

Psychiatric Patients' Satisfaction with Electroconvulsive Therapy and its Relation to their Knowledge and Attitude

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Abstract

Background: Despite unfavorable perceptions of Electro Convulsive Therapy (ECT) stemming from lack of knowledge, ECT has been one of the most significant therapeutic options for treating patients with serious mental problems since the early 20th century. **Aim:** the current study aimed to assess psychiatric patients' satisfaction with electroconvulsive therapy and its relation to their knowledge and attitude. **Research design:** A descriptive correlational research design was utilized. **Sample:** A purposeful sample consisted of ninety two inpatient psychiatric patients. **Setting:** This research was carried out in the hospital of Minia psychiatric health and addiction treatment. **Tools:** Three tools were utilized; Personal and clinical data questionnaire, Patient Satisfaction Survey (PSS) also ECT Knowledge and Attitude questionnaires. **Results:** The present study showed that about fifty percent of the studied sample has a moderate level of satisfaction while two thirds of them have fair level of knowledge about ECT also; three-quarters of them have neutral attitude toward ECT and their attitude with high statistical significance. **Conclusion:** The present study showed that, a positive correlation was present between patients' satisfaction with ECT and their attitudes toward it, and, between knowledge of patients regarding ECT as well as their attitudes toward it with a high statistical significance.

Keywords: ECT, Patients' satisfaction, Knowledge and Attitude.

Introduction

Since its inception in 1938, ECT has been one of the most established biological treatment modalities. Almost all psychiatrists believe that ECT is a safe and very successful treatment that involves electrically inducing a generalized seizure to treat refractory mental disorders (Harisoorya & Talwar, 2023). The ECT is frequently used to treat serious mental illnesses, such as schizophrenia, bipolar disorder, and depression. It works especially well for people who don't respond well to medication or can't take it (Sahoo & Naik, 2024).

The goal of electrical convulsive therapy (ECT) is to cause a generalized seizure by stimulating the brain. There is no agreement on the ideal length of the provoked seizures in relation to the best response to ECT; yet, this relationship is acknowledged. For the acute phase of the condition, ECT is given twice or three times a week until six to twelve sessions have been completed; often, in-patient therapy is used for acute phase treatment. As part of a maintenance cycle to avoid relapses, or after six months to prevent recurrence, the patients may continue to get ECT treatments after the acute phase is over (Selva-Sevilla et al., 2016).

The psychological condition that arises when expectations are confirmed or refuted by reality is known as satisfaction. therapy results may both impact and be impacted by the level of client satisfaction with the process of receiving therapy (Wang & Zhou, 2023). According to Grover et al., (2023) satisfaction is reflected as an essential factor in ECT because it facilitates patients' cooperation as well as enhances their help with the procedure of treatment.

Contribute after ECT, satisfaction should be measured for at least three key reasons: (1) A satisfaction survey is a beneficial quality improvement tool for a specific program; (2) patient satisfaction is an increasingly significant

component of outcomes evaluation; and (3) satisfaction statistics are helpful for patients choosing ECT therapy (Ul Haq et al., 2012). In addition, patient satisfaction with ECT is very important for better adherence with treatment, decrease re-hospitalization, patient complaints and improved clinical outcomes (Koh et al., 2023).

Kersten et al., (2022) defined knowledge as an accumulation of facts, information, and experience that a person has acquired during their education and life and may utilize or apply to new situations. In addition to being a collection of feelings or opinions about a person, place, or thing, attitude can also refer to an assessment, whether favorable or unfavorable, of such things, people, events, activities, or ideas. (Kerlinger., 2022).

Patient's knowledge and attitude towards ECT are very important for patients to be aware of this treatment modality, so the knowledge as well as attitude of patients about ECT has been studied in a several studies to understand the reasons behind its underutilization (Tiwari & Das 2023). Many factors, including stigma, knowledge, and attitude toward the efficacy also the safety of ECT procedures, have been reported in studies on its clinical efficacy (Salani et al., 2023).

Attitude surveys highlight patient education goals and highlight areas of ignorance regarding ECT. The length of time spent in clinical practice, medical school, the location where ECT is used, and the traits of the patients a psychiatrist sees all influence attitudes on ECT. Research assessing patients' opinions regarding ECT also demonstrates that after receiving therapy, patients' sentiments grow more positive. (Tyron et al., 2023).

Patients' attitudes as well as knowledge about ECT influence how well the process goes and how satisfied the patients are with ECT. (Sweetmore, 2022). Patients will have

a positive attitude and greater satisfaction with ECT after receiving beneficial effects and improvement from ECT if they have access to appropriate and trustworthy information regarding the treatment (**Kritzer et al., 2023**).

Compared to other medical professionals, nurses have more regular and intimate interactions with patients receiving electroconvulsive treatment due to the nature of their employment. On the other hand, attitudes of nurses are likely to affect the attitudes of their patients. Because of this, nurses are in a strong position to hear what patients have to say, reflect their experiences, and help patients make decisions about the use of ECT. (**Kheiri et al., 2011**). When it comes to preoperative planning and after care, ECT is handled similarly to minor surgery. The nurse plays a variety of roles in ECT, including teaching, support, pre-treatment evaluations, procedure monitoring, and post-treatment patient observation and interpretation. (**Ferrier et al., 2021**).

