Original Article

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Knowledge and Attitudes Toward Electroconvulsive Therapy Among Companions of Psychiatric Patients: A Cross-Sectional Study from Northern Iran, Rasht

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Abstract

Background: Electroconvulsive Therapy (ECT) is a highly effective treatment for psychiatric disorders, particularly in emergency cases, pregnancy, and when pharmacological treatments are contraindicated. However, misconceptions and negative attitudes among patients' companions can hinder its acceptance and adherence. This study aimed to evaluate the knowledge and attitudes of companions of ECT recipients at Shafa Hospital in 2024.

Methods: A cross-sectional descriptive study was conducted among companions of psychiatric patients referred to Shafa Hospital in Rasht, Iran during 2024.

The data collection tool is a questionnaire measuring knowledge and attitudes related to ECT. The variables analyzed using mean, standard deviation (SD), frequency and a significance level of $p<0.05$ also 95% confidence interval.

Results: Of the 361 participants, 52.4% were male, and 47.6% were female, with a mean age of 47.91±12.02 years. Most companions (48.5%) received information about ECT from healthcare providers, while 22.7% relied on the internet. Concerns included memory loss (30.7%), brain damage (25.4%), and fear of anesthesia (22.5%). Despite these concerns, 69.3% believed ECT was beneficial for their patients. Companions with higher education levels or prior ECT experience exhibited more positive attitudes and greater knowledge.

Conclusion: The findings of this study reveal significant misconceptions and negative attitudes toward ECT among patients' companions, which are characterized primarily by unfounded fears of memory loss and brain damage. Companions with higher education levels or prior ECT exposure demonstrated markedly more positive attitudes and greater knowledge. These findings underscore the necessity of structured educational interventions by healthcare providers to address misconceptions and to enhance ECT acceptance and treatment outcomes.

Keywords: Attitude, Brain, Electroconvulsive therapy, Fear, Mental disorders, Treatment outcome

Introduction

Electroconvulsive Therapy (ECT) remains one of the most effective treatments for severe psychiatric disorders, particularly in cases of treatment-resistant depression, acute suicidality, catatonia, and certain conditions during pregnancy where pharmacological interventions pose risks(1,2). Despite its well-documented efficacy, ECT is often met with resistance due to persistent misconceptions, stigma, and inadequate knowledge among patients and their families(3).

Given that psychiatric patients frequently lack the capacity to provide informed consent, the attitudes and knowledge of their legal guardians or companions play a crucial role in treatment adherence and outcomes (4).

Several studies have highlighted significant gaps in public understanding of ECT. According to a survey by Tang *et al* in Hong Kong, most patients and relatives viewed ECT as beneficial (5). Despite this positive view, over 60% reported receiving insufficient information before treatment. This lack of information was particularly evident regarding potential side effects, such as transient memory impairment (5). Similarly, Deng *et al* reported that only 37% of patients and 55% of caregivers in China received adequate explanations about ECT's risks and benefits, contributing to unwarranted fears (6).

Family members and legal guardians often serve as decision-makers for psychiatric patients undergoing ECT. However, studies indicate that their knowledge is frequently inadequate.

In the Iranian context, research by Kheiri *et al* revealed that a majority of patients' families had poor knowledge and negative perceptions about ECT, often influenced by media portrayals (7).

Grover *et al* found that caregivers with prior ECT experience had more favorable attitudes, as they were more likely to receive information directly from psychiatrists (8).

Conversely, first-time companions often relied on unreliable sources, exacerbating anxiety about the procedure. In Iran, Asadi *et al* demonstrated that companions' attitudes were significantly influenced by the patient's prior hospitalization and ECT exposure, emphasizing the need for structured educational interventions (9). Furthermore, a recent study from Iran, conducted by Hosseini *et al*, examined the experiences of psychiatric trainees with ECT.

They found that while ECT training in Iran is generally available nationwide, its implementation varies.

Psychiatrists generally held a positive attitude toward the procedure and were actively involved in both observing and administering ECT (10). Cultural beliefs and healthcare system disparities further complicate ECT acceptance. An other study from Iran showed that while patients who had received ECT reported significant satisfaction, public stigma remains a considerable barrier (11). This aligns with findings by Rafoul *et al*, where healthcare providers held positive views of ECT (12), while family members expressed skepticism, fearing brain damage or death—concerns not supported by mortality data (estimated at 0.002–0.04%)(13).

