Reasons for referral and diagnostic concordance between physicians/surgeons and the consultation-liaison psychiatry team: An exploratory study from a tertiary care hospital in India

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ABSTRACT

Background: Very few studies have evaluated the reasons for referral to consultation-liaison (CL) psychiatry teams. Aim: This study aimed to evaluate the psychiatric morbidity pattern, reasons for referral and diagnostic concordance between physicians/surgeons and the CL psychiatry team. Materials and Methods: Two hundred and nineteen psychiatric referrals made to the CL psychiatry team were assessed for reason for referral and diagnostic concordance in terms of reason of referral and psychiatric diagnosis made by the CL psychiatry team. Results: In 57% of cases, a specific psychiatric diagnosis was mentioned by the physician/surgeon. The most common specific psychiatric diagnoses considered by the physician/surgeon included depression, substance abuse, and delirium. Most common psychiatric diagnosis made by the CL psychiatric services was delirium followed by depressive disorders. Diagnostic concordance between physician/surgeon and psychiatrist was low ($\kappa < 0.3$) for depressive disorders and delirium and better for the diagnosis of substance dependence ($\kappa = 0.678$) and suicidality ($\kappa = 0.655$). Conclusions: The present study suggests that delirium is the most common diagnosis in referrals made to CL psychiatry team, and there is poor concordance between the psychiatric diagnosis considered by the physician/surgeon and the psychiatrist for delirium and depression; however, the concordance rates for substance dependence and suicidal behavior are acceptable.

Key words: Consultation-liaison psychiatry, diagnostic concordance, physicians, psychiatrists

INTRODUCTION

Consultation-liaison (CL) psychiatry is a subspecialty of psychiatry which involves the application of skills and knowledge of mental health professionals in evaluating and treating the emotional and behavioral problems in patients with medical and surgical problems. The CL psychiatry has two primary functions, i.e., to provide expert advice on the referred patient and that of a liaison or link. The liaison part of CL psychiatry denotes its educational function which includes education for patients, requesting physicians, nursing staff, patient’s families, and the health-care system.

In India, at most of the centers, the CL psychiatry services follow the consultation model, wherein psychiatrists

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evaluate and manage the patients who are referred from a physician/surgeon.\textsuperscript{10} Studies suggest that when inpatients of other departments are screened for mental disorders, psychiatric morbidity is found in 31-34.5\% of the patients,\textsuperscript{5,4} and 18.42%-53.7\% of patients seen in various outpatients settings have one or other psychiatric disorder.\textsuperscript{5-9} However, when the psychiatry referral rates for inpatients are evaluated, these have been found to be dismal (0.06%-3.6\%) in studies from India.\textsuperscript{10,11} The possible reasons behind the lower rate of psychiatric referrals could be poor knowledge about mental disorders and stigma associated with mental illnesses among physicians/surgeons. Other reasons for poor referral rates could be negative attitude toward mental disorders or focus on physical health only rather than on holistic health care. Studies from India and abroad, which have evaluated the knowledge of physicians suggest that incomplete knowledge and training during the undergraduate level is the major barrier for their poor attention and involvement in the management of mental disorders in patients.\textsuperscript{12-15} Although many efforts have being made to include psychiatry as a full subject in undergraduate medical teaching curriculum, this is still not a reality in India.

The studies from India which have evaluated the pattern of psychiatric morbidity among patients referred to CL psychiatry services suggest that across various institutes delirium, self-harm, depression, substance use disorders, and stress and neurotic disorders are the most common diagnostic categories.\textsuperscript{16-19}

Very few studies have evaluated the reason for referral to CL psychiatry teams.\textsuperscript{16,17} Although these studies provide information about common psychiatric morbidity in referred patients, they do not convey much about the accurate knowledge of physician/surgeons about psychiatric ailments as these did not evaluate the concordance between the diagnosis made by physician/surgeon and the psychiatrist.

