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Effectiveness of Self-Instructional Module (SIM) on Telenursing among Staff Nurses Working in Selected Tertiary Care Hospitals at Vidarbha Region, Maharashtra

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Abstract: ***Aim of the study: The study aims to find out the effect of self-instructional module on telenursing among staff nurses. Problem statement: What is the Effect of Self-Instructional Module (SIM) on Telenursing among Staff Nurses Working in Selected Tertiary Care Hospitals at Vidarbha Region, Maharashtra? Primary objective: The primary objective was used to find out the effect of self-instructional module on telenursing among staff nurses. Secondary objectives: 1) To assess the knowledge of staff nurses regarding telenursing in experimental and comparison group before intervention. 2) To assess the knowledge of staff nurses regarding telenursing in experimental and comparison group after intervention. 3) To find out the effect of SIM on telenursing among staff nurses. 4) To find out the association between post-test knowledge scores and selected demographic variables of staff nurses in experimental group. Method: A quasi-experimental design with non-randomized comparison group was used to assess the effect of Self-Instructional Module on knowledge regarding telenursing among 160 staff nurses. The data was collected by using self-administered questionnaire. Results: From the findings, it was observed that the pre-intervention demographic variables of staff nurses in control and experimental group were more or less similar revealing both the groups had similar characteristics. It was observed that the percentages of knowledge (control group; 23.7 & experimental group; 37.1%) on telenursing among staff nurses were more or less similar before intervention. However, after an intervention, the percentage of knowledge on telenursing was significantly increased from 37.1% to 79.2% in experimental group whereas it was almost remained unchanged in control group. There was a significant difference (p<0.0001) between pre-test and post-test knowledge scores in experimental group. And, there was also a significant difference (p<0.0001) between the post tests of control and experimental group. No significant association (p>0.05) was found between knowledge on telenursing and age, religion, qualification, professional experience, & income of staff nurses. But significant association (p<0.05) was found between knowledge on telenursing and gender. Interpretation and conclusion: The data were analyzed by applying descriptive and inferential statistic. The result of the study indicated that after intervention there was an improvement in the knowledge score. Analysis of data shows that highly difference found between the pre-test and post-test knowledge scores at the level of (p<0.05). The hypothesis proved and accepted.***

Keywords: SIM (Self Instructional Module), SAQ (Self-Administered questionnaire), % (Percentage)

1. Introduction

Telenursing is one of the various innovative and improved methods of providing nursing care. Tele meaning “at distance,” and it is used in term such as telescope, or telemetry. The prefix tele, when combined with the term scope, h a s the single clear following meaning: an instrument to view phenomena at a distance. However, in health care, as in other arenas, the prefix tele often takes on several meanings. Telenursing refers to the use of information technology in the provision of nursing services whenever physical distance exists between patient and nurse, or between any number of nurses [1]. Telenursing uses the technology for the nurses to do follow-up care with patients. The modern approach of follow-up care comforts the patient. Telenursing, the use of technology to allow nursing from a geographic distance, is used in many different settings including hospitals, home care, and other health related facilities [43] Telenursing is communicated via many different devices of technology. These are many different advantages in using telenursing rather than disadvantages. There are many different organizations involved in developing telenursing [44]. Telenursing has allowed for nurse to continue cares of their patient even after they are discharged from hospital. The ICN defines telenursing as follows. Telenursing refers to the use of telecommunications technology in nursing to enhance patient care [45]

1.1 Need for the study

The need for remote care began in early periods were early form soft technology and communication inter connected medical sites for treating the sick and elderly [51] Telenursing emerged as an important branch of telemedicine: the practice of telehealth and technology used together to optimize nursing care for patients and populations in remote locations. Successful telenursing involves complexcomputer-based systems that utilize video and audio features integrated with medical monitoring systems. Through the modes, nurses provide immediate, ongoing care, and can better consult their patients leading to improve clinical and health service outcomes [51] Together within formation technology, telecommunication and bioinformation in general, nurses now bring quality care regardless of geographical location or distance, maximizing effectiveness, efficacy and efficiency [52] Bedside nursing will never be replaced. Nonetheless, nursing is being generation of bio informational developments and advancements. By contrast, the medical field often lags behind when implementing these new and improved

healthcare practices[51]Healthcare providers to strive to provide the optimal effectiveness focused, patient-centred, and evidence-based practices for patients to ensure the highest quality of care, the ongoing debate of merging medicine and technology [53]With above facts and figure, it was felt need of the research scholar to find out the knowledge of staff nurses with regard to telenursing and to teach through self-learning material [54]

2. Review of Literature

Review of literature was carried out on recent and ongoing research relevant to the present study.
After thorough review, investigator has classified the literature based on variables which support aims and objectives of study.
The literature as follows –

1) Review related to general information on telenursing
2) Review related to tools and techniques of telenursing and its health care services
3) Review related to general information on communication technology and its uses at clinical setting.
4) Review related to Ethicolegal aspect and challenges of telenursing in India
5) Review related to knowledge of staff nurses on telenursing
6) Review related to SIM as a method of self-learning on telenursing among staff nurses

Assumptions:

- The demographic variables may influence on knowledge of staff nurses regarding telenursing.
- Self- Instructional module on telenursing may enhance the knowledge of Staff nurse

Delimitations:

The study was limited to -

- assessment of knowledge
- 160 staff nurses
- serving in tertiary care hospital of Vidarbha region, Maharashtra
- study was limited to private hospitals.