A critical barrier to ECT acceptance is the inadequacy of informed consent procedures. Research by Grover et al (8) and Deng *et al* (6) underscores that simplified, transparent discussions about ECT's mechanisms, efficacy, and side effects can mitigate fears. For instance, a study in India found that post-educational sessions, caregiver acceptance rates improved by 40% (14). Despite global research on ECT perceptions, few studies in Iran have examined companion-specific knowledge and attitudes, particularly in regions like Gilan, where Shafa Hospital serves as the primary psychiatric referral center.

This study aims to assess the level of knowledge and attitudes toward ECT among companions of patients, identify their primary sources of information and common misconceptions, and evaluate the influence of demographic factors (*e.g.*, education level, prior exposure to ECT) on their perceptions. By addressing these gaps, this study seeks to inform targeted interventions to enhance ECT acceptance and collaboration between families and clinicians, ultimately improving treatment outcomes for psychiatric patients.

Materials and Methods

Study design

This cross-sectional descriptive study was conducted at Shafa Hospital in Rasht, Iran, during 2024. The study population comprised companions of patients referred to the psychiatric clinic for ECT.

Table 1. Demographic characteristics of companions of patients receiving electroshock therapy at shafa hospital in rasht, 2024

Variable	Status	Number	Percentage
Gender	Female	172	47.6%
	Male	189	52.4%
Age group (years)	Under 40	103	28.5%
	40-60	187	51.8%
	Over 60	71	19.7%
Age (years)	Mean±SD (min-max)	47.91±12.02(25-71)	-
Marital status	Single	91	25.2%
	Married	270	74.8%
Employment status	Employed	200	55.4%
	Unemployed	161	44.6%
Education level	Below diploma	92	25.5%
	diploma	171	47.4%
	University degree	98	27.1%
Years of education	Mean±SD (min-max)	11.9±3.11(5-18)	-
Family relationship	Parent	82	22.7%
	Spouse	120	33.2%
	Sibling	64	17.7%
	Child	95	26.3%
History of Electroconvulsive Therapy (ECT)	Had ECT before	195	54%
	No ECT before	166	46%
Source of information	Media	14	3.9%
	Friends	90	24.9%
	Internet	82	22.7%
	Medical staff	175	48.5%

Sample size

A convenient sampling method was used to select participants from a list of all companions of ECT patients. The minimum required sample size was estimated to be 361 participants, based on a pilot study of 30 questionnaires (p 37.9%, with a 5% margin of error and 95% confidence level).

Inclusion criteria

Companions aged above 18 or older, fluent in Persian, mentally and physically capable of participating, and willing to provide informed consent.

Exclusion criteria

Included unwillingness to participate or inability to communicate.

Data collection tools

The data collection tool, titled "Questionnaire on Measuring Knowledge and Attitudes Related to ECT",

Table 2. Concerns about electroshock therapy among companions of patients receiving ECT at shafa hospital in rasht, 2024

Reason for concern	Number	Percentage
Memory loss	208	30.7%
Fear of anesthesia	152	22.5%
Concern about electric current	43	6.3%
Seizures	52	7.7%
Death	50	7.4%
Brain damage	172	25.4%
Total	677	100%

was extracted from a comprehensive study in 2023 and was completed during a face-to-face interview, provided that consent to participate in the research was obtained (6). After explaining the study objectives and procedures, trained interviewers administered the questionnaire through face-to-face interviews with consenting participants. The questionnaire included three sections: Demographics (gender, age, education level, source of ECT information, family relationship to the patient (Parent, spouse, sibling, child), and history of patient hospitalization), attitude (questions assessing perceptions and concerns about ECT) and knowledge (questions evaluating understanding of ECT's therapeutic effects, side effects, procedure, and risks). Content validity was confirmed by a panel of 9 faculty members (psychiatry and anesthesiology), with CVR>0.78 and CVI>0.79 for all items. Reliability was confirmed by Cronbach's alpha (0.66).

Statistical analysis

The variables analyzed using mean, standard deviation (SD), frequency and a significance level of $p<0.05$ also 95% confidence interval.

