The Impact of Problem-Based Learning (PBL) Vs Conventional Teaching Method on Undergraduate Students' Attitude towards Schizophrenia: A Comparative Approach

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Abstract: Attitudes towards Schizophrenia is a major concern and determinant of quality of mental health care. Given that nursing students are future health care providers, it is pivotal to improve their attitudes towards individuals with Schizophrenia prior to their transition into clinical practice. Problem Based Learning (PBL) is an instructional method for active learning for nursing students to understand the concept, improve the critical thinking, develop problem solving skills and shape their attitude towards Schizophrenia.   This study was aimed to compare the impact of Problem Based Learning (PBL) Vs Conventional Teaching Method (CTM) on Undergraduates Nursing Students' Attitude towards Schizophrenia. Chennai.

Methods: This study was conducted using Quasi Experimental Research among 272 Nursing students (PBL Group = 133, CTM = 137), who were selected through enumerative sampling technique, in nursing colleges of Chennai. Students were taught using the PBL and CTM on Schizophrenia. PBL is a student entered approach, where as CTM method is a Lecture cum discussion method. The data was collected by self-administration method using the predetermined, validated & pretested tools such as Background variables proforma of students and Rating Scale on attitude of students towards schizophrenia. **Results:** Study findings revealed that there was a significant difference in Mean attitude scores towards Schizophrenia   between PBL Group (Mean ± SD was 36.56±4.92) and CTM Group (Mean ± SD was 34.45±5.640) in Post test (t=3.28,   p < 0.001) which can be attributed to the effectiveness of Problem Based Learning than the conventional teaching method in enhancing the positive attitude towards Schizophrenia among nursing students.

Conclusion: Overall study findings revealed that nursing students had Positive attitude & satisfaction about PBL than Conventional teaching Method. Therefore, PBL can be effectively incorporated in future also along with traditional teaching method to facilitate effective teaching and learning process for teaching important disease conditions and concepts.

Keywords: Attitude, PBL, CTM, Nursing Students, Schizophrenia.

Introduction

Schizophrenia is a disabling psychiatric condition impacting around 1% of people worldwide and ranking among the top 10 global disability causes (Marder S R, Cannon T D 2019). Discrimination and stigmatization of people with mental illness are a global and complex phenomenon linked to problems of knowledge, attitudes and behaviour(Thornicroft, G., Rosem D. and Kassam, 2017). Negative attitudes, stereotypes and discrimination are still highly prevalent in the population. In fact there is evidence that public attitudes have not changed during the last two decades, or even turned worse in the case of people with schizophrenia(Schomerus G 2022). Stigma is also a major barrier to help seeking and cause delays, dropout and non-adherence in treatment. Recurrent studies during the last decades in the general population have further shown that people with mental illness are perceived as strange, frightening, unpredictable, aggressive and lacking self-control. Particularly people with schizophrenia are associated

with negative stereotypes(Phelan J C & Link B G 2018) . In repeated studies schizophrenia has been identified as the most stigmatizing condition among all types of mental illness , closely linked to perceptions of fear, violence and being unpredictable(Dickerson F B et al 2022)

Medical and paramedical students represent the prospect of the health care of a society. Studies over different time frames and across continents have shown nursing students and staff harboring a high level of negative attitudes toward mental illness (Happell B & Gaskin C J 2023)

In the last decades like any other profession, Nursing has undergone fundamental and major changes in order to meet the needs of the students and rapidly changing society. As the healthcare landscape evolves with advancements in technology, shifting demographics, and changing patient expectations, the role of students and nurses has expanded beyond traditional clinical responsibilities to encompass leadership, advocacy, and innovation.

In the realm of higher education, the adoption of innovative pedagogical approaches is essential for cultivating adaptable, critical-thinking graduates equipped to navigate an increasingly complex world. Among these approaches, Problem-Based Learning (PBL) stands out for its emphasis on student-centered inquiry and collaborative problem-solving. Student perception refers to the ideas and views related to "what is right and what is wrong" or in other words we can say that "what they think about the educational techniques" that are used in present era (Oja K J 2021). Educational techniques are the means or tools that are used to teach the students.

