Research Report

PREVALENCE OF PHYSICAL HEALTH PROBLEMS IN INMATES OF A TERTIARY CARE MENTAL HEALTH CARE FACILITY – CROSS-SECTIONAL SURVEY

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ABSTRACT

Introduction: Patients with severe mental illnesses have increased rates of physical illness compared to the general population. Mentally ill people die earlier than the general population. Physical illnesses could be contributing to this. Understanding the prevalence of medical comorbidities in the mentally will contribute to the planning of better patient care.

Objectives: The study aimed to identify the prevalence of physical health problems in patients admitted to a government tertiary care mental health care facility.

Methods: A descriptive, non-experimental study was done in a sample of 250 patients.

Results: Study showed that significant number of patients had physical problems. These included sleep problems(35.6%), forgetfulness(39.2%), tremors(56.8%), elevated blood pressure(46%), below normal haemoglobin level (male=56.3%; female=50%)., elevated blood sugar level(46.6%) and lower MCV (Mean Corpuscular Volume) value(13.5%). Female participants had a higher BMI (Body Mass Index).

Conclusion: Prevalence of physical health problems was high in patients with mental illness. The results have wide implications in the care of the mentally ill.

Keywords: physical health problems, prevalence, mental illness.

INTRODUCTION

People with serious mental illness such as schizophrenia and mood disorder are at risk of dying an average of 20 years prematurely compared with the general population.[1] Severe mental illness may be a risk factor for the development of physical illness.[2] Studies among mentally ill patients report a total psychiatric morbidity of 58 per 1000 population in India.[3] The mortality and

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morbidity of physical illness in severely mentally ill patients could be due to modifiable risk factors in many cases.[4] Physical health problems may remain undetected or untreated in this population. Up to 50% of people with serious mental illness have recognisable medical disorders, and about 20% have medical problems that may explain or exacerbate their psychiatric condition.[5,6] Patients with mental illness present a higher vulnerability to physical health problems for various reasons. Poor eating habits, sedentary lifestyles, high proportions of smokers and drug abusers, less access to regular health care services, and potential adverse events during pharmacological treatment are the crucial factors. There is enough evidence supporting the benefits of lifestyle interventions based on diet and exercise designed to minimise and reduce the negative impact of these risk factors on the physical health of patients with chronic mental illnesses.[7] In addition to factors related psychiatric conditions, the increased frequency of physical diseases in patients with mental illness may be a result of the unsatisfactory organisation of health services and the social stigma ascribed to the mentally ill patients.[8] Increased awareness about these problems among health care professionals helps to improve inpatient care of the mentally ill. The purpose of the study was to find the prevalence of physical health problems in patients with mental illness admitted to a government tertiary care mental health care facility in northern Kerala.

METHODS

A descriptive, non-experimental approach was used for the study. Population for the study was patients with mental illness admitted in psychiatric care facilities. The study setting was a tertiary care psychiatric care hospital in northern Kerala. The sample consisted of 250 admitted patients, half of the average total patients admitted in the selected setting, with mental illness, including schizophrenia, schizoaffective disorder, bipolar affective disorder and psychosis not otherwise specified (NOS). Patients were selected from four male wards and two female wards. We excluded Forensic wards. After obtaining permission from the concerned authority and consent from individual participants (or caregivers when an individual could not give consent), data were collected during February 2015. Participants were selected using consecutive sampling. Purpose of the study was explained to their level of understanding and confidentiality was maintained. Criteria for selection included at least six months duration of mental illness. Patients who were having mental disorders as per International Classification of Diseases-10 (ICD-10) Criteria for Mental and Behavioural Disorders[9] were included. Patients with dementia and severe or profound mental retardation and terminal illness were excluded. Data were collected by interview, physiological measurements and case sheet review. This study was approved by the Institutional Ethics Committee.

The tools included a semi-structured interview schedule, developed by the researcher, based on literature review and consultation with experts in the field of mental health. It included socio-personal and clinical variables, information regarding existing medical condition and physical examination findings. Socio-personal variables included were age, gender, marital status, education, occupation and type of family. Clinical variables included the primary psychiatric diagnosis, duration of

hospitalisation, existing physical conditions, substance use and medication history. The instruments were validated by ten experts. Blood Pressure (BP) apparatus and weighing machine was calibrated and certified by a Government laboratory. A pilot study was conducted in a sample of 25 participants, and necessary modifications were made. Available patient records were reviewed to collect sample characteristics. The subjective physical complaints were collected by self-report. Physical examination was done, and noticeable physical problems were recorded. BP was recorded for all patients. Random blood sugar (RBS) was tested for patients who had not undergone blood sugar testing in the last month. A few patients refused to undergo RBS measurements. Haemoglobin level and Mean Corpuscular Volume (MCV) values were obtained from the patient record, which was done within the last month. The data gathered were analysed and interpreted according to the objectives. Descriptive statistics like frequencies and percentage were used.