Occasional studies from other countries have evaluated the concordance between the physician’s impression about psychiatric diagnosis and the psychiatric diagnosis made by the CL psychiatry team.\textsuperscript{18-20} These studies have reported 41.5\%–47.4\% concordance between the physician/surgeons diagnosis and the diagnosis made by the psychiatrist.\textsuperscript{18,20} A study from Japan, which evaluated the concordance of diagnosis between physician/surgeons and psychiatrists for elderly referred to CL psychiatry services reported kappa statistics of 0.47 for F0 category, 0.27 for F1 category, 0.28 for F2/3 category, and F 0.32 for F4/5 category.\textsuperscript{19} Although many studies from India have evaluated the referral rates and common psychiatric diagnosis pattern, none of the studies have evaluated the diagnostic concordance between the physicians/surgeons and the diagnosis made by the psychiatrist. This provided impetus for this study which aimed to evaluate the psychiatric morbidity pattern, reasons for referral and diagnostic concordance between physicians/surgeons, and the CL psychiatry team.

**MATERIALS AND METHODS**

**Setting**

The study was carried out at a multispecialty teaching hospital in North India. The Department of Psychiatry provides CL psychiatric services for the entire hospital round the clock, using a three-tier service. Whenever a patient is referred to CL psychiatry services, the patient is first seen by a junior resident (trainee psychiatrist) under the supervision of a senior resident (a qualified psychiatrist). Then, the patient is reviewed by a consultant psychiatrist, and final diagnosis (according to the International Statistical Classification of Diseases and Related Health Problems-10 [ICD-10]) is made, and a treatment plan is formulated. The exact diagnosis of the patient and further plan of management is conveyed to the primary treating team after the initial evaluation.

The patient is followed up regularly till the discharge from the hospital. Further, all the patients are advised to follow-up in the psychiatry outpatient services by the same CL psychiatry team to provide continuity of care.

The CL psychiatry team receives telephonic calls from all the department of the hospital, and the calls are often initiated at the level of the junior resident (trainee), senior resident or a consultant from various specialties. Whenever a call is received, the psychiatry junior resident often asks the person making the call for “reason for referral” and requests the person from other specialties to document the reason for call in the treatment records of the patient.

The CL psychiatry team also maintains a registry of all the call received, in which data are recorded in the form of source of call (i.e., ward and specialty), patient’s age, gender, physical disease, reason for call, psychiatric diagnosis, psychiatric management, and outcome of the patient.

**Procedure**

For this study, the referrals made to the CL psychiatry team during August 2015 to September 2015 from various inpatient wards were assessed for reason for referral and diagnostic accuracy in terms of reason of referral and psychiatric diagnosis made by the CL psychiatry team. Accordingly, besides the routine procedure of asking the person making the call the “reason for referral” person, information on who initiated the referral was also recorded. It was also enquired whether the concerned colleague had completed his/her psychiatric posting or ever had an undergraduate exposure to psychiatry. Before collection of the information, the person making the call was informed that this information is being collected as part of a research
results

Data analysis

Data were analyzed using the Statistical Package for Social Scientists version 14 (SPSS version 14, SPSS Inc., Chicago, IL, USA). Frequency, percentage, mean, and standard deviation (SD) were calculated for the descriptive data. Kappa statistics was used to assess the diagnostic concordance between the diagnosis made by the psychiatry team and the possibility considered by the primary team/person sending the call.

RESULTS

During the study, 253 referrals were received by the CL psychiatry services from various medico-surgical inpatient wards, of which data of 219 was available for the reason for referral. The main reason for noninclusion was lack of information of the person making the referral.

The mean age of the patients was 45.2 years (SD: 17.78; range: 16–91 years). Nearly, three-fifths (n = 132; 60.3%) of the study sample comprised of male patients. More than half of the referral calls were received from medicine and allied specialties (n = 119; 53.9%) and about two-fifth of the calls were received from medicine and allied specialties (n = 84; 38.4%) and minority (n = 17; 7.8%) of the calls pertained to the specialty of obstetrics and gynecology.

In terms of organ/system involvement, about one-fifth (21.5%) of patients had multiorgan involvement, and this was followed by the involvement of musculoskeletal system (18.7%) and gastrointestinal system/hepatology (17.4%), nervous system (9.1%), female genital tract (7.8%), cardiovascular system (7.8%), genitourinary system (4.6%), respiratory system (2.3%), hematological system (3.2%), endocrine system (3.2%), and other systems (4.6%).

