



Assessment Of Nurses' Competency In Handling Electroconvulsive Therapy Equipment In Selected Hospital, Ayodhya, Uttar Pradesh

Rahul Mishra
DR. MANOJ PRAJAPATI

Abstract

Background:

Electroconvulsive Therapy (ECT) is an effective and evidence-based treatment modality used in psychiatric practice for severe mental illnesses. Safe administration of ECT depends largely on the competency of nursing personnel responsible for preparation, assistance during the procedure, monitoring, and post-procedure care. Inadequate knowledge and skill in handling ECT equipment may compromise patient safety and treatment outcomes.

Objectives:

1. To assess the competency of nurses in handling Electroconvulsive Therapy equipment.
2. To evaluate nurses' knowledge and practical skills related to ECT machine operation.
3. To determine the association between competency levels and selected demographic variables.

Methods:

A quantitative descriptive research design was adopted in a selected hospital at Ayodhya, Uttar Pradesh. Staff nurses working in psychiatric wards were selected using a convenient sampling technique. Data were collected using a structured knowledge questionnaire and competency observational checklist. Data were analyzed using descriptive and inferential statistics.

Results:

The study findings indicated variation in competency levels among nurses. Majority demonstrated moderate competency, while a smaller proportion showed high competency in ECT equipment handling. Competency levels were significantly associated with professional experience and previous training exposure.

Conclusion:

The study concluded that continuous competency-based training and regular skill enhancement programmes are essential to improve nurses' performance in handling ECT equipment and to ensure patient safety during psychiatric procedures.

Keywords: Electroconvulsive Therapy, Nursing Competency, Psychiatric Nursing, ECT Equipment, Staff Nurses, Mental Health Hospital.

Introduction

Mental health disorders constitute a significant global public health challenge and contribute substantially to disability, reduced quality of life, and increased healthcare burden worldwide. Severe psychiatric conditions such as major depressive disorder, bipolar affective disorder, schizophrenia, and catatonia often require specialized therapeutic interventions when conventional pharmacological and psychotherapeutic treatments fail to achieve adequate clinical 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 illnesses. With advances in anesthesia techniques, monitoring systems, and electrical stimulation technology, modern ECT has evolved into a safe and evidence-based procedure widely used in psychiatric practice.

The successful administration of ECT depends not only on the expertise of psychiatrists and anesthetists but also significantly on the competency of nursing professionals involved in the procedure. Nurses working in psychiatric settings play a vital role throughout all phases of ECT administration, including patient preparation, equipment readiness, intra-procedure monitoring, and post-procedure care. Their responsibilities involve ensuring proper machine functioning, maintaining safety precautions, monitoring vital signs, assisting the multidisciplinary team, and providing reassurance and observation during patient recovery. Effective performance of these responsibilities requires comprehensive knowledge of ECT machine components, electrical settings, safety checks, infection control measures, and emergency management protocols.

Competency in handling specialized equipment such as the ECT machine is essential for maintaining patient safety and achieving optimal therapeutic outcomes. Inadequate knowledge or lack of practical skills may lead to procedural errors, increased anxiety among nursing staff, and potential compromise in the quality of care. Despite technological advancements and improvements in clinical guidelines, variations in nursing competency regarding ECT equipment handling remain a concern in many psychiatric care settings. Differences in professional experience, exposure to ECT procedures, and availability of structured training programmes may contribute to inconsistent practice standards.

Furthermore, continuous professional development and competency-based training have become increasingly important in modern nursing practice, particularly in specialized clinical areas such as psychiatric care. Assessing nurses' competency levels helps identify existing knowledge gaps, determine training needs, and formulate targeted educational strategies to strengthen clinical performance. Therefore, evaluating competency in handling ECT equipment is essential to ensure safe practice, improve nursing confidence, and enhance patient outcomes.

In view of the critical role of nurses during ECT procedures and the need to maintain high standards of psychiatric nursing care, the present study was undertaken to assess nurses' competency in handling Electroconvulsive Therapy equipment in a selected hospital at Ayodhya, Uttar Pradesh.

Need for the Study

Electroconvulsive Therapy (ECT) is recognized as a safe and effective therapeutic intervention for the management of severe psychiatric disorders when performed according to established clinical guidelines and safety protocols. The effectiveness and safety of ECT procedures depend not only on medical expertise but also on the competency of nursing personnel who play a key role in preparation, equipment handling, monitoring, and post-procedure care. Proper handling of ECT equipment and strict adherence to procedural standards are essential to minimize complications, ensure patient safety, and achieve successful treatment outcomes.