Significance of the study

One of the few non-pharmacological stimulation treatments that is both affordable and successful in treating a variety of mental diseases, including epilepsy, is ECT. even through societal myths and misunderstandings cast doubt on the efficacy of this kind of care (**Ayub, 2023**). Globally, an estimated one million patients are expected to undergo electroacupuncture each year. (**Timäus et al., 2021**). While, in Egypt, about 100,000 patients receive ECT annually (**WHO, 2012**). In order to enhance the quality of ECT clinical practice and facilitate its optimal administration, it is crucial to assess patients' happiness, understanding, and attitudes regarding the treatment (**Tsai et al., 2021**).

Research on the attitudes of patients undergoing ECT and patients' comprehension and awareness of this treatment has been scant (**Ingadóttir, 2023**). A study conducted by **Dunlop & Cetrano, (2021)** revealed that (5%) of the patients had full knowledge about ECT, but positive attitudes about ECT were present in the lower half of the patients (44.1%), in another study, a significant proportion (66.7%) of patients were unsure about their attitudes toward ECT or (32.4%) of them had a negative attitude about ECT (**Zhang et al., 2021**).

Also **Tullio et al., (2020)** revealed that nearly seventy percent of patients complained about the information they had received prior to ECT, voiced dread of the procedure, and indicated concern about the potential for long-term cognitive damage. From all the studies mentioned, it appears that patient's satisfaction with ECT is influenced by patients' knowledge and attitude toward the treatment. So this study was conducted to highlight psychiatric patients' satisfaction with electroconvulsive therapy and its relation to their knowledge and attitude.

Aim of the study

The present study aimed to assess psychiatric patients' satisfaction with electroconvulsive therapy and its relation to their knowledge and attitude.

Research questions

- What are the levels of patient's satisfaction, knowledge and attitude toward electroconvulsive therapy?
- Is there a relation between patient's satisfaction, knowledge and attitude toward electroconvulsive therapy?

Subjects and methods

Research design

A descriptive correlational research design was utilized in the present study.

Study setting

The research was carried out at inpatient units of Minia Hospital for Mental Health and Addiction Treatment which located in New Minia City, Upper Egypt and affiliated to ministry of health. This hospital contains two floors; the first one includes the inpatient unit for females, outpatient clinics and pharmacy. The next floor comprises administration, nursing office, department dedicated to addiction treatment and male inpatient ward. The hospital has 53 beds available for patients of both genders. The nine districts of Minia Governorate are served by this hospital.

Patients:

A purposeful sample consisted of 92 psychiatric patients; admitted to the inpatients psychiatric unit at Minia psychiatric health and addiction treatment. The average number of psychiatric patients received ECT was 306 patients in 2021. The number of patients was calculated by the Isaac and Michael (1995) formula which was computed as $(N = n \times 30 / 100)$ in which $(N = \text{Sample size})$ and $(n = \text{total number of psychiatric patients receive ECT in the previous year of the study})$.

Inclusion Criteria:

- ❖ The patient's age must be more than 18 years.
- ❖ All psychiatric inpatients who received at least three sessions of ECT.

Exclusion Criteria:

- ❖ Patients exhibiting signs of mental retardation.
- ❖ Patients had a history of neurological disorders.
- ❖ Patients with a comorbid diagnosis of substance dependence.

Data collection tools:

The following instruments were used to gather the necessary data:

Tool I:

Personal as well as clinical data questionnaire:

The tool was designed by the researchers which encompassed these items as age, gender, level of education, marital status, occupation, diagnosis, duration of psychiatric disorder, number of admissions, type of ECT, number of sessions by week and sources of ECT information.

Tool II:

Patient Satisfaction Survey (PSS)

This design was developed by **Goodman et al., (1999)**. It consisted of forty-four items divided in to five parts. The 1st part evaluates the general satisfaction of the patients with ECT, whereas three other parts assess patients' contentment with ECT's results, Patients' contentment with the team providing ECT as well as their pleasure with the instruction or information provided prior to the procedure. The last part entitled "the feelings" assess the impact of ECT on the patient's symptoms. In addition, the scale was evaluated through 3 Likert scale (1) false, (2) Note sure, (3)

true. The total of the forty-four item ratings yields an "overall satisfaction" score.

Three levels were created from the total scores of the examined sample(44-132) as the following base:

- Low satisfaction from 44:73
- Moderate satisfaction from 74:103
- High satisfaction from 104:132

Tool III:

ECT Knowledge and Attitude questionnaire (Tang, Ungvari & Chan, 2002)

ECT knowledge and attitude questionnaire evaluate knowledge as well as attitudes of ECT among patients who had obtained ECT. The knowledge part had thirty- one questions that cover different aspects of ECT knowledge as the procedure, indication, informed consent, efficacy/usefulness of ECT, also the side effects of ECT. In addition, the knowledge section's items have two options: "know" and "don't know." To determine the level of knowledge, all right answers to questions 1 through 31 were assigned a score of "1," while incorrect answers or "don't know" answers received a score of "0." Consequently, the range of the overall knowledge score was zero to thirty- one. the total score is divided into 3 groups (0-31) as the following base:

- Poor knowledge from 0:10
- Fair knowledge from 11:21
- Good knowledge from 22:31

In addition, the attitude part had sixteen items which Pay close attention to the attitude toward ECT.. Each item had three responses the 1st response mean agree, the 2nd response mean neutral attitude and the 3rd response mean not agree. For calculating the total attitude score, agree response was rated as "+1", not agree was rated as "-1" and the neutral response was rated as "0".

