

A study on knowledge and attitude towards electroconvulsive therapy among healthcare professionals

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Abstract:

Background: Electroconvulsive therapy (ECT) is an effective and affordable treatment for a range of Psychiatric disorders. Despite being efficacious, it carries a social stigma owing to misconceptions. Healthcare professionals represent a major force in dispelling misconceptions and shaping public opinion regarding ECT. Hence, this study helps in recognizing the deficiencies in knowledge, so that the negative attitude gets corrected and ECT becomes a socially acceptable treatment.

Aim: To explore the knowledge and attitude towards ECT among health care professionals in Kalaburagi, Karnataka.

Methodology: This is an online cross-sectional study using google form comprising sociodemographic details and ECT knowledge and attitude questionnaire circulated to health care workers in Kalaburagi. Data is analysed using IBM SPSS Software 20.0

Results: A total of 260 health care workers participated in the study. The most common source of information was textbook (n=67;25.8). The mean knowledge score was 18.84 ± 5.98 (59.13%) and mean attitude score was 10.60 ± 4.32 (62.5%). Total score on knowledge and attitude questionnaire correlated positively ($r = 0.617, P < 0.01$) suggesting that higher knowledge is associated with more positive attitude.

Conclusion: There were certain gaps in knowledge about ECT among health care professionals. To fill such gaps, curriculum comprising classes on ECT, clinical postings and formative assessments are needed. This ultimately leads to better acceptance of the ECT treatment.

Keywords: Attitude, electroconvulsive therapy, knowledge, health care professionals

Introduction

Electroconvulsive therapy (ECT) is a technique used to treat mental illnesses, in which a brief seizure is induced

by giving electrical stimulation to the brain through electrodes placed on the scalp.¹

It is an effective treatment for severe mental disorders, including major depression, bipolar disorder, delusional disorder, schizophrenia, catatonia, and neuroleptic malignant syndrome. It reduces suicidality and is effective when other treatments have failed. Age is no barrier, with ECT successful in children, adolescents, and the old.²

However, despite evidence for its efficacy, the treatment is also associated with a lot of stigma and misunderstandings among the general public, and due to this, it is often not accepted readily by patients and their families.³ Primitive practices of the past, negative media representations, irrational fears of electricity, and exaggerated fears of memory loss all contribute to this stigma.^{4,5}

Studies assessing knowledge and attitude towards ECT among patients and their relatives reported that higher knowledge was associated with a more positive attitude and vice versa.^{6,7} The most popular sources of information regarding ECT, were the media and relatives/friends.⁸ Patients who acquired their information from the media usually had more negative perceptions⁹ while those who acquired from physicians had positive attitudes.¹⁰ Good knowledge and a favorable attitude are considered desirable attributes in therapeutic intervention and good outcome.¹¹

Evidence suggests that the most effective method of dispelling misconceptions about ECT is an explanation from healthcare professionals. Hence, healthcare professionals must take responsibility for educating society about the true nature and effectiveness of ECT¹²

In contrast to studies on knowledge and attitude toward ECT in patients and their relatives, the data pertaining to

different health-care professionals are very limited.²¹ Healthcare professionals represent a major force in shaping public opinion and influencing the level of support that ECT might receive in the professional space.¹⁷

Hence, the present study is undertaken to assess the knowledge and attitude toward ECT among healthcare professionals. This study will help us in recognizing the deficiencies in knowledge to be worked upon, so that the negative attitude gets corrected and ECT becomes a socially acceptable treatment

Methodology

We conducted a cross-sectional online study. After obtaining the institutional ethical committee clearance, an online questionnaire was circulated via social networks to 260 healthcare professionals working in the Hyderabad-Karnataka region, who provided consent to participate in the study. Healthcare professionals who are not on social media platforms were excluded from the study.

The online questionnaire was comprised of socio demographic details and an ECT knowledge and attitude questionnaire.

ECT knowledge and attitude questionnaire

This questionnaire has been designed in India⁹ and is used to assess the knowledge and attitude toward ECT treatment previously in Indian studies.^{3,6,20,21,22}

It takes about 15–20 minutes for the participant to complete the questionnaire

The knowledge part of the questionnaire has 31 questions that cover various aspects of ECT such as the procedure, informed consent, efficacy/usefulness of ECT, and side effects of ECT. The first item of the knowledge part of the questionnaire also enquires about

the primary source of information regarding ECT among the patients.

