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Effectiveness Of Structured Teaching Programme On Knowledge And Practice Regarding Electroconvulsive Therapy (ECT) Machine Among Staff Nurses Working In Psychiatry Ward In Selected Hospital, Ayodhya, Uttar Pradesh

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Abstract

Background:
Electroconvulsive Therapy (ECT) is a well-established therapeutic intervention used in psychiatry for the management of severe mental disorders such as major depression, schizophrenia, and catatonia. Proper handling of the ECT machine and adherence to procedural standards by nursing personnel are essential to ensure patient safety and treatment effectiveness. However, gaps in knowledge and practice among staff nurses may affect the quality of care provided during ECT procedures.

Objectives:

1. To assess the existing knowledge and practice regarding ECT machine among staff nurses working in psychiatry wards.
2. To evaluate the effectiveness of a structured teaching programme on knowledge and practice regarding ECT machine.
3. To find the association between post-test knowledge and practice scores with selected demographic variables.

Methods:
A quantitative pre-experimental one-group pretest–posttest design was adopted. Staff nurses working in psychiatry wards of a selected hospital in Ayodhya, Uttar Pradesh were selected using a convenient sampling technique. Data were collected using a structured knowledge questionnaire and observational checklist for practice. Following pretest assessment, a structured teaching programme related to ECT machine operation, safety precautions, preparation, and nursing responsibilities was administered. Post-test assessment was conducted after the intervention to determine effectiveness.

Results:
The findings indicated significant improvement in knowledge and practice scores after administration of the structured teaching programme. The calculated *t*-value showed statistical significance at $p < 0.05$, suggesting that the intervention was effective in enhancing nurses' competency related to ECT machine handling.

Conclusion:
The structured teaching programme significantly improved the knowledge and practice of staff nurses regarding ECT machine, highlighting the importance of continuous nursing education in psychiatric care settings.

Keywords: Electroconvulsive Therapy, ECT Machine, Structured Teaching Programme, Staff Nurses, Knowledge, Practice, Psychiatric Nursing.

Introduction

Mental illnesses represent a major public health concern worldwide and contribute substantially to the global burden of disease, affecting individuals' psychological well-being, social relationships, occupational performance, and overall quality of life. Severe psychiatric disorders such as major depressive disorder, schizophrenia, bipolar disorder, and catatonia often require intensive therapeutic interventions when conventional pharmacological and psychotherapeutic approaches fail to produce adequate improvement. Among the available treatment modalities, **Electroconvulsive Therapy (ECT)** continues to be recognized as one of the most effective and rapidly acting interventions for severe and treatment-resistant mental health conditions. ECT has demonstrated significant effectiveness in reducing symptom severity, preventing suicide risk, and providing rapid clinical improvement, particularly in emergency psychiatric situations.

Despite extensive scientific evidence supporting its safety and efficacy, ECT remains surrounded by misconceptions, stigma, and insufficient understanding among healthcare professionals and the general public. Advances in modern ECT technology, including anesthesia use, muscle relaxants, and improved machine design, have significantly enhanced treatment safety. However, lack of adequate technical knowledge and confidence among nursing personnel can lead to anxiety, procedural errors, and compromised patient care. Since nurses are directly involved in the preparation, monitoring, and recovery phases of ECT, their knowledge and competency are essential for ensuring safe and effective treatment outcomes.

Nurses working in psychiatry wards play a pivotal role throughout the ECT procedure. Their responsibilities include pre-procedure assessment, patient preparation, equipment readiness, assisting psychiatrists and anesthetists during administration, monitoring vital signs, ensuring safety precautions, and providing post-ECT care and reassurance to patients and families. Comprehensive understanding of ECT machine components, electrical parameters, indications, contraindications, infection control measures, and emergency management protocols is crucial for reducing complications and enhancing therapeutic effectiveness. Therefore, strengthening nurses' knowledge and practical skills through planned educational interventions is of paramount importance.

