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A study to evaluate the effectiveness of structured teaching programme regarding teleconsultation among undergraduate students at Narayan institute of agricultural sciences in Jamuhar, Rohtas

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Abstract
Introduction: Teleconsultations are a useful approach for triaging patients and reducing unnecessary visits to emergency departments. Scheduled teleconsultations allow the evaluation, monitoring, and follow-up of outpatients who do not require face-to-face assessment. Teleconsultations bring multiple possibilities in the case of pandemic, where authorities may request or impose community isolation, closing of borders, limitation on the means of transportation, and so on, Teleconsultation in healthcare can be used to provide telecare, offer remote assistance, and help with administrative management of patients, triage, follow-up, meetings, and technical discussions among physicians in different locations, among others.
Methodology: To conduct research study in Narayan Institute of Agricultural Sciences, a written permission will be obtained from Dean-cum-Principal of the college before starting the study. Written consent will be obtained from the sample. Anonymity and confidentiality of the information will be maintained; in this study Quantitative research approach was used; pre-test post-test research design was used; in this study the variables used were Independent: Socio- Demographic Variables; Dependent STP; the study was conducted in Narayan Institute of Agricultural Sciences Jamuhar, Sasaram; the target population was B.Sc. Agriculture 4th year students; sampling technique was Purposive sampling technique; sample size was 60; Socio-Demographic variables & Self-Structured Questionnaire was used; the tool was submitted to 4 experts; Reliability of the tool was checked by Karl Pearson's Formulae and the correlational coefficients r=0.75; 10% of the total sample fulfilled the inclusion criteria and were selected using purposive sampling technique; The obtained was analysed by Descriptive and Inferential statistics.
Results: The current study shows that the 5-point Likert scale was used to determine the level of knowledge among the samples, where majority of the sample depicted very aware at 36.6 placing them as adequately informed. Association was only found in the category gender, years of using phone, and preference during sickness [n=60 (0.004, 95%, df=4); n=60 (0.006, 95%, df=12); n=60 (0.02, 95%, df=4)] In this study data revealed that was found that, P value and statical significance: the two-tailed P value is less than 0.0001, by conventional criteria, this difference is considered to be extremely statically significant.
Conclusion: Among the available sample, majority of the sample depicted had pre-test knowledge of Unaware (n=27) 45%; Neither Unaware nor Aware (n=17) 28.33%; Aware (n=9) 15%; Very Unaware (n=7) 11.66%. Hence, majority of the population had below average knowledge and majority of the sample had post-test knowledge of Very aware (n=22) 36.66%; Aware (n=19) 31.66%; Neither Unaware nor Aware (n=11) 18.33%; Very Unaware (n=5) 8.33%; Unaware (n=3) 5%. Hence, majority of the population had above average knowledge, so there was significant effectiveness of STP on teleconsultation. Association related to socio demographic data and level of knowledge revealed that, for gender n=60 (0.004, 95%, df=4); age group n=60 (0.89, 95%, df=4); annual family income n=60 (0.82, 95%, df=12); occupation of father n=60 (0.60, 95%, df=12); use of smartphone n=60 (0.74, 95%, df=8); years of using phone n=60 (0.006, 95%, df=12); preference during sickness n=60 (0.02, 95%, df=4); area n=60 (0.29, 95%, df=8); experience of teleconsultation n=60 (0.50, 95%, df=4); association was only found in the category gender, years of using phone, and preference during sickness.

Keywords: Evaluate, effectiveness, STP, teleconsultation

Introduction
Teleconsultation is defined as synchronous or asynchronous consultation using information and communication technology to omit geographical and functional distance,

Its goals are for diagnostics or treatment between two or more geographically separated health providers (for example physicians or nurses) or between health providers and patients. The delivery of health-care services, where distance is a critical factor, by all health-care professionals using information and communications technologies for the exchange of valid information for diagnosis, treatment and prevention of disease.

Teleconsultation, sometimes referred to as remote consultation or tele-health, refers to interactions that happen between a clinician and a patient for the purpose of providing diagnostic or therapeutic advice through electronic means, to help prevent the spread of COVID-19, flu and other infectious diseases, doctors can use telehealth appointments to pre-screen patients for possible infectious disease, It also saves sick people from having to come in to the office.