The rest of the items of the knowledge part has 3 options, one of which indicates correct knowledge, another option indicates lack of knowledge, and the third option “don’t know,” which again suggested lack of knowledge. For understanding the level of knowledge all the correct responses to question number 2-31 were given a score of “+1” and wrong responses or “don’t know” responses were scored as “0.” Accordingly, the total knowledge score could vary from 0 to 30.

The attitude part of the questionnaire has 16 items that specifically look at the attitude toward ECT. Each item in the attitude questionnaire has three responses—a response suggesting a positive attitude, a second response indicating a negative response and a third “don’t know” response indicating a neutral attitude. For calculating the total attitude score, the positive attitude response was rated as “+1,” negative attitude was rated as “-1” and the neutral response was rated as “0”. Accordingly, the total attitude score could vary from -16 to 16.⁹

Results

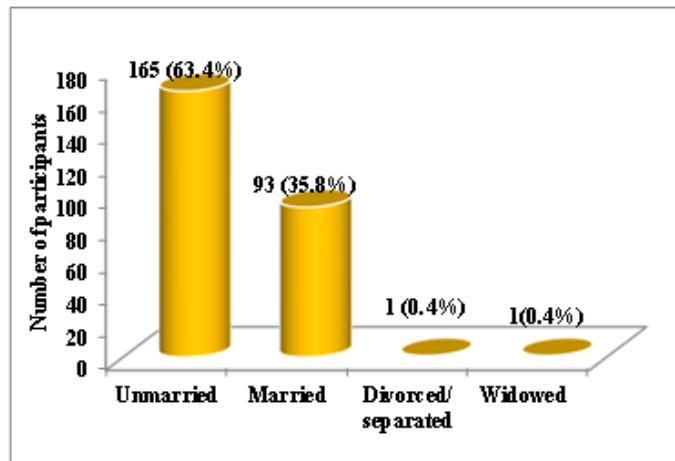
Demographic data

Table 1: Age and gender-wise distribution of participants.

Age in years	Males N (%)	Females N (%)	Total N (%)
20-30	77 (58.8%)	99 (76.7%)	176(67.7%)
31-40	36 (27.5%)	19 (14.7%)	55 (21.2%)
41-50	13 (9.9%)	10 (7.8%)	23 (8.8%)
> 50	5 (3.8%)	1 (0.8%)	6 (2.3%)
Total	131	129	260
Mean ± SD	33.21 ± 9.12	32.35 ± 8.86	32.78 ± 8.95
t-test value and P-value	t = 1.623 P = 0.097NS		

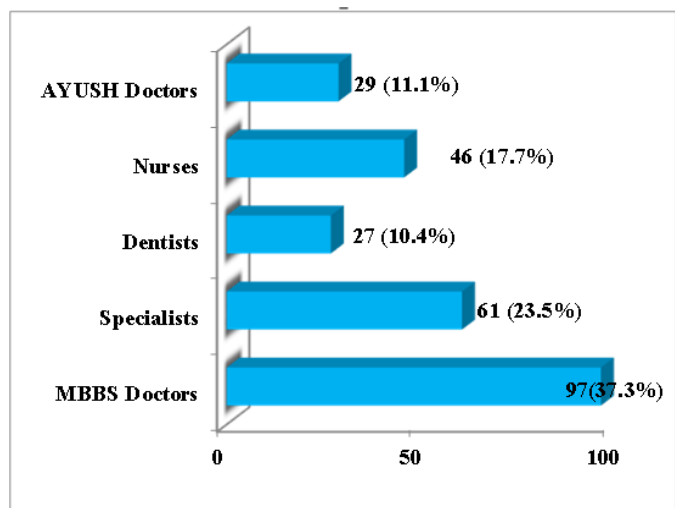
A total of 260 healthcare workers were included in the study. The mean age of participants was 32.78 years. There were 131 (50.4%) male and 129 (49.6%) female participants as illustrated in Table no.1. There was no statistically significant difference in mean age between males and females (P>0.05).

Figure 1: Simple bar diagram representing the distribution of cases according to marital status.



Out of 260 sample participants, the majority of participants were unmarried (165;63.4%), 93 (35.8%) were married and each 1(0.4%) of the participant was divorced/ separated and widowed respectively as illustrated in Figure no.1.