Ethical considerations

This cross-sectional study assessed the knowledge and attitudes toward ECT among companions of psychiatric patients at Shafa Hospital in Rasht, Iran, during 2024. Ethical approval was obtained from the Institutional Review Board (IRB) of Guilan University of Medical Sciences prior to the study commencement (Approval Code: IR.GUMS.REC.1403.022). Informed consent was obtained from all participants, and confidentiality of data was maintained throughout the research.

Results

Out of 400 companions approached, 361 agreed to participate, yielding a response rate of 90.25%. The demographic characteristics of the participants are summarized in table 1. The primary concerns expressed by the companions regarding ECT are presented in table 2. The overall level of knowledge regarding ECT is detailed in table 3. While 67.9% of companions reported having received some information about ECT ($p<0.05$), only 41.3% felt they had received sufficient overall information ($p<0.05$). Although 51.5% were

Table 3. Awareness of electroconvulsive therapy (ECT) among companions of patients receiving ECT at shafa hospital in rasht, 2024

Awareness question	Response	Yes	No	Don't know
Has information about Electroconvulsive Therapy (ECT) been provided to you?	Number	245	98	18
	Percentage	67.9%	27.1%	5.0%
Has information about ECT's therapeutic effects been provided?	Number	186	125	50
	Percentage	51.5%	34.6%	13.9%
Has information about ECT's side effects been provided?	Number	104	182	75
	Percentage	28.8%	50.4%	20.8%
Has information about the ECT procedure been provided?	Number	71	196	94
	Percentage	19.7%	54.3%	26.0%

Contd. table 3.

Has information about ECT risks been provided?	Number	86	181	94
	Percentage	23.8%	50.1%	26.1%
Have you received sufficient overall information about ECT?	Number	149	120	92
	Percentage	41.3%	33.2%	25.5%
Do you believe ECT is beneficial for the patient?	Number	250	55	56
	Percentage	69.3%	15.2%	15.5%
Do you feel ECT worsens the patient's condition?	Number	33	189	139
	Percentage	9.1%	52.4%	38.5%
Is ECT more effective than medication?	Number	106	63	192
	Percentage	29.4%	17.5%	53.1%
Does ECT work faster than medication?	Number	137	73	151
	Percentage	38.0%	20.2%	41.8%

Table 4. Attitudes toward electroconvulsive therapy (ECT) among companions of patients receiving ECT at shafa hospital in rasht, 2024

Attitude question	Response	Agree	Disagree	Neutral/don't know
Electroconvulsive Therapy (ECT) is a safe treatment method	Number	167	120	74
	Percentage	46.3%	33.2%	20.5%
You are worried about ECT	Number	303	40	18
	Percentage	83.9%	11.1%	5.0%
ECT has more side effects than drug therapy	Number	239	53	69
	Percentage	66.2%	14.7%	19.1%
ECT should be banned due to its risks	Number	25	254	82
	Percentage	6.9%	70.4%	22.7%
ECT is performed on people who don't need it	Number	0	281	80
	Percentage	0%	77.8%	22.2%
ECT is only for severely ill patients	Number	308	18	35
	Percentage	85.3%	5.0%	9.7%
ECT is a last-resort treatment	Number	254	41	66
	Percentage	70.4%	11.4%	18.2%
ECT is used to punish psychiatric patients	Number	0	322	39
	Percentage	0%	89.2%	10.8%
Would you or the patient agree to ECT treatment	Number	85	263	13
	Percentage	23.5%	72.9%	3.6%

