

Electro Convulsive Therapy: Impact of an Educational Program in Developing Knowledge and Attitude of Psychiatric Nurses Working at Psychiatric Hospital Jeddah

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Abstract Objective: Despite the evidence based effectiveness of ECT in treating mental disorders, there are many misconception and lack of knowledge among nurses who are typically at the forefront of providing care before, during and after the procedure. The aim of the present study was to explore the impact of educational program on the knowledge and attitudes towards ECT among nursing staffs working in psychiatric hospital, Jeddah. Participants and Methods: Quasi-experimental design was used with a convenient sample of 20 nurses' working at psychiatric hospital Jeddah affiliated to Ministry of Health, Saudi Arabia. A self-administered questionnaire consists 28 – items was administered before and after the educational program. Results: 80% of participants had more than 3 years of work experience The paired Test sample showed the significant difference the mean score of participants on ECT program pre-test was 65.4 and that their mean score of the total post-test was 71.4 and the difference is statistically significant in favor of the post-test ($t = 2.80, P < .011$)The mean score of participants' knowledge and attitudes was 45.15, 25.25 respectively, with no significance ($P > 0.05$) difference with their demographic background. Conclusion: Providing and expanding accurate knowledge about ECT is necessary in order to improve the attitudes towards ECT. Despite the limitations of the study, the findings were extremely promising.

Keywords Electroconvulsive Therapy, Nursing Staff, Attitude, Knowledge, Educational Program

1. Background

Since its introduction in the 1930s, electroconvulsive

therapy (ECT) has received a great deal of attention [1]. Electroconvulsive therapy (ECT) involves the induction of a grand mal seizure through the passage of an electrical current to the patient's brain with the aim of improving the patients' mental status under anesthesia and muscle relaxant^[2]. There is no solid based clarification for the mechanism of action and how the ECT works but the most credibility goes to the biochemical theory ^[3,4,&2]

Although still controversial, the modifications that have been made to ECT over the last 20 years have significantly reduced the adverse side effects that once accompanied this treatment. Despite its long term use, current data shows that worldwide, the general public maintains a negative perception of ECT, with regard to its safety and ethics ^[5]. Moreover, Gazdag, et.al ^[6] and Malekian et al ^[7] consistently reported that individuals hold numerous misconceptions about ECT.

Among the most common misconceptions which are believed to have been caused by the misrepresentation of ECT through Hollywood films and the media ^[8]. These misconceptions are as that ECT is used to punish patients if they don't behave well, ECT is painful and that whole parts of an individual's memory may be permanently erased.

A study by Byrne, Cassidy, & Higgins, ^[9] has shown that the endorsement of previously mentioned misconceptions is greatest among individuals who lack experience and knowledge about ECT. Even in highly developed countries like Australia, studies have shown that misconceptions regarding ECT were common, especially among young and less educated groups ^[10].

Two studies conducted by Andrews and Hasking^[11], and Oldewening et al^[8] on the relationship between attitudes and knowledge of ECT, they had indicated that participation in a training program designed to educate individuals on ECT would potentially positively improve

their attitudes. Accordingly, to improve the attitudes towards ECT, it was hypothesized that the use of an intensive training program that incorporates different educational modes may be more effective in changing nurses and professional staffs' knowledge and attitude towards ECT.

Researchers have reported that individuals' attitudes towards ECT can be improved after viewing educational videotapes and /or pamphlets. For example, Andrews, and Hasking^[11] concluded through their study on the effect of an educational video and pamphlet on knowledge and attitudes towards ECT, that providing education about ECT, whether in the form of a video or information pamphlet, has the ability to increase knowledge and improve attitudes towards this treatment. Similarly, Dawood, Salim and Khalil,^[12] reported the significant improvement in knowledge and attitude towards ECT of nursing students enrolled in psychiatric nursing course after educational interventions that incorporate power point presentation and educational videotapes.

Psychiatric nurses are responsible to handle patients in pre, during and post ECT interventions. Kavanagh and Maloughlin^[13] indicated that recently the nursing role in ECT has been enhanced and included the following: the ward Nurse, an ECT nurse coordinator, anesthetists' assistant or operating department assistant and a recovery nurse.