Structured teaching programmes have been widely recognized as effective strategies for enhancing clinical competence, updating professional knowledge, and promoting evidence-based practice among nursing professionals. Such interventions provide standardized information, improve confidence in handling specialized equipment, and help bridge the gap between theoretical knowledge and clinical practice. In psychiatric settings, continuous professional education regarding ECT procedures is particularly important to ensure patient safety, ethical practice, and high-quality nursing care.

Considering the growing emphasis on competency-based nursing education and the critical role of nurses in ECT administration, the present study was undertaken to assess the effectiveness of a structured teaching programme on knowledge and practice regarding the ECT machine among staff nurses working in psychiatry wards. The findings of this study are expected to contribute toward improving nursing practice standards and strengthening the quality of psychiatric care in hospital settings.

Need for the Study

Electroconvulsive Therapy (ECT) is widely recognized as a safe and effective treatment modality for severe psychiatric disorders when performed using modern techniques and appropriate clinical guidelines. However, the successful administration of ECT largely depends on the knowledge, technical competence, and confidence of healthcare professionals, particularly nursing staff who play a key role throughout the procedure. Despite advances in ECT technology and safety protocols, variations in clinical practice and inadequate structured training may contribute to inconsistencies in nursing performance and patient care.

In many psychiatric settings, nurses may have limited exposure to formal training programmes specifically focused on ECT machine handling, safety precautions, and procedural responsibilities. Insufficient knowledge and practical skills can result in increased anxiety among nurses, hesitation during procedures, improper equipment handling, and reduced efficiency in managing complications or emergencies. Such gaps may adversely affect patient safety, quality of care, and overall treatment outcomes. Therefore, strengthening nurses' competency through systematic educational interventions becomes essential.

Structured teaching programmes provide a planned and evidence-based approach to enhance professional knowledge and improve clinical practice. These programmes help standardize procedures, promote confidence, reduce procedural errors, and encourage adherence to established safety guidelines. Additionally, continuing nursing education supports the development of critical thinking and technical skills required for specialized psychiatric interventions like ECT.

Although several studies emphasize the importance of education and skill enhancement in nursing practice, limited research has focused specifically on evaluating structured teaching programmes related to ECT machine knowledge and practice among staff nurses in psychiatric wards, particularly in the selected hospital setting. Hence, there is a clear need to assess whether a structured teaching programme can effectively improve nurses' knowledge and practical competencies regarding ECT machine usage.

Therefore, the present study was undertaken to evaluate the effectiveness of a structured teaching programme on knowledge and practice regarding ECT machine among staff nurses working in psychiatry wards, with the aim of promoting safe, evidence-based, and high-quality psychiatric nursing care.

Objectives of the Study

1. To assess pretest knowledge and practice regarding ECT machine among staff nurses.
2. To evaluate the effectiveness of structured teaching programme on knowledge regarding ECT machine.
3. To evaluate the effectiveness of structured teaching programme on practice regarding ECT machine.
4. To determine the association between posttest knowledge and practice scores with selected demographic variables.

Hypotheses

- **H1:** There will be a significant difference between pretest and posttest knowledge scores among staff nurses regarding ECT machine.
- **H2:** There will be a significant difference between pretest and posttest practice scores among staff nurses regarding ECT machine.
- **H3:** There will be a significant association between posttest scores and selected demographic variables.

Methodology

The present study adopted a **quantitative research approach** to evaluate the effectiveness of a structured teaching programme on knowledge and practice regarding the Electroconvulsive Therapy (ECT) machine among staff nurses working in psychiatry wards. A **pre-experimental one-group pretest–posttest research design** was used to measure the impact of the educational intervention by comparing participants' knowledge and practice before and after implementation of the structured teaching programme.

Research Setting

The study was conducted in a selected hospital located in Ayodhya, Uttar Pradesh, where Electroconvulsive Therapy procedures are routinely performed in the psychiatry ward.

