IJNH

Research Article

Effect of Self-instructional Module on Knowledge Regarding Lithium Carbonate Therapy among the Staff Nurses in Selected Psychiatric Institutions of Mumbai City

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Abstract

Introduction: Mental illness affects one in every eleven individuals in India, or approximately 50 million Indians are afflicted with psychiatric disorders. Approximately one in ten thousand individuals with psychiatric disorders will experience mood disorders at some point in their lives. A recent NICE guideline from 2014 designates lithium as the initial maintenance treatment for bipolar affective disorder.

Materials and Methods: A quasi-experimental, one group pre-test, post-test design has been adopted to assess the effectiveness of self-instructional module (SIM) on knowledge, among the staff nurses on lithium carbonate therapy in selected psychiatric institutions. The study was conducted on 60 staff nurses who were working in selected psychiatric institution. Data were collected from May 2021 to July 2021. A structured questionnaire has been utilized to assess the knowledge of staff nurses about general concept, pharmacodynamics, pharmacokinetics, therapeutic doses, laboratory monitoring, adverse effect, contraindication, measure to prevent adverse effect, management of adverse effects, and nursing implications to be taken while the patient on lithium carbonate therapy.

Results: The data revealed that there is a significant difference in mean of pre-test score and mean of post-test score knowledge regarding lithium carbonate therapy among staff nurses in selected psychiatric institutions. The study's key findings indicate that the SIM concerning lithium carbonate therapy effectively improves the knowledge of staff nurses. No statistically significant correlation was found between demographic variables and staff nurses' knowledge of lithium carbonate therapy.

Conclusion: The study concluded that it is necessary to provide study module on lithium carbonate therapy to enhance the knowledge of staff nurses which is essential.

Keywords: Lithium carbonate therapy, psychiatric institutions, self-instructional module

Introduction

Mood stabilizing properties of lithium help to avoid the recurrence of manic and to a lesser extent, depressed episodes.

Date of Submission: 23-10-2023
Date of Revision: 02-12-2023
Date of Acceptance: 12-12-2023

Access this article online
Website: http://innovationalpublishers.com/Journal/ijnh
ISSN No: 2454-4906
DOI: 10.31690/ijnh.2023.v09i04.015

For over 50 years, lithium has been used to treat bipolar affective disorder. In people with emotional disorders, it also aids in preventing suicide. It is also used as an adjuvant to antidepressants for unipolar depression and to treat depressive episodes in bipolar disorder. For over 50 years, lithium has been used to treat bipolar affective disorder. In people with emotional disorders, it also aids in preventing suicide. In addition, it is used to treat bipolar disorder depression episodes and unipolar depression by enhancing the effects of antidepressants.[1] It treats euphoric mania as a high-dose monotherapy. When it comes to manic, depressive, or mixed episodes in bipolar disorder, lithium is just as effective as valproate.[2]

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In the 1970s, the U.S. FDA approved lithium as the first mood stabilizer for the mania treatment. It frequently works wonders for managing manic symptoms and averting the recurrence of manic and depressive episodes.[3]

Approximately 50 million Indians suffer from psychiatric diseases, or one in eleven people in the country suffer from mental illness. About one in ten thousand people with psychiatric diseases have mood issues. There is an urgent need to address both the preventive and curative aspects of the concerning rise in the number of mentally ill individuals.[4]

Manic episodes linked to bipolar disorder are prevented and treated with lithium. Lithium improves the reuptake of biogenic amines, norepinephrine, and serotonin and modifies the metabolism of sodium in nerve and muscle cells. It becomes an anti-manic and anti-depressant drug by blocking sensitive dopamine receptors. The range of lithium carbonate concentrations that are both helpful and harmful is quite small.[5]

The study's key findings showed that we could measure participants' knowledge levels and provide them with sufficient information to avoid problems and aid in the early detection of lithium carbonate medication adverse effects. Thus, evaluating staff nurses' degree of understanding about lithium carbonate medication is urgently needed; therefore, the present study is designed and undertaken to educate the nurses on lithium carbonate therapy with a self-instructional module (SIM). This will help the nurses to improve their knowledge about lithium therapy and provide care accordingly to their clients.

Materials and Methods

A quasi-experimental study has been conducted on sixty staff nurses employed in selected psychiatric institutions to assess the efficacy of a SIM on lithium carbonate therapy knowledge. A study's sample consisted of sixty staff nurses employed in psychiatric institutions. The sample for the study was chosen from those who satisfied the sampling criteria and were available from May 2021 to July 2021. They were chosen using a convenient non-probability sampling method.

An evaluation methodology was employed in this study to gauge how well the SIM covered lithium carbonate therapy knowledge. The research design utilized was quasi-experimental, one group pre-test and post-test designs to measure the effectiveness of SIM on knowledge regarding lithium carbonate therapy in the staff nurses in selected psychiatric institutions.

A structured questionnaire has been utilized to assess the knowledge of staff nurses about general concept, pharmacodynamics, pharmacokinetics, therapeutic doses, laboratory monitoring, adverse effect, contraindication, measure to prevent adverse effect, management of adverse effects, and nursing implications to be taken while the patient on lithium carbonate therapy.