RESULTS

Demographic details of the participants show majority of them (56.4%) belonged to the 31-50 age group, 53.2% were males, 44.4% were unmarried, 75.6% had primary education, 45.6% had manual labour as occupation and 78.4% belonged to nuclear family (Table.1). Fifty-five per cent of the participants (n=138) were diagnosed as schizophrenia, 26% (n=65) as bipolar disorder, 1.4% (n=4) as bipolar depression, 6.6%(n=17) as schizoaffective disorders and 10.8% (n=26) as unspecified psychosis. Analysis of total duration of hospitalization shows, 44.4% (n=111) spent less than one year at the hospital, 35.6% (n=89) spent 1-5 years, 6% (n=15) spent 5-10 years and 14% (n=35) spent more than ten years.

Among the male participants (n=133), 25.6% (n=64) were having a history of use of multiple substances (alcohol and tobacco) in the past, before the admission, and currently, 65.4% (n=87) reported smoking tobacco. Of the 117 female participants, 4.3% (n=5) of the female participants were having a history of betel leaf chewing in the past but not having any substance abuse presently. Table.4 depicts that 20% (n=51) of the participants were treated with haloperidol, 55.2% (n=138) with risperidone and 36.8% (n=92) of the participants were treated with sodium valproate.

Table.1 Distribution of socio-personal variables (N=250)

Variables	Category	n	%
Age	<20	1	0.4
	21-30	46	18.4
	31-40	68	27.2
	41-50	73	29.2
	51-60	47	18.8
	>60	15	6.0
Gender	Male	133	53.2
	Female	117	46.8
Marital status	Unmarried	111	44.4
	Married	44	17.6
	Widower/ widow	29	11.6
	separated/divorced	66	26.4
Education	No formal education	34	13.6
	Primary	189	75.6
	Secondary	23	9.6
	Graduation	4	1.6
Occupation	No formal job	104	41.6
	Manual labour	114	45.6
	Private employment	31	12.4
	Government	1	0.4
Type of family	Nuclear family	196	78.4
	Joint family	54	21.6

Table2. Distribution of participants based on clinical variables (N=250)

Variable	Category	n	%
Diagnosis (psychiatric)	Schizophrenia	138	55
	Bipolar affective disorder-mania	65	26
	Bipolar affective disorder-depression	4	1.6
	Schizoaffective disorder	17	6.6
	Psychosis NOS	26	10.8
Duration of hospitalisation	<1 year	111	44.4
	1-5 year	89	35.6
	5-10 year	15	6
	>10 year	35	14
Physical conditions (record review)	Hypertension	12	4.8
	Diabetes	32	12.8
	Filariasis	1	0.4
	CAD	4	1.6
	Hepatitis B	1	0.4

Majority of the participants (56.8%, n=142) reported tremors on extremities. Similarly, 46%of the participants had their blood pressure >120/80 mm of Hg. Sleep disturbances (35.6%, n=89), forgetfulness (39.2%, n=98), constipation (23.2%, n=58), increased thirst (20.8%, n=52), dandruff (24.8%, n=62), palpitation (35.6%, n=89) and cough (11.6%, n=29) were other common problems reported by patients or observed by the investigator (Table 5).

Results also show that 17.1% (n=21) of male participants and 8.8% (n=10) of female participants were underweight. Similarly, 16.2% (n=20) of male participants and 49.1% (n=55) of female participants were either overweight or obese(BMI above 25kg/m2).

Among 189 participants, the random blood sugar level of 46.6% (n=88) of participants were>140 mg/dl. Among 197 participants who had undergone investigation for haemoglobin during the previous month, 56.3% of the male patients (f=58) and 50% of female patients (f=47) were having below normal haemoglobin levels. Similarly, MCV investigation done in the past month showed 13.8% (n=27) having MCV value <80 fl/dl.