In about half of the cases (n = 119; 54.3%), consultation was initiated by a senior resident, and in about one-third the consultation was initiated on behalf of a consultant (n = 68; 31.1%) and in only minority of cases, the consultation was initiated by a junior resident (n = 32; 14.6%).

In slightly more than half of the cases (n = 125; 57%), a specific psychiatric diagnosis/symptoms were mentioned by the person who made the call. However, in few cases, the calls were made because the patient was known to be suffering from a mental illness (n = 12; 5.5%), psychiatric clearance was required for the surgery (n = 10; 4.6%), and to rule out unspecified psychiatric illness (n = 9; 4.1%). In remaining cases (n = 63; 28.8%), the person initiating the call did not mention the specific diagnosis while seeking psychiatric consultation.

The specific psychiatric diagnosis which was considered by the person making the call included depression (n = 30; 13.7%), substance abuse (n = 29; 13.2%), delirium (n = 25; 11.4%), psychosis (n = 17; 7.8%), dissociation (n = 9; 4.1%), insomnia (n = 5; 2.3%), anxiety/anxiety disorder (n = 4; 1.8%), mania/hypomania (n = 2; 1%), enuresis (n = 1; 0.5%), malingering (n = 1; 0.5%), eating disorder (n = 1; 0.5%), and neuroleptic malignant syndrome (n = 1; 0.5%).

In cases where specific diagnosis was not mentioned (n = 63; 28.8%), the common reasons mentioned included irrelevant talk (n = 13; 5.93%), suicidality (n = 9; 4.1%), agitation/aggression (n = 8; 3.65%), altered sensorium (n = 6; 2.73%), abnormal behavior (n = 4; 1.8%), functional pain (n = 2; 1%), irritability (n = 6; 2.73%), disorientation (n = 2; 1%), low mood (n = 2; 1%), crying spells (n = 2; 1%), uncooperativeness (n = 2; 1%), anorexia (n = 1; 0.5%), restlessness (n = 1; 0.5%), behavioral problems (n = 1; 0.5%), mutism (n = 2; 1%), not talking (n = 1; 0.5%) and breaking bad news (n = 1; 0.5%).

Diagnosis by the psychiatrist

Most common psychiatric diagnosis made by the CL psychiatry team was that of delirium (n = 95; 43.4%), followed by depressive disorders (n = 26; 11.9%). Other diagnostic details are given in Table 1.

Concordance of diagnosis made by psychiatrist and the primary treating physician/surgeon

Concordance between the major psychiatric diagnosis (i.e., delirium, depressive disorders, substance use disorders, psychotic disorders) as per the psychiatrist and the referring physician/surgeon was evaluated using kappa statistics. Diagnosis of delirium was considered by the treating physicians in 25 cases, whereas in 95 cases, psychiatrist made the diagnosis of delirium and the kappa value for the concordance between the psychiatrist and the
physician was only 0.186. However, when the diagnosis of delirium as per the treating physician and various symptoms suggestive of delirium (abnormal behavior, altered sensorium, disorientation, irrelevant talk, mutism, not talking, irritability, uncooperativeness, insomnia, behavioral problem, restlessness, agitation/aggression, and abnormal behavior) were taken into account as the reasons for referrals, 76 patients were considered to have delirium. When concordance of this broad diagnosis of delirium was evaluated against the psychiatrist diagnosis of delirium, the $\kappa = 0.457$.

In terms of diagnosis of depression, in 30 cases, the referring physician referred the patient for depression, however, in overall sample, diagnosis of depressive disorders was made only in 26 cases by the psychiatrist. When the concordance, between the diagnosis by the physician and psychiatrist was evaluated, $\kappa = 0.223$. When the diagnosis of depression as per the treating physician and various symptoms suggestive of depression (insomnia, irritability, not talking, mutism, suicidality, anxiety, and crying) as the reasons for referral were considered to be indicators of depression, 57 patients were considered to have depressive disorders. When concordance of this broad diagnosis of depression was evaluated against the psychiatrist diagnosis of depression, the $\kappa = 0.266$. When the psychiatrist diagnosis of depression and adjustment disorder were considered, 37 patients had broad psychiatrist diagnosis of depressive disorders. When concordance of broad psychiatrist and broad physician's depressive disorder was evaluated, the $\kappa = 0.277$. Further, when the diagnosis of depressive disorder as per the psychiatrist was broaden by including those with anxiety disorders, suicidal behavior and bipolar disorder, and concordance of same was evaluated with physicians broad diagnosis of depression and the $\kappa = 0.288$. Concordance between the diagnosis of substance dependence and suicidality by physicians and psychiatrist was better with $\kappa = 0.678$ and 0.655, respectively.