The ward nurse has a major responsibility to address the psychological needs of the patient undergoing a course of ECT. This involves ensuring the patient is fully informed about their illness, why ECT has been recommended for them, the treatment process initially and throughout the course, overcoming fears the patient or their family may have about ECT and directing their attention to scientific fact and evidence supporting its use. The ECT Nurse coordinates the service and is responsible for the management of ECT clinic and the care of the patient.

Finch^[14] noted that 'ECT teaching' serves to educate the patient, develop a therapeutic nurse-patient relationship, reduce anxiety, and dispel myths or negative preconceived ideas often present before treatment. In turn, the treatment process is less intrusive and more positive, which will encourage the patient to persist through any initial adverse effects while therapeutic effect develops.

Significance of the Study

During the clinical training phase of psychiatric and mental health nursing course, the researchers observed that ECT at Psychiatric Hospital Jeddah is the most challenging procedure for all nurses working in the hospital, since that nurses lack required knowledge and positive attitude towards this treatment modalities. Indeed, it was observed that many patients undergoing the ECT are exposed to many health problems during the procedure such as burn, fractures or, dislocation in shoulder, femur and jaw due to lack of appropriate care pre, during and post ECT. The fact is that all

nurses working in this psychiatric hospital aren't qualified or licensed in psychiatric nursing and the majority of them are diploma holder that might rationalize their malpractice. However, the literature reveals a paucity of published studies concerning knowledge and attitudes towards ECT in the Saudi Arabian national level.

The aforementioned situation of ECT and patients at this hospital prompted the researchers to develop a special educational program to qualify the nurses with necessary knowledge and information. The idea of the program was discussed, in principle, with the manager of the continuous education and training department who acknowledged the massive need of nurses for such a program and they noted that this program will be the first ECT educational program implemented at Jeddah Psychiatric Hospital. Moreover, reviewed literature indicated that none of the studies was conducted to assess knowledge and attitudes of nurses towards ECT at Psychiatric Hospital Jeddah which prompted the researchers to carry out this study. Therefore, the aim of the present study was to explore the impact of educational program on the knowledge and attitudes towards ECT among nursing staffs working in psychiatric hospital, Jeddah affiliated to Ministry of health, Saudi Arabia.

Objectives of the Study

The objective of the current study was to:

1. To assess knowledge level and attitudes of nurses towards ECT. (Pre, and post assessment).
2. Investigate the association between the knowledge of and attitudes towards ECT.
3. Examine the relationship between nurses' knowledge of and attitudes towards ECT and their gender, age, and length of work experience.

2. Subjects and Methods

2.1. Design

Quasi-experimental, specifically "one group pre-post test" design was used. The researchers thought about true experimental design but random assignment of participants was not feasible, therefore, quasi-experimental was selected. According to Lobiondo-wood and Haber^[15] threats to internal validity, such as selection, maturation, testing and mortality, are possible with this design, however, the design is relatively strong because by gathering data at the pretest, researchers can compare the equivalence of the two groups on important antecedent variables before the independent variable (i.e., the educational program on ECT) is introduced.

2.2. Study Setting

This study was conducted in Psychiatric Hospital, Jeddah affiliated to Ministry of Health, Saudi Arabia.

2.3. Participants

A non-probability convenient sample consists of 20 male and female nurses out of total 49 who work in inpatient psychiatric wards at psychiatric hospital, Jeddah and agreed to participate in the educational program with response rate of 100%.

2.4. Study Instrument

Data was collected using questionnaire consisted of 3 parts as follows:

- First part: Socio – demographic data questionnaire regarding gender, age of participants, and length of working experience.
- The second part consists of two questions concerned with participants' knowledge. The first question asks participants about the sources of their ECT knowledge, and the other asks about ECT indications, this question was drawn from Kinnair, Dawson, and Perera^[16] published study. Participants are instructed to check (√) as many answers as applicable.
- The third part is a 28 item self-reported questionnaire, Eight items (# 3,4,10, 18-22) were drawn from Chavan et al^[17] fourteen items (# 1,2,5,7,8,9,11,12,13,14,15,21,24,16) were drawn from Kinnair, Dawson, and Perera^[16]. The remaining six items (# 6, 16, 17, 25, 27, and 28) were drawn from Dawood^[18]. It is worth mentioning that 18 items were knowledge oriented (# 8, 9, 10, 11, 15-28), and the other ten items were attitude oriented (#1-7, 12-14). The questionnaire is a three responses scale, participants use the following numerical values to indicate if they agree, disagree or do not know about any of the given items: 1 = agree, 2 = do not know, 3 = disagree. Four attitude statements are scored positively (higher scores indicating more positive attitudes) while six statements are scored in reverse way. As regard to the knowledge statements, eight statements are scored in a positive way with higher scores reflecting accurate knowledge, and ten statements are scored in negative way with disagree indicating the correct response. The total possible score ranges from 28 to 84 with higher scores indicating more knowledge and more positive attitudes towards ECT.

The tool was tested for reliability and validity by the original developers^[12]. As they reported that the tool was translated into Arabic language and back translated into English language. Back translation aimed at verifying whether the translation covers all aspects of the original English version of the questionnaire or not. Then to ensure the face validity and reliability of the final translated Arabic version of the questionnaire was evaluated by a panel of experts who were selected on the basis of their qualifications and experience in nursing research and education. The tool was piloted and tested by 10 participants to identify

ambiguities in questions, time required for completing the questionnaire, and any difficulties that might be encountered by the participants in reading or understanding the questionnaire. The results of the pilot study showed that the questionnaire was clear, easy to read, and required around 15 minutes to complete.

2.5. Data Collection Procedure:

- The Data was collected during the academic year 2012/13. The participants in the Quasi-experimental group was asked to fill the questionnaire before, and after the educational program. The educational training program consisted of 2 consecutive days involving 6 sessions each session was 45 minutes to an hour.

First day: was used for lecturing the theoretical part about ECT including definition, importance, indications, contraindication, complication and nursing interventions before running the ECT session. The first session also included a simulated role played video regarding the difference between modern and past ECT, in addition to care given before, during and after ECT (This day consisted of 4 sessions which were given in 4 hours).

The second day: consisted of two main parts: the first was re demonstration for the pre ECT preparation including the psychological, physical and the informed consent. The second part was the live demonstration of the clinical part which involves:

- Preperation of equipment's and the medications needed for the patients undergoing the ECT session.
- Demonstration and re demonstration for nursing care for patients during and post ECT. This clinical session took 2 hours as a live demonstration for the participants; finally, they have learned how to make documentation for the procedure.

2.6. Ethical Issues

An official permission was obtained from the Research Committee at CON-J and the Continues Education Department and Ethical Committee in Psychiatric Hospital Jeddah affiliated to ministry of health for data collection. The participants were informed about the nature and the purpose of the study, and that their participation is voluntary and they can withdraw from the study at any time. A written consent was obtained from all participants. Confidentiality and anonymity was ensured by using identification codes on the questionnaires that facilitated individual comparison of pre and post educational program responses.

2.7. Data Analysis

The data were coded and analyzed using SPSS version 18.0. A paired t test was used to analyze the total scores of the participants in Quasi-experimental group before and after the educational program. Furthermore, each specific

question was analyzed separately with the same method. Participants' sociodemographic and attitudinal differences were analyzed using non probability Chi Square test (χ^2). Pearson r was used to test correlation. The significance level was chosen as ($p < 0.05$). Data was presented using descriptive statistics in the form of frequencies and percentages. Interval and ratio variables were presented in the form of means and standard deviations.

3. Results

As shown in table # 1, the total number of participants was 20, males and females were equal in number. The majority of participants (80%) had more than 3 years of work experience at psychiatric hospital Jeddah in general; it is worth mentioning that all participants had an experience with ECT in particular. Most participants (45%) answered correctly the question concerning the uses of ECT (I.e., ECT used for treatment of schizophrenia, depression and bipolar disorders). However, 40% believed that ECT is used just for the treatment of depression.

Concerning the sources of participants' knowledge, most of participants (45%) indicated that the source of their knowledge is through their clinical experience, although 40% of them indicated that it was through multiple sources (I.e., newspapers, books, discussion with friends and clinical experience).