Hypothesis:

H1: There is a significant difference between pre-test and post-test knowledge scores on telenursing among staff nurses in experimental and comparison group.
H2: There is a significant difference between post-test knowledge scores of staff nurses in experimental and comparison group regarding telenursing.
H3: There is a significant association between post-test knowledge scores and demographic variables of staff nurses in experimental group

3. Methodology

Research approach: A quantitative research approachwas used for the study

Research design: A quasi-experimental design with non-randomized comparison group

Variables under study:

- Independent variable**:** The Self-Instructional Module
- Dependent variable**:** Knowledge on telenursing

Accessible population - staff nurses who were available for research studies were considered as accessible population.

Sample and sampling technique
Sample: staff nurses working in three selected hospitals were the samples for research study
Sample size: Sample size was 160 however. it was calculated on the basis of sample size determination formula
Sampling technique:non-probability convenient sampling technique was used.

Inclusion criteria:

- Staff nurses those who were consented to participate in the study
- Staff nurses those who were available at the time of data collection
- Staff nurses those who are registered in the state nursing council

Exclusion criteria:

- Staff nurse with the designation of nursing superintendent grade I and II

Tool Preparation

Development of tool:
The tools were developed on the basis of research question and conceptual framework. The investigator has undergone extensive review of literature to develop the tools. However, the following efforts were made by the investigator prior to construction of tools.

- Reviews from various resources like textbooks, journals, periodicals, magazines, published thesis, newsletter etc
- Consultation and discussion with peer group, nursing experts, and others concerned.
- Personal and professional experience of investigator with Staff nurses.
- Preparation and revision of blue print/draft and subject content prior to final draft.

After such deliberations, the investigator has constructed self-administered questionnaire and Self- Instructional module for data collection.

Description of Tools

Self-Administered Questionnaire (SAQ): This tool was constructed to assess the knowledge of Staff Nurses on telenursing before and after the intervention in experimental and comparison group. The (SAQ) contains some questions / statements (MCQs) on telenursing and some demographic variables of Staff nurses working in selected Hospitals. This instrument was handed over to the staff nurses with instructions to complete it in stipulated time period. It has two parts; Part- A and Part-B
Part A: seeks information on demographic variables of staff nurses working in selected hospitals. The variables include;

age, gender, religion, qualification, professional experience, and monthly income.

Part B: is related to questions/statements that seek information on telenursing among staff nurses working in selected hospitals. It contains 4 sections/areas. They were; general information on telenursing, telenursing and its health care service, tools and techniques of telenursing, Ethicolegal aspect and challenges of telenursing in India.

Tool Validity

Content validity of SAQ and SIM were established in consultation with 8 experts from the field of Medical Surgical Nursing (n=6), nursing superintendent (n=1), statistician (n=1). The suggestions of subject experts were taken into consideration and reframed the same.

Tool Reliability

Data was collected from 16 staff nurses who were working in selected hospital (other than the main study area) to test reliability of SAQ. The split half method was used where the tool was divided into two parts; then both parts given to one group of staff nurses at same time. The score from both parts is correlated. Karl Pearson's correlation coefficient was calculated and SAQ was found to be reliable r = 0.89. Hence, the SAQ was considered reliable.

Pilot Study

The pilot study was conducted among conveniently selected staff nurses (16) to find out the effect of SIM on telenursing at two selected hospitals, after prior permission from the authorities concerned. Informed consent was obtained from staff nurses and data was collected during the month of January 2021

Plan for Data Analysis

collected data from staff nurses was planned to analyze by using descriptive and inferential statistics. The descriptive statistics includes; percentage, mean, mean percentage and standard deviation. The inferential statistics includes; t test and one-way ANOVA using SPSS software.

4. Results

Section– I: Distribution of staff nurses according to their demographic variables in experimental and control group (fig – 4.1.1)

Distribution of staff nurses according to age

Distribution of staff nurses according to their age reveals that the highest percentage (53.8% & 80%) were belonged to the age group of 21–30 years in control & experimental group respectively whereas only <4% of them were 51 yrs. & above. In addition, more or less similar percentages (26.3% & 20%) were in the age group of 31–40 years in control & experimental group respectively. Further, none of staff nurses were in the age group of 41-50 years in experimental group whereas it was 16.3% in control group (fig – 4.1.1).

Hence, it was interpreted that the age distribution of staff nurses in both the groups were more or less similar. In addition, it was also concluded that almost all the staff nurses were below the age of 40.