It is necessary to know how and where (what institutions are offering teleconsultations) to connect, and with which hardware and software, since there are several types. The use of teleconsultation can improve nursing care in many ways, It allows nurses to monitor their patients remotely and view medical records, which saves time and money, Nurses no longer need to travel to visit patients in the hospital or make house calls, which reduces traffic congestion and pollution, The use of telemedicine also improves patient safety by reducing the likelihood of errors due to poor communication between staff members.

The American Telemedicine Association (ATA) identifies telemedicine as a significant and growing component of healthcare treatment in the United States. The ability to virtually provide care to patients who might not otherwise receive it can enable early intervention, higher patient satisfaction and reduced overall costs, Nurses often play a key role in the success of this method of treatment by remotely collaborating with the physician either in the patient's home or from a medical setting.

It also allows providers to review electrocardiograms (ECG) and radiologic images, or monitor blood glucose, blood pressure, and mental health status.

Teleconsultation can be used to support in-patient care, giving nurses a way to monitor patient health after they are discharged from the hospital or while managing a chronic illness at home; Teleconsultation technology can also allow nurses to share patient data with doctors and specialists in real-time, connecting patients to the best care from anywhere in the world; No matter what the role of teleconsultation in nursing, teleconsultation technology acts as a key connection between in-patient care and at-home health management; Teleconsultation can help providers reduce healthcare costs, too; By keeping patients in their homes and allowing nurses and doctors to see more patients in less time, patients and medical institutions can save money.

As healthcare advances, nurses continue to expand in their roles; Nurses are known for being flexible and innovative, and those who have completed online education are already familiar with adapting to varied technology; Teleconsultation can offer exciting opportunities and benefits for patients while enabling nurses to be on the forefront of providing cutting-edge, quality care.

Objectives

- To assess the level of pre-test knowledge and attitude regarding usage of teleconsultation.
- To assess the effectiveness of STP regarding usage of teleconsultation.
- To find out the association between knowledge and demographic variables.
- To find out statistical significance between the scores of pre-tests and post-test knowledge regarding usage of teleconsultation.

Hypothesis

- **H_1:** Majority of the population will have below average knowledge and attitude regarding usage of teleconsultation.
- **H_2:** There will be significant effectiveness of STP regarding usage of teleconsultation.
- **H_3:** There will significant association between post-test knowledge and demographic variables.
- **H_4:** There will be significant statistical significance between the scores of pre-tests and post-test knowledge regarding usage of teleconsultation.

Delimitations

The study is delimited to,

1. Those people are from Narayan Institute of Agricultural Sciences.
2. The study is limited to students from B.Sc. Agriculture 4th year.

Material and Methodology

Research Approach

In this study Quantitative research approach was used.

Research Design

Pre-test Post-test research design was used.

Variables

Independent: Socio- Demographic Variables; Dependent STP

Setting

The study will be conducted in Narayan Institute of Agricultural Sciences, Jamuhar, Sasaram, Rohtas, Bihar.

Population

The target population is B.Sc. Agriculture 4th year students from Narayan Institute of Agricultural Sciences, Jamuhar

Samples

The students who are studying in B.Sc. Agriculture 4th year.

Criteria for sample selection

Inclusion criteria

Those who are willing to participate in the research study.

Exclusion criteria

Those who are not willing to participate in the research study.

Sampling technique
In this study sample technique is Purposive sampling technique.

Sample size
In this study total sample size will be 60.

Description of the tool
Tool: Socio-Demographic variables & Self-Structured Questionnaire.
The tool consists of two parts; one part is based upon demographic variables; second part is of Structured Questionnaire.

Part 1: demographic variables Performa consists of: Gender, Age group, Annual family income, Father's occupation, Use of smartphone, Year of using phone, what do you prefer, if you fall sick, Area, Experience of Teleconsultation.