Despite advancements in ECT technology and the availability of standardized protocols, variations in nursing competency continue to be observed in clinical practice. Nurses who lack adequate knowledge and technical skills may experience difficulty in operating equipment, identifying machine settings, maintaining safety precautions, or responding effectively to emergencies during the procedure. Such limitations can increase procedural risks, reduce efficiency, and potentially affect patient outcomes. Therefore, assessing competency levels among nursing personnel becomes essential for identifying existing gaps in knowledge and practice.

Evaluation of nurses' competency provides valuable insight for healthcare administrators and educators to design targeted educational interventions, competency-based training programmes, and continuing professional development activities. Regular assessment helps ensure that nurses maintain updated clinical skills, improve confidence in handling specialized equipment, and deliver evidence-based psychiatric nursing care.

Hence, the present study was undertaken to assess nurses' competency in handling Electroconvulsive Therapy equipment in a selected hospital at Ayodhya, Uttar Pradesh, with the aim of strengthening nursing practice and promoting safe and effective psychiatric care.

Objectives of the Study

1. To assess the competency of staff nurses in handling Electroconvulsive Therapy equipment.
2. To assess knowledge related to ECT equipment among staff nurses.
3. To evaluate practical competency in ECT machine handling.
4. To find the association between competency levels and selected demographic variables.

Methodology

The present study employed a **quantitative research approach** to assess nurses' competency in handling Electroconvulsive Therapy (ECT) equipment. A **descriptive research design** was adopted to systematically evaluate the knowledge and practical competency levels among staff nurses working in psychiatric settings.

Research Setting

The study was conducted in a **selected hospital located in Ayodhya, Uttar Pradesh**, where Electroconvulsive Therapy procedures are regularly performed as part of psychiatric treatment services.

Population and Sample

The target population comprised staff nurses working in the psychiatric ward. A total of **100 staff nurses** participated in the study. Participants were selected using a **convenient sampling technique** based on their availability and willingness to participate during the data collection period.

Research Tools

Data were collected using the following instruments:

- **Structured Knowledge Questionnaire:**
A self-administered questionnaire designed to assess nurses' knowledge regarding ECT equipment, including machine components, functioning, safety measures, and procedural guidelines.
- **Competency Observational Checklist:**
An observational tool used to evaluate practical competency related to ECT equipment handling, procedural preparation, safety practices, and nursing responsibilities during ECT administration.

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

Data Collection Procedure

After obtaining administrative permission and informed consent from participants, data collection was carried out in the psychiatric ward. Participants completed the structured knowledge questionnaire, and their practical competency was assessed using the observational checklist during routine clinical practice.

Data Analysis

The collected data were analyzed using **descriptive and inferential statistics**. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize demographic characteristics and competency levels. Inferential statistical methods were applied to determine associations between competency scores and selected demographic variables.

Results

The analysis of data revealed important findings regarding nurses' competency in handling Electroconvulsive Therapy (ECT) equipment among staff nurses working in the psychiatric ward. The results indicated that the **majority of nurses demonstrated a moderate level of competency**, suggesting adequate basic understanding and performance but highlighting the need for further improvement in technical skills and procedural accuracy. Only a smaller proportion of participants exhibited a **high level of competency** in handling ECT equipment.

Assessment of knowledge scores showed that although participants possessed foundational knowledge related to ECT machine operation and safety measures, there remained areas requiring additional skill enhancement and structured training. The findings emphasize the importance of continuous professional development to strengthen competency in specialized psychiatric procedures.