Accordingly, the attitude total score is divided into 3 groups (-16 to 16.) as the following base:

- Negative attitude from -16: -6
- Neutral attitude from -5:5
- Positive attitude from 6: 16

The validity and reliability of the research tools

Five panels of psychiatric and mental health nursing specialists (from Cairo University's Psychiatric Mental Health Nursing Department and Minia University's Faculty of Nursing) evaluated the instruments to ensure that their content validity. The instruments were sent to each member of the expert panel to review for content coverage, clarity, phrasing, length, format, and overall look. Any required modifications were made. The reliability of the study instruments was assessed by internal consistency using Cronbach's alpha coefficient, which came out to be (0.912), (0.835), and (0.753) for patient satisfaction, knowledge of ECT, and attitude toward ECT, respectively.

Pilot Study

A pilot research was conducted to assess the clarity of the study instruments, testing the comprehensiveness, applicability, accessibility, and time required to complete out the scales on nine patients, or 10% of the study population. The pilot research's results showed that the scales were appropriate and didn't require modification, thus it was added to the study population.

Procedure

- In order to assess the validity of the tools, five panels of jury experts from Minia, Cairo University's psychiatric mental health nursing department, and the College of Nursing translated the instruments into Arabic. The statistician assessed the instruments' dependability, and the supervisors made revisions.
- Official requests for permission to collect data were made to the dean of Minia University's Faculty of Nursing and the head of Minia Hospital for psychiatric health and addiction treatment.
- Oral acceptance was obtained from the patients following a clear and personal explanation of the nature and purpose of the study, to gain their approval, participation, and secrecy.
- Three days a week (Sunday, Tuesday and Thursday from 1pm to 4pm), the researchers visited in-patient psychiatric hospital departments considering too many weeks not gathered through it due to no new cases receiveing ECT or hospital stopping ECT due to different reasons, patient who received ECT were personally questioned by the researchers who also gathered data from them. Data gathering from each patient take about 30-45 minutes. To finish the research tools, patient who received ECT were personally questioned (almost 3-5 patients daily). Over a period of eight months, from November 2022 to January 2023, data was gathered.

Ethical consideration

The research study received official initial clearance from the ethical council of Minia University's Faculty of Nursing; during the study, the research sample was not in danger. Additionally, the patient rights committee at the public secretariat for the psychiatric mental health and addiction treatment hospital obtained written informed permission. After the goal of the study was clarified, both written and verbal informed consent from each participant was acquired. The patient was free to accept or refuse the trial; they were not required to participate. Every assessment form was coded, and the names of patients were hidden to maintain patient privacy and anonymity.

Statistical design

Using the SPSS version (25), the gathered data were tabulated, processed, analyzed, and summarized using descriptive statistical tests to test research hypotheses. The data was examined using the T-test and the Anova test. A p-value of less than 0.05 was deemed significant for probability.

Results:

Table (1): Frequency distribution of the studied psychiatric patients' personal data (No = 92).

Items	Patients (no.= 92)	
	no.	%
Age		
18-30 yrs.	40	43.5
31-43 yrs.	44	47.8
44-55 yrs.	8	8.7
Mean +SD	40.37±6.735	
Gender		
Female.	32	34.8
Male.	60	65.2
Level of education		
Illiterate	27	29.3
Primary education	7	7.6
Preparatory education	13	14.1
Secondary education	33	35.9
High education	12	13.1
Marital status		
Single	52	56.5
Married	39	42.4
Divorce	1	1.1
Widow/ Widowed	0	0
Occupation		
Worked	38	41.3
not worked	54	58.7

Table (1) reveals that, (65.2%) of the studied sample are males, also (47.8%) of them are aged between 31 to 43 years old with mean age 40.37±6. years, moreover (35.9%) of them have secondary education, on the other hand (56.5%) of them are single, while, (58.7%) of them is not worked.

Table (2): Frequency distribution of studied psychiatric patients' clinical data (No. =92).

Items	Patients (No.= 92)	
	no.	%
Diagnosis		
•Depression	24	26.1
•Mania	16	17.4
•Schizophrenia	31	33.7
•Schizoaffective disorder	16	17.4
•Other disease (Bipolar)	5	5.4
Duration of illness		
• <1year	19	20.7
• 2-5years	56	60.8
•>5years	17	18.5
Number of admissions		
• One time	15	16.3
• Two time	27	29.3
• Three time	32	34.8
•More than three times	18	19.6
Type of ECT		
• Unilateral	2	2.2
• Bilateral	89	96.7
• Bi-frontal	1	1.1
Number of sessions by week		
•One /week	1	1.1
•Two /week	3	3.3
•Three /week	88	95.6
Sources of information about ECT		
•Experience of friends, family or relatives	22	23.9
•Network	34	37.0
•Television	14	15.2
•Newspapers, books, magazines	5	5.4
•Explanation from a psychiatrist/doctor or nurse	17	18.5

Table (2) mentions that, more than one-third (33.7%) of the studied sample have schizophrenia, also (60.8%) of them have the disease from two to five years, while (34.8%) of them are admitted to the hospital about three times. In addition, (96.7%) of them received bilateral ECT and (95.6%) of them received ECT three times weekly. Regarding sources of information about ECT, (37%) of them have information about ECT from the network.

