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Nurses' Knowledge and Practices Regarding Electroconvulsive Therapy in El Tigani El Mahi Psychiatric Teaching Hospital Khartoum State Sudan

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Abstract

Background: Electroconvulsive therapy (ECT) remains a vital and effective treatment in contemporary psychiatric practice, particularly for patients with severe mood and psychotic disorders. Enhancing nurses' knowledge and practice regarding ECT is essential to ensure patient safety, provide optimal care, and offer psychosocial support.

Methods: A descriptive, cross-sectional, hospital-based study was conducted to assess nurses' knowledge and practices regarding ECT at El Tigani El Mahi Psychiatric Teaching Hospital in Khartoum State, Sudan, during the period from April to July 2022. A non-probability convenience sampling technique was used, and the study included 40 nurses who were readily available and agreed to participate during the data collection period. Data were collected using a self-administered questionnaire and an observational checklist and analyzed using SPSS version 21.

Results: The results showed that 92.5% of nurses were female, with 57.5% aged above 31 years and 42.5% under 30 years. Most participants (92.5%) held a nursing diploma, and 52.5% had over five years of clinical experience. The overall knowledge level about ECT was good (70.3%). Nurses demonstrated competent practice in several areas, ranging from 75% to 100%. However, the lowest level of competency was observed in checking the gag reflex before giving fluids, performed by only 7.5% of nurses.

Conclusion: While the general knowledge and practice levels were good, there were specific gaps, particularly regarding contraindications and gag reflex assessment. The study recommends incorporating regular in-service training and continuing education programs within psychiatric hospital systems to strengthen nursing competencies in ECT.

Introduction

Electroconvulsive therapy (ECT) is a well-established biological treatment in psychiatry that involves the induction of a controlled seizure under general anesthesia and muscle relaxation. It is considered one of the most effective interventions for severe depressive disorders, bipolar disorder, psychotic disorders, and treatment-resistant psychiatric illnesses [1-3]. Modern ECT is performed according to standardized protocols that have considerably improved its safety profile and minimized adverse effects [1, 2, 4]. Despite advances in psychopharmacology, ECT remains an important therapeutic option because of its rapid efficacy and its ability to reduce morbidity and suicide risk among severely ill patients [2-4]. Nurses play an essential role throughout the ECT process, including pre-treatment preparation, monitoring during the procedure, and post-treatment recovery and evaluation [1,5]. In addition to technical responsibilities, nurses provide

psychological support and health education to patients and families, thereby helping to alleviate anxiety and misconceptions surrounding ECT [5, 6]. Effective communication and nursing competence have been shown to improve the quality and safety of ECT services [5]. Although ECT has demonstrated considerable therapeutic benefits, misconceptions and stigma continue to influence its acceptance among patients, families, and healthcare professionals [3,7]. Educational interventions have been reported to improve attitudes toward ECT and reduce stigma associated with the treatment [7-9].

Historical evidence suggests that nurses' attitudes toward ECT have evolved over time alongside the development of evidence-based psychiatric nursing practice [8]. International studies have shown that exposure to ECT and structured training significantly improve knowledge and attitudes among healthcare professionals [9,10]. Previous studies have demonstrated considerable variability

in nurses' knowledge and attitudes regarding ECT. Knowledge deficits have been particularly noted concerning cognitive side effects and aspects of patient education, and greater knowledge has been associated with increased clinical experience and more positive attitudes toward ECT [11,12].

Studies among nursing students and psychiatric nurses have highlighted the importance of continuous educational programs and clinical exposure in improving knowledge and attitudes toward ECT [13-15]. Furthermore, exposure to clinical ECT practice has been shown to play a key role in improving attitudes among mental health professionals [9,10]. Evidence from African countries indicates that the implementation of ECT services is often hindered by inadequate infrastructure, insufficient training opportunities, and the absence of standardized guidelines [11, 16-19]. In Kenya, healthcare personnel demonstrated basic knowledge regarding ECT but showed inconsistencies in practice due to inadequate training [11]. In Sudan, psychiatric services continue to face challenges related to limited resources and shortages of specialized mental health personnel. Patients and relatives also demonstrate varying perceptions regarding ECT, highlighting the importance of education and psychosocial support [17, 20-23].

Therefore, assessing nurses' knowledge and practices regarding ECT is crucial for identifying gaps and improving the quality of psychiatric nursing care. Accordingly, this study aimed to assess nurses' knowledge and practices regarding electroconvulsive therapy at El Tigani El Mahi Psychiatric Teaching Hospital in Khartoum State, Sudan.

Methods

Study design and setting: A descriptive cross-sectional hospital-based study was conducted from April 2022 to July 2022 at El Tigani El Mahi Psychiatric Teaching Hospital in Khartoum State, Sudan. The hospital is located in Omdurman, the national capital of Sudan, and includes general and special wards, an emergency department, pharmacies, an electroconvulsive therapy (ECT) room, an EEG room, administrative offices, and staff resting rooms.