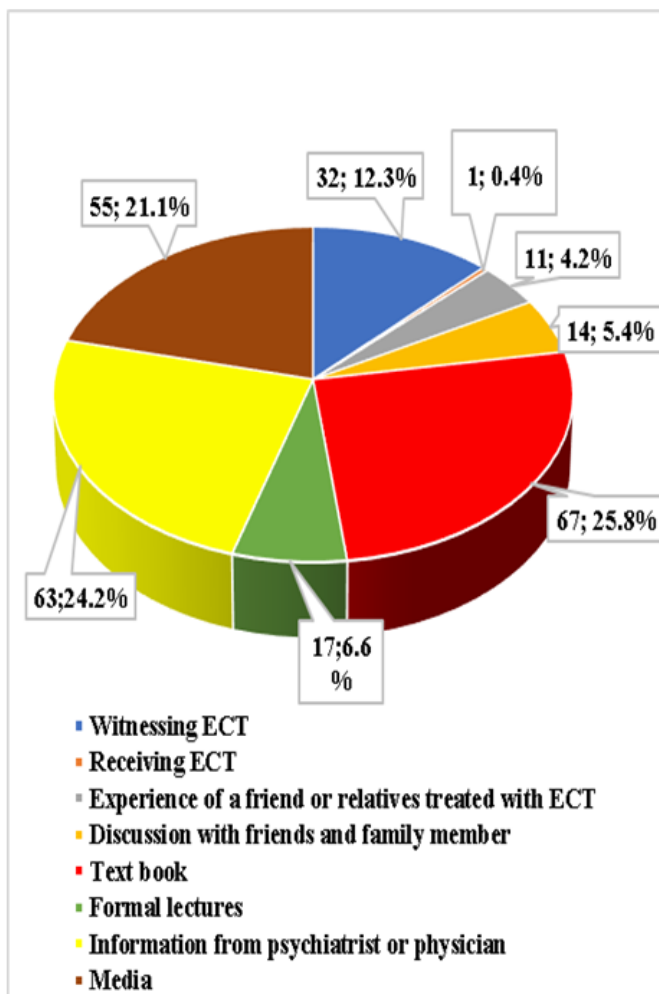
Figure 2: Simple bar diagram represents different groups or cadres of healthcare workers.



In the present study, majority of participants were MBBS doctors (n=97; 37.3%), followed by specialists (n=61; 23.5%), Nursing (n=46 ;17.7%), AYUSH doctors (n=29; 11.1%) and dentists (n=27;10.4%) as depicted in Figure 2.

B. Knowledge about ECT among Health care workers

Figure3: Pie chart representing sources of information about Electroconvulsive Therapy.



In the present study, the first item of the knowledge questionnaire assesses the primary source of information about ECT. Our study observed that the most common primary source of information was a textbook (n = 67; 25.8%), followed by an explanation by a psychiatrist or physician (n = 63; 24.2%)

media (n=55; 21.1%) and witnessing ECT (n= 32; 12.3%) as illustrated in Figure no.3.

Table 2: Knowledge regarding the procedure of ECT among healthcare workers.

Procedure	Correct response	N (%)
During ECT, anesthetics /other medications are used	Yes	173 (66.5%)
How often is ECT given per week?	1-3 times a week	157 (60.4%)
How many ECTs do most patients require in one course?	Usually 1-10	135 (51.9%)
Where is the current applied?	To the head	231 (88.8%)
Who can administer Electroconvulsive therapy?	Psychiatrists/ doctors	201 (77.3%)
What is Electroconvulsive therapy?	Treatment using electricity	188 (72.3%)
Certain investigations are needed before ECT	Yes	188 (72.3%)
How long is the current applied?	Seconds	180 (69.2%)
How is Electroconvulsive therapy given?	By a special machine	223 (85.7%)

In our study, with regards to the procedure part of the knowledge questionnaire, the majority of the participants were aware that current is applied over the head (n=231; 88.8 %) and ECT is administered by a psychiatrist/doctor (n=223; 85.7%) whereas, only about half of the participants were aware of the number of ECTs administered in a course (n=135; 51.9%).