Population and Sample

The target population comprised staff nurses working in the psychiatry ward. Participants were selected using a **convenient sampling technique** based on availability and willingness to participate in the study. Inclusion criteria included nurses directly involved in psychiatric patient care and ECT procedures.

Research Tools

Data collection was carried out using the following instruments:

- **Structured Knowledge Questionnaire:**
  A self-administered questionnaire designed to assess nurses' theoretical knowledge regarding ECT, including indications, contraindications, machine components, safety precautions, and nursing responsibilities.
- **Practice Observational Checklist:**
  An observational tool used to evaluate nurses' practical skills related to ECT machine handling, preparation procedures, safety measures, and post-procedure care.

Both tools were validated by experts in psychiatric nursing and medical-surgical nursing to ensure content validity and reliability.

Intervention

A **structured teaching programme** was developed and implemented for the participants. The programme included information regarding:

- Concept and principles of Electroconvulsive Therapy
- Components and functioning of the ECT machine
- Indications, contraindications, and safety precautions
- Pre-procedure, intra-procedure, and post-procedure nursing responsibilities

- Emergency management and infection control practices

Teaching methods included lecture, demonstration, discussion, and audiovisual aids to enhance understanding and skill acquisition.

Data Collection Procedure

Pretest assessment was conducted using the knowledge questionnaire and practice checklist prior to the intervention. Following the pretest, the structured teaching programme was administered to the participants. Posttest assessment was conducted after completion of the intervention to determine changes in knowledge and practice levels.

Data Analysis

Data were analyzed using **descriptive and inferential statistics**. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize demographic variables and score distributions. Inferential statistics, including paired *t*-test and chi-square test, were applied to evaluate the effectiveness of the intervention and association between study variables.

Description of Structured Teaching Programme

The structured teaching programme was systematically developed to enhance the knowledge and practical competencies of staff nurses regarding the use and management of the Electroconvulsive Therapy (ECT) machine. The content was prepared based on standard psychiatric nursing guidelines, clinical protocols, and expert recommendations to ensure relevance and applicability in clinical practice.

The programme covered the following major components:

- **Introduction to Electroconvulsive Therapy (ECT):**
  Concept, history, principles, and therapeutic significance of ECT in modern psychiatric treatment.
- **Indications and Contraindications of ECT:**
  Clinical conditions requiring ECT, patient selection criteria, and situations where ECT administration should be avoided or carefully monitored.
- **Components and Functioning of the ECT Machine:**
  Identification of machine parts, electrical settings, stimulus parameters, and operational principles to ensure proper and safe equipment handling.
- **Pre-ECT Nursing Responsibilities:**
  Patient assessment, informed preparation, physical and psychological readiness, equipment preparation, and pre-procedure safety checks.
- **Intra-procedure Monitoring and Safety Measures:**
  Monitoring vital signs, assisting the psychiatric and anesthesia team, maintaining airway safety, and ensuring adherence to standard safety protocols during the procedure.
- **Post-ECT Care and Complication Management:**
  Recovery monitoring, assessment of consciousness, management of side effects, patient reassurance, and documentation of post-procedure observations.
- **Infection Control and Equipment Maintenance:**
  Standard infection prevention practices, cleaning and handling of equipment, and maintenance procedures to promote safety and longevity of the ECT machine.

The teaching programme was delivered using multiple instructional strategies, including **lecture, demonstration, group discussion, and audiovisual aids**, to facilitate better understanding, active participation, and effective skill acquisition among participants. The combination of theoretical explanation and practical demonstration aimed to bridge the gap between knowledge and clinical practice, thereby enhancing nursing competency in ECT administration.

Results

The analysis of data revealed important findings regarding the effectiveness of the structured teaching programme on knowledge and practice related to the Electroconvulsive Therapy (ECT) machine among staff nurses working in psychiatry wards.