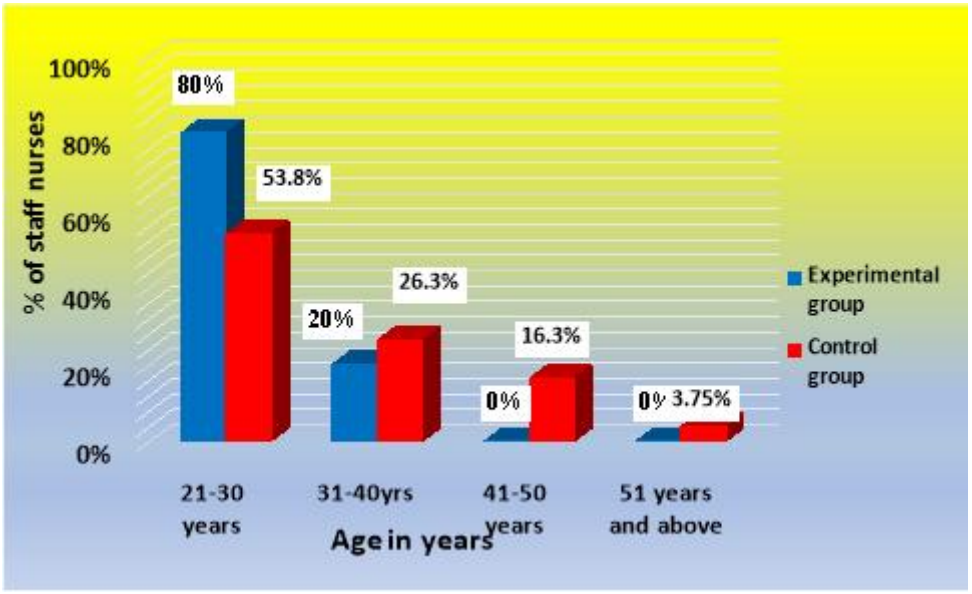

Figure 4.1.1: Distribution of staff nurses according to age

Distribution of staff nurses according to gender

Gender distribution of staff nurses depicts that the most (94% & 91%) of them were females in control & experimental group respectively (fig – 4.1.2). Hence, it was interpreted that the gender distribution of staff nurses was more or less similar in both the groups though it was dominated by female nurses.

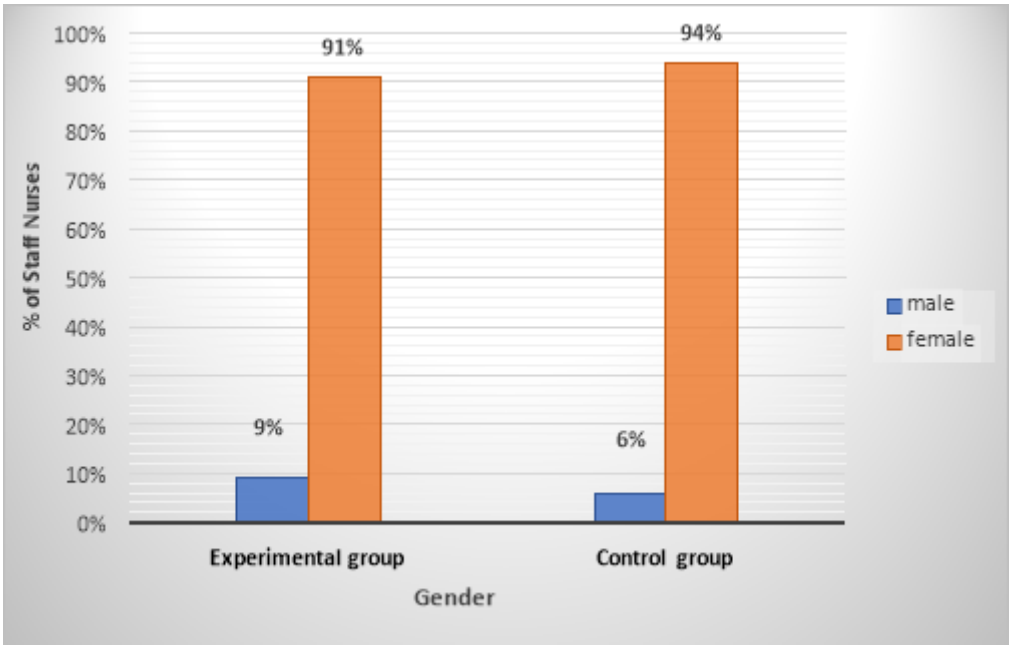

Figure 4.1.2: Distribution of staff nurses according to gender

Distribution of staff nurses according to religion

Distribution of staff nurses according to religion depicts that around one third (62.5%) were Hindus in experimental group whereas the nurses belonged to other than Hindu religion were <15%. On the other hand, the nurses belonged to religion of Buddhist, Hindu, and Christian was more or less similar (34%, 28.8% & 23% respectively) in control group (fig – 4.1.3). Hence, it can be interpreted that the place of study was slightly dominated by Buddhist and Christian religion when compared to the latest census of India. It was also concluded that religion wise distribution of staff nurses in both groups was not so similar.