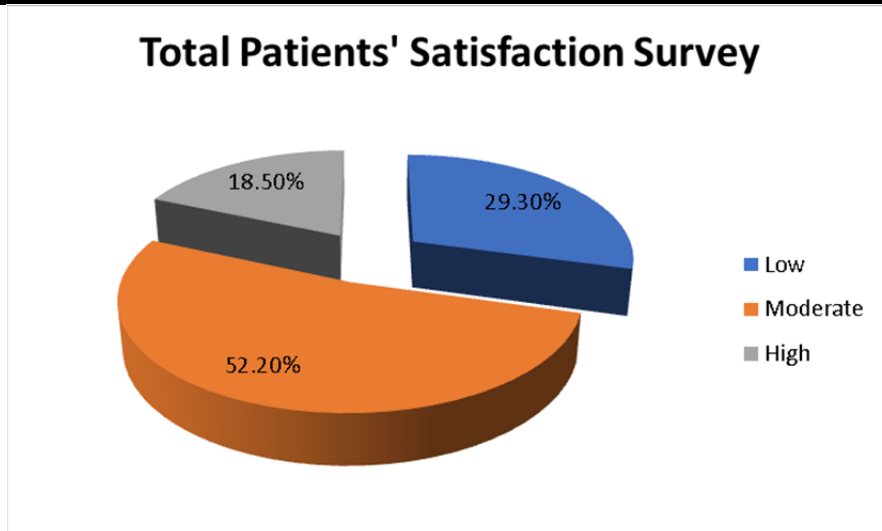


Figure (1): Distribution of the studied psychiatric patients regarding total Patient Satisfaction Survey (No.= 92)

Figure (1) demonstrates that more than half (52.2%) of the patients have a moderate levels of satisfaction, and (29.3% & 18.5%) of them have low and high level of satisfaction respectively.

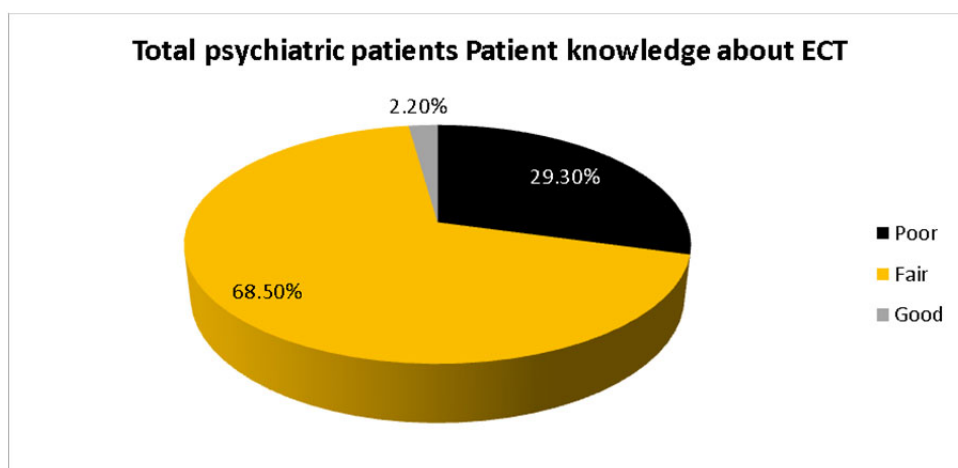


Figure (2): Distribution of the studied psychiatric patients' total knowledge about ECT(No.=92)

Figure (2) illustrates that (68.5%) of the studied sample have fair level of knowledge about ECT, and (29.3% & 2.2%) of them have poor and high levels of knowledge about ECT respectively.

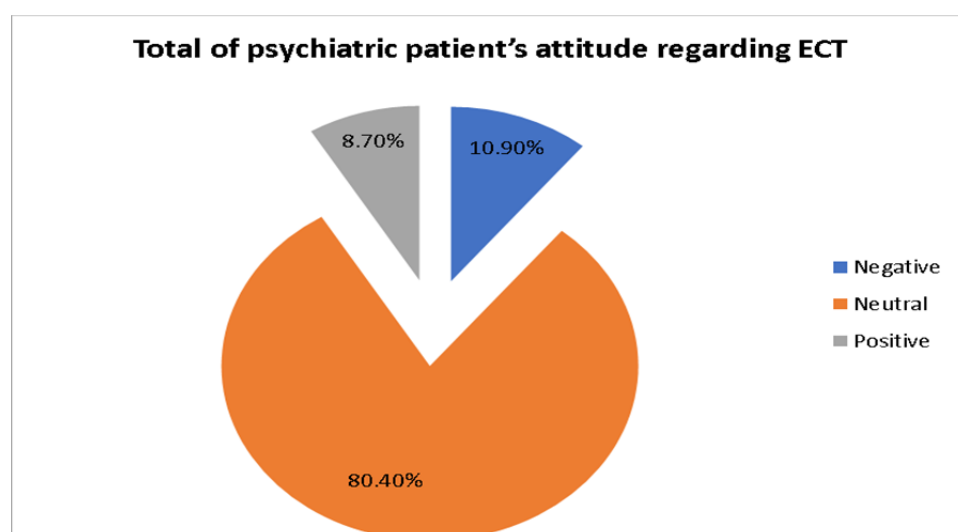


Figure (3): Distribution of total attitude toward ECT among the studied sample (No.= 92).

Figure (3) displays that (80.4%) of the studied sample have a neutral attitude toward ECT, while (10.9% & 8.7%) of them have negative as well as positive attitudes toward ECT respectively.

Table (3): Relation between the studied psychiatric patients' satisfaction with ECT and their knowledge as well as attitude (No.= 92).