informed about its therapeutic effects, fewer were aware of its side effects (28.8%, p<0.05), the specific procedure (19.7%, p<0.05), or the associated risks (23.8%, p<0.05). A strong majority (69.3%, p< 0.05) believed ECT was beneficial for the patient. A substantial majority of companions (83.9%, p<0.05) expressed worry about the treatment. To control for potential confounding variables, a multivariate logistic regression analysis was performed. After adjusting for age, gender, and education level, prior exposure to ECT remained a significant independent predictor of higher knowledge scores [Adjusted Odds Ratio (AOR)=2.85, 95% CI: 1.92–4.24, p<0.001) and more positive attitudes (AOR=2.10, 95% CI: 1.45–3.04, p<0.001). The attitudes of the companions are presented in table 4. Table 5 compares the awareness of ECT between companions based on the patient's prior exposure to ECT. Companions of patients with prior ECT experience demonstrated significantly greater knowledge across all domains (p<0.05, Chi-square test). Higher education level was significantly associated with lower anxiety regarding ECT (p<0.05, Chi-square test). Table 6 illustrates how the source of information influenced the companions' awareness. Companions who received information from medical staff had the highest rates of awareness across all knowledge domains (p<0.05, Chi-square test). Despite concerns, 69.3% (p<0.05) viewed ECT as beneficial, and 46.3% considered it safe. Higher education correlated with lower anxiety (p<0.05).

Table 5. Awareness of ECT based on previous ECT experience among companions of patients at shafa hospital, rasht (2024)

Awareness question	Response	Previous ECT (n=195)		No previous ECT (n=166)		p-value
		No.	%	No.	%	
Received information about Electroconvulsive Therapy (ECT)?	Yes	155	79.5%	90	54.2%	p<0.0001
	No	27	13.8%	71	42.8%	
	Don't know	13	6.7%	5	3.0%	
Informed about therapeutic effects?	Yes	112	57.4%	74	44.6%	p=0.028
	No	56	28.7%	69	41.6%	
	Don't know	27	13.9%	23	13.8%	
Informed about side effects?	Yes	76	39.0%	28	16.9%	p<0.0001
	No	77	39.5%	105	63.2%	
	Don't know	42	21.5%	33	19.9%	
Informed about procedure?	Yes	56	28.7%	15	9.0%	p<0.0001
	No	73	37.4%	123	74.1%	
	Don't know	66	33.9%	28	16.9%	
Informed about risks?	Yes	66	33.8%	20	12.0%	p<0.0001
	No	68	34.9%	113	68.1%	
	Don't know	61	31.3%	33	19.9%	
Received sufficient overall information?	Yes	104	53.3%	45	27.1%	p<0.0001
	No	49	25.1%	71	42.8%	
	Don't know	42	21.6%	50	30.1%	
Believe ECT is beneficial?	Yes	163	83.6%	87	52.4%	p<0.0001
	No	15	7.7%	40	24.1%	
	Don't know	17	8.7%	39	23.5%	
Feel ECT worsens condition?	Yes	23	11.8%	10	6.0%	p=0.005
	No	111	56.9%	78	47.0%	
	Don't know	61	31.3%	78	47.0%	

Contd. table 5.

Believe ECT is more effective than drugs?	Yes	82	42.1%	24	14.5%	p<0.0001
	No	37	19.0%	26	15.7%	
	Don't know	76	39.0%	116	69.9%	
Believe ECT works faster than drugs?	Yes	103	52.8%	34	20.5%	p<0.0001
	No	36	18.5%	37	22.3%	
	Don't know	56	28.7%	95	57.2%	

Table 6. Frequency distribution of responses to awareness questions about electroconvulsive therapy (ECT) by information source among companions of patients receiving ECT at shafa hospital in rasht, 2023

Awareness question	Information source	Media		Friends/relatives		Internet		Medical staff	
	response	Count	%	Count	%	Count	%	Count	%
Given information about Electroconvulsive Therapy (ECT)?	Yes	5	35.7	50	55.6	44	53.7	146	83.4
	No	9	64.3	40	44.4	29	35.4	20	11.4
	Don't know	0	0	0	0	9	11.0	9	5.1
Given information about therapeutic effects of ECT?	Yes	4	28.6	38	42.2	40	48.8	104	59.4
	No	10	71.4	29	32.2	25	30.5	61	34.9
	Don't know	0	0	23	25.6	17	20.7	10	5.7
Given information about side effects of ECT?	Yes	6	42.9	14	15.6	22	26.8	62	35.4
	No	6	42.9	61	67.8	25	30.5	90	51.4
	Don't know	2	14.3	15	16.7	35	42.7	23	13.1
Given information about ECT procedure?	Yes	2	14.3	19	21.1	12	14.6	38	21.7
	No	11	78.6	60	66.7	33	40.2	92	52.6
	Don't know	1	7.1	11	12.2	37	45.1	45	25.7