Part 2: consists of total of 20 structured questions to assess the level of knowledge and effectiveness of STP

Validity of the tool
"Validity refers to the degree to which an instrument measures what it is supposed to be measuring." (Polit and Hungler)
The tool was submitted to four experts comprising of one is Associate professor (medicine) Narayan Medical College & Hospitals Jamuhar and one is MD, SR (medicine) Narayan Medical College & Hospitals Jamuhar, one is Asst. Professor (Department of MSN, NNC), two are Asst. Professors (Department of MHN, NNC), Experts gave their suggestions and options about the contents of tools

Reliability of the tool
"Reliability is the degree of consistency and accuracy with which an instrument measure the attribute for which it is designed to measures." (Suresh K. Sharma) Reliability of the tool was checked by Karl Pearson's Formulae and the correlational coefficients r=0.75, hence the tool was found to be highly reliable.

Ethical considerations
To conduct research study in Narayan Institute of Agricultural Sciences, a written permission will be obtained from Dean-cum-Principal of the college before starting the study.
Written consent will be obtained from the sample.
Anonymity and confidentiality of the information will be maintained.

Pilot study
The investigators conducted the pilot study from 06/02/23 To 07/02/23, in Narayan Institute of Agricultural Sciences, Jamuhar, Sasaram, Rohtas. 10% of the total sample fulfilled the inclusion criteria and were selected using purposive sampling technique. True experimental research design was adopted in this study. After sampling technique, the data was collected by using structured questionnaire to assess the effectiveness of STP.

Data collection
Prior to data collection a written permission was obtained from the Dean-cum-principal of Narayan Institute of Agricultural Sciences, Jamuhar, Sasaram for the study. Purposive sampling techniques was used for sample selection. The researcher met with the samples and explained about the purpose of the research and assured confidentiality and anonymity and consent was obtained from the subjects. The researcher adopted true experimental research design. The Demographic variables were collected by using multiple choice questionnaire. The Knowledge were assessed using Structured Questionnaire.

Table 1: representation of Likert rating scale used for data collection

Very Unaware	0-4
Unaware	5-8
Neither Unaware nor Aware	9-12
Aware	13-16
Very Aware	17-20

Data Analysis
Data Analysis were planned according to objectives and hypothesis of the study. The obtained was analysed by Descriptive and Inferential statistics. The plan for data analysis was as follows:

Part 1: Socio- Demographic variables of B.Sc. Agriculture 4th year students by using frequency and percentage distribution and association between post-test knowledge and their demographic variables.

Part 2: Assessment of the pre-test knowledge regarding Teleconsultation using 5-point Likert Scale.

Part 3: Evaluating the effectiveness of STP regarding knowledge on Teleconsultation using 5-point Likert Scale.

Result
Organisation of the research study: -

Section 1: Socio Demographic distribution and association between the level of knowledge with selected socio-demographic variables

Section 2: Level of knowledge regarding usage of teleconsultation and effectiveness of STP regarding usage of teleconsultation using 5-point Likert Scale

Section 3: Assessment of significant association between post-test knowledge and demographic variables.

Section 1: Socio Demographic distribution and association between the level of knowledge with selected socio-demographic variables

Table 2: Frequency and percentage distribution information of socio demographic data along with their Pearson's Chi square values N=60

Demographic Information			Frequency	Percentage	DF	(x^2)
1	Gender	Male	31	51.66	4	0.004
		Female	29	48.33		
2	Age group	18 - 20 years	17	28.33	4	0.89
		21 - 23 years	43	71.66		
3	Annual family income	50000₹-100000₹	21	35	12	0.82
		100000₹-150000₹	13	21.66		
		150000₹-200000₹	5	8.33		
		More than 200000₹	21	35		
4	Occupation of father	Farmer	28	46.66	12	0.60
		Government job	7	11.66		
		Privet job	7	11.66		
		Other	18	30		
5	Use of smartphone	Android	51	85	8	0.74
		IOS	6	10		
		Other	3	5		
6	Years of using phone	1 year	6	10	12	0.006
		2 years	6	10		
		4 years	18	30		
		More than 4 years	30	50		
7	Preference during sickness	Visit hospital	52	86.66	4	0.02
		Teleconsultation	8	13.33		
8	Area	Rural	34	56.66	8	0.29
		Urban	20	33.33		
		Semi-urban	6	10		
9	Experience of Teleconsultation	Yes	49	81.66	4	0.50
		No	11	18.33		