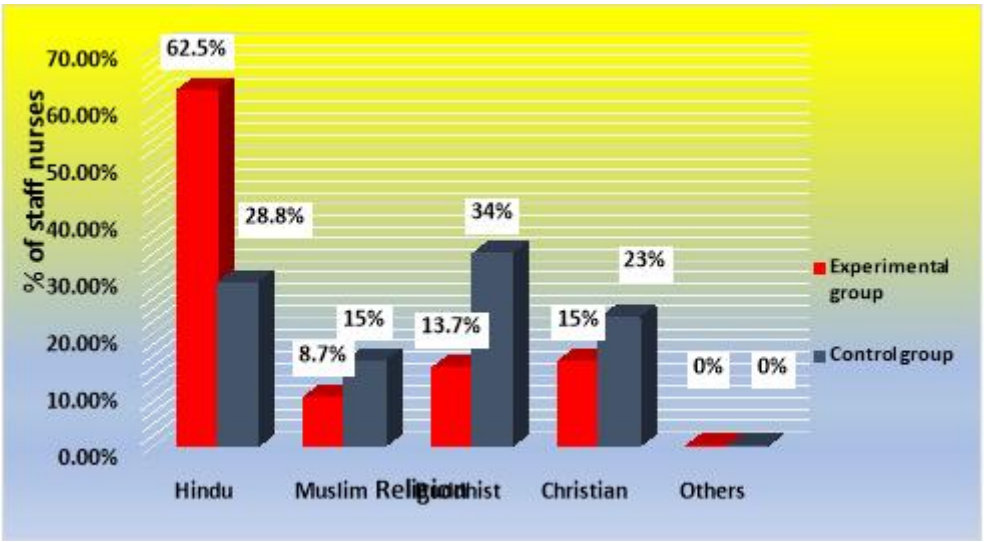

Figure 4.1.3: Distribution of staff nurses according to religion

Distribution of staff nurses according to qualification

Distribution of staff nurses according to qualification shows that majority (68.7% & 65%) were with GNM qualification in experimental & control group respectively whereas the nurses with other qualifications were <25% (fig – 4.1.4). Therefore, it can be interpreted that the place of study was dominated by registered nurses with a GNM qualification. It was also concluded that the distribution of nurses according qualification were more or less similar in both the groups.

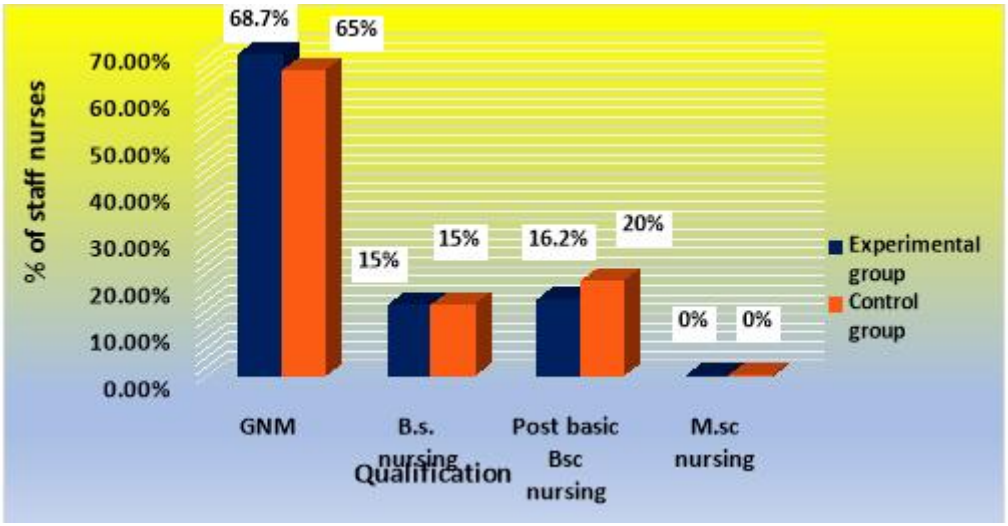

Figure 4.1.4: Distribution of staff nurses according to qualification

Distribution of staff nurses according to their experience

The professional experience of staff nurses depicts that around half of them (56.3% & 55%) had 5 yrs. & below experience in experimental & control group respectively whereas the nurses with 11 & above year of experience were <18%. However, 42% & 23% of them had 6-10 years of experience in experimental & control group respectively (fig – 4.1.5). Collectively it reveals that most were had <10 years of professional experience. Hence, it was interpreted that the experience of staff nurses was more less similar in both the groups.

