

Awareness of Medical Emergencies Occur in Patients among Psychiatric Care Area Nurses to Prevent Unnecessary Delay and Save a Life

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Abstract: *Essential parts of treatment in reduction of acute behavioral and psychiatric symptoms are medicines. That in turn frequently leads patient towards common medical problems like sudden cardiac arrest, respiratory distresses, convulsions and hypoglycemia. The nurses caring for mentally ill require an adequate level of knowledge regarding management of medical emergencies and should develop assessment skills to detect the physical changes in the patient's condition. Study objectives were to evaluate the effectiveness of self instructional modules among staff nurses and to find the associations of pre test mean knowledge scores with selected demographic variables. One group pre test post test design was used. The sample consisting of 30 staff nurses were fulfilled the inclusion criteria of sample selected from psychiatric inpatient care area. A semi structured knowledge questionnaire was used, developed by investigator. Study showed there was a significant improvement in the knowledge level of nurses after using the SIM. The nurses employed in the inpatient psychiatric care area play a vital role in the health care delivery system. As they provide the direct care to the sick and suffering, they are responsible for rapid assessment and treatment of the patient with medical emergencies, independently and collectively.*

Keywords: Medical emergency, Psychiatric nurse, Self Instructional Module, Psychiatric in patient

1. Introduction

Psychiatric patients have emerged as the number one killer because the patients on psychotropic drugs often has the complications of arrhythmia and cardiac arrest.^[5] The natural causes of death among persons with severe mental illness (SMI) are Cardiovascular disease, Diabetes, Respiratory disease etc. The mortality rates from these diseases among SMI population are very high, than those of the Morbidity and Mortality in general population.^[6] A Survey report in 2003, says that more than 68% of adults with a mental disorder having at least one common medical disorder, and 29% of persons with a medical disorder had a co morbid mental health problems.^[7]

Marc et al. reported that heart disease (2.6%), Diabetes type2 (4.8%), Epilepsy (23.4%) and Asthma (19.2%) etc are the main medical problems suffered by mentally ill people and it is reported by patients themselves. Around 60% of premature deaths occur in people with mental illness are effect of their general medical conditions.^[2]

The people who receive initial emergency care increases their survival rate to 30% more than those who do not receive the initial emergency care.^[4] A report from world psychiatry journal mentioned that the life period of people with severe mental illness (SMI) is shorter compare to the common population.

Hence the nurses who care for patient with mental illness requires an adequate level of knowledge regarding management of medical emergencies and also should develop some assessment skills to detect the changes in the patient's condition. The nurse must be able to provide immediate management to the patient and also they must be competent enough to provide sensitive, empathetic care to patients who are in dangerous condition and must initiate resuscitation early without losing much time. Nurse must

increase their knowledge regarding emergency /resuscitative and acute phase of emergency management.^[3]

2. Literature Survey

The aim of this study was to be investigated for cardio-metabolic screening in patients prescribed antipsychotics. 100 samples were participated in this study. They identified that individuals with severe mental illness are receiving hospital care around 30% less than those without SMI. In addition, less than 30% of individuals with SMI may receive physical examinations and laboratory examinations before or during treatment with antipsychotics. They indicate that the integration of physical and mental health services may be beneficial in reducing disparities in health care for individuals with SMI.⁹

The effects of undertreated chronic medical illnesses in patients with severe mental disorders were investigated in this study. Investigator selected 200 samples by using random sampling technique. Investigator found that, some of the co morbidities associated with severe mental illness are reducing the quality of life and undiagnosed and under treated medical conditions that leads to premature mortality. The study proved that the life expectancy for individual with serious psychiatric disorders is approximately 30% shorter than that of the general US population. Implementing behavioral interventions into clinical practice may help patients improve their overall health and prevent chronic medical conditions.^[10]