Overall, complete match of diagnosis between the psychiatrist and physician was noted for only 54 (24.65%) cases.

**DISCUSSION**

The present study suggests that delirium is the most common psychiatric diagnosis in patients referred to CL psychiatry team, and this is followed by diagnosis of depressive disorders, alcohol dependence syndrome, adjustment disorder, and opioid dependence syndrome. Some of the earlier studies, which have evaluated psychiatric morbidity pattern among inpatients and patients from emergency referred to CL psychiatry services, also suggest that delirium is the most common psychiatric diagnosis made by the CL psychiatry team. Findings from other parts of the world also suggest that delirium is one of the most common psychiatric morbidity among inpatients referred to CL psychiatry teams. Considering that delirium is the most common psychiatric diagnosis among patients seen in inpatient CL psychiatry services, the CL psychiatrist should collaborate closely with the physicians/surgeons and teach them clinical skills to identify delirium at the earliest so that appropriate management can be started at the earliest. Further, physicians/surgeons should also be informed about the consequences of lack of detection and management of delirium on the outcome of physical illnesses. This may possibly act as a better incentive for them to consider the possibility of delirium. The physicians/surgeons also must be provided more information about how to manage delirium.

The studies from India have differed in terms of the prevalence of psychiatric morbidity with some studies reporting self-harm, depression, substance use disorders, and stress and neurotic disorders being the most common diagnostic categories. In the present study too, most of these diagnostic categories figured among the first 5 most common psychiatric diagnosis made by the CL psychiatry team. These findings suggest that people working in the CL psychiatry setup must have skills to identify these common conditions and curriculum designed for CL psychiatry must focus on enhancing knowledge, clinical skills, and management skills for these disorders.

In general, there is limited data on reason for referral to CL psychiatry teams. Some of these studies are retrospective in nature, and these studies have not explicitly mentioned that the authors have documented the exact reason reported by the referee. Hence, it is quite possible that reasons for referral reported in these studies could have been more impressionistic findings rather than reason reported by the referee. In contrast to these studies, in the present study, the reasons for referral were noted as reported by the referee. Findings of the present study suggest that in slightly more half of the cases, the physician/surgeon were able to report the patient by using a psychiatric diagnostic term. In rest of the cases, the physician/surgeon relied on using the terms which either denoted symptoms suggestive of mental disorder or the reason for referral suggested the need of the physician/surgeon, i.e., clearance for surgery, to rule out any psychiatric diagnosis or because patient is having an mental illness. These findings could be interpreted in multiple ways. First, lack of use of specific psychiatric diagnosis in about half of the referrals, possibly reflects that the physicians/surgeons may not be very well versed with the psychiatric disorders. Second, initiating the referral just for their need also reflects that physician/surgeon are not actually interested in knowing or managing the mental illness and rather it reflect that referrals are made as lack of psychiatric clearance may hinder in carrying out the procedure or may have medicolegal implications. These hypotheses are supported by studies which have shown that there is underestimation of psychiatric morbidity by all the clinicians and there is a general reluctance to refer patients.
to a psychiatrist. In addition, attitude and knowledge of physicians toward psychiatry have also been found to be negative and poor, respectively, which influence the referral rates and reflect the lack of integration of psychiatry and medicine at the training level. Accordingly, it can be said that findings of the present study reflect the ground reality in the routine clinical practice and provides leads to the role of CL psychiatrist in bridging the gaps in the knowledge of physicians and surgeons and addressing their negativistic attitude toward mental health of their own patients.