Therefore, the Nursing teachers are being encouraged to use teaching methods which enables the students to be more responsible for their learning(Al-maghawry 2021), and that the application of these methods presupposes different orientations and different attitudes. Hence the teachers have to adopt the role of facilitator for learning.

Innovative teaching and learning strategies in nursing education are expected to promote nursing students to be actively involved in self-regulated learning, to transform traditional one-way delivery of knowledge to cultivate patient-centered teaching and learning model. The innovative strategies help nursing students to foster the ability of health informatics, communication skills, collaborative skills, reflection, cultural sensitivity, critical thinking, as well as evidence-based health care (Chan Z C 2023).

Majority of students find the lectures, tutorials and practical sessions to be beneficial to their learning and tutorials are considered to be the least preferred strategy adopted by the students according to a study conducted on the teaching mode efficiency and learning preferences of first year nursing students.

As we enter the new millennium, continued change in both our personal and professional lives is inevitable. In particular, health care providers and educators will be faced with increasing complexities within their respective systems. One approach to learning will not meet the needs of health professionals being educated to deliver evidence-based care. It is also known fact that, no one educational methods meet the needs of students with varied backgrounds and learning style. Never the less, problem–based learning (PBL) with its emphasis on self-directed learning (SDL) is an appropriate method for developing the attitudes and skills to cope with ever changing environments.

Learning is a dynamic and interactive process resulting in some modifications relatively permanent in the way of thinking, feeling and doing of the learner.

Teaching/learning process fosters intellectual growth, critical thinking, and lifelong learning. Teaching and learning are based on the beliefs that each of intellectual inquiry is implemented through effective interpersonal relationships and communication.

It is well known that, over the past two decades, like any other field of Nursing psychiatric education also has seen dramatic changes including introduction of OSCE (Vijayalakshmi K 2017, SBT -Simulation Based Training (Saraswathi K 2022), Bibliotherapy (Metha et al, 2016) and other innovative methods in teaching and learning

process. In addition, when the teaching learning process is student centered, with the, digital skills of teachers and students, internet connectivity it is necessary to explore online learning, to achieve our goal without interruption (Kalaimathi A) which is also one of the essential tasks of PBL.

Attitude is defined as tendencies of feelings and behaviors toward objects or subjects that include psychological values; they indirectly exist in an individual's life and stem from an individual's observable behaviors. In the teaching–learning process, a positive attitude toward courses is regarded as an important feature of the affective domain, and students should adopt this attitude.

As the effects on achievement of students' attitudes toward courses has been verified, the application of different teaching–learning approaches has become a significant area of study in the literature, in terms of whether these approaches positively affect students' attitudes. Problem-based learning (PBL) is one such approach and emphasizes the significance of affective properties of students as well as cognitive and psychomotor properties in order to accomplish student achievement. PBL has an integrative structure as it includes cognitive, affective, and psychomotor learning in the teaching–learning process.

Traditional learning starts from the idea of total control of the teacher over students in the way a curricular content is taught. In other words, the teacher conceives their students as "*empty holes*" in knowledge and only through their teachings the "holes" can be "filled". Recognized experts such as Dewey and Robert emphasize the passive role of the students in which a rigid explanation of phenomena given by the teacher is imposed. Besides, the repetition, memorization of concepts and written tests focused only on theory as instruments of evaluation of a course.

Problem Based Learning is one of the advanced teaching strategy where the nurse teacher uses in implementation of students curricular/ academic activity with an aim to achieve sound result of students in solving a problem / scenarios. This may be different kind but it should be student oriented, ultimate goal is to improve the strength of students' knowledge. Presently this type of strategies were practicing much in educational institution, service developments and research areas(Boland, 2005).