The effectiveness of self instructional module regarding emergency management of patient with myocardial infarction on knowledge among staff nurses was investigated. Data was collected from 98 staff nurses selected by convenient sampling technique using closed ended questionnaire and data was analyzed by using descriptive and inferential statistics. The result shows that

the overall pretest mean score 22.06+1.92 which is 48% whereas in the post test the mean score (30.04+2.82) which is 65% of the total score with an overall difference of 17% of pretest score reveals good knowledge, which shows that the SIM was effective in increasing the knowledge scores of staff nurses [11]

A systematic review was done from 1966 to 2010 to assess the prevalence physical health problems in people with severe mental illness. Study revealed that metabolic syndrome rates 30%, diabetes 8%, cardiovascular disease 35%, respiratory disease 23% higher in mentally ill people compare to the general population. The study highlights the contributing factors that are considered the impact on the physical health of these people, such as psychotropic medications, individual lifestyle choices, psychiatric symptoms, as well as disparities in the health care etc. Moreover, there is sufficient evidence that people with SMI are less likely to receive standard levels of health care for most of these diseases. [12]

A systematic and meta-analysis review was done from November 2009 to November 2014 (13477 reviews) to assess the effects of antipsychotics, antidepressants and mood stabilizers in people with schizophrenia, depression and bipolar disorder. Evidence suggests that the prevalence of type 2 diabetes mellitus in people with schizophrenia, bipolar disorder and schizoaffective disorder is 2-3 folds higher risk and 1.5 to 3 folds higher risk for cardiovascular morbidity and mortality than in the general population. Moreover, cardiovascular diseases are the commonest cause of death in patients with SMI, that is 10-fold higher than suicide. [13]

The effectiveness of self instructional module on knowledge regarding myocardial infarction rehabilitation, among sixty staff nurses working in cardiac center was investigated. Subjects were administered a questionnaire regarding cardiac care was used to assess the existing knowledge of the subjects and administered self instructional module on cardiac care after five days. Followed by a post-test was given to assess the gain in knowledge on post myocardial infarction cardiac rehabilitation. The result of this study was the mean pre-test score 8.27 ± 4.40 and it was increased to 23.18 ± 3.69 in the posttest following administration of the self-instructional module. The post test score was statistically significant ($P < 0.0001$) indicating that the self-instructional module was effective to gain in knowledge of the subjects. [14]

3. Problem definition and Problem statement

Problem statement

Effectiveness of Self Instructional Module on knowledge regarding management of selected common medical emergencies among staff nurses working in selected psychiatric hospitals in Mangalore.

Problem definition

In this study **Self instructional module (SIM)** regarding management of selected common medical emergencies refers to the systematically organized instruction, prepared by the investigator, for the self learning of the study subjects

for a period of 7 days, and assessing the knowledge gained thereafter.

In this study **Knowledge** refers to the correct written response of the staff nurses to the knowledge items in the semi structured questionnaire regarding nursing management of medical Emergencies in Psychiatric setting.

In this study **Selected medical emergency** are "the sudden onset of a medical condition manifesting itself by acute symptoms of sufficient severity. 'The investigator selected, Heart attack, Respiratory distress, Convulsion, Hypoglycemia are the selected medical emergencies in this research study.

In this study **Heart attack** is a sudden occurrence of coronary artery occlusion via thrombosis, typically resulting in the death of part of a heart muscle and sometimes fatal among psychiatric patient who need emergency care such as CPR and need of Code blue.

In this study **Respiratory distress** is a severe difficulty in achieving adequate oxygenation in spite of significant efforts to breathe. It is usually associated with increased breathing rate and the use of accessory muscles in the chest wall.

In this study **Convulsion** is a sudden, violent, involuntary contraction of the muscles of the body, often accompanied by loss of consciousness.

In this study **Hypoglycemia** is the condition in which the blood sugar concentrations fall below a level necessary to properly support the body's need for energy and stability throughout its cells.

In this study **Effectiveness** refers to the extent to which the SIM on selected common medical emergencies achieved effect in improving knowledge of staff nurses as evident from gain in knowledge score.