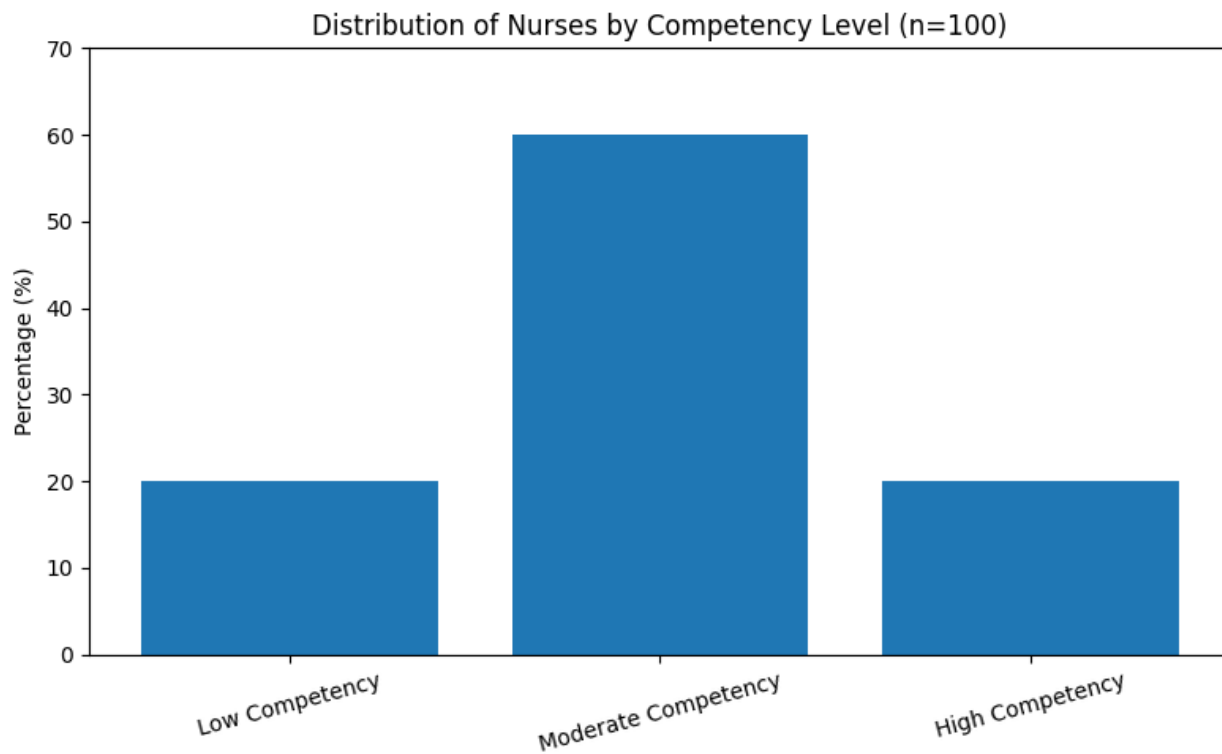
Further analysis demonstrated that nurses who had **previous exposure to ECT-related training** and those with greater professional experience achieved higher competency scores compared to others. This suggests that practical exposure and targeted educational programmes play a significant role in improving technical proficiency and confidence in handling ECT equipment.

Inferential statistical analysis revealed a **significant association between competency scores and selected demographic variables**, particularly work experience and previous training exposure. These findings indicate that educational and professional factors influence competency levels and should be considered while planning staff development initiatives.

Overall, the study findings highlight the need for regular competency-based training programmes to enhance nursing performance and ensure safe and effective ECT practice in psychiatric settings.

Table 1: Distribution of Nurses According to Overall Competency Level in Handling ECT Equipment (n = 100)

Competency Level	Frequency (n)	Percentage (%)
Low Competency	20	20%
Moderate Competency	60	60%
High Competency	20	20%
Total	100	100%

