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An analytical study of psychiatric complains in intensive care unit patients

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Abstract---Introduction: Numerous studies have established a higher incidence of psychiatric disorders among general hospital inpatients. In our local / Indian set ups there is a lack of literature on the prevalence of psychiatric morbidity in patients admitted to the intensive care units. Hence this study was conducted to find psychiatric morbidity among the patients of the intensive care unit (ICU). Methods: The present Observational, Analytical & Cross-Sectional study is carried out on 100 subjects. The SCL-R-90 scale was administered to the participants by the faculty in their respective colloquial language. Each item of the questionnaire is rated by the patient on a five-point Likert scale of distress ranging from 0 (none) to 4 (extreme). Results: Nearly 49% of the participants had no psychiatric morbidity. 36% had mild and 15% had moderate psychiatric morbidity as per the SCL-90-R Scale. There was no participant with severe psychiatric morbidity. Factors such as age, gender, educational level, or duration of stay had no significant influence on the outcome. Among the psychiatric manifestations, interpersonal sensitivity and somatization were found to be the most prevalent symptoms. Conclusions: Psychiatric morbidity is high among patients in Intensive Care Units and severity of presentation is more than that in general medical patients. Identifying them early and prompt intervention may be necessary to reduce the cost, the duration, and the suffering of the patients.

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Keywords---psychiatry morbidities, ICU, SCL-R-90, analytic study.

Introduction

Numerous studies have established a higher incidence of psychiatric disorders among general hospital inpatients.[1-3] Depression, dysthymia, anxiety, and somatoform symptoms are the common manifestations in these patients. Posttraumatic stress disorders (PTSD), cognitive impairment, and substance use can also be seen.[1-5] The overall prevalence rates range from 20% to over 60% depending on the methodology (single or two-stage design), instruments used (screening questionnaire vs. structured clinical interview), as well as the nature of specialty of the ward.[6-10] In a large meta-analysis of 24 studies with 4007 individuals across seven countries in palliative-care settings, it was found that the prevalence of all types of depression combined was 24.6% (17.5–32.4), depression or adjustment disorder 24.7% (20.8–28.8), and all types of mood disorder 29.0% (10.1–52.9). There were few consistent correlates of depression. There was no effect of age, sex, or clinical setting, and inadequate data to examine cancer type and illness duration.[3] As unipolar depression has been projected as one of the three leading causes of burden of disease in 2030 and given its high incidence in patients with medical morbidities, it is imperative that it is identified early and duly managed.[11] Psychiatric morbidity compounds the disability and suffering in medical patients, increases the consumption of medical resources, complicates the treatment and result in poorer outcome. Moreover, most research on psychiatric morbidity in patients in the general hospital are limited to specific medical disorders.[6-10]

Patients admitted in ICU may experience psychological distress with increasing development of psychological illness and morbidity related to psychological disorders. Among the critically ill patients admitted in ICU, those who had undergone prolonged mechanical ventilation or had been admitted for severe trauma and sepsis may have worst quality of life. Further ICU admission for major trauma may represent an additional risk factor because of the acutely stressful trauma experience. There are many factors which are associated with psychological distress among the patients of ICU which includes duration of mechanical ventilation and ICU stay, personality traits, pain memory, age, sex, educational and 2 employmental status. Psychiatric morbidity complicates medical treatment resulting in poorer outcome, increases the consumption of medical resources and compounds the disability and suffering in medical patients.

Hence the knowledge of the overall prevalence of psychiatric morbidity was important as a basis for service planning and resource utilization in the general hospital. In Indian set ups there is a lack of literature on the prevalence of psychiatric morbidity in patients admitted to the intensive care units. Hence this study was conducted to find psychiatric morbidity among the patients of the intensive care unit (ICU). [6-10]. We undertook this study to determine the magnitude of psychiatric morbidities in patients admitted to the local randomly selected Medical Intensive Care Unit (MICU) of Tertiary Hospitals & Institutes with Psychiatry Department and to compare the sociodemographic correlates with the

different psychiatric manifestations so that the needs of these patients could be addressed and the disease burden be alleviated.