4. Methodology/Approach

A descriptive and evaluatory approach was used. A one group Pre-test Post-test design was adopted.

4.1 Objectives

- 1) To determine the pre test knowledge of staff nurses regarding management of selected medical emergencies in psychiatric settings.
- 2) To evaluate the effectiveness of self instructional module regarding management of selected medical emergencies in psychiatric settings among staff nurses.
- 3) To find the association of pre test mean knowledge scores with selected demographic variables.

4.2 Assumptions

- 1) The staff nurses will have some knowledge about common medical emergencies

2) The SIM will improve the knowledge of the nurses towards the management of common medical emergencies

4.3 Hypotheses

H₁-The mean post test knowledge scores of Self Instructional Module will be significantly higher than the mean pre-test knowledge scores.

H₂. There will be significant association between pre-test knowledge score with selected demographic variables.

4.4 Inclusion criteria for Staff Nurses

- 1) Nurses those who are working in psychiatric settings.
- 2) Nurses those who had special training in ACLS or they had not under gone any special training.

4.5 Exclusion Criteria

- 1) Nurses who have less than six months experience in the psychiatry wards.
- 2) Nurses those who are completing their internship training.

4.6 Data collection instruments

Semi structured knowledge questionnaire on emergency management of Heart attack (Tool-1, 7 items ,the grade was given such as very good (6-7), good (4-5), average (2-3) and poor (0-1), Respiratory distress (Tool-2, 7 items, the grade was given such as very good (6-7), good (4-5), average (2-3) and poor (0-1), Convulsion (Tool-3, 6 items, the grade was given such as very good (>5), good (4-5), average (2-3) and poor (0-1), and Hypoglycemia (Tool-4, 6 items, the grade was given such as very good (>5), good (4-5), average (2-3) and poor (0-1) to assess the knowledge level of the staff nurses and effectiveness of the SIM.

4.7 Data Collection Procedure

Study was conducted in Father Muller Mental Hospital, Mangalore on 30 psychiatric staff nurses. The baseline information collected by demographic proforma and further the semi structured knowledge questionnaire regarding management on heart attack (Tool-2), respiratory arrest (Tool-3), convulsion (Tool-4) and hypoglycaemia (Tool-5) were administered to the sample. The time taken for each tool completion for each subject was 5-8 minutes. Followed by the Self Instructional Modules were introduced to each subjects and a time period of 7 days was given for the subjects. Post test was done using the same semi structured knowledge questionnaire after 7 days to assess the effectiveness of self instructional module on knowledge regarding management of selected common medical emergencies.

5. Result and Discussion

Table 1: Frequency (f) percentage (%) distribution of subjects according to their sample characteristics

Variables	Frequency (f)	Percentage (%)
Age in years		
21-25	18	60
26-30	9	30
31-35	1	3
>35	2	7
Gender		
Male	11	37
Female	19	63
General Education		
10 th Standard	-	-
Pre-university	18	60
Graduate	10	33
Post Graduate	2	7
Professional Education		
GNM	6	20
Diploma in psychiatry Nursing	-	-
BSc Nursing	21	70
MSc Nursing	3	10
Present Position		
Incharge	3	10
Staff Nurse	27	90
Duration of services in the psychiatric settings		
6 months to 1 year	16	53
1 – 2 years	11	37
3 – 4 years	2	7
5 – 6 years	1	3
7 – 8 years	-	-
9 – 10 years	-	-
>10 years	-	-
Previously seen any medical emergencies		
Yes	21	70
No	9	30
Previously attended any medical emergencies		
Yes	23	77
No	7	23
Previous experience in medical / emergency ward or ICU		
Yes	15	50
No	15	50

N=30

Table 2: Frequency (f), Percentage (%) distribution and grading of subjects according to pretest and post test knowledge scores basis on management of selected medical emergencies such as Heart Attack(Tool 2) and respiratory arrest(Tool 3)