Variables	Patients' Satisfaction Survey (r-p-value)	Knowledge of patients about ECT (r-p-value)	Attitude of patients regarding ECT (r-p-value)
Patients' Satisfaction Survey		0.183 0.081	0.246* 0.018
Knowledge of patients about ECT	0.183 0.081		0.552** 0.001
Attitude of patients regarding ECT	0.246* 0.018	0.552** 0.001	

Table (3) presents that there is a positive correlation between the patients' satisfaction with ECT and attitude of patients regarding ECT, as well as there is a positive correlation between knowledge of patient about ECT their attitude with a highly statistically significant (p= 0.001).

Discussion

ECT, which includes mildly electrically stimulating a patient's brain while they are sedated to induce a brief seizure, is generally a very successful treatment for serious mental illnesses (Karayagmurlu et al., 2020 & Jiang et al., 2020). A number of studies have dissuaded patients from using ECT due to possible side effects, including temporary disorientation and memory loss (Zheng et al., 2018). The same author also mentioned how crucial it is to look at the attitudes and knowledge of patients and caregivers regarding the intervention. Thus, this study set out to evaluate the degree of satisfaction that psychiatric patients had with electroconvulsive treatment and how that satisfaction related to their knowledge and attitude.

Regarding the studied patients' personal data, the actual study's results illustrated that, higher two-fifth of the patients were in age group (31-43) years old with a mean age (40.37±6.735). This result may be related to the fact that the prevalence of psychiatric disorders is high during this period of age, such as schizophrenia. Concerning patients' gender, higher half of the study patients were males. This result might be discussed by the number of males' were more than females (according to the population distribution in Egypt), and men were on average diagnosed earlier than women.

These results agree with Shrama and Mohanty (2021) who clarified that, mean age of patients was 32.4 ± 8.08, the same author stated that, the males were more than patient's female. Moreover, Griffiths et al., (2018) stated that, the high number of the participants was more than forty years, these findings disagreed with Payne and Lexington, (2024) reported that, the age of all participants from twenty-two to fifty years with mean 41±8. In addition, Griffiths et al., (2018) mention that, more than fifty percent of the participants were from females and less than fifty percent of them were males.

In relation to educational level, the actual study result showed that, above than one third of the patients had a secondary educational level. This outcome could be the result of the patients not finishing their schooling due to their family's financial problems or that a most of patients have schizophrenia which negatively affects the cognitive functions that consequently influence school achievements. Also slightly above half of them were single; this could be attributed to the problem of getting married with psychiatric problems, especially in Arab societies, the stigma of psychiatric disorders which impacts and discourages both sexes from getting married.

This is in harmony with the study of Alaa El Din et al., (2013) who reported that about one third of the participants had a secondary educational level; also more than

fifty percent of the participants were single. On the opposite side the study of Taha Abd El-Raof et al., (2022) who showed that the highest percentage of the participants had Technical diploma above average and were married.

Concerning working status, a higher half of the studied sample weren't working, because of the symptoms of their sickness that prevented them from carrying out their jobs well, they were dismissed or quit their jobs, and disturbed the relationship between them and their workmates and also impaired ability to work due to mental illness or frequent hospitalization. This is parallel with the study of Rajagopal et al., (2012) who mention that more than fifty percent of the participants were not employed, and similarly, Abdelraof & Behilak, (2020) reported that, (80%) of the sample were not working.to. On the other hand disagreed with Shrama and Mohanty, (2021) who reported that more than fifty percent of the participants were employed

Concerning the clinical data of patients, the actual study clarified that slightly lower one-third of the studied patients were diagnosed with schizophrenia. This finding may be due to the fact that schizophrenia is the most common prevalent diagnosis that is present in many psychiatric hospitals. Also schizophrenia as psychiatric disorders begins at the early onset of age, this is agreed with Manea et al. (2020) who mention that schizophrenia is the most common chronic psychotic disorder in Egypt that affects about 1.5 million people, and represents the major bulk of patients in mental hospitals. On the other hand disagreed with Shrama and Mohanty, (2021) reported that, less than fifty percent of the participants were diagnosed with bipolar disorder manic episodes and about twenty- five percent of them were diagnosed with schizophrenia.

On the other hand, this study illustrated that, slightly more than two-thirds of them had a duration of illness from two to five years. This finding could be attributed to the chronicity of the most common psychiatric disorders. Indeed, non-adherence of the patient to psychotropic medications, also lack of the patients and their families' information about mental health care. This approved with Saber et al. (2022) reported that, slightly lower two-fifths of the studied patients had duration of illness > 5 years while this result came in against Rabei et al. (2019) found that, under half of the studied patients had an illness from five to ten years.

Concerning the number of admissions this study illustrated that, above a third of patients were admitted to the hospital three times. This finding could be attributed to the long duration of the most common psychiatric disorders among psychiatric patients. May also be linked to patients' relapses, lack of family and financial support, and non-adherence to medicines following discharge. Also, bilateral

ECT was utilized by more than 75% of the group under study. This result may be explained by the fact that is the most often utilized kind in hospitals.

On the other hand, the actual study illustrated that, higher three quarters of the studied sample took three sessions per week. This finding could be attributed to the rule of psychiatric hospital. Concerning the source of information about ECT this study discovered that, above one-third of the studied sample take information from the network. This finding could be attributed to the most of psychiatric patient and their relatives have a mobile phone which make it easy to search for ECT information they need.

This finding was matched with **Subramanian et al., (2022)** illustrated that, many people have six to twelve sessions given two to three times per week over a period of several weeks. Also mismatch to **Coman, (2022)** the highest number of participants didn't receive information and a tenth of them received information from the media. While the opposite context **Dan et al., (2014)** reported that, the high number of the participants received the information from the television. Also, **Grover et al., (2021)** stated that, the majority of the patients received ECT information from the explanations by psychiatrists or doctors.