Discussion

The findings of this study highlight significant gaps in the knowledge and attitudes of companions of ECT patients at Shafa Hospital in Rasht, Iran, in 2024. Despite the proven efficacy of ECT in treating severe psychiatric conditions, misconceptions and fears persist, particularly regarding memory loss, brain damage, and the safety of the procedure. These concerns are consistent with previous research, which has shown that public perception of ECT is often shaped by outdated stereotypes and media portrayals rather than scientific evidence (15). Present results indicate that nearly half of the companions received information about ECT from healthcare providers, yet a substantial proportion still lacked comprehensive understanding. This aligns with studies by Grover *et al*, which found that families with prior ECT experience had better knowledge and more positive attitudes, likely due to direct communication with clinicians (16). However, the reliance on non-medical sources such as the internet and social media among first-time companions underscores the need for improved patient education strategies. The study also revealed that companions with higher education levels expressed fewer concerns. This is supported by findings from Shamsaei et al, who emphasized the role of structured pre-ECT counseling in enhancing understanding and reducing anxiety (17). Furthermore, a positive association exists between prior ECT exposure and

reduced fear of either mortality or severe side effects. This finding aligns with studies from high-income countries like the U.S. and other middle-income nations in the region, such as India (3,14).

The high patient volume, compounded by systemic time constraints a challenge across the country is particularly pronounced in regional referral centers such as Shafa Hospital. This is further exacerbated by the lack of comparable private psychiatric referral facilities in the region. These constraints significantly limit the ability of healthcare providers to conduct the detailed, empathetic conversations required to address region-specific misconceptions and beliefs.

When comparing awareness of ECT to other psychiatric treatments, a notable disparity emerges. Pharmacological therapies, while also stigmatized, are generally more accepted due to their widespread use and perceived controllability. In contrast, ECT's more invasive and less understood nature makes it a target for greater skepticism. This is not unique to Iran; studies in Turkey and the Arab world have reported similar public reservations, often rooted in cultural and religious beliefs about the brain and the soul, which are less frequently associated with medication (18,19).

In this regard, the media can play an important role in improving public perceptions of ECT and reducing stigma against it. The media should provide accurate information about a psychiatric patient undergoing ECT. Especially, they show that the procedure is humane and safe, and has excellent recovery (20).

A notable limitation of this study is the reluctance of some companions to participate, particularly those with multiple ECT experiences. This may have introduced selection bias, as their perspectives could differ significantly. Future research should explore innovative methods to engage this subgroup, such as anonymous surveys or focus groups.

As demonstrated by studies globally, from Italy (2) to Hong Kong (5), direct information from healthcare providers significantly improves attitudes toward ECT. Consequently, the development of standardized counseling protocols and culturally adapted educational materials for companions-which clearly detail the efficacy and side effects of ECT-is recommended. Enhancing providers' communication skills through targeted training would also enable them to more effectively address companions' fears, a strategy endorsed by Shamsaei *et al* (17). The present study complements and extends these findings by directly assessing the companions' perspective the key decision-makers. The authors found that this stigma and fear are deeply entrenched among companions, with a significant majority (83.9%) expressing concerns, primarily about memory loss (30.7%) and brain damage (25.4%). This disparity between patient-reported satisfaction and companion apprehension underscores a critical communication gap within the treatment ecosystem. It suggests that positive treatment experiences alone are insufficient to dispel deep-seated societal and cultural fears, emphasizing the need for proactive educational interventions targeting families before and during the treatment process.

Limitations

The small sample size was a limitation of the study.

Conclusion

The findings of this study underscore the critical need for targeted interventions to improve the knowledge and attitudes of companions of patients receiving ECT. Misconceptions and fears, particularly regarding memory loss, brain damage, and procedural safety, persist despite ECT's well-established efficacy in treating severe psychiatric conditions. Addressing these gaps requires a multifaceted approach centered on education, communication, and community engagement. By adopting these measures, healthcare systems can improve companions' acceptance of ECT, facilitate informed decision-making, and ultimately enhance treatment outcomes for patients. Future research should explore the long-term impact of such interventions on ECT adherence and patient recovery.

Informed consent

Written consent form was completed by the participants.

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Conflict of Interest

There was no conflict of interest in this manuscript.

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