Knowledge score	Grade	Heart Attack				Respiratory Arrest			
		Pre test		Post test		Pre test		Post test	
		f	%	f	%	f	%	f	%
>5	Very good	1	3	27	90	2	7	26	87
4 – 5	Good	16	53	3	10	7	23	4	13
2 – 3	Average	13	44	-	-	21	70	-	-
0 – 1	Poor	-	-	-	-	-	-	-	-

N=60 Maximum score =14

Table 3: Frequency (f), Percentage (%) distribution and grading of subjects according to pretest and post test knowledge scores basis on management of selected medical emergencies such as convulsion(Tool 4) and hypoglycemia(Tool 5).

Knowledge score	Grade	Heart Attack				Respiratory Arrest			
		Pre test		Post test		Pre test		Post test	
		f	%	f	%	f	%	f	%
>5	Very good	-	-	24	80	-	-	25	83
4 – 5	Good	7	23	6	20	6	20	5	17
2 – 3	Average	22	74	-	-	24	80	-	-
0 – 1	Poor	1	3	-	-	-	-	-	-

N=60 Maximum score =12

Table 4: Mean, SD, Mean percentage, Mean difference, SD difference, 't' value and p value of pretest and post test knowledge scores on management on medical emergencies such as Heart attack, Respiratory arrest, Convulsion, Hypoglycemia

Tools	Max score	Pre test		Post test		't' value	p value
		Mean	SD	Mean	SD		
Heart attack	7	3.5	.77	6.3	.66	20.817	<0.0001
Respiratory Arrest	7	3.3	1.08	6.4	.73	15.119	<0.0001
Convulsion	6	2.9	1.24	5.8	.40	13.186	<0.0001
Hypo glycemia	6	2.8	.81	5.8	.40	23.235	<0.0001

N=120, Maximum score = 26. $t_{(29)} = 2.045$, $p < 0.05$

Majority of the subjects (60%) were found in the age group of 21-25years. Similar findings noted in other study which showed that 74% of participants were the same category of the age group.⁴⁰ Most of the subjects (63%) were female staff nurses and only 37% were male staff nurses. Similar findings were revealed in another study majority of (74%) of participants were females.⁵¹ Among all the subjects (70%) were graduate. Findings are contradictory with other study findings which showed 66.67% staff nurses were with GNM qualification.⁵⁵

In the present study the knowledge level on management of heart attack in psychiatry settings, the majority (56%) of the subjects had good knowledge, 44% of them had average knowledge during the pretest. After the introduction of SIM 90% of subjects had very good knowledge and 10% had good knowledge. In the case of respiratory arrest knowledge level majority (70%) of the subjects had average knowledge, 23% of them had good knowledge where as only 7% of them had very good knowledge. After the introduction of SIM 87% of the subjects had very good knowledge and 13% had good knowledge. During the pretest the knowledge level on management of convulsion, majority (74%) of the subjects had average knowledge and 23% of them had good knowledge. After the introduction of SIM 80% of subjects had very good knowledge and 20% had good knowledge. In the case of hypoglycemia knowledge level majority (80%) of the subjects had average knowledge, 20% of them had good knowledge where as only 7% of them had very good knowledge. After the introduction of SIM 83% of the subjects had very good knowledge and 17% had good knowledge.

A study conducted on knowledge of staff nurses on management of cardiac rehabilitation reported that the mean pre-test score was 8.27 ± 4.40 and post test score was increased to 23.18 ± 3.69 . This was statistically significant ($P < 0.0001$) indicating that the self-instructional module was effective to gain in knowledge of the subjects.⁵⁵ These findings supported following findings of present study, the posttest mean and SD were greater than pretest mean and SD. The tool wise mean pretest, post test scores and SD on management of heart attack was $3.5 \pm .77$ and $6.3 \pm .66$, on management of respiratory arrest was 3.3 ± 1.08 and $6.4 \pm .73$, on management of convulsion 2.9 ± 1.24 and $5.8 \pm .40$. and on management of hypoglycemia was $2.8 \pm .81$ and $5.8 \pm .40$ respectively.