In the present study, complete match of diagnosis between the psychiatrist and physician was noted for only one-fourth of the cases, which is much lower. The previous studies have reported minimum concordance rate of 41.5%, with concordance rate highest for cognitive disorders (100%), followed by anxiety disorders (85.7%), psychotic disorders (69.2%), and depressive disorders (48%). These findings possibly reflect the diagnostic inaccuracy/misdiagnosis in the hand of the physician/surgeons.

In terms of concordance of specific diagnosis, concordance was low for common psychiatric disorders such as delirium and depression. However, concordance for the diagnosis of substance dependence and self-harm behavior was moderate. The studies from other parts of the world also suggest that the concordance rates of diagnosis made by CL psychiatry team, and the physician/surgeons are low for various ICD-10 categories. These findings possibly reflect the diagnostic inaccuracy/misdiagnosis in the hand of the physician/surgeons.

The present study has certain limitations. The study was conducted over a limited period and included 219 patients only. We did not evaluate the relationship of reason of referral with the psychiatry training received by the person initiating the psychiatric referral due to small sample size. We also could not evaluate the association of diagnostic concordance with psychiatric training and number of years of standing in profession. The present study did not evaluate the impact of psychiatric morbidity on clinical outcome of the patient. Future studies must attempt to overcome the limitations of the present study.

**CONCLUSIONS**

The present study suggests that delirium is the most common psychiatric diagnosis in referrals made to CL psychiatry services and this is followed by depression, alcohol dependence, adjustment disorder, and opioid dependence. In terms of specific diagnosis considered by the referee, in only about three-fifth of the referrals, the treating physicians/surgeons can report a specific diagnosis. In terms of specific diagnosis considered by the referee, the most common psychiatric diagnosis is that of depression followed by substance dependence, delirium, and psychosis. In general, there is poor concordance between the psychiatric diagnosis made by the physician/surgeon and the psychiatrist for delirium and depression; however, the concordance rates for substance dependence and suicidal behavior are high.

The present study suggests that physicians/surgeons possibly lack knowledge about psychiatric diagnosis and most often their diagnosis does not match with that made by the psychiatrist. This possibly reflects the poor psychiatric knowledge among other specialists, possibly arising out of lack of attention given to psychiatry as a specialty in the undergraduate training. Accordingly, it can be said that there is a definite need for inclusion of psychiatry as a full subject in undergraduate medical curriculum. Further, this study also suggests that CL psychiatrists have a major role to play in improving the knowledge about mental disorders among practicing physicians/surgeons.

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**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

