



## **Effectiveness of Integrated Teaching Involving Patients as Teachers Vs Traditional Teaching upon Cognitive Behaviour of Nursing Students at Tamil Nadu, India**

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### **Abstract**

**Purpose:** This study aimed to evaluate the effectiveness of integrated teaching involving patients as teachers' vs. traditional teaching upon the cognitive behaviour of nursing students.

**Design and methods:** Experimental study with pre-test and post-test control design was selected. Patients suffering from chronic renal failure (CRF) volunteered to teach the students. The data were collected from 100 nursing students who were randomly assigned equally into control and experimental group. A structured questionnaire was used to assess the cognitive behaviour of nursing students regarding CRF, before and after the intervention. The traditional teaching method was used to teach about CRF for both groups, which was followed by first post-test. Integrated teaching by patients on CRF was conducted for only an experimental group of nursing students. After one week, post-test 2 was conducted for both groups.

**Findings:** There was no significant difference in pre-test cognitive behaviour between the control group (M=09.40, SD=2.123) and an experimental group of students (M=9.44, SD=2.611) with  $P>0.05$ . However, there was a significant difference in post-test 2 cognitive behaviour between the experimental group (M=19.7, SD=2.426) and control group (M=16.16, SD=2.90) of nursing students with  $p< 0.05$ .

**Conclusion:** The findings suggest that involving patients as teachers in classroom teaching is an effective method for better learning experiences of nursing students.

**Keywords:** Integrated Teaching, Patients as Teachers, Traditional Teaching, and Cognitive Behaviour.

### **1. Introduction**

Nursing is a practice-based profession. Teaching-learning process in nursing education always involved patients in clinical settings and the role of patients had been passive. The concept of involving patients in actively teaching medical and nursing students have become known recently. Patients with chronic illness can make teaching more realistic by sharing their physical, emotional, social and economic aspects of illness.

A qualitative study to assess what educators and students think about using patients as teachers in medical education involved a total of 46 participants in 9 focus groups consisting of medical educators and medical students. The role of the patient in learning and teaching; the impact of the patient-teacher; the impact of being the storyteller and mechanisms to explain the patient-teacher role in medical training were the four themes emerged from the study<sup>1</sup>

A research-based on the view that utilizing patients as active participants in teaching and learning experiences allows nurses to gain valuable insight into the patient's perspective by developing a more patient-centred approach to identifying their perceived problems suggest that involving patients in classroom teaching is an effective teaching strategy for enhancing the teaching and learning experiences of nurses, as well as having positive effects on participating patients.<sup>2</sup>

Review of publications from 1970 to October 200, after

independent scrutiny, included 23 articles involving patients as teachers in medical education. The review identified learners' experiences were all positive and some learners preferred being taught by trained patients rather than doctors. Patients who were consulted enjoyed their teaching role. Several articles commented on the high quality of patients' teaching. Remuneration varied from payment of expenses to an hourly rate. The motivation for recruiting patients included the desire to reduce costs and the value attributed to the learners' perspective. Patients' involvement as teachers has important edifying benefits for students. Patients offer unique explanations that can enhance the gaining of skills and empathetic attitude towards patients<sup>3</sup>

Real patients have valuable points of view to enhance nursing students' clinical learning and caring for patients. However, the benefits, barriers and outcomes regarding patients' involvement in teaching are still ambiguous and not widely used.

There is not much evidence on to what extent the active involvement of patients in teaching can help in nursing students learning. Therefore, this study was conducted to assess the effectiveness of integrated teaching by patient Vs traditional teaching on the management of renal failure upon cognitive behaviour of nursing students at Selected Nursing College, Tamil Nadu, India.

### **2. Materials and methods**

#### **2.1. Research Design**

A true experimental pre-test, post-test Control Group design was used to conduct the study.

## 2.2. Study Setting

The study was conducted at a selected college of nursing in Tamil Nadu, India. The college offers recognised nursing courses at baccalaureate, master and doctorate level. Classroom teaching is done only by nursing and medical faculty.

## 2.3. Inclusion criteria

The students studying in the second year of B.Sc. nursing and willing to participate in the study were included.

## 2.4. Exclusion criteria

The students studying in other years of study of B.Sc. nursing, M.Sc. nursing and any other nursing courses were excluded from the study

## 2.5. Sample size and sampling technique

The study included 100 students studying in the second year B. Sc. (Nursing). They were randomly allocated using a systematic random sampling technique into control and experimental group in equal numbers.

## 2.6. Instruments

Data was collected using predetermined and pre-tested tools. Baseline variable proforma was used to collect the background data of the students. Structured knowledge questionnaire was developed to assess the cognitive behaviour of nursing students, which consisted of 20 multiple-choice questions. Each question had 4 options with one correct answer and 3 distracters. For Correct answer score was "1" and "0" score for the wrong answer. The total score was summed up for the analysis and interpretation. Pre-test and post-test assessment of cognitive behaviour was assessed among control and experimental group of nursing students by using structured knowledge questionnaire.