Table 3: Knowledge regarding informed consent for ECT among healthcare workers

Informed consent	Correct response	N (%)
Is written permission of the patient or his/her family member always necessary?	Yes	225(86.5%)
ECT can be given against the wishes of patients and family	No	199 (76.5%)

In the present study, out of 260 healthcare workers, 225 (86.5%) were aware of the need for written consent by the patient or their family member to provide ECT.

Table 4: Knowledge regarding indications of ECT

Indications	Correct response	N (%)
ECT is given to only those patients who have little chance of improvement	No	105(40.4%)
ECT can also be given to older persons (>60-65 years)	Yes	51 (19.6%)
ECT is given only to inpatients	No	91(35.0%)
Pregnant women can also receive ECT	Yes	40(15.4%)
ECT is often used to	Treat acute psychiatric conditions not responding to drugs	191(73.5%)

In the current study, in terms of indications for ECT, out of 260 participants, 191 (73.5%) were aware that ECT is used for the management of acute psychiatric conditions. However, very few healthcare workers were aware that

ECT can be given to the elderly (n=51; 19.6%) and pregnant women (n=40; 15.4%) and ECT can be given to outpatients also (n=91; 35%)

Table 5: Knowledge regarding Effectiveness/mechanism of action of ECT

Effectiveness/ mechanism of action:	Correct response	N (%)
ECT is useful in treating psychiatric disorders	Yes	220(84.6%)
Compared to medications, how useful is ECT?	More or equally useful	169(65.0%)
ECT often worsens psychiatric illness	No	170(65.4%)
How does the ECT work?	By correcting brain changes causing symptoms	218(83.8%)
Effects of ECT last only for a short while	Yes	82 (31.5%)
Does ECT result in a permanent cure?	No	14 (53.8%)
Scientific evidence favors the usefulness of ECT?	Yes	172(66.1%)

In our study, most of the participants were aware of the usefulness of ECT in treating psychiatric disorders (n=220; 84.6%), the mechanism by which ECT works (n=218; 83.8%), and that the scientific evidence favors

the usefulness of ECT (n=172; 66.1%). But less than half were aware that the effects of ECT last only for a short while (n=82;31.5%)

Table 6: Knowledge regarding side effects of ECT

Side effects:	Correct response	N (%)
Use of ECT leads to temporary impairment of memory	Yes	124(47.7%)
Use of ECT leads to permanent loss of memory	No	182(70.0%)
ECT results in permanent damage to brain	No	187(71.9%)
ECT can damage other body-parts permanently	No	197(75.8%)

During the ECT chances of death are very high	No	164(63.1%)
Headache is a common side effect of ECT	Yes	177(68.1%)
Most of patients receiving ECT develop epilepsy later	No	119(45.8%)

In the current study, regarding side effects of ECT, majority knew that ECT does not damage body-parts (n=197; 75.8%) and do not cause permanent brain damage (n=187; 71.9%), But, less than half of the

participants were aware that ECT leads to temporary impairment of memory (n=124; 47.7%) and do not lead to epilepsy later (n=119; 45.8%).

C. Attitude towards ECT among healthcare professionals

Table 7: Attitude towards ECT among healthcare professionals

Attitude toward Electroconvulsive therapy	Positive attitudes N (%)	Ambivalent Attitude N (%)	Negative Attitude N (%)
ECT is dangerous and should not be used?	219(84.2%)	30(11.5%)	11(4.3%)
ECT is inhumane treatment?	213(81.9%)	27(10.4%)	20(7.7%)
I will advise a close relative to receive ECT if recommended	171(65.8%)	32(12.3%)	57(21.9%)
If required, I will undergo ECT.	160(61.5%)	46(17.7%)	54(20.8%)
ECT is often given as a punishment to violent/angry patients.	201(77.3%)	35(13.5%)	24(9.2%)
Following the discovery of new medicines, is treatment with ECT never required?	133(51.2%)	89(34.2%)	38(14.6%)
If ECT fails in a patient, then no other treatment will succeed.	138(53.1%)	94(36.1%)	28(10.8%)
Is ECT at times lifesaving?	162(62.3%)	57(21.9%)	41(15.8%)
Is treatment with ECT cruel?	189(72.7%)	45(17.3%)	26(10.0%)
Is treatment with ECT outdated?	192(73.8%)	46(17.7%)	22(8.5%)
Treatment with ECT should be outlawed.	191(73.5%)	51(19.6%)	18(6.9%)
Once a person is given ECT, in the future whenever he/she becomes ill, is ECT the only treatment option?	142(54.6%)	91(35.0%)	27(10.4%)
Does ECT get you better quicker than medications?	131(50.4%)	74 (28.5%)	55(21.1%)
ECT is given indiscriminately to people.	146(56.1%)	66(25.4%)	48(18.5%)
Is ECT the worst option under any circumstances?	178(68.5%)	59(22.7%)	23(8.8%)
Is ECT often given to people who do not need it?	190(73.1%)	56(21.5%)	14(5.4%)