Methodology

The present Observational, Analytical & Cross Sectional study is carried out on 100 subjects. The study included records of 100 adult patients & involved prior Consent from Hospital Authorities / Medical Superintendents of the Local Randomly selected Tertiary care Hospitals or Medical Intensive Care Units of Tertiary (MICU) Hospitals & Institutes with Psychiatry Department and to compare the sociodemographic correlates with the different psychiatric manifestations so that the needs of these patients could be addressed and the disease burden be alleviated. The study was conducted within ethical standards. The Patients who were admitted in randomly selected ICUs / hospitals including our Hospital in the city were selected for the study during last three years. Randomization was done using computer tables in selecting data. All Patients underwent standard clinical examinations, routine biochemical and haematological investigations with CT. Medical record numbers were used to generate the data for analysis.

For the purpose of the present study, Examination & data of 100 of the randomly selected patients (candidates / study subjects) who seek care for care in ICUs who were willing to give written informed consent were enrolled for participation in the study who were declared medically fit for interview by the treating doctor, just before being transferred to a step-down ward, were included in the study. Written informed consent was obtained from all the participants. Each participant was interviewed by a psychiatry department health professional and the data was collected using a specially designed pro forma meant to map the sociodemographic details of the participant, date of hospitalization, medical diagnoses, age of onset of the illness and the illness course, duration of hospitalization, and medication history – past and present. The Symptom Checklist Revised - 90-R (SCL-R-90) was administered to each of our participants. Any participant identified to have psychiatric comorbidity was offered treatment in the form of counseling, psychotherapy, and medications as per individual requirement. A total of 100 consecutive patients admitted to the Medical ICU who were willing to give written informed consent were enrolled for participation in the study.

Selection Criteria

Only records of the patients were enrolled in the study which followed the following inclusion and exclusion criteria.

Inclusion Criteria

A total of 100 consecutive patients admitted to the Medical ICU who were willing to give written informed consent were enrolled for participation in the study.

Exclusion Criteria

All patients who are unwilling to provide consent or under the influence of drugs that alter mental status or were delirious, mentally retarded, or frankly psychotic patients were excluded from our study.

Statistical Analysis

The data obtained were analyzed in detail using the statistical software SPSS 21 for Windows. Data are reported as mean ± SD or proportions and 95% confidence intervals. Statistical analysis was performed by tests of significance. Analysis was done by Chi-square test, paired t test and Student's t-test. The difference was considered as statistically significant for a p- value of less than 0.05.

Sampling method

Systematic random sampling method for sample selection was employed. Taking the prevalence of psychiatric morbidity as 42.5% with a confidence interval of 95%, considering a 10% margin of error for the estimate, the sample size was estimated as 93%.[1] Expecting a non-compliance of 10%, the total sample size was rounded off to 100.

Study tool

The SCL-90-R first introduced by Derogatis and Lipman is a 90-item self-report symptom inventory designed primarily to identify the psychological manifestations of psychiatric and medical patients.[12]. The SCL-R-90 scale was administered to the participants by the faculty in their respective colloquial languages. The SCL-90-R is a measure of current psychological symptom status and is not a personality inventory. Each item of the questionnaire is rated by the patient on a five-point Likert scale of distress ranging from 0 (none) to 4 (extreme). The SCL-90-R consists of the following nine primary symptom dimensions:

- Somatization
- Obsessive–compulsive
- Interpersonal sensitivity
- Depression
- Anxiety
- Hostility
- Phobic anxiety
- Paranoid ideation
- Psychoticism.

The SCL-90-R takes 10–20 min to administer and accounts for the symptom manifestations of the past 1 week. It has been designed for a broad spectrum of populations, including normal population, medical, or psychiatric patients. It is, however, not used for delirious, mentally retarded, or frankly psychotic patients. [13-15]. Informed written consent was taken from all the participants for voluntary participation in the local language (Hindi & Chhattisgarhi).

Result

Table 1 shows that of the 100 ICU patients interviewed as participants for our study, 49% had no psychiatric morbidity. 36% were found to have mild and 15% were found to have moderate psychiatric morbidity as per the SCL-90-R Scale. There was no participant with severe psychiatric morbidity.