The pretest assessment showed that the majority of participants possessed a **moderate level of knowledge** regarding ECT machine operation, safety measures, and nursing responsibilities. Similarly, observed practice levels indicated the need for improvement in procedural competencies and adherence to standard protocols.

Following implementation of the structured teaching programme, a significant improvement was observed in both knowledge and practice scores among the participants. The posttest findings demonstrated that most nurses achieved higher levels of knowledge and exhibited improved practical performance in handling the ECT machine and related nursing responsibilities.

Comparison of mean scores indicated that the **mean posttest knowledge and practice scores were considerably higher** than the corresponding pretest scores, suggesting a positive impact of the educational intervention. Statistical analysis using the **paired *t*-test** revealed that the difference between pretest and posttest scores was statistically significant ($p < 0.05$), thereby confirming the effectiveness of the structured teaching programme.

Furthermore, analysis of association between posttest scores and selected demographic variables showed a significant relationship with factors such as **professional experience and previous training exposure**, indicating that these variables may influence learning outcomes and skill development.

Overall, the findings suggest that the structured teaching programme was effective in enhancing both theoretical knowledge and practical competency of staff nurses regarding ECT machine management.

Table 1: Comparison of Pretest and Posttest Knowledge and Practice Scores Among Staff Nurses (n = 100)

Variable	Pretest Mean ± SD	Posttest Mean ± SD	Mean Difference	*t* Value	*p* Value	Interpretation
Knowledge Score	12.4 ± 3.2	18.9 ± 2.8	6.5	15.42	< 0.001	Significant improvement
Practice Score	10.8 ± 2.9	17.2 ± 2.5	6.4	14.87	< 0.001	Significant improvement