DISCUSSION

The socio-demographic profile of the person with mental illness is consistent with that of the earlier studies conducted on persons with mental illness in the institutional settings.[10] Unmarried status and separated/divorced status are high among psychiatric patients.[11]This study has found that 44.4% (n=111) of the participants were unmarried, and 26.4% (n=66) were separated/divorced. It was also found that the majority of participants (75.6%, n=189) had primary level education. The low educational level of patients with mental illness in India has been reported in National Mental Health Survey of India 2015–2016.[12]

Schizophrenic disorders constitute the most frequent diagnoses in long-stay psychiatric inpatients world over.[13] The present study has also found that 55% (n=138) of the participants were diagnosed as schizophrenia as per ICD-10 classification of mental and behaviour disorders.[9] Previous studies have reported that mentally ill patients were more likely to use multiple substances.[14] Our study has found that 25.6% (n=64) of the male participants

Table 3. Substance abuse among male participants

		Male (n=133)		Female (n=117)	
		n	%	n	%
Substance abuse (past)	Alcoholism	6	4.5	0	0
	Smoking	28	21.1	1	0.9
	Betel leaf chewing	1	0.8	5	4.3
	Mixed	64	25.6	111	94.8
	No substance abuse	34	48	0	0
Substance use (Present)	Smoking (tobacco)	87	65.4	0	0
	Mixed	5	3.4	0	0
	No substance abuse	43	31.2	117	100

(n=133) were using both alcohol and tobacco before admission, and 65.4% (n=87) were using tobacco only.

Consistent with the findings of another study done in a similar setting, we have found that risperidone, sodium valproate, clozapine, haloperidol and olanzapine are the commonly prescribed drugs and patients were treated mostly on multiple drugs.[15] This study did not specifically look into the prescription pattern and side effects caused by these drugs.

Sleep disturbances were reported by 35.6% (n=89) of participants in this study. A widely referred meta-analysis of 177 studies on sleep in psychiatric disorders reported significantly reduced sleep efficiency and total sleep time in most psychiatric patient groups.[16] Literature shows various explanations for the poor quality of sleep in patients admitted to psychiatric facilities. Medications and living facilities may have affected their sleep quality.

Table 4: Distribution of participants based on medications taken (N=250)

Medication	n	%
Haloperidol	51	20.4
Chlorpromazine	16	6.4
Risperidone	138	55.2
Clozapine	95	38
Quetiapine	39	15.2
Olanzapine	44	17.6
Amisulpride	3	1.2
Aripiprazole	3	1.2
Lithium	10	4
Sodium valproate	92	36.8
Carbamazepine	6	2.4
Escitalopram	7	2.8
Sertraline	4	1.6
Fluoxetine	2	0.8

Table 5: Distribution of participants based on physical health problems.

N=250

Patient complaints	n	%
Sleep disturbances	89	35.6
Forgetfulness	98	39.2
Unsteady gait	9	3.6
Tremors on extremities	142	56.8
Cough	29	11.6
Constipation	58	23.2
Decreased appetite	75	30
Vomiting	3	1.2
Hypersalivation	10	4
Diarrhoea	7	2.8
Dry mouth	10	4
Increased thirst	52	20.8
Decreased urine output	13	5.2
Dysuria	18	7.2
Rash	12	4.8
Itching	11	4.4
Abnormal movements (TD)	9	3.6
Deformities of extremities	5	2
Weakness	11	4
Skin colour changes	22	8.8
Dandruff	62	24.8
Deformities	4	1.6
Weakness	11	4.4
Elevated body temperature	9	3.6
Palpitation	89	35.6
Bradycardia (<60/mt)	6	2.4
Tachycardia (>100bt/mt)	66	26.4
Respiratory rate>20 breaths/mt	43	17.2
Blood pressure >120/80 mm of Hg	115	46

Treating sleep disturbances can have significant effects on the outcome of treatment of psychiatric conditions.[17] Further studies are recommended to determine the nature of sleep disturbances among the institutionalised mentally ill patients.

Cognitive deficits are common among patients with chronic mental illness. In this study, 39.2% (n=98) of the participants, complained about forgetfulness. Though this study had not attempted a detailed cognitive examination, the finding has general implications. Early identification of cognitive dysfunctions would benefit patients and suggest ways of coping with this dysfunction.[18]

Prevalence of movement disorders among patients taking psychiatric drugs is well-documented.[19] In this study, 56.8% of the participants (n=142) reported tremors on extremities. The burden of constipation among psychiatric patients is frequently neglected but can lead to adverse severe clinical consequences. A study across all public psychiatric hospitals in the Basque Country hospitals reported that approximately half of the admitted patients had at least one laxative prescribed.[20] We also found that 23.2% (n=58) of participants complained constipation. Age-related physiologic and anatomical changes, lifestyle factors, comorbid physical and surgical disorders, medications, including psychotropics, and polypharmacy, are possible reasons. A delay in treatment leads to poor quality of life.[21]