Table 1
Magnitude of Psychiatric Morbidities in the patients interviewed

Psychiatric morbidity	Frequency (%)
Absent	49 (49.0)
Mild	36 (36.0)
Moderate	15 (15.0)
Severe	0 (0.0)
Total	100 (100.0)

Our study had 65 male and 35 female participants. The maximum participants were noted in the (30–45) age group and had attained basic education up to 8th standard. Chronic kidney disease was the most common diagnosis causing prolonged stay in 8 patients, followed by uncontrolled diabetes mellitus in 5 patients, chronic obstructive pulmonary disorder, and post-stroke sequelae in 2 patients each, respectively. For easy tabulation, the medical diagnoses were clubbed under infectious, non-infectious, toxicological, and miscellaneous diseases. The highest number of the participants was in the Medical ICU for infectious disorders (40%). Factors such as gender, age, educational level or duration of stay, or the medical diagnoses had no statistical significant association with psychiatric morbidity. The maximum number of participants were in the hospital for duration of 20–60 days range and the mean duration of day was 54.19 days. However, since the distribution of the duration of stay is very skewed, we have used the median and interquartile range instead, as can be seen in Table 2.

Table 2
Statistical Analysis of the symptom checklist revised 90 -R Scores with respect to the sociodemographic profile

Predictors	SCL-90-R Scores						
Mean±SD	x^2	p	<90	90-179	179-270	Total	
Gender							
Female	16	15	4	35	96.4857±71.64757	1.129	0.669
Male	36	21	8	65	92.8308±67.35182	Not Significant	
Total	52	36	12	100			
Age group (years)							
<30	19	9	2	30	76.1667±62.59728	5.756	0.451
30-45	18	16	4	38	97.3158±70.38777	Not Significant	
46-60	12	9	6	27	109.4444±70.81250		
>60	3	2	0	5	94.6000±73.20724		
Total	52	36	12	100	Mean age=43.5±16.28 (SD)		
Education level							
No formal schooling	6	9	2	17	5.906		0.206
Up to 8th standard	40	25	7	72	Not		Significant
12th /Graduate/above	6	2	3	11			
Total	52	36	12	100			
Duration of stay (days)							
20	16	6	2	24	Median (IQR)		Not significant
20-60	31	25	8	64	3.00 (1.25-9.50)		
60-180	3	2	2	7			
180-365	1	2	0	3	Range (minimum-maximum)		
>365	1	1	0	2	0-190		
Total	52	35	12	100	Mean duration of stay=54.19±274.24 (SD)		
Medical diagnoses							
Infectious	18	19	3	40	x^2		P
Noninfectious	20	7	5	32	10.19		0.117
Toxicology	8	4	0	12	Not		Significant
Miscellaneous	6	6	4	16			
Total	52	36	12	100			

In Table 3, to test the association between predictors such as gender, education, and age in the participants with and without psychiatric morbidity, primary linear regression was used. None of the predictors showed any statistical association with the presence of psychiatric morbidity.

Table 3
Statistical analysis of the sociodemographic profile with respect with the outcome

Predictor	B	SE	Wald's statistics	Degrees of freedom	P	OR	95% CI for OR	
							Lower	Upper
Gender	0.328	0.432	0.577	1	0.447	1.388	0.596	3.235

Educational level	-0.250	0.177	2.004	1	0.162	0.882	0.551	1.101
Age	0.153	0.245	0.391	1	0.532	1.166	0.721	1.885
Constant	0.166	0.849	0.038	1	0.845	1.181		

B: Regression quotient, SE: Standard error, CI: Confidence interval, OR: Odds ratio

Table 4
Symptom profile of the patients according to the symptom checklist revised-90-R subscale scores

SCL-90-R scale	Percentage				
	Prevalence	Mild	Moderate	Severe	Extreme
Somatization	58.3	28.9	17.5	10.4	2.75
Obsessive-compulsive symptoms	56	26.2	15.9	11.1	3.3
Interpersonal sensitivity	61.3	22.3	16.2	9.1	2.7
Depression	55.8	26.5	14.6	10.7	3.9
Anxiety	55	23.6	14.3	11.5	3.8
Hostility	52.7	30.6	14.6	10.1	5.2
Phobic anxiety	52.7	22.4	16.6	10.7	3.1
Paranoid ideation	47.3	24	15.1	9.9	3.7
Psychoticism	58.1	26.1	18.2	10.8	3.8
Additional	56.4	23.6	16.1	12.1	4.6