Table 1. Participants' demographic characteristics, ECT Experience and knowledge

Variable	Frequency	%
Gender		
● Male	10	50
● Female	10	50
Experience		
● <than 3 yrs	4	20
● >than 3 yrs	16	80
Experience with ECT		
● Yes	20	100
● No	0	0
ECT uses		
● Depression	8	40
● Bipolar disorder	0	0
● Schizophrenia	2	10
● Others	1	5
● a, b & c	9	45
Sources of Knowledge		
● Newspaper and magazines	1	5
● Books	1	5
● Discussion with friends	1	5
● Clinical experiences	9	45
● More than one selection	8	40

The rest of the results will be presented in relation to each study objective:

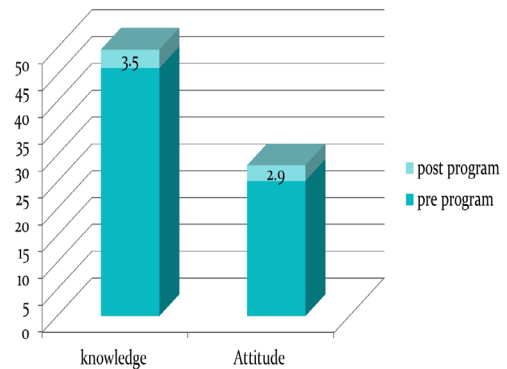
Study objective # 1: To assess the level of knowledge and

attitude of nurses towards ECT (pre and post assessment)

The results as shown in table # 2 indicated that the mean score of participants on ECT program pre-test was 65.4 and that their mean score of the post-test was 71.4. To assess if the difference between participants' mean scores between their pre-test and post test is statistically significant, the researchers used paired t-test. The results as shown in table # 3 indicated that $P = < 0.05$. In other words, the difference is statistically significant in favor of the post-test ($t = -2.806$, $df = 19$, $P = .011$).

Table 2. Mean scores of Participants on Knowledge, Attitude, and on Pre-test and Post-test of ECT program

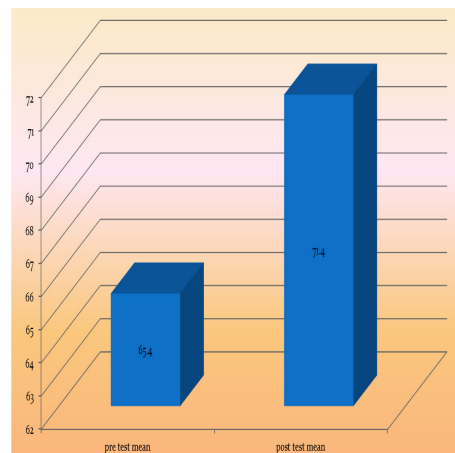
	Pre-test	Post-test	Knowledge	Attitude
Mean	65.4000	71.4000	46.1500	25.2500
N	20	20	20	20
±SD	9.36061	5.49066	3.51351	2.89964



Graph 1

Table 3. Paired-Samples T- Test of Participants' knowledge and attitude on Pre-test and Post-test of ECT educational program (N=20).

Mean difference	SD	t	Df	P
-6.00000	9.56419	2.806	19	.011



Graph 2

Study objective # 2: To assess the association between participants' knowledge and attitudes towards ECT.

The results as shown in table #2 indicated that the mean score of participants' knowledge was 45.15, and the mean score of participants' attitude was 25.25. To test for the association between the two variables, Pearson correlation was used. The results as shown in table # 4 indicated that $r = 0.4621$, $P = <0.05$. A close look at the correlation between knowledge and attitudes shows that the association is weak but statistically significant.

Table 4. Pearson correlations between participants' knowledge and attitude.

Variable	Knowledge	Attitude
Knowledge	1	.461* P=.041
Attitude	.461* P=.041	1

*. Correlation is significant at the 0.05 level (2-tailed).

Study objective # 3: To examine the relationship between nurses' knowledge and attitudes towards ECT with their gender, age, and length of experience

The results as shown in table 5 indicated that there was no statistical significance ($P > 0.05$) between participants knowledge, and attitude with their gender, age, and experience.