1. Leigh H. The functions of consultation-liaison psychiatry. In: Leigh H, Strelitzer J, editors. Handbook of Consultation-Liaison Psychiatry. Boston, MA: Springer US; 2015.
2. Grover S. State of consultation-liaison psychiatry in India: Current status and vision for future. Indian J Psychiatry 2011;53:202-13.
3. Sachdeva JS, Shergill CS, Sidhu BS. Prevalence of psychiatric morbidity among medical in-patients. Indian J Psychiatry 1986;28:293-6.
4. Mathur RS. Psychiatric morbidity in soldiers hospitalised for physical ailments. Indian J Psychiatry 1977;19:89-96.
5. Bhatia MS, Balakrishna, Dhar NK, Bohra N, Guptta H, Malik SC. Psychiatric morbidity in patients attending medical OPD. Indian J Psychiatry 1987;29:243-6.
6. Bagadia VN, Ayyar KS, Lakdawala PD, Sheth SM, Acharya VN, Pradhan PV. Psychiatric morbidity among patients attending medical outpatient department. Indian J Psychiatry 1986;28:139-44.
7. Goyal A, Bhogjak MM, Verma KK, Singhali A, Jhirwal GP, Bhojak M. Psychiatric morbidity among patients attending cardiac OPD. Indian J Psychiatry 2004;43:335-9.
8. Agrawal P, Malik SC, Padubidri V. A study of psychiatric morbidity in gynecology out patient clinic. Indian J Psychiatry 1990;32:57-63.
9. Sriram TG, Shamasunder C, Mohan KS, Shanmugham V. Psychiatric morbidity in the medical outpatients of a general hospital. Indian J Psychiatry 1986;28:325-8.
10. Jindal RC, Hemrajani DK. A study of psychiatric referrals in a general hospital. Indian J Psychiatry 1980;22:108-10.
11. Srinivasan K, Babu RK, Appaya P, Subrahmanyam HS. A study of inpatient referral patterns to a general hospital psychiatry unit in India. Gen Hosp Psychiatry 1987;9:372-6.
12. Liu SI, Lu RB, Lee MB. Non-psychiatric physicians’ knowledge, attitudes and behavior toward depression. J Formos Med Assoc 2006;107:921-31.
13. Cowan J, Raja S, Naik A, Armstrong G. Knowledge and attitudes of doctors regarding the provision of mental health care in Doddaballapur Taluk, Bangalore rural district, Karnataka. Int J Ment Health Syst 2012;6:21.
14. Chadda RK, Shome S. Psychiatric aspects of clinical practice in general hospitals: A survey of non-psychiatric clinicians. Indian J Psychiatry 1996;38:86-92.
15. Gupta R, Narang RL. Psychiatric training and its practice: A survey of 86 practitioners. Indian J Psychiatry 1997;29:340-52.
16. Avasthi A, Sharan P, Kulhara P, Malhotra S, Varma VK. Psychiatric profiles in medical-surgical populations: Need for a focused approach to consultation-liaison psychiatry in developing countries. Indian J Psychiatry 1998;40:224-30.
17. Manabendra M, Uttam M. Psychiatric comorbidity among referred
inpatients and need for consultation – Liaison psychiatry. Delhi Psychiatry J 2013;16:120-7.
18. Aljarad AM, Al Osaimi FD, Al Huthail YR. Accuracy of psychiatric diagnoses in consultation-liaison psychiatry. J Taibah Univ Med Sci 2008;3:123-8.
19. Yamada K, Hosoda M, Nakashima S, Furuta K, Awata S. Psychiatric diagnosis in the elderly referred to a consultation-liaison psychiatry service in a general geriatric hospital in Japan. Geriatr Gerontol Int 2012;12:304-9.
20. Su JA, Tsai CS, Hung TH, Chou SY. Change in accuracy of recognizing psychiatric disorders by non-psychiatric physicians: Five-year data from a psychiatric consultation-liaison service. Psychiatry Clin Neurosci 2011;65:618-23.
21. Grover S, Subodh BN, Avasthi A, Chakrabarti S, Kumar S, Sharan P, et al. Prevalence and clinical profile of delirium: A study from a tertiary-care hospital in North India. Gen Hosp Psychiatry 2009;31:25-9.
22. Grover S, Sarkar S, Avasthi A, Malhotra S, Bhalla A, Varma SK. Consultation-liaison psychiatry services: Difference in the patient profile while following different service models in the medical emergency. Indian J Psychiatry 2015;57:361-6.
23. McNicoll L, Pisani MA, Zhang Y, Ely EW, Siegel MD, Inouye SK. Delirium in the Intensive Care Unit: Occurrence and clinical course in older patients. J Am Geriatr Soc 2003;51:591-8.
24. Bilge EU, Kaya M, Senel GÖ, Ünver S. The incidence of delirium at the postoperative Intensive Care Unit in adult patients. Turk J Anaesthesiol Reanim 2015;43:232-9.
25. Kumar GS, Rami Reddy AKV. Inpatient psychiatric referrals to general hospital psychiatry unit in a tertiary care teaching hospital in Andhra Pradesh. IOSR J Dent Med Sci 2015;14:26-9.
26. Chadda RK. Psychiatry in non-psychiatric setting – A comparative study of physicians and surgeons. J Indian Med Assoc 2001;99:24, 26-7, 62.
27. Alhamad AM, Al-Sawaf MH, Osman AA, Ibrahim IS. Differential aspects of consultation-liaison psychiatry in a Saudi hospital. I: Referral pattern and clinical indices. East Mediterr Health J 2006;12:316-23.
28. Alhamad AM, Al-Sawaf MH, Osman AA, Ibrahim IS. Differential aspects of consultation-liaison psychiatry in a Saudi hospital. II: Knowledge and attitudes of physicians and patients. East Mediterr Health J 2006;12:324-30.

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