SCL: Symptom Checklist Revised

The psychiatric morbidity was higher among female participants as compared to the males. Increase in age seems to increase the risk of psychiatric morbidity as per the odds ratio (1.166). Education had an inverse relationship with psychiatric morbidity; psychiatric morbidity reduced with increase in educational levels (Odd's ratio = 0.882, P = 0.162). Table 4 shows that among the 51% participants with psychiatric morbidity, interpersonal sensitivity was the most common, followed by somatic and psychotic symptoms. It was uniformly found that all of the symptoms were most prevalent in the mild grade.

Discussion

The magnitude of psychiatric comorbidity in the 100 participants interviewed was found to be 41%. This is in keeping with the findings of previous studies indicating a range from 20% to 60%.[1-3] In our study, interpersonal sensitivity, somatization, and psychoticism were found to be the most common subtypes, while unspecific symptoms, obsessive symptoms, and depressive and anxiety symptoms were also found in more than half of the population with psychiatric comorbidity. In primary care settings, overall prevalence of psychiatric manifestations was found between 23% and 42.5% which is in keeping with our finding. The common manifestations ranged between mood disorders, including major mood disorder and dysthymia, anxiety, somatoform symptoms, and alcohol abuse which is in contrast with our finding.[1,2] 22% of PTSD symptoms were seen in nearly 22% ICU survivors which are contrary to our findings that did not have a single PTSD case.[4] This might be a limitation of using the SCL-90-R scale

which divides psychiatric morbidities into nine primary symptom dimensions or subcategories, namely: Somatization disorder, obsessive–compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism and does not have any provision for diagnosing PTSD.[12-14]

Age, gender, educational levels of the patients, and the duration of stay had no statistical significance on the prevalence of psychiatric morbidity. However, primary linear regression reveals that increasing age has a proportionate effect on the prevalence of psychiatric morbidity. Highest prevalence of psychiatric morbidity was seen in the 50–70 years followed by the 30–50 years' age group. The prevalence rate dropped for the population above 70 years. This is reflected by the finding of one study that clearly indicates the prevalence of somatization symptoms is less in the elder population above the age of 65 years.[4] When the correlation of gender was considered with psychiatric morbidity in our study, the female participants seemed to have a higher preponderance compared to the male participants of the study. A similar trend is reflected in a study of IBS and non-ulcer dyspepsia which shows more morbidity (anxiety, depression, and somatic symptoms) in females as compared to the male patients.[10] Patients with increased educational level showed lesser risk of psychiatric morbidity.

This is in line with our statistical analysis that shows an inverse relationship between presence of psychiatric morbidity and educational level.[9,10] Studies further reveal a trend of lesser psychiatric morbidity with employment. However, this was not explored in our study. Psychiatric comorbidity poses a major challenge in the management of long-standing critical patients, worsens prognosis, and increases the likelihood of complications. It can lead to lasting impairment and unduly increase the cost and duration of treatment. Hence, it is imperative that doctors of various specialty, general practitioners, and even medical support staff identify psychiatric symptoms and refer adequately so that the manifestations are timely dealt with and appropriately in the best interest of the patients. This is further supported by a study conducted in critically ill patients that found that early psychologist intervention in the Intensive Care Unit itself reduced the risk of developing anxiety, depression, and PTSD in these patients. It was even found to reduce the number of patients requiring psychiatric medications eventually (41.7% in the control population vs. 8.1% in the intervention group; $P < 0.0001$).[16]

Conclusion

Psychiatric morbidity is high among patients in Intensive Care Units and severity of presentation is more than that in general medical patients. Identifying them early and prompt intervention may be necessary to reduce the cost, the duration, and the suffering of the patients. The small sample size may be a limitation and may not be representative of the entire population.

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