Table 5. Correlations of participants ECT Knowledge and attitudes with selected demographic characteristics (N=20)

Variable		Gender	Age	Experiences
Knowledge	Pearson Correlation	-.365	-.057	-.088
	Sig. (2-tailed)	.114	.812	.713
Attitude	Pearson Correlation	-.301	-.031	.088
	Sig. (2-tailed)	.198	.896	.711

4. Discussion

Although ECT is a highly effective treatment of major depression and other mental disorders, there is a lack of understanding as well as negative attitude towards ECT among the general public. This study aimed to investigate the effectiveness of a developed hospital based educational program in enhancing knowledge and attitude of convenience sample of psychiatric nurses towards electroconvulsive therapy. The findings of the current study revealed that there was significant difference between the knowledge and attitude of nurses in the pre-test ($m=65.4 \pm 9.36$) and in the post-test ($m=71.4 \pm 5.49$) assessment data of educational program. These results are consistent with the results of Oldewening et al [8] who concluded that the attitude and knowledge of nursing and psychiatric care aid students regarding ECT have improved favorably after the completion of a training program. Also the same finding was obtained by Dawood, Salim, and Khalil [12], Battersby et al [19], Guze et al [20].

This program was designed to provide comprehensive

information regarding ECT using a variety of educational modes. Essentially the conducted educational program examined in this study had 3 different educational modes that might have influenced attitudes differently: (1) provision of ECT information face-to-face with the option of asking questions, (2) exposure to an educational videotape that included ECT information and seeing a patient on screen undergoing ECT, and many videos demonstrating the difference between the past and modern ECT, the needed equipments and the preparation of the patients in pre, during and post ECT. In addition, the program included a separate session of one hour duration for participants to demonstrate back the "nursing care pre, during and post ECT" under the supervision of the researchers.

Poster, et al [21] concluded that teaching nursing students using a videotape on ECT had a positive impact on nursing students' perception of ECT. Warnell et al [22] also concluded that watching live demonstration or viewing an ECT videotape was an effective ECT teaching methods for students which had a positive impact on the students' knowledge and attitudes towards ECT. Szuba, Guze, Liston [23] and Chanpattana [24] also observed the positive effect of psychiatry training in improving the levels of knowledge about ECT among nursing college students.

It was observed that most of the literature reported that all the educational programs conducted in electroconvulsive therapy were done on either nursing or medical students and there are no studies conducted to investigate the knowledge and attitudes of psychiatric nurses working in psychiatric hospitals. Furthermore, the results of this study showed similar findings in Andrews and Hasking [11] who concluded that the education program that had been given to the participants increases their knowledge and produces more favorable attitudes towards ECT.

However, the results indicated that there was no significant correlation between experience and participants' knowledge and attitude. This result is not in line with Kerr, McGrath, and Kearney [25] who noted that the more experience a person has with ECT, the more favorable their attitudes will be. The findings of this current study are more likely influenced by the small sample size and with the homogeneity of the sample, in other words the majority of the participants (80%) had past experience for more than 3 years compared to only 20% whose experience was less than 3 years.

5. Limitations of the Study

The only limitation of the current study is that, the generalization of the results is limited in relation to the small sample size, and the sampling technique which was non-probability, and the type of the sample which was a conveniently selected. Further, social desirability could be an influencing factor for participants' responses (i.e the participants were aware of the researchers' interest, which could have affected some of the responses in a way that they thought would be desirable or more socially acceptable).

6. Conclusion and Recommendations

It is evident that throughout this study and other studies that knowledge is a predetermining factor of attitudes. Providing and expanding accurate knowledge about ECT is necessary in order to improve the attitudes towards it. Despite the limitations of the study, the results from the current study were extremely promising. Therefore, we recommend replicating of this study by using a larger sample size with randomization technique of selecting experimental and control group. Also, future studies use samples from the patients and the general public focusing on how they perceive ECT and the level of patients' satisfaction of care given by nursing staff pre, during and post ECT.

Acknowledgements

The researchers would like to extend their appreciation to the management of the Psychiatric Hospital Jeddah and to the nurses who agree to participate in the study. Without their support, this study would not have been possibly conducted.

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