Another study was conducted on knowledge of staff nurses on management of patients with mood disorders reported that the difference between the mean post test and the mean pretest was statistically significant ($t'_{(98)} = 50.522$; $P \leq 0.001$) which shows that the SIM was effective in increasing the knowledge scores of staff nurses.⁵⁶

The mean post test knowledge score was higher than the mean pretest knowledge score (17.4). The computed 't' value and 'p' value to determine the effectiveness of the SIM on management of heart attack was found to be 20.817 and <0.0001 , on management of respiratory arrest was found to be 15.119 and <0.0001 , on management of convulsion 13.186 and <0.0001 and on management of hyperglycemia 23.235 and <0.0001 respectively. In four tools the computed 't' and 'p' values were higher than the table value ($t'_{(29)} = 2.045$, $p < 0.05$), which indicated that, there was significant difference between the pretest and posttest mean knowledge scores. So the SIM was found to be effective in improving the knowledge of the subjects.

This study is supported by a similar study conducted on the effectiveness of Self Instructional Module regarding Emergency Management of patient with Myocardial Infarction on Knowledge among Staff Nurses which showed a significant differences between pretest mean score 22.06 ± 1.92 which is 48% whereas in the post test the mean score (30.04 ± 2.82) which is 65% of the total score with an overall difference of 17% of pretest score reveals good knowledge. ($P < 0.0001$)⁵¹

6. Conclusion

The patients who had a mental illness at any point in their life were twice as likely to have had a medical problems especially heart disease, metabolic disorders, respiratory problems and convulsions than the general population, due to their medications or their life style. The main purpose of this study was to assess the effectiveness of self instructional module (SIM) on management of selected common medical emergencies such as heart attack, respiratory arrest, convulsion and hypoglycemia among staff nurses working in psychiatric settings. It is the responsibility of the psychiatric nursing personnel to update their knowledge on management of medical emergencies as they occur at any time anywhere in the psychiatric care settings in any hospital, and probably the nurse is the first responder to such an emergency codes . Therefore nurses in specialized area have to possess

sufficient knowledge in assessment and emergency management, which is achieved and maintained by proper instruction and training.

7. Future Scope

The present study have shown that, there was gap of knowledge among staff nurses on management of selected medical emergencies in special area or they might assume mentally challenged patient will not have medical emergencies and based on the study findings present SIM can be under taken at various levels to improve the knowledge of the staff nurses. The nurse educators should focus attention to provide in service education, self learning materials, and awareness program on this area and should offer emphasis on nursing research and clinical studies are needed to improve the quality of nursing care.