## 2.7. Validity and Reliability

The Baseline variable proforma and structured knowledge questionnaire was validated by subject experts. The reliability of the structured questionnaire was done using split-half technique and spearman brown formula for correlation. ( $r = 0.82$ )

## 2.8. Intervention

Pre-test assessment of students' knowledge was done using structured knowledge questionnaire. Traditional teaching using lecture cum discussion by the faculty using PowerPoint presentation was done for both the groups, which was followed by first Post-test. Integrated teaching by the patient was conducted for the only experimental group of nursing students. i.e. Two patients with chronic renal failure (CRF) who were undergoing treatment including dialysis in the hospital volunteered were brought to the classroom and involved in teaching in two sessions (Morning and Afternoon). They were explained about the study purpose and their role in teaching. They taught the students regarding CRF, from patient's point of view focusing and highlighting their picture of onset of illness, clinical manifestations, and their journey to the treatment including dialysis, their experiences and coping with the illness. After one week, post-test 2 was conducted for both the groups using the same tool.

## 2.9. Ethical consideration

The study was approved by Institutional ethics committee. Data were collected after obtaining informed consent from the study participants.

## 2.10. Statistical analysis

The Collected data were analysed using descriptive and inferential statistics in SPSS-20 version. The baseline data were analysed

using frequency and percentage. The cognitive behaviour of nursing students was analysed using analysis of variation and pairwise comparison of pre and post-test assessment scores.

## 3. Results

The baseline data of the students has shown that more than half of nursing students belonged to the age group of 20-21 yrs (58%, 62%), majority of them had English as their medium of instruction (78%, 86%) belonged to Tamil Nadu (70%, 62%) in control and experimental group respectively. The academic performance scores of half of the students were more than 75 % in the previous year of study and half of them resided in Rural and Urban areas in both the groups. Table 1 shows that there was a significant difference in cognitive behaviour assessments between Pre-test (M=10.6,SD=2.244), post-test 1 (M=16.22,SD=3.189) and post-test 2 (M=16.16,SD=2.90) in control group and experimental group with Pre-test(M=9.44,SD=2.611), post-test 1 (M=17.2, SD=3.264) and post-test 2 (M=19.7, SD=2.426)scores.

Table. 1. Comparison of Mean and Standard Deviation of Pre-test and Post-test Cognitive Behaviour Scores regarding Chronic Renal Failure among Control and Experimental Group of Nursing Students.

Assessment	Control Group (n=50)			Experimental Group (n=50)		
	Mean	SD	F value & p value	Mean	SD	F value & p value
Pre-test	09.40	2.123	157.37***	9.44	2.611	434.24***
Post-test 1	16.22	3.189	p<0.0001	17.2	3.264	p<0.0001
Post-test 2	16.16	2.90		19.7	2.426	

The data in Table.2 revealed that there was significant improvement in post-test 1(M=16.22, SD=3.189) than Pre-test (M=09.40, SD=2.244), at P = 0.001. Cognitive behaviour scores were also higher in post-test 2(M=16.16, SD=2.90) than post-test 1 scores (M=16.22, SD=3.189) and Pre-test at P = 0.000. But there was no significant difference in cognitive scores between post-test1 (M=16.22, SD=3.189) and post-test- test 2 (M=16.16, SD=2.90).

Table 2. Pairwise comparison of Assessments (Post Hoc Analysis) of Control Group of Nursing Students (N=50).

Assessment	Mean	SD	Mean Difference	P value	95% CI	
					Lower Bound	Upper Bound
Pre-test & Post-test 1	09.40 16.22	2.123 3.189	8.16	0.000	9.253	7.067
Post-test 1 & Post-test 2	16.22 16.16	3.189 3.189	0.06	0.911	1.135	1.015
Pre-test & Post-test 2	09.40 16.16	2.90 2.90	8.2	0.000	9.121	7.079

It can be inferred from Table 3 that there was a significant improvement in cognitive behaviour scores in post-test 2 (M=19.7, SD=2.426) than post-test 1 scores (M=17.2, SD=3.264) in the experimental group of students at p = 0.000. This depicts the effectiveness of the integrated teaching involving the patient as Teachers among the experimental group.

Table 4 shows that there was no significant difference in cognitive behaviour in Pre-test (M=09.40, SD=2.123) in control and experimental group (M=9.44,SD = 2.611) with 't' value 1.245 (p > 0.05).However, there was a significant difference in cognitive behaviour of nursing students in post-test 2 scores between experimental group (M=19.7, SD=2.426) and control

group (M=16.16, SD=2.90) with 't' value of 3.024 (p<0.05). ie. Cognitive behaviour scores of nursing students in post-test 2 were higher than the post-test 1 scores. It indicates that integrated teaching involving the patient as Teachers was effective in improving the students' Cognitive behaviour.