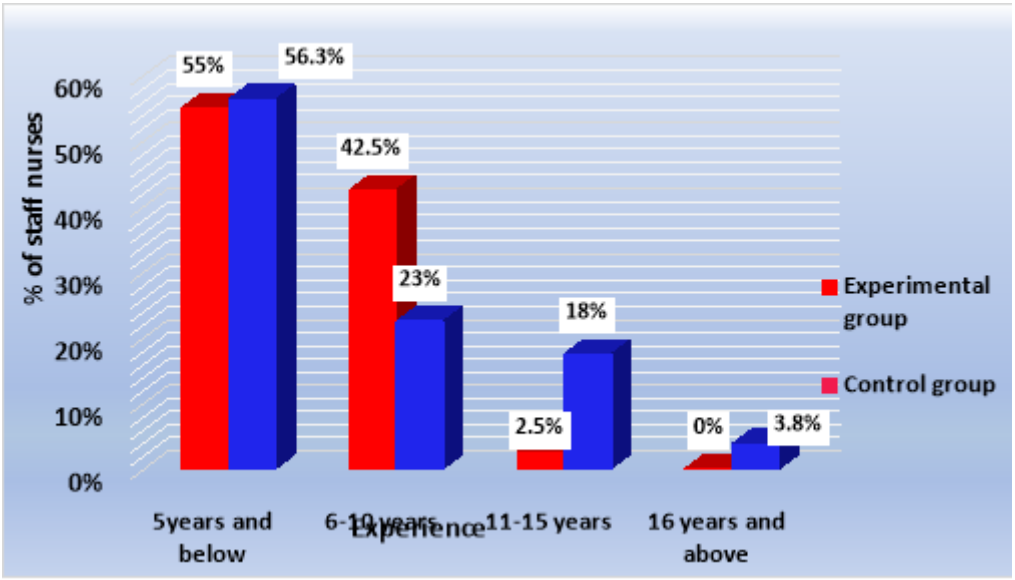

Figure 4.1.5: Distribution of staff nurses according to their experience

Distribution of staff nurses according to their income

Distribution according to income reveals that the staff nurses belonged to the income group Rs. 10000/- & below, Rs. 10001–15000/-, Rs. 20000/- & above and Rs. 15001–20000/- had more or less similar income i.e., 28.8%, 27.5%, 27% & 18.8% respectively in control group. Staff nurses belonged to the income group of Rs. 15001–20000/-, Rs. 10001–15000/-, Rs. 10000/- & below were 40%, 38.7% & 21.2% respectively in experimental group whereas none of them had an income of Rs. 20000/- & above (fig – 4.1.6). Hence, it was interpreted that the income distribution of staff nurses was not so similar.

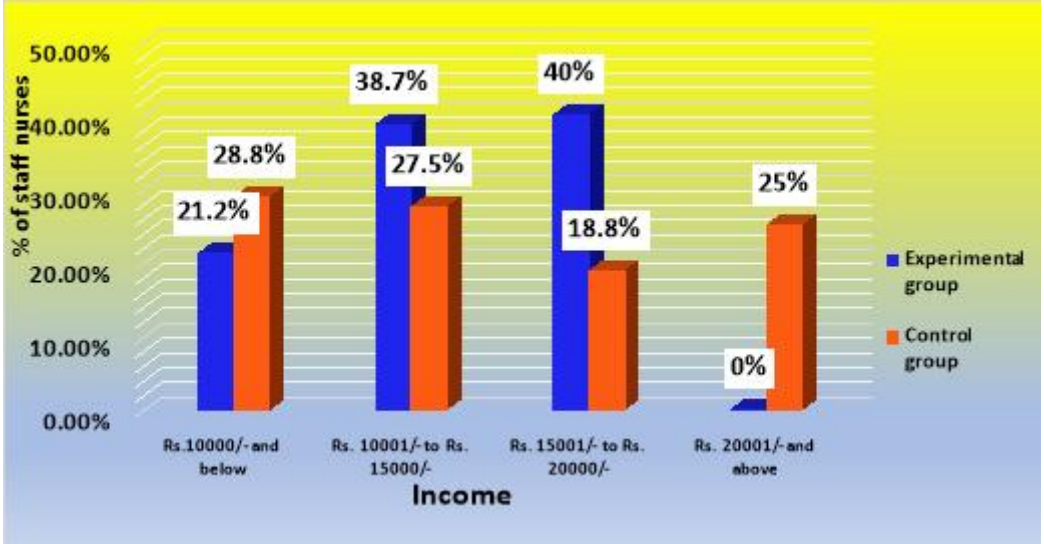

Figure 4.1.6: Distribution of staff nurses according to their income

Section II: Assessment of knowledge on telenursing among staff nurses before intervention in experimental group and control group

Table 4.2.1: Percentage distribution of knowledge scores on telenursing among staff nurses in experimental and control group before intervention

Level of knowledge	Control group		Experimental group	
	f	%	*f*	%
Poor	20	16.3%	01	15.8%
Average	60	26.1%	39	31.1%
Good	0	0%	40	43.2%
Very good	0	0%	0	0%
Excellent	0	0%	0	0%
Overall	80	23.7%	80	37.1%

Table 4.2.2: Mean knowledge scores on telenursing among staff nurses in experimental and control group before intervention

Level of knowledge	Control Group		Experimental group	
	F	Mean ± SD	*f*	Mean ± SD
Poor	20	6.2 ± 0.7	01	6.0 ± 0.1
Average	60	9.9 ± 1.5	39	11.8 ± 1.3
Good	0	0	40	16.4 ± 1.3
Very good	0	0	0	0
Excellent	0	0	0	0
Overall	80	9.0 ± 2.1	80	14.1 ± 2.7

Table 4.2.3: Area wise percentage distribution of knowledge scores on telenursing among staff nurses in experimental and control group before intervention

Area of Knowledge	Number of items	Knowledge in %	
		Control group	Experimental group
General information on telenursing	7	41%	48.2%
Telenursing and its health care service	12	29.5%	39.9%
Tools and techniques of telenursing	9	18%	40.4%
Ethico-legal aspect & challenges of telenursing	10	16.3%	23.1%
Overall	38	27.3	37.1%