In our study, majority of the participants disagreed to statements like ECT is dangerous (n=219; 84.2%), ECT is an inhumane treatment (n=213; 81.9%) and ECT is often given as punishment to violent/angry patients (n=201; 77.3%). But, for statements like, Does ECT get

you better quicker than medications? out of 260 participants, only 131 (50.4%) had a positive attitude whereas 55 (21.1%) had a negative attitude and 74 (28.5%) were ambivalent.

D. Distribution of Knowledge and attitude scores among the different cadre of Health care workers

Table 8: Distribution of Knowledge scores among the different cadre of Health care workers

Cadre	No. of participants	ECT knowledge Scores Mean ± SD (%)
MBBS doctors	97	21.09 ± 5.02 (70.3%)
Specialists	61	21.18 ± 5.20 (70.6%)
Dentists	27	16.08 ± 5.29 (53.6%)
Nurses	46	13.40 ± 5.07 (44.7%)
AYUSH Doctors	29	15.82 ± 5.86 (52.7%)
Total	260	18.84 ± 5.98 (59.13%)
ANOVA-Test value, P-Value	F = 20.132	

In the present study, on the knowledge questionnaire, the mean knowledge score was 18.84 ± 5.98 (59.13%), Specialists and MBBS doctors had better knowledge about ECT (21.18 ± 5.20; 70.6% and 21.09 ± 5.02; 70.3% respectively) as compared to Dental (16.08 ± 5.29; 53.6%), AYUSH (15.82 ± 5.86; 52.7%), and Nursing faculty (13.40 ± 5.07; 44.7%). This finding was Statistically highly significant (P<0.01).

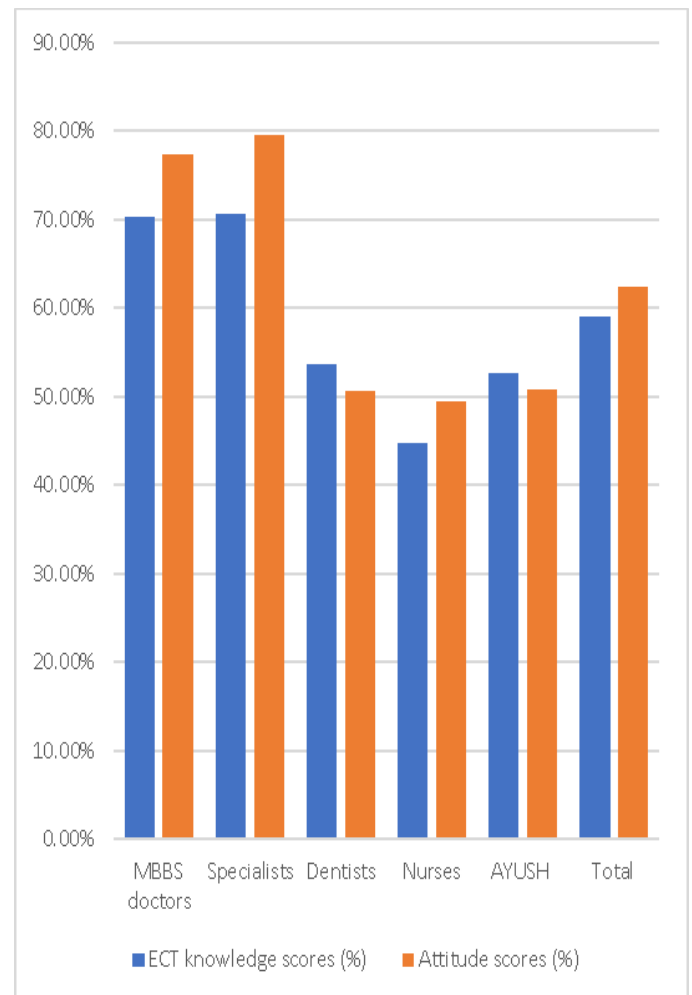
Table 9: Distribution of attitude scores among the different cadre of healthcare professionals