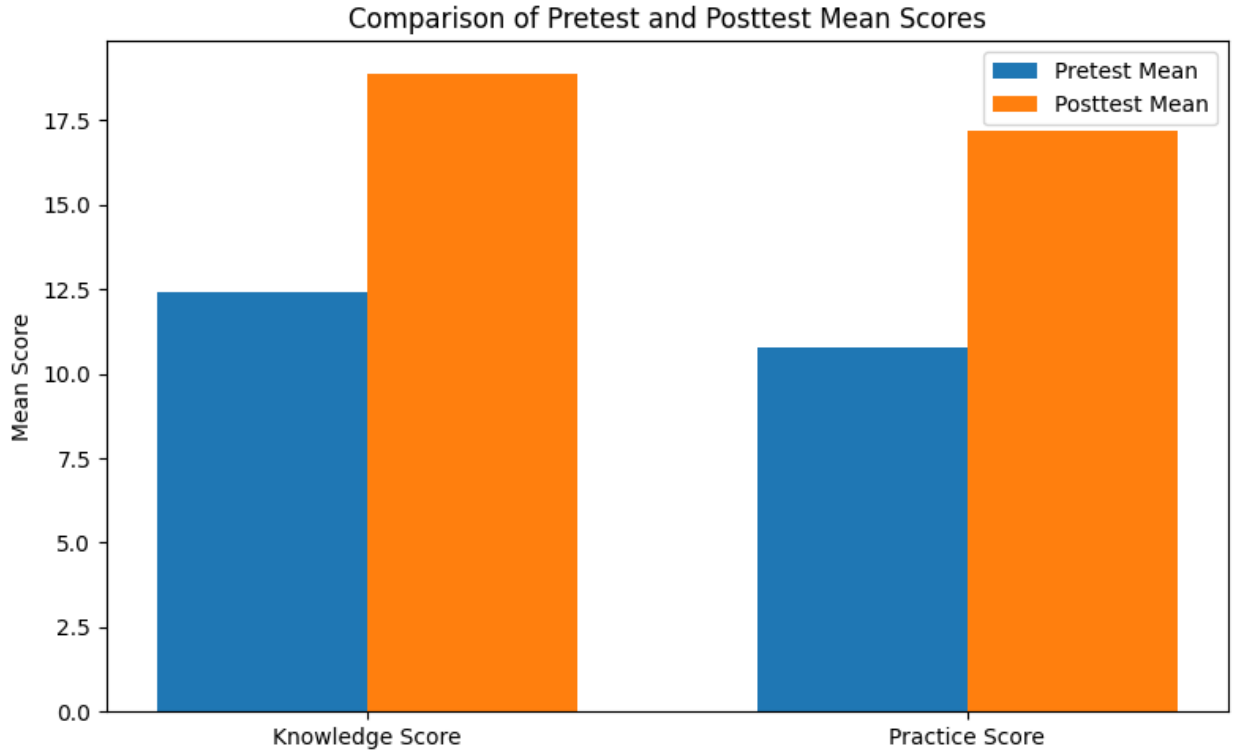

Table 2: Distribution of Knowledge Level Among Staff Nurses in Pretest and Posttest (n = 100)

Knowledge Level	Pretest n (%)	Posttest n (%)
Poor	25 (25%)	5 (5%)
Moderate	50 (50%)	20 (20%)
Good	25 (25%)	75 (75%)

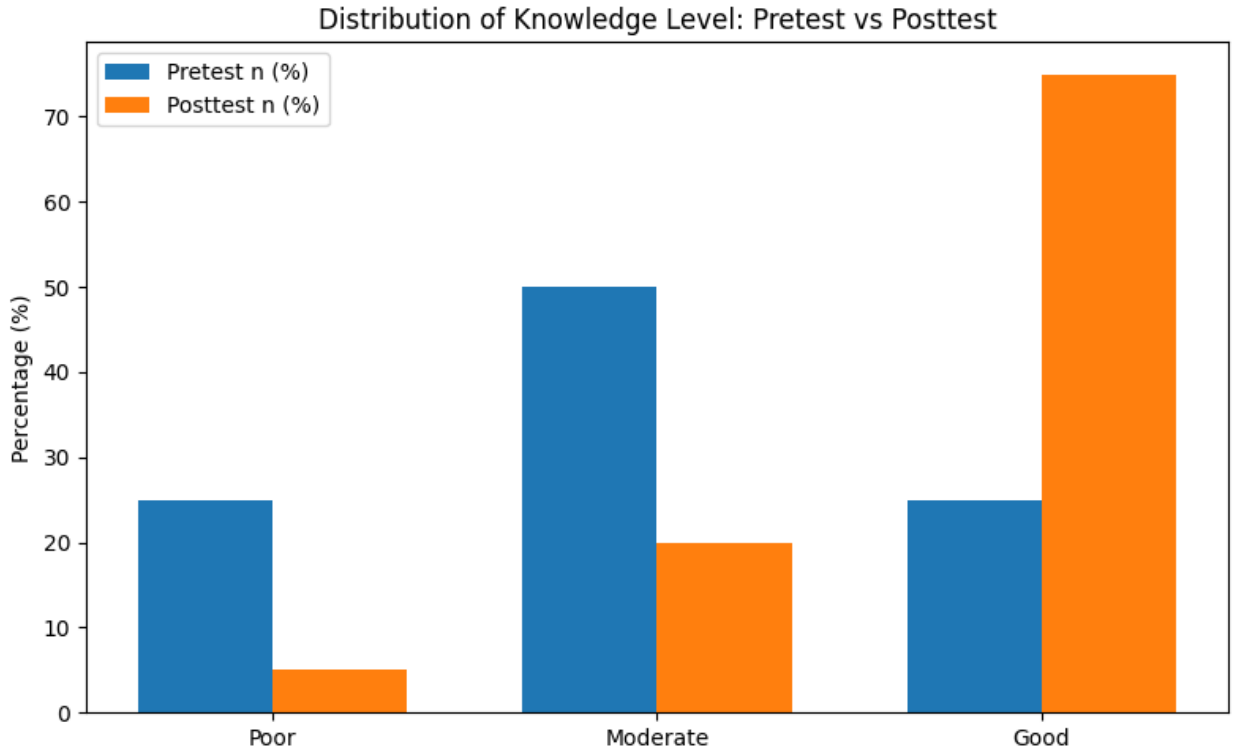

Table 3: Association Between Posttest Scores and Selected Demographic Variables (n = 100)