Section 2: Level of knowledge regarding usage of teleconsultation and effectiveness of STP regarding usage of teleconsultation using 5-point Likert Scale

Table 3: Likert rating scale to assess level of knowledge

Level Category	Class	Pre-test	Percentage of pre test	Post-test	Percentage of post test
Very Unaware	0-4	7	11.66	5	8.33
Unaware	5-8	27	45	3	5
Neither Unaware nor Aware	9-12	17	28.33	11	18.33
Aware	13-16	9	15	19	31.66
Very Aware	17-20	0	00	22	36.66

Table.3: shows that majority of the sample had pre-test knowledge of Unaware (n=27) 45%; Neither Unaware nor Aware (n=17) 28.33%; Aware (n=9) 15%; Very Unaware (n=7) 11.66%. Hence, majority of the population had below average knowledge. Therefore, Hypothesis H_1 is accepted.
Majority of the sample had post-test knowledge of Very aware (n=22) 36.66%; Aware (n=19) 31.66%; Neither Unaware nor Aware (n=11) 18.33%; Very Unaware (n=5) 8.33%; Unaware (n=3) 5%. Hence, majority of the population had above average knowledge, so there was significant effectiveness of STP on teleconsultation. Therefore, Hypothesis H_2 is accepted.

Section 3: Assessment of significant association between post-test knowledge and demographic variables.

Table 4: Student t test statistical significance N=60

Group	Pre-test	Post-test
Mean	8.37	13.67
SD	3.64	4.84
SEM	0.47	0.64
N	60	60

Table.4: shows that, P value and statical significance: the two-tailed P value is less than 0.0001, by conventional criteria, this difference is considered to be extremely statically significant. Confidence interval: the mean of PRE-TEST minus POST-TEST equals -5.30, 95% confidence interval of this difference: From -6.57 to -4.03. Intermediate values used in calculations: t = 8.3724, df = 59, standard error of difference = 0.633. Hence, Hypothesis H_4 is accepted.

Discussion

Majority of the study subjects lied in the category of male at 52% and rest 48% study samples lied in the category of female, 21-23 years at 72% and rest 28% study subjects lied in the category of 18-20 years, 35% study subjects lied in the category of 50000₹ - 100000₹, then 21.66% study subjects lied in the category of 100000₹ - 150000₹, then 8.33% study subjects lied in the category of 150000₹ - 200000₹ and rest 35% study subjects lied in the category of more than 200000₹, 46.66%, 11.66% study samples lied in the category of Government Job, then 11.66% study samples lied in the category of privet job and rest 30% study samples lied in the category of other job, Android at 85%, then 10% study samples lied in IOS category and rest 5% study samples lied in the category of other, more than 4 years at 50%, then 30% study samples lied in the category of 4 years, then 10% of study samples lied in the category of 2 years and rest 10% study samples lied in the category of 1 years, visiting hospital at 86.66% and rest 13.33% study samples lied in the category of teleconsultation, rural at 56.66%, then 33.33% study samples lied in the category of urban and rest 10% study samples lied in the category of semi urban, category of No experience at 81.66% and rest 18.33% study subjects lied in the category of yes.
In the present study, 5-point Likert scale was used to determine the level of knowledge among the samples, where

majority of the sample depicted very aware at 36.6 placing them as adequately informed, secondly, 31.6% of the sample data were at Aware level, 18.3% of the sample showed result for Neither unaware nor Aware, 5% of the samples showed result for Unaware, 8.3% of the samples showed result for Very Unaware. This study was supported by, a study to assess the level of knowledge regarding Telemedicine, to develop and administer a Structured Teaching Programme on knowledge regarding Telemedicine by Sushmita *et al*. 2022 [16] & study aimed to assess the knowledge and attitude of healthcare professionals toward the use of telemedicine in the rural areas of Sindh, Grouve Kumar *et al*. 2022 [17].

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