Study population: The study population included nurses holding a diploma or bachelor's degree who were working in the selected hospital during the study period and who agreed to participate in the study.

Sample size and sampling technique: The sample size consisted of 40 nurses. All nurses who were available and met the inclusion criteria during the study period were included. A non-probability convenience sampling technique was used due to the limited number of available staff during the data collection period.

Data collection tools: Two tools were used to collect data for this study: Structured knowledge questionnaire, which consisted of two parts: Part one: socio-demographic data (age, gender, qualification, and experience). Part two: knowledge regarding ECT, including definition, induction, duration, side effects, contraindications, time of application, and complications. Observational checklist, used to assess nurses' practices before, during, and after the ECT procedure. Data analysis : Data were analyzed using Statistical Package for Social Sciences (SPSS) version 21. Descriptive statistics, including frequencies and percentages, were used to present the results.

Ethical consideration

Ethical approval was taken from university of Bahri, faculty of -nursing Sciences-graduate college committee. Permission from the hospital was taken from the hospital director. Verbal consent obtained from all participant's nurses after explaining the

purposes of the study to them. The questionnaire was filled with the nurses in their rest time without any interruption.

Results

[Table 1], showed that the majority (92.5%) of nurses were females, more than half (57.5%) of them were above 30 years old. majority (92.5%) with a diploma, and (52.5%) of them with more than 5 years of experience.

[Table 2], showed that, the overall mean of nurses' knowledge about ECT was 70.3%.

[Table 3], showed that, great majority (97.5%) of nurses responded with correct answers regarding definition of ECT.

[Table 4], demonstrated that all (100%) nurses responded with correct answers regarding induction of ECT.

[Table 5], demonstrated that the majority (70%) of nurses mentioned that ECT therapy duration is according to the case'. situation.

[Table 6], demonstrated that nearly two third (65%) of nurses mentioned headache as an ECT therapy side effect, (55%) mentioned temporary raise in blood pressure, and 50% knew that nausea and Temporary confusion or disorientation.

[Table 7], showed that all nurses (90%) reported that Severe, unstable medical conditions is one of ECT contraindications. The mean of nurses' knowledge regarding ECT contraindication was 66.7%

[Table 8], showed that the majority (75%) of nurses stated that ECT applying time is 30 – 60 minutes.

[Table 9], showed that (87.5%) nurses have knowledge about teaching the patient and the family what to expect with ECT, while only 30% have information about the encouragement of the client to discuss feelings.

[Table 10], showed the practice of nurses about nursing care during the ECT Procedure, all nurses 40 (100%) ascertaining if the client and the family have received a full explanation, removing dentures, glasses, contact lenses, hearing aids, hair pins, giving preoperative medications as ordered, Muscle relaxing as order, placing bite block, giving an electrical stimulus. The overall nurses practice was 78.3%.

Variable	Frequency	Percent
Gender		
Female	37	92.50%
Male	3	7.50%
Total	40	100%
Age		
20-30 years	17	42.50%
Above30 years	23	57.50%

Total	40	100%
Qualification		
Diploma	37	92.50%
high diploma	1	2.50%
Bachelors	2	5%
Total	40	100%
Experience in year		
Less than 1 year	4	10%
1-5 years	15	37.50%
Above 5 years	21	52.50%
Total	40	100%

Table1: Distribution of studied sample according to demographic characteristic: (n=40)

Dimension	Mean %	Level
Definition of ECT	97.50%	Good
Inductionof Electroconvulsive	100%	Good
Duration of ECT	70%	Good
Side effects of ECT	42%	Poor
Contra indication of ECT	66.70%	Good
Time of applying ECT	70%	Good
Emotional and educational Support to the patient &	46.30%	Poor
Overall %	70.30%	Good

Table 2: Overall mean Knowledge of nurses about ECT (n=40)

Definition of ECT	Freq	%
Yes	39	97.50%
No	1	2.50%
Total	40	100%

Table 3: Nurses knowledge regarding definition of ECT (n=40)

Induction of ECT	Freq	%
Mania with psychotic symptoms	40	100%
OCD with depression	40	100%

Table 4: Nurses knowledge regarding induction of Electroconvulsive (n=40)

Duration of ECT	Freq	%
2-4 Week	9	22.50%
4-8 Week	3	7.50%
According to cases.	28	70%
Total	40	100%

Table 5: Nurses knowledge regarding duration of ECT (n=40)

Side effects	Freq.	%
Loss of temporary/ permanent memory	16	40%
Temporary raise in blood pressure	22	55%
Nausea	24	50%
Temporary confusion or disorientation	20	50%
Changes in heart rate	14	35%
Headache	26	65%
Total	40	100%

***Mean of knowledge: 42%**

Table 6: Nurses knowledge regarding side effects of ECT (n=40)