Table 3: Pair Wise Comparison of Assessments (Post Hoc Analysis) of Experimental Group of Nursing Students (N=50).

Assessment	Mean	SD	Mean Difference	p value	95% CI Lower Bound	Upper Bound
Pre-test & Post-test 1	9.44	2.611	7.840	0.000	8.985	6.695
Post-test 1 & Post-test 2	17.2	3.264	2.50	0.000	1.444	3.556
Post-test 2 & Pre-test	19.7	2.426	10.340	0.000	11.337	9.343

Table 4. Comparison of Mean and Standard Deviation between Control and Experimental Group in Pre-test and Post-tests.

Assessment	Control Group (n=50)		Experimental Group(n=50)		t- value	P value
	Mean	SD	Mean	SD		
Pre-test	09.40	2.123	9.44	2.611	1.245	0.216
Post-test 1	16.22	3.189	17.2	3.264	1.456	0.148
Post-test 2	16.16	2.90	19.7	2.426	3.024	0.003

#### 4. Discussion

The involvement of patients as teachers has shown improvement in the cognitive behaviour of students. The pr-test scores of cognitive behaviour students in both control and experimental students were almost the same. The post-test 1 conducted immediately after traditional classroom teaching by the faculty has shown a significant improvement in the cognitive behaviour of students with no significant difference between a control and an experimental group. The effectiveness of involving patients as teachers in addition to the traditional classroom teaching was evident through the findings that, there was a significant improvement in cognitive behaviour scores in post-test 2 than post-test 1 scores of an experimental group of students, while there was no difference in cognitive behaviour scores in post-test 2 and post-test 1 scores of a control group of students. This finding emphasises the importance of patient integrated teaching in facilitating the long term retention of content and application as the basis of enabling cognitive behaviour.

Involving patients as educators have value addition for learners, patients and teachers. For learners, it enables access to personal knowledge and experience of the condition and use of services, deepens understanding, provides constructive feedback, reduces anxiety, increases confidence, influences attitude and behaviour, improves acquisition of skills, increases respect for patients. Value for patients are, use of their disease or condition positively, use of their knowledge and experience, acknowledgement their expertise, creation of a sense of empowerment, provides an opportunity to help future patients, increases their knowledge and improves their understanding of doctors. The value for teachers is that it provides additional teaching resources, improves the quality of teaching, offers

alternative teaching opportunities and helps to develop mutual understanding.<sup>3</sup>

Similar findings were reported in a cross-sectional study conducted to find out the scope of integrated teaching in the undergraduate medical curriculum in the coastal region of South India. Integrated teaching was conducted in coordination between Departments. The pre- and post-test scores showed that there was a statistically significant increase in knowledge. Overall, 56.7 % of students gave positive feedback on the Likert scale as very good for integrated teaching on a whole. They concluded that the involvement of patients in teaching is effective in improving students learning.<sup>4</sup>

A randomized controlled trial on Effect of expert-patient teaching on empathy in nursing students reported that the involvement of expert patients in teaching is found to be effective in improving empathy levels in both male and female nursing students. Expert-patient teaching can be a promising nursing-education modality for developing empathy.<sup>5</sup>

Patients' Involvement in Nursing Students' Clinical Education: A Scoping Review also reported that In general, patients appreciated the opportunity to contribute to a student's learning process and thus enhance the quality of patient care. However, the patients' approaches varied from active to passive participants, comprising active participants contributing to students' learning, followers of care and advice, and learning platforms with whom students practised their skills. Some patients perceived themselves as active participants who facilitated students' learning by sharing knowledge and experience about their care and wellbeing as well as assessed students' performance by providing encouraging feedback.

#### 5. Conclusion

The present study, which is one of the few Indian studies, provides evidence for implementing effective educational strategies involving patients as valuable resources. Expert-patient teaching can be a promising nursing-education modality for developing good learning outcome. Involving patients as teachers have important educational benefits for learners. The results of this study concluded that integrated teaching involving patients as teachers has significantly improved the cognitive behaviour of nursing students. Therefore Patient Integrated teaching can be incorporated as a regular method of teaching while dealing with important and chronic diseases.

#### Limitations

The study included only second-year B.Sc. nursing students and teaching by patients was done only on chronic renal failure. The cognitive behaviour of students was assessed by self-administered structured questionnaire only

#### Recommendations

The study can be replicated on a larger group, to teach multiple disease conditions and utilizing a variety of patients with different stages of disease conditions. The empathy and attitude of the students toward the patient-centred approach can also be added as variables of the study.

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