Problem-based learning (PBL) is a strategy that enhances students' ability to critically apply cumulative knowledge to actual clinical problems. It necessitates collaborative student effort to analyze and solve unfolding clinical problems that are fluid and reflect real-life situations (Niemer, 2010)

However, Problem Based Learning is not much explored in Nursing, especially in India in spite of its benefits. Therefore the investigator had conducted this study to assess the Nursing students' attitude towards Problem Based Learning (PBL) and Conventional Teaching Method (CTM) on Management of Schizophrenia among nursing students in selected Nursing Colleges of Chennai.

Statement of the problem

A study to assess the Impact of Problem-Based Learning (PBL) Vs Conventional Teaching Method on Undergraduate Students' Attitude towards Schizophrenia at Selected Nursing Colleges, Chennai.

Research Methodology

This study was conducted using the quasi experimental research design among 272 Nursing students in selected Nursing colleges, Chennai, which are affiliated to The Tamilnadu Dr.M.G.R Medical University and Indian Nursing Council. Colleges in Chennai were selected randomly using lottery method. Selected Colleges were allocated to

Group 1 & Group 2 randomly. Total enumerative sampling technique was used to select the nursing students from seven nursing colleges, Chennai. ie All the available sample during data collection period, who were willing to participate in the study were included. Data was collected through self-administration method using the predetermined, validated and pretested tools. Data was collected after obtaining ethical clearance from the Institutional ethics committee of Apollo College of Nursing, Chennai and formal permission from the concerned authorities of the nursing colleges. Data collection tools included were background variables proforma and rating scale on Attitude of Nursing Students towards patient with schizophrenia. Rating scale consists of 10 items rated on a 6-point rating scale and scored from 0 to 5. Therefore the total obtainable score was 0 to 50. Pre test was done for the total 272 students. Students of Group 1 (n= 133) was taught using Problem based Learning and Group 2 (n= 139) by conventional teaching method on Management of Schizophrenia.After 1 month, post test was conducted using same predetermined and pretested Tools.

Using a quasi-experimental research method, 272 nursing students from Chennai-based nursing colleges affliated to the Indian Nursing Council and the Tamil Nadu Dr. M.G.R. Medical University participated. Using the lottery approach, colleges in Chennai were chosen at random and then divided into two groups, Group 1 (PBL) and Group 2 (CTM). Seven nursing institutes in Chennai were used to choose nursing students using a total enumerative sampling technique. Student who was available and willing to participate in the study during the data collection period was included.

Using validated, and pretested instruments, a self-administration approach was used to collect data. Ethical clearance was obtained from the Institutional Ethics Committee of Apollo College of Nursing, Chennai, and formal permission was secured from the concerned authorities of the nursing colleges. A proforma measuring background characteristics and a rating scale gauging nursing students' attitudes toward patients with schizophrenia were the instruments used to collect the data. A total of 0 to 50 could be obtained by rating each of the 10 items on the 6-point rating scale, which had scores ranging from 0 to 5.

A pre-test was given to all 272 Nursing Students. While students in Group 2 (n=139) were instructed in traditional teaching Method about the management of schizophrenia, students in Group 1 (n=133) were instructed through problem-based learning. Using the same pre-planned and pretested instruments, a post-test was carried out a month later.

Characteristics	Conventional Teaching Method	Problem Based Learning
Topic	Management of Schizophrenia	Management of Schizophrenia
Case Scenario	Not Given	Given
Preparation for Teacher	Needed	Needed
Preparation for Student	Not Needed	Needed

Sessions	Not Applicable	Applicable
Duration of Teaching	6 Hours	6 Hours
Method of Teaching	Lecture, Discussion, Demonstration	Case studies, Role play, Simulation
Student's Role	Passive Participation	Active Participation
Teacher's Role	Lecture Demonstration	Discussion Demonstration Debriefing Informal observation Obtaining qualitative and quantitative information Brain Storming

Section A. Background characteristics profroma of Nursing students

The background characteristics proforma of Nursing students consist of students' characteristics such as age, gender, religion, Academic performance in college (up to II year B.Sc (N) in percentage) and Medium of Instruction (up to 12 th standard)

Section B: Rating scale on Attitude of Nursing students towards patients with Schizophrenia.