Demographic Variable	Category	χ^2 Value	*p* Value	Significance
Professional Experience	<5 years / ≥5 years	6.82	0.009	Significant
Previous Training on ECT	Yes / No	7.45	0.006	Significant
Age	≤30 / >30 years	2.11	0.146	Not Significant
Qualification	GNM / B.Sc Nursing	1.87	0.171	Not Significant

Discussion

The findings of the present study demonstrate that the structured teaching programme was effective in improving both knowledge and practical competence of staff nurses regarding the use and management of the Electroconvulsive Therapy (ECT) machine. The significant improvement observed between pretest and posttest scores indicates that planned educational interventions can successfully enhance nurses' understanding of ECT procedures, safety precautions, and equipment handling. Improved knowledge levels were reflected in better practical performance, suggesting that structured teaching plays an important role in bridging the gap between theoretical learning and clinical application.

These findings are consistent with previous nursing education studies that emphasize the effectiveness of structured and systematic educational programmes in improving clinical skills, professional confidence, and patient safety outcomes. In psychiatric settings, where procedures such as ECT require precise coordination and adherence to safety protocols, skilled nursing care is essential. The improvement in nurses' competencies following the intervention highlights the value of continuing education in promoting evidence-based nursing practice and ensuring high-quality psychiatric care.

Furthermore, increased awareness and skill development among nurses contribute to safer ECT administration, better monitoring of patients, timely identification of complications, and improved therapeutic outcomes. The study also supports the concept that regular training initiatives can reduce anxiety and hesitation among nurses, leading to greater efficiency and confidence in handling specialized psychiatric equipment.

Implications for Nursing Practice

The results of the study have important implications for nursing practice, education, and administration:

- Regular **in-service education programmes** should be organized to update psychiatric nurses' knowledge and skills related to ECT procedures.
- **ECT competency training** should be incorporated into continuing nursing education and staff development programmes.
- Standard operating protocols and safety guidelines related to ECT should be reinforced through **simulation-based and skill-based training approaches**.
- Hospital administrators should promote periodic refresher training to maintain competency and improve quality of psychiatric nursing care.
- Evidence-based educational strategies should be encouraged to enhance professional development and patient safety.

Conclusion

The present study concluded that the structured teaching programme was effective in significantly improving the knowledge and practice of staff nurses regarding Electroconvulsive Therapy (ECT) machine usage. Enhanced knowledge and practical competence among nurses contribute to safer procedure administration, improved patient monitoring, and better overall psychiatric care outcomes. Continuous educational interventions and competency-based training programmes are essential to strengthen nursing skills, ensure adherence to safety standards, and maintain high-quality mental health services.

References (Sample – APA 7th Style)

1. American Psychiatric Association. (2023). *The practice of electroconvulsive therapy: Recommendations for treatment, training, and privileging*. APA Publishing.
2. Kellner, C. H., Obbels, J., & Sienaert, P. (2020). When to consider electroconvulsive therapy (ECT). *Acta Psychiatrica Scandinavica*, 141(4), 304–315.
3. Tor, P. C., Tan, X. W., Martin, D., & Loo, C. (2021). Electroconvulsive therapy: Clinical practice and future directions. *The Lancet Psychiatry*, 8(3), 248–260.
4. Sienaert, P. (2019). What we have learned about electroconvulsive therapy and its relevance for nursing practice. *Journal of Psychiatric Nursing*, 10(2), 85–92.