References

- [1] Puskar K, Smith MD, Herisko C, Urda B. Medical emergencies in psychiatric Hospitals. Issues in mental health nursing[*internet*].2011[cited Oct.2nd 2014]; 32 (10): p. 649-653. Available from: [http:// www.ncbi.nlm.nih.gov/pubmed/? term= puskar](http://www.ncbi.nlm.nih.gov/pubmed/?term=puskar).
- [2] Frost M. The medical care of psychiatric in patients, suggestions for improvement. *Internet journal of health care administration*[*internet*]. 2006 Jun[cited10th July 2015] ; 4(2). Available from: <http://ispub.com/IJHCA/4/2/9240>
- [3] Roy R. Reeves, Jefferson D. Parker, Randy S, Burke. Unrecognized physical illness prompting psychiatric admission. *Annals of Clinical Psychiatry*[*internet*]. 2010Nov[cited 15th Jan 2015]; 22(3):180-185. Available from: https://www.aacp.com/pdf/%2F0810%2F0810ACP_Reeves.pdf.
- [4] Felkar B, Yazel JJ, Short D. Mortality and medical co morbidity among psychiatric patients. A review. *Psychiatr Serv*[*internet*]. 1996[cited Nov20th 2014]; 47(12): p. 1356-1363. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/9117475>.
- [5] Benjamin G, Druss MD, Elizabeth RW. Mental disorders and medical co morbidity. *Research synthesis* [*internet*]report No. 21, 2011Feb[cited 10 Dec 20,2015].
- [6] Rashid MF. Imran M. Javeri Y. Rajani M. Samad S. Omender S. Evaluation of rapid response team Implementation in medical emergencies: A gallant evidence based medicine initiative in developing countries for serious adverse events. *International Journal of critical illness*[*internet*]. 2014 [cited July20th 2015];4 (1): 3-9. Available from: <http://www.ijciil.org/text.asp? 2014/4/1/3/12805>.
- [7] Jonathan DM. Society Response Time and Its Significance in Medical Emergencies. *Medical care*[*internet*]. 1980 Jan[cited Jul 20th 2015]; 70 (1): p. 79-87. Available from: <http://www.jstor.org/stable/214369>.
- [8] Hert MD, Correl CU, Bobes J, Bakmans MC, Cohen D, Asai I. Physical illness in patients with severe mental disorders. 1, prevalence impact of medications and disparities in health care. *World psychiatry*[*internet*]. 2011 Feb[cited 18th may 2015]. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3048500>.
- [9] Scott D, Happell B and Platania PC. Quality of care for cardiovascular disease and diabetes amongst individuals with serious mental illness and those using antipsychotic medications. *J Healthc Qual*[*internet*]. 2012 Sep-Oct.[cited20th Dec.2015]; 34(5): p. 15-21. Available from: [http://www.ncbi.nlm.nih.gov/pub med/22092725](http://www.ncbi.nlm.nih.gov/pubmed/22092725).
- [10] Fagiolini A and Goracci. The effects of undertreated chronic medical illnesses inpatients with severe mental disorders. *J Clin Psychiatry*[*internet*].2009 [cited Apr 19th 2015]; 70(3):p.22-29. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/>.
- [11] Binu Xavier Effectiveness of Self Instructional Module regarding Emergency Management of patient with Myocardial Infarction on Knowledge among Staff Nurses. *IOSR Journal of nursing and health science* [*internet*]. 2013 Nov-Dec [cited Feb18th 2016]; 2 (6): p.14-19. Available from: <http://www.iosrjournals.org>.
- [12] Hert DM, Cohen D, Bobes J, Cetkovich BM, Leucht S, Ndeti DM et al. Physical illness in patients with severe mental disorders, Prevalence, impact of medications and disparities in health care. *World Psychiatry*[*internet*]. 2011 Feb.[cited Dec20th 2015]; 10(1): p. 52. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21379357>.
- [13] Correl CU, Detraux J, Lepeleire J and Hert DM. Effects of antipsychotics, antidepressants and mood stabilizers on risk for physical diseases in people with schizophrenia, depression and bipolar disorder. *World Psychiatry* [*internet*]. 2015Jun [cited 20th Dec.2015]; 14(2): p.119-36. Available from: [http:// www.ncbi.nlm.nih.gov/pmc/articles/PMC4471960](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4471960).
- [14] Binu J M. Effectiveness of Self Instructional Module on knowledge and attitude of staff nurses regarding management of patients with mood disorders. [Unpublished dissertation] Rajiv Gandhi University, Bangalore. May 2005.
- [15] Kendrick T. Cardiovascular and respiratory risk factors and symptoms among general practice patients with long-term mental illness. *The British Journal of Psychiatry*[*internet*]. 1996 Dec[citedJuly6th 2015]; 196(6): p.733-739. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/8968631>.
- [16] Benjamin G. Druss, David B, Robert A, Rosenheck, Martha JR, Harlan M. Krumholz. Quality of medical care and excess mortality in older patients with mental disorders. *Jama psychiatry*[*internet*]. 2001Jun[cited Mar 11th 2015]; 58(6): p.565-572. Available from: <http://pmmp.cnki.net/>.

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