Table - 4.2.4: Area wise Mean knowledge scores on telenursing among staff nurses in experimental and control group before intervention, n = 160

Area of Knowledge	Number of Items	Control group		Experimental Group	
		Mean	SD	Mean	SD
General information on telenursing	7	2.8	0.7	3.3	1.0
Telenursing and its health care service	12	3.5	1.7	4.7	1.1
Tools and techniques of telenursing	9	1.6	1.4	3.6	1.3
Ethico-legal aspect and challenges of telenursing	10	1.6	1.4	2.3	1.1
Overall	38	9.0	2.1	14.1	2.7

Section III

Section III: Comparison of knowledge scores on telenursing among staff nurses after intervention in experimental group and control group

Table 4.3.1: Comparison of knowledge scores on telenursing among staff nurses in experimental and control group after intervention, *n=160*

Level of knowledge	Control group				Experimental group			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	*f*	%	*f*	%	*f*	%
Poor	20	16.3%	10	17.9%	01	15.8%	0	0%
Average	60	26.1%	69	27.6%	39	31.1%	0	0%
Good	0	0%	1	42.1%	40	43.2%	1	55.3%
Very good	0	0%	0	0%	0	0%	40	73.7%
Excellent	0	0%	0	0%	0	0%	39	85.8%
Overall	80	23.7%	80	26.6%	80	37.1%	80	79.2%

Table 4.3.2: Comparison of Mean knowledge scores on telenursing among staff nurses in experimental and control group after intervention, *n=160*

Level of knowledge	Control group				Experimental group			
	Pre-test		Post-test		Pre-test		Post-test	
	f	Mean ± SD	*f*	Mean ± SD	*f*	Mean ± SD	*f*	Mean ± SD
Poor	20	6.2 ± 0.7	10	6.8 ± 0.4	01	6.0 ± 0.1	0	0
Average	60	9.9 ± 1.5	69	10.5 ± 1.8	39	11.8 ± 1.3	0	0
Good	0	0	1	16 ± 0.1	40	16.4 ± 1.3	1	21± 1.3
Very good	0	0	0	0	0	0	40	28.0 ± 1.5
Excellent	0	0	0	0	0	0	39	32.6 ± 1.4
Overall	80	9.0 ± 2.1	80	10.1 ± 2.2	80	14.1 ± 2.7	80	30.1 ± 2.9

Table 4.3.3: Comparison of area wise knowledge percentage on telenursing among staff nurses in experimental and control group, *n=160*

Area of Knowledge	Number of Items	Control group		Experimental group	
		Pre-test	Post-test	Pre-test	Post-test
General information on telenursing	7	41%	40%	48.2%	76.6%
Telenursing and its health care service	12	29.5%	30%	39.9%	75.2%
Tools and techniques of telenursing	9	18%	17.9%	40.4%	83.1%
Ethico-legal aspects & challenges of telenursing	10	16.3%	21.3%	23.1%	83%
Overall	38	27.3%	26.6%	37.1%	79.2%

Table 4.3.4: Comparison of area wise Mean knowledge scores on telenursing among staff nurses after intervention in experimental and control group knowledge scores, *n=160*

Area of Knowledge	Number of items	Control group				Experimental group			
		Pre-test		Post-test		Pre-test		Post-test	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
General information on telenursing	7	2.8	0.7	2.8	0.9	3.3	1.0	5.3	0.9
Telenursing and its health care service	12	3.5	1.7	3.5	0.9	4.7	1.1	9.0	1.3
Tools and techniques of telenursing	9	1.6	1.4	1.6	0.9	3.6	1.3	7.4	1.0
Ethico-legal aspect and challenges of telenursing	10	1.6	1.4	2.1	1.8	2.3	1.1	8.3	1.2
Overall	38	9.0	2.1	10.1	2.2	14.1	2.7	30.1	2.9

Section IV

Section IV: Significant difference in the post-test knowledge scores on telenursing among staff nurses in control and experimental group

Testing of hypothesis

H_1: There is a significant difference between pre-test and post-test knowledge score on telenursing among staff nurses in experimental and control group.

Table 4.4.1: Significant difference between pre-test and post-test knowledge score on telenursing among staff nurses in control and experimental group, *n=160*

Group	Test	Mean ±SD	Mean difference	df	't' value	P value
Control	Pre-test	9±2.1	1.1±0.1	79	2.5	0.5* p>0.05
	Post-test	10.1±2.2				
Experimental	Pre-test	14.1±2.8	16±0.1	79	35.6	0.0001*** p<0.05
	Post-test	30.1±2.9				

*P value<0.0001***highly significant, table value<0.001**moderately significant, table value<0.05 * significant, NS-not significant*

Paired 't' test was computed to find out the significant difference between pre-test and post-test knowledge score on telenursing among staff nurses in control and experimental group.

Highly significant difference ($p<0.0001$) was found with a 't' value of 35.6 between a pre-test & post-test knowledge score in experimental group whereas the calculated 't' value of 2.5 between a pre-test and post-test knowledge score shows not significant ($p<0.05$) in control group (table - 4.4.1).

