowledge of subjects regarding Telemedicine.⁹

CONCLUSION:

From the findings of the present study, it is concluded that the level of knowledge regarding Telemedicine among students was poor during the pretest assessment. However, the findings of the posttest show that, the level of knowledge had

improved and the scores have indicated an excellent level of knowledge among students. The improvement is due to the Structured Teaching Programme. Therefore the knowledge of the students can be further improved by providing on-going teaching and educational programme. Based on the finding the result of the study shows that pre-test knowledge score was 11.78 and after giving Structured Teaching Programme mean knowledge score enhance to 27.95. The difference between mean score showed that Structured Teaching Programme was very effective method of providing information regarding Telemedicine.

RECOMMENDATIONS:

1. Interventional studies can be planned among staff nurses, doctors and community health workers regarding Telemedicine
2. Further topic can be explored as research studies in application of Telemedicine
3. An observational study can be conducted to assess telenursing practices among nurses
4. Larger samples can be taken in the study for the purpose of generalization
5. A randomized sampling technique can be used to control extraneous variables
6. The study can be done using computer-assisted programme and other educational aid.

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