Rating scale is designed to assess the attitude of nursing students towards Management of Schizophrenia. It consists of 10 items rated on a 6-point rating scale and contains 10 items, item wise score ranging from 0-5, with the total obtainable score of 0 -50 (0- Completely agree, 1- Mostly agree, 2- Partially agree, 3- Completely Disagree, 4- Mostly Disagree, 6- Partially Disagree). Higher scores indicates Positive attitude of students towards management of patient with Schizophrenia.

Table 1 Frequency and Percentage Distribution of Baseline Characteristics Among Nursing Students

Characteristics	PBL Group (n= 133)		CTM Group (n= 139)		χ^2 value	df	p - value
	f	%	f	%			
Age in Years							
≤ 21	**122**	**91.7**	**124**	**89.2**	.500	1	.480
> 21	11	8.3	15	10.8			

Gender							
Male	16	12.0	21	15.1	.548	1	.459
Female	**117**	**88.0**	**118**	**84.9**			
Academic Performance							
Distinction	26	19.5	22	15.8	.771	2	.680
First Class	**105**	**78.9**	**114**	**82.0**			
Pass	2	1.5	3	2.2			
Fail	0	0	0	0			
Medium of Instruction							
English	**118**	**88.72**	**120**	**86.33**	0.355	1	.551
Vernacular Language	15	11.28	19	13.67			

Tab 1 reveals that, majority of the students were aged ≤ 21 years (91 & 89%), female students (88 & 85%), obtained first class (academic performance- 79 & 80%), studied in English medium in school (89 & 87%) in PBL group and CMT group respectively. There was no statistically significant difference between these groups with regard to background characteristics (such as Age, Gender, Academic performance, Medium of instruction in the school ($p > 0.05$) Hence, both the groups were homogenous and comparable with regard to background characteristics.

Tab 2: Frequency and Percentage Distribution Attitude on Schizophrenia among Nursing Students

Levels	PBL Group (n= 133)		CTM Group (n= 139)	
	f	%	f	%
Pre Test				
Positive Attitude (34-50)	31	23.3	20	14.4
Neutral Attitude (17-33)	**71**	**53.4**	**82**	**59.0**
Negative Attitude (>17)	31	23.3	37	26.6
Post Test				

Positive Attitude (34-50)	**107**	**80.5**	**94**	**67.6**
Neutral Attitude (17-33)	26	19.5	45	32.4
Negative Attitude (>17)	0	0	0	0

Tab 2 reveals that, in pretest more than half of them had Neutral Attitude (71% & 82%) followed by positive Attitude (23% & 14%) and Negative Attitude (31% & 37%) in PBL group and CTM group respectively.

However in post test majority of the students' had Positive Attitude (81% and 68%) followed by Neutral Attitude (20% & 32%) in PBL group and CTM group respectively.

Tab 3: Comparison of Attitude Scores on Schizophrenia within PBL & CTM Group among Nursing Students

Attitude Scores	Max Score	PBL Group (n=133)		CTM Group (n=139)		Mean Dif	Ind t Value	p value
		Mean	SD	Mean	SD			
Pretest	50	24.60	9.89	23.43	9.290	11.954	12.425	**<0.001**
Post test		36.56	4.92	34.45	5.640	11.014	11.65	**<0.001**

Tab 3 reveals that, there is significant difference in Pre & post test mean attitude scores of PBL Group (t= 12.43, p<0.001) mean scores of of CTM Group (t =11.014, p <0.001) i.e. Mean attitude scores of PBL Group were significantly higher in the pre test & Post test than CTM Group which can be attributed to the effectiveness of the intervention (PBL method of teaching) in reduction of negative attitude on Schizophrenia.