The findings of the research illustrated that above half of the studied sample had a moderate levels of satisfaction, and about one quarter of them had a low and high levels of satisfaction respectively. From the researcher point of view this may be related to positive responses of patients about satisfaction that reflected some advantages of ECT as ECT improves the quality of patient life, getting along with others better since ECT treatment, feel calm and peaceful, and feel full of life. However, some patients had negative response about satisfaction that reflect some disadvantages of ECT as ECT is dangerous, more confused since the ECT treatment, and The patients lacked sufficient knowledge about ECT to determine its appropriateness.

This finding agreed with **Rajagopal et al. (2013)** said that, based on their overall satisfaction levels, contentment with the outcomes of ECT, and satisfaction with the beneficial effects of ECT on their symptoms, more than half of the patients seemed to be somewhat happy with the treatment. Participants acknowledged dread of ECT, dissatisfaction with the amount of information provided before to ECT, and concern about the risk of persistent cognitive damage despite their high levels of satisfaction. Also on the same point, **Deng et al. (2023)** reported that, approximately half of the patients had fair satisfaction about ECT because they believed that ECT was beneficial, also they thought that ECT was more effective and more rapid than drugs. On the other hand, this finding against **Selva-Sevilla et al., (2016)** mentioned that, a high percentage of patient had low satisfaction with ECT therapy.

In addition, this finding mentioned that, above two thirds of the patients had fair level of knowledge about ECT, and above one quarter of them had poor level of knowledge about ECT. From the researcher point of view this might be the patient didn't receive enough information from the medical staff about the ECT therapy and its side effects as memory impairment or confounding effects of the current mental state. This result agreed with **Kumar and Eugin, (2017)** who mention that, a high percent of the participants had fair knowledge about ECT, while the minority of them had low and high levels of knowledge about ECT. Also, **Bhatt et al. (2022)** illustrated that more than sixty percent of the

studied participants had a moderate degree of knowledge about ECT. On the other line **Rajagopal et al. (2012)** stated that, about two-thirds of the participants had adequate knowledge about ECT. Also **Ingadóttir (2023)** mentioned that, most participants had adequate knowledge of ECT. This may be due to different culture.

Furthermore, the current finding mentioned that, the majority of patients had neutral attitude toward ECT, and the minority of them had negative as well as positive attitude toward ECT respectively. This might be due to the high percent of patient had fair knowledge about ECT, which reflected on their attitude. This disagrees with **Kumar and Eugin, (2017)** mention that, a high percent of the participant had a positive attitude towards ECT, as well as **Zhang et al.(2018)** reported that, most patients and caregivers reported a positive attitudes towards ECT. Also, **Ingadóttir (2023)** mentioned that, the majority of participants had a positive attitude about ECT. This could be due to a patient's attitude reflects their level of knowledge.

Additionally this finding illustrated that, there was a positive correlation between the patients' satisfaction with ECT and attitude of patients regard ECT as well as there is positive correlation between the knowledge of patient regarding ECT and their attitude toward it with high statistical significance. It could be explained by that knowledge of patient about ECT effect on their attitude and reflect on their satisfaction. This findings were in harmony with **Rafoul et al. (2020)** shown that information about ECT and attitudes about it, as well as the degree of personal significance and direct impact, all affect attitudes toward and willingness to undergo ECT, and **Bhatt et al. (2022)** who illustrated that there was a significant connection between patient knowledge and their level of attitude towards ECT. Also **Ingadóttir (2023)** reported that, greater knowledge of ECT was correlated with more positive attitudes toward ECT.

Conclusion

In relation to the results of this study, it can be concluded that about more than half of the studied sample have a moderate level of satisfaction. On the other hand, more than two thirds of them have fair level of knowledge and the majority of them have neutral attitude toward ECT Moreover, there was a positive correlation between patient satisfaction with ECT and attitude toward it and also a highly significant positive correlation between knowledge of patient regarding ECT and their attitude toward it.

Recommendations

- A structured psycho-educational program is required for psychiatric nurses to be prepared to educate patients who receive ECT to reach optimum level of knowledge and satisfaction.
- Provide the psychiatric ward with a counselor or nurse to assist the patient with intervention and education oriented program in order to well be informed about ECT.
- Create a program for systemic health education prior to ECT therapy and make sure that patients and caregivers are properly informed about ECT, including how it works as a treatment, its therapeutic effects, and any possible adverse effects