Cadre	No. of Participants	Attitude scores Mean ± SD (%)
MBBS doctors	97	12.36 ± 3.46 (77.3%)
Specialists	61	12.74± 3.70 (79.6%)
Dentists	27	8.11± 4.44 (50.6%)
Nurses	46	7.91± 3.41 (49.4%)
AYUSH- Doctors	29	8.13± 4.01 (50.8%)
Total	260	10.60± 4.32 (62.5%)
ANOVA-Test value, P-Value	F = 13.11	

Our study reveals that the overall mean attitude score was 10.60± 4.32 (62.5%). Specialists (12.74± 3.70; 79.6%) and MBBS doctors (12.36 ± 3.46;77.3%) had a significantly better attitude about electroconvulsive therapy as compared to AYUSH (8.13± 4.01; 50.8%), Dental (8.11± 4.44; 50.6%) and Nursing faculty (7.91±

3.41; 49.4%). This finding was statistically very highly significant (P<0.001).

Figure 4: A column chart comparing total knowledge and attitude scores among different cadres of healthcare workers.



E. Correlation of the knowledge and attitude towards ECT among healthcare professionals

In the present study, there was a statistically significant positive correlation between total knowledge scores and total attitude scores ($r = 0.617$, $P < 0.01$) suggesting that higher knowledge was associated with a more positive attitude.

Discussion

In the present study, the mean age of the participants was 32.78 years. There were 131 (50.4%) male and 129 (49.6%) female participants which is comparable to a study conducted by AL Hadi et al (2017) among psychiatrists and family physicians where the mean age of participants was 34.82 years but the majority were males (70.6%).¹⁶

In the present study, the majority of participants were MBBS doctors ($n=97$; 37.3%), followed by specialists ($n=61$; 23.5%), Nursing ($n=46$; 17.7%), AYUSH doctors ($n=29$; 11.1%) and dentists ($n=27$; 10.4%). Our findings suggest that MBBS doctors were keener and more enthusiastic in participation because of the inclusion of 15 days of clinical postings in psychiatry and more acquaintance in using social media.

In the present study, the most common source of information was a textbook ($n=67$; 25.8%) followed by information from a psychiatrist or physician ($n=63$; 24.2%), media ($n=55$; 21.1%) and witnessing ECT ($n=32$; 12.3%). In a study conducted by Bhat et al, among the medical interns, a majority ($n=27$; 75%) obtained information from medical books while others ($n=9$; 25%) from media.²³ Whereas, in a study conducted by Sharma et al, 2017 among nursing students, 60.8% ($n = 62$) obtained information from media.²⁰ Since the majority of our participants were MBBS doctors and specialists, their primary source of information was

textbooks and discussions with the psychiatrist in contrast to a study conducted on nursing students by Sharma et al.²⁰

In the present study, the mean knowledge score was 18.84 ± 5.98 which is slightly higher compared to a study conducted by Bhat et al on medical interns (16.58 ± 4.78)²³ and nursing students (16.22 ± 3.36)²². This might be due to the inclusion of healthcare professionals who are more experienced and knowledgeable when compared to students.

In our study, with regards to the procedure part of ECT, the majority were aware that current is applied over the head ($n=231$; 88.8 %). Whereas, just over half of the participants were aware of the number of ECTs given in a course ($n=135$; 51.9%), its frequency per week ($n=157$; 60.4%), and that anesthetics are used during ECT ($n=173$; 66.5%).

These findings are comparable to a study conducted by Sharma et al in which 88% ($n=161$) were aware that current is applied over the head, 45.9% ($n=84$) knew the number of ECTs administered in a course, 54.1% ($n=99$) knew the frequency of ECT per week, and 61.2% ($n=112$) knew that anaesthetics are used during ECT.²⁰ In our study, most of the participants were aware of written consent from patient/family ($n=225$; 86.5%) similar to Bhat et al in which 88.9% ($n=48$) were aware of the written consent.²² This gap in knowledge might be due to the lack of specific classes on ECT and the absence of formative assessment after the classes.