Contraindication	Freq	%
Pregnant women	30	75%
Severe, unstable medical conditions (like heart disease, hypertension)	36	90%
Recent stroke or brain injury		
Total	40	100%

*Mean : 66.7%

Table 7: Nurses knowledge regarding Contra indication of ECT (n=40)

Time of applying ECT	Freq	%
20-30 sec	10	25%
30-60 sec	30	75%
Total	40	100%

Table 8: Nurses knowledge regarding time of applying ECT (n=40)

Item description	Freq	%
Encourage the client to discuss feelings	7	17.50%
Teach the patient and the family what to expect with ECT	30	75%
Total	40	100%

*Mean = 46.3%

Table 9: Nurses knowledge regarding emotional and educational Support to the patient & family (n=40)

Item description	Done		Not done	
	N	%	N	%
Ascertain if the client and the family have received a full explanation, including the option to withdraw the consent at any time.	40	100	0	0
Remove dentures, glasses, contact lenses, hearing aids, hair pins.	40	100	0	0
Give preoperative medications as ordered.	40	100	0	0
Place a blood pressure cuff on one of the client's arms.	36	90	4	10
As the intravenous line is inserted and EEC and ECG electrodes are attached, give a brief explanation to the client.	5	12.5	35	87.5

Put on the pulse oximeter to the client's finger.	33	82.5	7	17.5
Monitor blood pressure throughout the treatment.	29	72.5	11	27.5
Muscle relaxant as ordered.	40	100	0	0
% Oxygen by mask via positive pressure.	31	77.5	9	22.5
A bite block is placed to prevent biting of the tongue.	40	100	0	0
Electrical stimulus given (seizure should last 30 to 60 seconds.	40	100	0	0
Check the vital signs after ECT.	30	75	10	15
Check the gag reflex before giving client fluids.	3	7.5	37	92.5
Mean % of nurses practice	78.30%			

Table 10: Nurses practice during the ECT Procedure (n=40)

Discussion

The present study revealed that nurses had an overall adequate level of knowledge (70.3%) and generally competent practice (78.3%) regarding electroconvulsive therapy (ECT). These findings are consistent with previous literature indicating that nurses often possess basic procedural knowledge of ECT but demonstrate variability in deeper understanding, particularly regarding side effects and psychosocial aspects of care [11,12].

In the current study, strong knowledge was observed in areas such as the definition and indications of ECT, which aligns with findings reported by Weiner and Fink and by Lisanby, who emphasized that ECT remains a well-established and standardized psychiatric intervention [2,4].

However, gaps were identified in nurses' understanding of side effects (42%) and emotional and educational support (46.3%). Similar findings were reported by Gass and by Jones and Mason, who found that psychiatric nurses often lack sufficient knowledge regarding cognitive effects and patient education aspects of ECT [11,12].

The study also demonstrated weaknesses in specific clinical practices, particularly in assessing the gag reflex before oral intake (7.5%), which reflects the importance of adherence to standardized nursing protocols in ECT care [1,5].

International evidence supports that exposure and structured education significantly improve knowledge and attitudes toward ECT. The Polish study by Antosik-Wójcińska et al. demonstrated that professionals who had direct exposure to ECT sessions showed more positive attitudes and better understanding of the procedure [15].

Similarly, Byrne et al. reported that nurses and healthcare professionals with greater knowledge demonstrated more positive attitudes toward ECT, whereas lack of exposure was associated with misconceptions and negative perceptions [10].

Studies among nursing students in India and other settings have shown that structured psychiatric training significantly improves knowledge and attitudes toward ECT [13,14]. These findings highlight the importance of integrating ECT-focused education into nursing curricula and clinical training programs.

In addition, studies among undergraduate nursing students and mental health nurses have reported similar patterns, where exposure to psychiatric clinical settings improved understanding and reduced negative perceptions toward ECT [9,14,15].

In African settings, Ali et al. and Abaatyo and Kaggwa reported that inadequate training, limited resources, and absence of standardized protocols significantly affect ECT practice [11,16]. These findings are consistent with the current study, where gaps in knowledge and practice suggest the need for continuous in-service training.

In Sudan, similar challenges have been documented, where limited mental health resources and varying perceptions among patients and healthcare workers affect the delivery of ECT services [17]. This reinforces the importance of structured educational interventions to improve both knowledge and clinical competence among nurses.

Overall, the findings of this study emphasize that while nurses demonstrate satisfactory general knowledge and practice regarding ECT, targeted improvements are required in safety procedures and psychosocial care. Continuous professional development and standardized clinical guidelines are essential to enhance the quality of ECT nursing care.

Conclusion

The study concluded that nurses had a generally good level of knowledge (70.3%) and satisfactory practice (78.3%) regarding electroconvulsive therapy. However, gaps were identified in knowledge of side effects and psychosocial support, as well as in critical post-procedure care such as gag reflex assessment. These findings highlight the need for continuous in-service training and the development of standardized guidelines to improve nursing competency in ECT.

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