References

1. Abdelraof A., & Behilak S., (2020). Relation between Self-Stigma And recovery attitude in Schizophrenic Patients. *Journal of Nursing and Health Science (IOSR-JNHS)*; 9 (3): 44-57. e-ISSN: 2320-1959.ISSN.
2. Alaa El Din, M. D., Mohammed, K. A., Sayied, N. E., & Khalifa, N. M. (2013). Assessment of knowledge and attitude about electroconvulsive therapy among caregivers of patients with different psychiatric disorders. *Middle East Current Psychiatry*, 20(4): 205-215.
3. Ayub M., (2023). Attitude regarding electroconvulsive therapy among Pasychiatric Patients. *European Psychiatry*; 66 (1): 48-59.
4. Bhatt, R. B., Kumar, P., Vasavada, D. A., Shah, V. R., Nerli, L. M., & Tiwari, D. S. (2022). Impact of Electroconvulsive Education Module on Knowledge and Attitude of Caregivers of Mentally Ill Patients toward Electroconvulsive Therapy. *Journal of Mental Health and Human Behaviour*, 27(2): 113-118.
5. Coman, A. (2022). Recipient experience within formation provision for electroconvulsive therapy (ECT). *BMC psychiatry*, 22 (1),86.
6. Dan, A., Grover, S., & Chakrabarti, S. (2014). Knowledge and attitude of patients with psychiatric disorders and their relatives toward electroconvulsive therapy. *Indian journal of psychological medicine*, 36(3): 264-269.
7. Deng, C. J., Nie, S., Mai, J. X., Huang, X., Huang, X. B., & Zheng, W. (2023). Electroconvulsive therapy knowledge and attitudes among patients and caregivers in South China: A preliminary study. *Frontiers in Psychiatry*. 14, (11): 45-60.
8. Dunlop, R., & Cetrano, G. (2021). Rewiring practice: community mental health professionals' attitudes towards and knowledge of electroconvulsive therapy in the context of advance decision-making. *Mental Health Review Journal*; 52(5):36-65
9. Ferrier, D. C., & Honeychurch, K. C. (2021). Carbon nanotube (CNT)-based biosensors. *Biosensors*, 11(12), 486.
10. Goodman, J.A, Krahn, L.E., Smith, G.E., Rumman, T.S. (1999). Patient satisfaction with electroconvulsive therapy. *MAYO Clinic proceeding*, 74 (10): 967-971
11. Griffiths, C., O'Neill-Kerr, A., & Thompson, R. (2018). Patient reported experience of electro convulsive therapy (ECT). *Neuropsychiatry*, 8(5): 1571-6.
12. Grover, S., Varadharajan, N., & Chakrabarti, S. (2021). Knowledge about and attitude toward electroconvulsive therapy among those who agree and those who refuse electroconvulsive therapy treatment. *Journal of Mental Health and Human Behaviour*, 26(2), 92-99.
13. Harisoorya, A. U., & Talwar, P. (2023). Desideratum of Electroconvulsive Therapy for the Ministration of Distinct Psychological Infirmary: A Review. *International Journal of Health Sciences and Pharmacy (IJHSP)*, 7(1), 90-113.
14. Ingadóttir, D. S. (2023). Knowledge and attitudes toward electroconvulsive therapy (ECT) among mental health workers and the public in Iceland (Doctoral dissertation).
15. Karayagmurlu, A., Coskun, M., Elboga, G., Ghaziuddin, N., Karayagmurlu, E., Gökçen, C., & Altindag, A. (2020). Efficacy and safety of electroconvulsive therapy in adolescents: a retrospective chart review study from Turkey. *The Journal of ECT*, 36(1), 54-59.
16. Kerlinger, F. N. (2022). Liberalism and conservatism: The nature and structure of social attitudes. *Routledge*
17. Kersten, M., Taminiau, E., Weggeman, M., & Embregts, P. (2022). Motives and strategies of CEOs for stimulating sharing and application of knowledge in the care and support for people with intellectual disabilities. *Journal of Knowledge Management*.
18. Kheiri M. , Sahebalzamani M., & Jahantigh M.(2011). The Study of Education Effect on Knowledge of, and Attitudes toward Electroconvulsive Therapy among Iranian Nurses and Patients' Relatives in a Psychiatric Hospital, 2009-2010. *Procedia - Social and Behavioral Sciences* 30; 256 – 260.
19. Koh, A. H., Tan, X. W., Tor, P. C., Chatterton, M. L., Martin, D. M., & Loo, C. K. (2023). The association between outpatient continuation/maintenance electroconvulsive therapy, readmission risk and total direct cost in patients with depressive, bipolar and psychotic disorders: a naturalistic retrospective cohort study. *Journal of Affective Disorders*, 338, 289-298.
20. Kritzer, M. D., Peterchev, A. V., & Camprodon, J. A. (2023). Electroconvulsive therapy: mechanisms of action, clinical considerations, and future directions. *Harvard review of psychiatry*, 31(3), 101-113.
21. Kumar, M. L., & Eugin, S. B. (2017). Knowledge and attitude towards ECT among care givers of mentally ill clients and their socio demographic correlates: A cross sectional survey. *Asian Journal of Nursing Education and Research*, 7(1), 12-16.
22. Manea, A., Zaki, R. A. E. H., & Morsi, A. (2020). The Relationship between Insight and Quality of Life among Schizophrenic Patients. *Egyptian Journal of Health Care*, 11(4), 212-223.
23. Payne, G., & Lexington, K., Y. (2024). "Electroconvulsive Therapy: Improving Psychiatric RN Knowledge and Attitudes Using an Educational Module" (2024). *DNP Projects*. 474. https://uknowledge.uky.edu/dnp_etds/474
24. Rabei, S., ELBoraie H. O., ELsaadouni, N., & ELhadidy, M.E.(2019).Schizophrenia symptoms dimensions in correlation to patients demographic and clinical characteristics. *Egyptian journal of Psychiatry*, 40(3),127,
25. Rafoul, B., Mashlach-Eizenberg, M., Hasson-Ohayon, I., & Roe, D. (2020). Knowledge about, attitudes toward, and willingness to undergo electroconvulsive therapy among mental health patients, staff, and family members. *International Journal of Mental Health*, 49(3), 215-228.
26. Rajagopal, R., Chakrabarti, S., & Grover, S. (2013). Satisfaction with electroconvulsive therapy among patients and their relatives. *The journal of ECT*, 29(4), 283-290.
27. Rajagopal, R., Chakrabarti, S., Grover, S., & Khehra, N. (2012). Knowledge, experience & attitudes concerning electroconvulsive therapy among patients & their relatives. *Indian Journal of Medical Research*, 135(2), 201-210.
28. Saber, E.H, Hassan, S., & Mohamed, A.(2022). The Relation between Subjective well-being, Resilience, and Hope among Psychiatric patients . *Egyptian journal of Health care*, 13(1),894-913
29. Sahoo, S., & Naik, S. S. (2024). Electroconvulsive Therapy Beyond Schizophrenia and Bipolar Disorders. *Current Behavioral Neuroscience Reports*, 1-8.
30. Salani, D., Goldin, D., Valdes, B., & DeSantis, J. (2023). Electroconvulsive therapy for treatment-resistant depression: dispelling the stigma. *Journal of*