In the present study, in terms of indications for ECT, not many healthcare workers were aware that ECT can be given to the elderly ($n=51$; 19.6%), pregnant women ($n=40$; 15.4%), and on an outpatient basis ($n=91$; 35%). The results differed from a study conducted by Sharma et al among nursing students, in which 50.8% ($n=93$)

were aware that ECT can be given to the elderly, 35.5% (n=65) were aware that ECT can be given to pregnant women and 72.1% (n=132) were aware that ECT can be given to outpatients also.²⁰ This might be due to the fact that only a few of our participants had witnessed ECT (n=32; 12.3%).

In terms of effectiveness and mechanism of action, our study reveals that the majority of the participants knew that ECT works by correcting the brain changes causing symptoms (n=218; 83.8%) while only few knew that the effects of ECT are transient (n=82; 31.5%). These findings are comparable to Sharma et al in which 88% (n=161) knew that ECT works by correcting the brain changes causing symptoms but only 25.7% (n=47) knew that the effects of ECT are transient.²⁰ The reason for deficiency in the knowledge might be the insufficient duration of clinical postings and no clear guidelines which compel witnessing ECT.

In the present study, with regards to side effects of ECT, most of the participants were aware that ECT does not result in permanent damage to the brain (n=187; 71.9%) or other body parts (n=197; 75.8%) or causes permanent loss of memory (n=182; 70%) and less than half of the participants were aware that ECT leads to temporary impairment of memory (n=124; 47.7%).

In a study conducted by Sharma et al 71.6% (n=131) were aware that ECT does not result in permanent damage to the brain, and 76% (n=139) knew that ECT does not damage other body parts. But, 89.6% (n=164) knew that ECT does not cause permanent loss of memory and 71% (n=130) knew that ECT leads to temporary impairment of memory.

Our findings were slightly lower when compared to Sharma et al, as our study population included healthcare workers from a tertiary multi-specialty

hospital with less caseload in contrast to Sharma et al who conducted a study on nursing students in the national institute.²⁰

In the present study, the mean attitude score was 10.60 ± 4.32 which is similar to a study conducted by Bhat et al among medical interns (9.94 ± 4.82).²³

Majority of our participants disagreed with statements like ECT is dangerous (84.2%) and ECT is an inhumane treatment (81.9%). Our study participants had a more positive attitude towards ECT when compared to Sharma et al,²⁰ in which only 11.5% disagreed that ECT is dangerous and 10.4% disagreed that ECT is an inhumane treatment.²⁰

This could be explained by the fact that most of our study population gained information about ECT from textbooks and psychiatrists in contrast to media in Sharma et al.²⁰

In the present study, medical faculty differed from other healthcare workers in both knowledge and attitude towards ECT with medical faculty having more knowledge (70.6%) and more positive attitude (79.6%) which is similar to a study conducted by Ram Brender et al in which psychiatrists (81%) had better knowledge and attitude compared to and nurses (71%) social workers (42%) and psychologists (42%)¹⁸. This might be due to the fact that the medical curriculum gives some importance to psychiatry by including theoretical classes and 15 days of clinical postings in psychiatry.

Total scores on the knowledge questionnaire were correlated positively ($r = 0.617$, $P < 0.01$) which is similar to studies conducted by Sharma et al ((Pearson's correlation coefficient – 0.596, $P < 0.001$)²⁰ indicating that better knowledge was associated with a more positive attitude and vice versa.

Limitations

- Study sample consists of predominantly younger age group and medical faculty (MBBS doctors and specialists)
- The study was conducted in one tertiary multi-specialty hospital, so the results of the study cannot be generalized.
- In the absence of a uniform tool to assess the knowledge and attitude towards, it is difficult to compare the results of the present study with other studies. This comparison is further complicated by different groups which were assessed and are entirely different from our study groups such as patients, their relatives, and the general public.²⁰⁻²³

Conclusion

Our results show that healthcare professionals have knowledge about basic ECT procedure and consent, but they lack knowledge about the effectiveness and indications of ECT. These findings emphasize the importance of understanding the knowledge levels of different groups of healthcare professionals. Since lack of knowledge is associated with negative attitudes, it is both possible and very important to change attitudes towards ECT that are in part based on lack of knowledge.

The gap in knowledge and attitudes inside the clinical setting must first be acknowledged and then hopefully changed. This is of great importance since the gap can influence the quality of the treatment, cooperation of the patient, prognosis, quality of life, and even risk for suicide.

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