Section A

This section contained (7) questions about the demographic of staff nurses such as age, gender, educational qualification, received any information by attending any program on lithium carbonate therapy organizational position, training institute, and clinical experiences.

Section B

This section contained (41) questions in main 10 categories such as general concept, pharmacodynamics, pharmacokinetics, therapeutic doses, laboratory monitoring, adverse effect, contraindication, measure to prevent adverse effect, management of adverse effects, and nursing implications to be taken while the patient on lithium carbonate therapy.

The content was scrutinized and validated for accuracy, appropriateness, and adequacy by an expert from the field of Mental Health Nursing and Expert Guidance from Psychiatry, Psychology, Sociology, Educationalist, Statistician, and other fields of nursing experts. Content validity of the tool was established by obtaining suggestions from the experts. The tools were further modified as per the suggestions and recommendations of the expert. Using the split-half method, the questionnaire's reliability was determined to be r-0.87.

A final research was conducted on 60 staff nurses who have been working in selected psychiatric institution. Staff nurses who satisfied the specified criteria were chosen using a convenient selection approach to form the study's sample. Consent to take part in the study was gained after the study's objectives were

Table 1: Sociodemographic distribution of staff nurses

Demographic variable	Frequency	Percentage
Age (years)		
22–30	7	11.7
30–40	46	76.7
40–50	5	8.3
Above 50	2	3.3
Gender		
Male	32	53.3
Female	28	46.7
Educational qualification		
GNM	26	43.3
Basic BSc Nursing	22	36.7
Post-basic BSc Nursing	6	10
MSc Nursing	4	6.7
Post-basic Diploma in Psychiatry	2	3.3
Have you received information about lithium carbonate therapy?		
No	32	53.3
Yes	28	46.7
Organizational Position		
Staff Nurse	52	86.7
Sister in charge	6	10
Psychiatric unit in charge	2	3.3
Training Institute		
Government	5	8.3
Private	55	91.7
Clinical experience		
<5 years	4	6.7
5–10	46	76.7
11–15	6	10
>15	4	6.7

Table 2: Distribution of staff nurses according to knowledge regarding lithium carbonate therapy among the staff nurses.

S. No	Scores	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1	61% and above	7	11.67	60	100
2	51–60%	24	40	0	0
3	41–50%	24	40	0	0
4	Below 40%	5	8.33	0	0

outlined. The assessment of current knowledge on lithium carbonate therapy involved the distribution of a structured knowledge questionnaire, which was followed by the distribution of a SIM on the subject. After 7 days, a post-test was conducted. Numerous statistical tests were employed to analyze the data in line with the objective and the hypothesis, including the paired t-test, chi-square test, percentage, mean, and standard deviation.

Results

Section I: Description of sociodemographic data of staff nurses in selected psychiatric institutions

Findings of section I show that the majority of staff nurses (76.7%) were from the age group 22–30 years and 53.3% were male. Majority of staff nurses (43.3%) were educated up to GNM, majority of staff nurses (53.3%) were not received any information by attending any program on lithium carbonate therapy, majority of participants in organizational positions (86.7%) were staff nurses, and majority of staff nurses were from 91.7 were from the private training institute and 76.67% had 5–10-year clinical experience [Table 1].

Section II assessment of knowledge regarding lithium carbonate therapy among the staff nurses in selected psychiatric institution

Table 2 shows that majority 24 (40%) of samples scored between 41 and 50 and 24 (40%) of samples scored between 51 and 60 in pre-test whereas in post-test, majority 60 (100%) scored between 61% and above.

Section III effectiveness of SIM on knowledge regarding lithium carbonate therapy among the staff nurses

Table 3 shows that the post-test mean percentage of knowledge score about lithium carbonate therapy improved to 31.23 from the pre-test mean of 20.82.

Section IV association between knowledge with selected demographic variables regarding lithium carbonate therapy

Association between knowledge with selected demographic variables of staff nurses in selected psychiatric institutions such as age, gender, educational qualification, received information about lithium carbonate therapy, organizational position, training institute, and clinical experiences shows that, the P-value of the association with pre-test and post-test knowledge score was more than 0.05. Thus, there is no significant association of above these demographic variables with the pre-test knowledge score of staff nurses in selected psychiatric institutions [Tables 4 and 5].

Table 3: Comparison of the knowledge among staff nurses

Test	*n*	Mean
e-Test	60	20.82
Post-test	60	31.23

Discussion

This study was intended to assess the effect of SIM on knowledge regarding lithium carbonate therapy among the staff nurses in selected psychiatric institutions.