A significant number of patients complained about increased thirst (20.8%, n=52) in this study. Similar findings have been reported previously, which states that polydipsia, unrelated to organic polyuria is present in 20% of the patients hospitalised in psychiatry on a long-term basis and the reason could be multi-

factorial, including as a symptom of mood disorder.[22] This study has found that 24.8% (n=62) of participants had dandruff. Another study conducted among patients with primary psychiatric disorders in a tertiary care psychiatric hospital in South India reported that 16.2% of patients had seborrheic dermatitis.[23] Association between stress and a high level of anxiety with seborrheic dermatitis has been established.[24]

The study has found that a significant number of patients complained about palpitation (35.6%, n=89). Patients taking psychotropic drugs may present with palpitation. Assessment of the cardiac risk profile is recommended in patients taking psychotropic drugs.[25]

The generally recommended cut-offs for BMI are 18.5 - 24.9 kg/m^2 for normal, 25.0 - 29.9 for overweight and >30 kg/m^2 for obesity.[26] In this study, 16.2% (n=20) of male participants and 49.1% (n=55) of female participants were either overweight or obese. In patients with severe mental illness, obesity is associated with lifestyle factors, illness-related and treatment-related factors. Obesity in patients using psychotropic medications is well documented.[1]

According to the American Diabetes Association, random blood sugar value of 79-140mg/dl is considered normal in adults.[27]A random blood sugar value of141-200mg/dl is considered as pre-diabetes and >201mg/dl is considered as diabetes. Our study (n=189) has revealed that 46.6% of participants were having blood sugar level >140mg/dl. It was found that 35.9% were having blood sugar level between 141-200mg/dl and 10.7% were having >201mg/dl. An 8-year cohort study among schizophrenic patients on clozapine in Thessaloniki reported that the prevalence of metabolic syndrome was 28.7%. Regression models showed that baseline BMI ($p < 0.0001$) and BMI change after clozapine treatment ($p<0.001$) were significant factors for metabolic syndrome as were most metabolic parameters except hyperglycaemia and diabetes mellitus, which were related to treatment duration.[28]

Our study also found that 46% (n=115) participants had their blood pressure value >120/80 mm of Hg, disregarding the age group. The estimates of the prevalence of hypertension in persons with mental illness reported in literature ranged from 10.0% to 68.0%.[29] Our study had a limited scope of cross-sectional surveying of these parameters, and further research is warranted to ascertain the specific nature of elevated blood pressure in this population.

Considering Hb cut-off values for males as <13.8 and for females as <12 g/dl, review of the patients' blood reports (n=197) revealed that 56.3% of the male participants and 50% of the female participants of this study were having below normal haemoglobin levels.[30] Similarly, normal MCV value in an adult is considered to be 80-95 fl. Review of the patient's blood report (n=197) also revealed that 13.5% of participants had MCV value less than 80fl/dl. Our findings show a quite higher figure when compared to the results reported in other studies in the literature. Another study has reported a high prevalence of anaemia in psychotic disorder patients (35%).[31]

Another finding of the present study found that 30% (n=70) of the participants reported decreased appetite. Decreased appetite among

these patients could be due to various reasons, including depression and lack of physical activity. A study has reported that veterans with mental disorders were at least twice as likely to have gastrointestinal diseases as those without mental health disorders.[32]

Increased awareness of these potential complications enables health care team to manage better and monitor high-risk patients. Accurate assessments are critical to avoid serious complications. Monitoring patients regularly via regular physical assessment, blood draws, checking vital signs, and procedures like electrocardiogram can help to identify clinical problems early and prevent further complications. Family and patient education is also essential to reduce morbidity and mortality in this patient.[33]

LIMITATION

Methodological limitations in this study included the use of a survey approach and inadvertent exclusion of significant problems like dental caries. Complaints by patients such as sleeplessness, forgetfulness and constipation may be a result of the side effect of the medication, which the study did not look into. Association between socio-personal/clinical variables and physical problems did not yield relevant results as the primary objective was to survey these problems. Generalizability of the study is limited, and blinding was not done. Despite these shortcomings, the study has implications in clinical practice.

CONCLUSION

This present study showed that the prevalence of physical health problems was high in patients with chronic mental illness. Nurses are having an essential role in early identification and help them for recovery from physical health problems. Most of the physical health problems are the results of a sedentary lifestyle, and due to modifiable risk factors. Because of the disturbance in thought and thinking, these patients are leading a sedentary lifestyle. Mental health care should be designed to deal with physical problems in equal importance with psychiatric care which helps patients to lead a healthy life.

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