Hence, it was interpreted that the higher score of staff nurses in experimental group was due to an effect of self learning through SIM on telenursing**.** Therefore, the SIM on telenursing among staff nurses was considered as effective. Whereas a slight variation of value in control group was negligible as that might have occurred by chance and not by choice.

However, the difference observed between pre-test & post-test knowledge score value in experimental group was true difference; hence a research hypothesis was accepted.

Table 4.4.2: Area wise significant difference between pre-test and post-test knowledge score on telenursing among staff nurses in control and experimental group

Area of knowledge	Control group				Experimental group			
	Pre-test Mean ±SD	Post-test Mean ±SD	't' Value	p value	Pre-test Mean ±SD	Post-test Mean ±SD	't' value	p value
General information on telenursing	2.8±0.3	2.8±0.3	0.59	0.555 P<0.05	3.3 ±1.0	5.3 ±0.9	15.8	0.0001 p<0.05
Telenursing and its health care service	3.5±1.7	3.5±0.9	0.00	1.000 P<0.05	4.7 ±1.2	9.0 ±1.4	20.4	0.0001 p<0.05
Tools and techniques of telenursing	1.6±1.4	1.6±0.6	0.07	0.9419 P<0.05	3.6 ±1.3	7.4 ±1.0	20.0	0.0001 p<0.05
Ethico-legal aspect & challenges of telenursing	1.6±1.4	2.1±1.8	0.01	0.0122 P<0.05	2.3 ±1.1	8.3 ± 1.2	31.8	0.0001 p<0.05
Overall	9.2.10±	10.1±2.2	2.56	0.0001 P<0.05	14.1 ±2.8	30.1 ±2.9	35.6	0.0001 p<0.05

*df-79, table value<0.0001***highly significant, table value<0.001**moderately significant, tablevalue<0.05 * significant*

Paired 't' test was computed to find out the significant difference between area wise pre-test and post-test knowledge score on telenursing among staff nurses in control and experimental group. Highly significant difference (p<0.0001) was found with a 't' value of 31.8 in the area of Ethico-legal aspects when compared to other areas in experimental group. However, the calculated 't' value in experimental group were similar (p<0.0001) in the areas of telenursing & its service ('t' =20.4) and tools & techniques of telenursing ('t' =20.0). On the other hand, no such significant difference (p<0.05) was observed in any of the areas of telenursing in control group (table - 4.4.2). Hence, it was interpreted that the difference observed between pre-test & post-test area wise knowledge score of staff nurses in experimental group were due to an effect of self-learning through SIM on telenursing.

H2: There is a significant difference in post-test knowledge scores on telenursing among staff nurses between experimental and control group.

Table 4.4.3: Significant difference between the post-test knowledge scores of controls and experimental group, *=160*

Group	Test	Mean ±SD	Mean difference	df	't' Value	P value
Control	Post-test	10.1±2.2	20+0.7	179	48.7	0.0001*** S, p<0.05
Experimental	Post-test	30.1±2.9				

*df-79, table value<0.0001***highly significant, table value<0.001**moderately significant, table value<0.05 * significant*

Unpaired 't' test was computed to find out the significant difference between the post-test knowledge scores of control and experimental group. Highly significant difference (p<0.0001) was found between the post-tests of control group and experimental group with a calculated 't' value of 48.7 (table - 4.4.3).

Hence, it was interpreted that highly significant difference between the post-test knowledge score was due to an effect of self-learning through SIM on telenursing among staff nurses. Therefore, the SIM as a teaching tool on telenursing among staff nurses was considered as effective.

However, a difference observed between the post-test knowledge score value in control group and experimental group was true difference; hence a research hypothesis is accepted.

Section V

Section V: Association between post-test knowledge scores on telenursing and demographic variables of staff nurses in experimental group

Testing of hypothesis

H3: There is a significant association between the post-test knowledge score on telenursing and age in years of staff nurses in experimental group

Table 4.5.1: Association between post-test knowledge score and age, n =80

Age in years	*f*	Mean & SD	F value	P value
21-30 yrs.	64	30.3 ± 2.9	0.7641	0.3847 NS p>0.05
31-40 yrs.	16	30.7 ± 2.6		
41-50 yrs.	-	-		
≥ 51 yrs.	-	-		

df - 79, table value - 0.3847, NS- not significant

Analysis of variance (F-test) was computed to find out the significant association between the post-test knowledge score and the age of staff nurses. The finding of F value shows that there is no significant association (p>0.05) between post-test knowledge score and age. Hence, it was interpreted that the age of staff nurses was not associated with the knowledge on telenursing. However, the F value was true difference and not by chance. Therefore, the research hypothesis was rejected.

H3: There is a significant association between the post-test knowledge score on telenursing and gender in years of staff nurses in experimental group

Table 4.5.2: Association between post-test knowledge score and gender

Gender	*f*	Mean & SD	F value	P value
Male	7	26.2±3.5	16.0045	0.0001*** S, P<0.05
Female	73	30.5±2.6		

*df - 79, table value - 0.0001*** highly significant, S- significant*

Analysis of variance (F-test) was computed to find out the significant association between the post-test knowledge

score and the gender of staff nurses. The finding of F value shows that there is a significant association ($p<0.05$) between post-test knowledge score and gender.