A study on lithium medication for individuals with learning disabilities, as well as carers' attitudes toward treatment and awareness of potential risks, was carried out by Clarke D. J. in 1994. A survey of twenty-five carers was conducted to gauge their attitude toward treatment and their understanding of lithium's side effects. Data were collected from individuals on lithium as well as those who provided care for them. The group's understanding of lithium's effects was found to be comparable to that of research conducted on individuals with mental illnesses, according to the findings. There was no discernible variation in knowledge based on residence. People with learning difficulties who are administered lithium should be given written information regarding the drug's effects, according to the majority of respondents who had good views toward its treatment. Those with greater knowledge also showed more positive attitudes toward the treatment. The prescriber needs to make sure that the patient has learned enough to be safe.[6]

To ascertain the level of patient knowledge of lithium therapy and to investigate potential influencing factors, Schaub conducted a study. The knowledge ratings for lithium therapy were found to be adversely connected with age, but the length of treatment, sex, education, and diagnosis did not seem to have any bearing on knowledge. Increased patient education regarding lithium treatment is necessary, particularly for older patients who are taking the drug because they are more vulnerable to adverse drug effects.[7]

Mehala (2011) evaluated the impact of psychoeducation on knowledge in relatives of patients receiving lithium medication in a research. The study results are consistent with the present investigation, which revealed that the SIM was useful in raising staff nurses' level of knowledge. This study also shows the efficacy of a psychoeducational intervention program in enhancing the knowledge of family members of clients getting lithium therapy or lithium carbonate therapy about lithium therapy. It follows that there is a correlation between this study and the current one.[8]

Table 4: Association between pre-test knowledge with selected demographic variables

S. No	Variable	Group	Knowledge		Chi-square	d.f.	*P*-value	Significance
			Below average	Above average				
1	Age (years)	22–30	5	2	2.204	3	0.531	Not significant
		30–40	20	26				
		40–50	3	2				
		Above 50	1	1				
2	Gender	Male	17	15	0.63	1	0.427	Not significant
		Female	12	16				
3	Educational qualification	GNM	13	13	1.662	4	0.798	Not significant
		Basic BSc Nursing	9	13				
		Post-basic BSc Nursing	3	3				
		MSc Nursing	3	1				
		Post-basic Diploma in Psy	1	1				
4	Have you received any information by attending any program on lithium carbonate therapy?	No	14	18	0.577	1	0.488	Not significant
		Yes	15	13				
5	Organizational Position	Staff Nurse	26	26	0.601	1	0.741	Not significant
		Sister in charge	2	4				
		Psychiatric unit in-charge	1	1				
6	Training Institute	Government	2	3	0.152	1	0.697	Not significant
		Private	27	28				
7	Clinical experience (years)	<5 years	1	3	0.934	3	0.817	Not significant
		5–10	23	23				
		11–15	3	3				
		>15	2	2				

Table 5: Association between post-test knowledge with selected demographic variables

S. No	Variable	Group	Knowledge		Chi-square	d.f.	*P*-value	Significance
			Below average	Above average				
1	Age (years)	22–30	3	4	3.968	3	0.265	Not significant
		30–40	24	22				
		40–50	4	1				
		Above 50	0	2				
2	Gender	Male	16	16	0.076	1	0.782	Not significant
		Female	15	13				
3	Educational qualification	GNM	15	11	0.731	4	0.947	Not significant
		Basic BSc Nursing	10	12				
		Post-basic BSc Nursing	3	3				
		MSc Nursing	2	2				
		Post-basic Diploma in Psy	1	1				
4	Have you received any information by attending any program on lithium carbonate therapy?	No	17	15	0.058	1	0.809	Not significant
		Yes	14	14				
5	Organizational position	Staff nurse	29	23	3.296	2	0.192	Not significant
		Sister in charge	1	5				
		Psychiatric unit in-charge	1	1				
6	Training Institute	Government	1	4	2.19	1	0.139	Not significant
		Private	30	25				
7	Clinical experience (years)	<5 years	2	2	3.604	3	0.308	Not significant
		5–10	23	23				
		11–15	5	1				
		>15	1	3				

Singh (2014) carried out a study to find what patients knew about lithium therapy. The study's objective is to determine the efficacy of the patient knowledge instructional module on lithium carbonate therapy. The study's main conclusions showed that improving patients' understanding through an instructional module on lithium carbonate therapy for self-care is beneficial. These studies demonstrate that patients are taking particular mental medications, which have higher adverse consequences. Particular education is required to avoid therapeutic cessation and recurrence.[9]

Perehudoff *et al*. (2016) carried out a study in Belgium to evaluate the nurses' training and understanding of

psychopharmacology for acute geriatric care. Nursing students at Belgian educational institutions as well as nurses and nurse assistants working in assisted living facilities were included in the study. The findings demonstrated that nurses are conscious of their knowledge gaps and have little understanding of the usage of psychotropics in nursing homes.[10]

Conclusion

The current study investigates the impact of an instructional module on patients' knowledge regarding lithium carbonate medication and finds a highly significant increase in knowledge. The nurse may come across numerous circumstances in which she might use tools such as booklets or psycho-education to organize patients' education and discharge as efficiently as feasible.

Conflicts of Interest

There were no conflicts throughout the study.

Funding

No funding was received from any agency for this study.

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How to cite this article: Perke J, Kadri M. Effect of Self-instructional Module on Knowledge Regarding Lithium Carbonate Therapy among the Staff Nurses in Selected Psychiatric Institutions of Mumbai City. Innov J Nurs Healthc. 2023;9(4):68-72.