Tab 5: Comparison of Outcome - Attitude Scores on Schizophrenia among Nursing Students between PBL Group and CTM Group

Attitude Scores	Max Score	PBL Group (n=133)		CTM Group (n=139)		Mean Dif	Ind t Value	p value
		Mean	SD	Mean	SD			
Pretest	50	24.60	9.89	23.43	9.290	1.17	1.006	.315
Posttest		36.56	4.92	34.45	5.640	2.01	3.284	**<0.001**

Tab 5 reveals that, there is no significant difference in Mean attitude scores between PBL Group and CTM Group in Pre Test (t=1.05, p > 0.05). However there is significant difference in Mean attitude scores between PBL Group and CTM Group in Post test (t=3.28, p < 0.001) which can be attributed to the effectiveness of Problem Based Learning than the conventional teaching method in reduction of negative attitude on Schizophrenia.

Discussion

This study was conducted to assess the Nursing students' attitude towards Problem Based Learning (PBL) Vs Conventional Teaching Method (CTM) on Management of Schizophrenia in selected Nursing Colleges of Chennai.

Study revealed that in pretest more than half of them had Neutral Attitude (71% & 82%) followed by positive Attitude (23% & 14%) and Negative Attitude (31% & 37%) in PBL group and CTM group respectively. However in post test majority of the students' had Positive Attitude (81% and 68%) followed by Neutral Attitude (20% & 32%) in PBL group and CTM group respectively. It is consistent with the study done by Judith et al (2018) which revealed that the majority of nursing students felt that PBL was a stimulating (59.7%; n = 55) and useful (65.2%; n = 60) learning strategy, with most students rating their attitude positively at +3 on the SD scale.

- There is significant difference in attitude scores between pretest and post test (t= 11.95, p<0.001). i.e. Mean attitude scores were significantly higher in the post test than the pre test in PBL Group. It is consistent with the study done by Gandhi & Dass (2018) revealed that overall 38.7% of the nursing students had a favourable attitude, 31.7% of the nursing students had moderately favourable attitude and 30 % of nursing students had unfavourable attitude in the pretest and overall 68.5% of the nursing students had favourable attitude, 31.5% of nursing students had moderately attitude in the posttest.

- There is no significant difference in Mean attitude scores between PBL Group and CTM Group in Pre Test (t=1.05, p > 0.05). However there is significant difference in Mean attitude scores between PBL Group and CTM Group in Post test (t=3.28, p < 0.001) which can be attributed to the effectiveness of Problem Based Learning than the conventional teaching method in reduction of negative attitude on Schizophrenia. This study is consistent with the study done by Lin et al (2010) to compare the learning effectiveness of peer tutored problem-based learning and conventional teaching of nursing ethics in Taiwan which revealed that after the intervention, both groups showed a significant increase in ethical discrimination ability. There was a statistically significant difference between the ethical discrimination scores of the two groups (P < 0.05), with the experimental group on average scoring higher than the control group

- In pretest & post test there is no significant association of selected Background variables with knowledge and attitude of Nursing students on schizophrenia in PBL & CTM group (p< 0.05). This is consistent with the study done by sherin (2022) which revealed that there is no significant association between attitude score and socio personal variables such as gender, type of boarding, study pattern and method of study.

Students performance including their attitude and clinical competence on this area also can be assessed periodically by various reliable and valid evaluation tools (Vijayalakshmi et al 2014, Vijayalakshmi & Revathi, 2017), and such as OSCE/ OSPE (Objective Structured Clinical/ Practical Examination). An integrated teaching method involving consumers or patients with specific condition (Ramya et al, 2021) will be an alternative approach that can enhance students' knowledge and improve their attitude towards patient with schizophrenia which will improve the overall learning objective of the students.

Conclusion

Students' attitude on selected conditions or concepts play major role in their caring behavior and overall learning outcome. The findings suggest that the attitudes of the nursing students towards Schizophrenia can be altered by using the alternative method of teaching- Problem Based learning and also exploring other innovative teaching learning strategies. It is known fact that,reducing the stigmatization of mental illness continues to be an important goal for mental health professionals. Every student nurse needs to be grounded in the basic principles of communicating with patients and providing patient-centered care in a culturally sensitive way. Mental health assessment needs to be part of the routine nursing assessment, like taking a blood pressure or temperature, so patients can be identified and the appropriate care provided.

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