- Psychosocial Nursing and Mental Health Services, 61(6), 11-17.
31. Selva-Sevilla C, Gonzalez-Moral ML & Tolosa-Perez MT (2016). The Psychiatric Patient as a Health Resource Consumer: Costs Associated with Electroconvulsive Therapy. *Front. Psychol.*, 7(790); 1-7. doi: 10.3389/fpsyg.2016.00790.
 32. Selva-Sevilla, C., Romero-Rodenas, P., & Lucas-Perez-Romero, M. (2016). How can we improve patient satisfaction as a consumer of public health services? The case of psychiatric patients undergoing electroconvulsive therapy. *Frontiers in Psychology*, 7, 801.
 33. Shrama, M., & Mohanty, S. (2021). Knowledge & Attitudes Towards Electroconvulsive Therapy Among Psychiatric Patients & their Spouses. *Age*, 32(8.08), 32-3.
 34. Subramanian, S., Lopez, R., Zorumski, C. F., & Cristancho, P. (2022). Electroconvulsive therapy in treatment resistant depression. *Journal of the Neurological Sciences*, 434, 120095.
 35. Sweetmore, V. (2022). A critical realist review of qualitative evidence. *Journal of Psychiatric and Mental Health Nursing*, 29(2), 204-219.
 36. Taha Abd El-Raof, M., Abd El Hameed Loutfi, Z., & Elias Abdel-Aziz, A. (2022). Nurses Performance Regarding Care of Patients Undergoing Electroconvulsive Therapy. *Egyptian Journal of Health Care*, 13(4), 757-768.
 37. Tang WK, Ungvari GS, Chan GW. (2002). Patients' and their relatives' knowledge of, experience with, attitude toward, and satisfaction with electroconvulsive therapy in Hong Kong, China. *J ECT*. 2002;18:207-12
 38. Timäus, C., Vogelgsang, J., Kis, B., Radenbach, K., Wolff-Menzler, C., Mavridou, K., ... & Wiltfang, J. (2021). Current clinical practice of electroconvulsive therapy and repetitive transcranial magnetic stimulation in psychiatry, a German sample. *European archives of psychiatry and clinical neuroscience*, 271(1), 181-190
 39. Tiwari, N., & Das, A. (2023). Patient's Consent and Autonomy in Jerry Pinto's *Em* and the Big Hoom. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, 15(4).
 40. Tsai, J., Huang, M., He, H., Selek, S., & Rosenheck, R. A. (2021). Cross-cultural Comparison of Perceptions and Knowledge About Electroconvulsive Therapy Among Adults Who Screened Positive for Depression in the United States, India, and China. *The Journal of ECT*, 37(4), 274-280
 41. Tullio, V., Zerbo, S., Lanzarone, A., Procaccianti, S., & Argo, A. (2020). Psychological and Medico-Legal Perspectives on Electroconvulsive Therapy and Patient-Centered Care: A Short Review of Cross-Cutting Issues. *The Open Psychology Journal*, 13(1).
 42. Tyron, J. M., Bluhm, R., Achtyes, E. D., McCright, A. M., & Cabrera, L. Y. (2023). The influence of prior awareness on views about psychiatric electroceutical interventions among non-clinician stakeholders. *npj Mental Health Research*, 2(1), 6.
 43. Ul Haq I., Ahmed M., Hayat A., , Minhas F, (2012). Patient Satisfaction With Electroconvulsive Therapy In A Tertiary Care Hospital. *JPPS*; 9(2): 74-79..
 44. Wang, X., & Zhou, R. (2023). Impacts of user expectation and disconfirmation on satisfaction and behavior intention: the moderating effect of expectation levels. *International Journal of Human-Computer Interaction*, 39(15), 3127-3140.
 45. WHO (2012). WHO Quality Rights tool kit to assess and improve quality and human rights in mental health and social care facilities. Geneva, World Health Organization, 2012
 46. Zhang, X. Y., Chen, H. D., Liang, W. N., Yang, X. H., Cai, D. B., Huang, X., ... & Zheng, W. (2021). Adjunctive magnetic seizure therapy for schizophrenia: a systematic review. *Frontiers in psychiatry*, 12.
 47. Zheng, W., Tong, G., Ungvari, G. S., Ng, C. H., Chiu, H. F., Xiang, Y. Q., ... & Xiang, Y. T. (2018). Memory Impairment Following Electroconvulsive Therapy in Chinese Patients with Schizophrenia: Meta-Analysis of Randomized Controlled Trials. *Perspectives in psychiatric care*, 54(2), 107-114