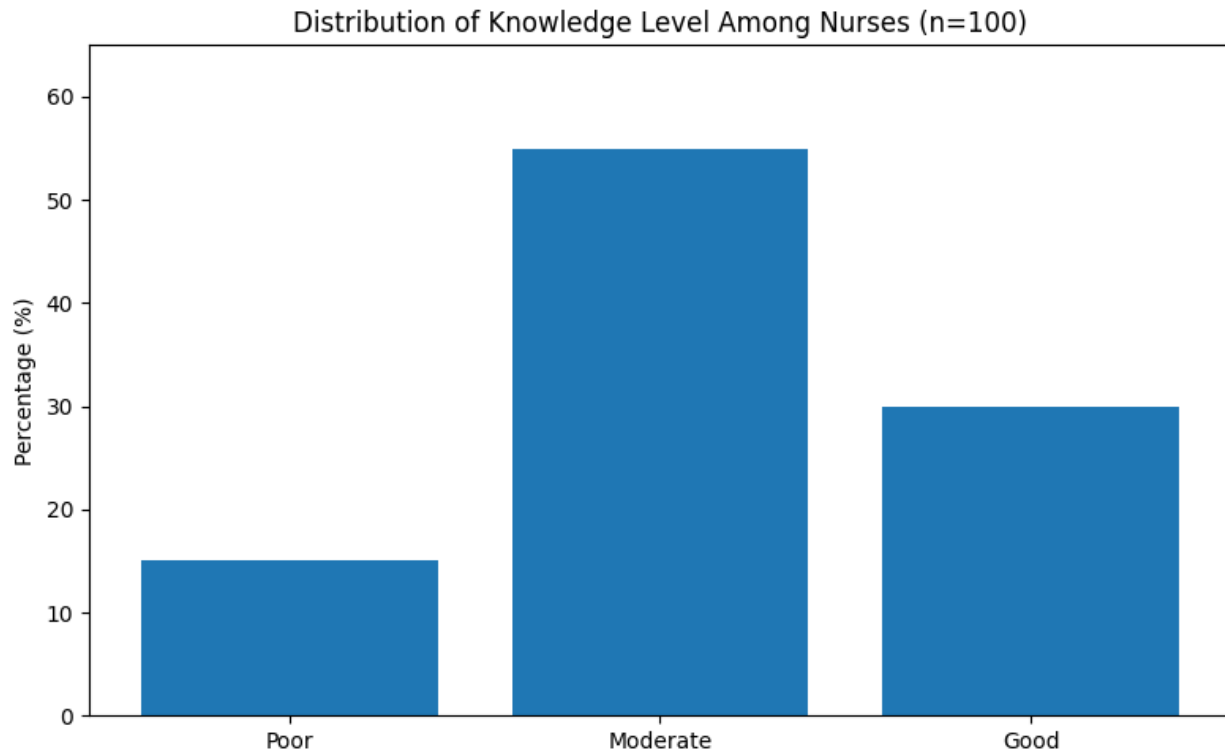


Description

Table 1 shows the overall competency level of staff nurses in handling ECT equipment. The majority of nurses (60%) demonstrated a moderate level of competency, while 20% showed high competency and 20% had low competency. These findings indicate that although most nurses possess adequate skills, further training is required to enhance competency levels.

Table 2: Distribution of Knowledge Scores Related to ECT Equipment (n = 100)

Knowledge Level	Frequency (n)	Percentage (%)
Poor	15	15%
Moderate	55	55%
Good	30	30%
Total	100	100%



Description

Table 2 illustrates the knowledge level of staff nurses regarding ECT equipment. More than half of the participants (55%) had moderate knowledge, whereas 30% demonstrated good knowledge and 15% showed poor knowledge. The results suggest the need for continued educational programmes to improve theoretical understanding.

Table 3: Association Between Competency Level and Selected Demographic Variables (n = 100)

Demographic Variable	Category	χ^2 Value	p Value	Interpretation
Professional Experience	<5 years / \geq 5 years	6.82	0.009	Significant
Previous ECT Training	Yes / No	7.45	0.006	Significant
Age	\leq 30 / >30 years	2.11	0.146	Not Significant
Educational Qualification	GNM / B.Sc Nursing	1.87	0.171	Not Significant

Description

Table 3 shows the association between competency level and selected demographic variables. A statistically significant association was found between competency scores and professional experience as well as previous ECT training ($p < 0.05$). However, age and educational qualification did not show a significant association with competency levels.

Table 4: Summary of Findings on Nurses' Competency in Handling ECT Equipment (n = 100)

Parameter	Findings
Overall Competency Level	Majority moderate competency
Knowledge Level	Mostly moderate knowledge
High Competency	20% nurses
Factors Influencing Competency	Experience & previous training
Statistical Significance	$p < 0.05$
Overall Interpretation	Need for competency-based training

Description

Table 4 summarizes the key findings of the study. The results indicate that most nurses demonstrated moderate competency, and professional experience along with previous training played an important role in improving competency levels. These findings support the need for regular training and skill development programmes.

Discussion

The findings of the study indicate that nurses' competency in handling ECT equipment varies based on training exposure and clinical experience. Similar findings reported in nursing education research suggest that skill-based training significantly improves technical competence and confidence among nurses. Since ECT procedures require precise coordination and safety monitoring, continuous assessment and training are essential. Strengthening competency among nursing personnel can reduce procedural errors and enhance patient safety in psychiatric care settings.

Implications for Nursing Practice

- Regular competency assessment should be conducted for nurses assisting in ECT procedures.
- Skill-based training programmes should be integrated into continuing nursing education.
- Simulation-based practice sessions can enhance technical proficiency.
- Hospitals should establish standardized protocols for ECT equipment handling.

Conclusion

The study concludes that nurses' competency in handling Electroconvulsive Therapy equipment requires continuous enhancement through structured training and practice-based learning. Improving competency levels among psychiatric nurses will contribute to safer ECT administration, improved clinical efficiency, and better patient outcomes in mental health care settings.

Sample References (APA 7th Edition)

1. Kellner, C. H., Obbels, J., & Sienaert, P. (2020). Electroconvulsive therapy: Clinical practice and safety considerations. *Acta Psychiatrica Scandinavica*, 141(4), 304–315.
2. Tor, P. C., Tan, X. W., Martin, D., & Loo, C. (2021). Modern electroconvulsive therapy and nursing implications. *The Lancet Psychiatry*, 8(3), 248–260.
3. American Psychiatric Association. (2023). *The practice of electroconvulsive therapy*. APA Publishing.