Hence, it was interpreted that the gender of staff nurses was associated with the knowledge on telenursing. However, the F value was by chance and not true difference. Therefore, the research hypothesis was accepted.

H3: There is a significant association between the post-test knowledge score on telenursing and religion of staff nurses in experimental group

Table 4.5.3: Association between post-test knowledge score and religion, *n=80*

Religion	*f*	Mean & SD	F value	P value
Hindu	50	30.1±3.0	1.4298	0.2407 NS p>0.05
Muslim	7	31.8± 2.5		
Buddhist	11	29 ± 2.4		
Christian	12	30.5 ± 2.6		
Others	0	0		

df - 79, table value - 0.2407, NS- not significant

Analysis of variance (F-test) was computed to find out the significant association between the post-test knowledge score and the religion of staff nurses. The finding of F value shows that there is no significant association ($p>0.05$) between post-test knowledge score and religion.

Hence, it was interpreted that the religion of staff nurses was not associated with the knowledge on telenursing. However, the F value was by chance and not true difference. Therefore, the research hypothesis was rejected.

H3: there is a significant association between the post-test knowledge score on telenursing among staff nurses and their qualification in experimental group

Table 4.5.4: Association between post-test knowledge score and qualification, *n=80*

Qualification	f	Mean & SD	F value	P value
GNM	55	30.1±2.8	0.0865	0.9172 NS p>0.05
B. Sc. (N)	12	30.4±3.5		
P B B. Sc (N)	13	29.9±2.9		
M.Sc. (N)	-	-		

df - 79, table value 0.9172, NS- not significant

score and the qualification of staff nurses. The finding of F value shows that there is no significant association ($p>0.05$) between post-test knowledge score and qualification.

Hence, it was interpreted that the qualification of staff nurses was not associated with the knowledge on telenursing. However, the F value was by chance and not true difference. Therefore, the research hypothesis was rejected.

H3: there is a significant association between the post-test knowledge score on telenursing among staff nurses and their work experience in experimental group

Table 4.5.5: Association between post-test knowledge score and work experience, *n=80*

Work Experience	*f*	Mean & SD	F value	P value
5 years & below	44	29.8±3.1	0.8702	0.423 NS p>0.05
6 -10 years	34	30.6±2.5		
11 - 15 years	2	29.5±3.5		
16 years & above	0	-		

df - 79, table value - 0.423, NS- not significant

Analysis of variance (F-test) was computed to find out the significant association between the post-test knowledge

Analysis of variance (F-test) was computed to find out the significant association between the post-test knowledge score and the work experience of staff nurses. The finding of F value shows that there is no significant association ($p>0.05$) between post-test knowledge score and work experience.

Hence, it was interpreted that the work experience of staff nurses was not associated with the knowledge on telenursing. However, the F value was by chance and not true difference. Therefore, the research hypothesis was rejected.

H3: there is a significant association between the post-test knowledge score on telenursing among staff nurses and their monthly income in experimental group

Table 4.5.6: Association between post-test knowledge score and monthly income, *n=80*

Monthly income	*F*	Mean & SD	F value	P value
Rs. 10000/- & below	17	30.3±2.3	1.2309	0.2977 NS p>0.05
Rs. 10001/- to Rs. 15000/-	31	29.5±3.4		
Rs. 15001/- to 20000/-	32	30.6±2.6		
Rs. 20001/- & above	0	-		

df - 79, table value - 0.2977, NS- not significant

Analysis of variance (F-test) was computed to find out the significant association between the post-test knowledge score and the monthly income of staff nurses. The finding of F value shows that there is no significant association ($p>0.05$) between post-test knowledge score and monthly income.

Hence, it was interpreted that the monthly income of staff nurses was not associated with the knowledge on telenursing. However, the F value was by chance and not true difference. Therefore, the research hypothesis was rejected.

5. Summary

The study was undertaken to assess the effectiveness of Self-Instructional Module on telenursing among working staff nurses. A quantitative approach with quasi-experimental design was used to collect data among 160 staff nurses drawn with non-probability convenient sampling technique using inclusion and exclusion criteria.

6. Conclusion

From the findings of present study, it was concluded that the pre-intervention demographic variables of staff nurses in

control and experimental group were more or less similar revealing both the groups had similar characteristics. Percentage of knowledge and the mean scores of staff nurses were more or less similar in both the groups before intervention.

However, after an intervention, the percentage of knowledge and the mean scores of staff nurses were significantly increased in experimental group whereas it was remained unchanged in control group. There was a significant difference between pre-test and post-test knowledge scores in experimental group. And, there was also a significant difference between the post-tests of control and experimental group.

Thus, it was concluded that the SIM on telenursing as a method of self-learning was effective among staff nurses working in selected hospitals at Vidarbha region, Maharashtra.

7. Recommendations

1) Similar study with large sample can be undertaken to bring out more generalization of findings.
2) Comparative study can be undertaken to find out the difference in knowledge among staff nurses attending urban and rural hospitals / government or private hospital.
3) A similar study can be conducted by using STM / VATM on telenursing
4) A similar study can be conducted including attitude and practice on telenursing.
5) Recommended to conduct true experimental design.

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