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Original Research Article

Diagnostic concordance in consultation liaison psychiatry – Referring physicians to psychiatrists

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ABSTRACT

Background: Psychiatric co-morbidity in patients with physical illness is known to influence the course and outcome of both conditions. Consultation liaison psychiatry [CLP] can be regarded as an essential service between psychiatry and other medical specialties. Efficient communication between different levels of care is known to have an impact on the quality of health care.

Aim: To study the patterns of referrals to the department of psychiatry and diagnostic concordance between referring physicians to CL-Psychiatrist.

Materials and Methods: The present study was a cross-sectional study conducted in the Department of Psychiatry of a tertiary care hospital. All the patients referred to the Psychiatry department for 4 months were taken after excluding referrals sent for disability assessment. Socio-demographic details, source of referral, reason for referral, and the psychiatric diagnosis by both the referring doctor and CL-psychiatrist were recorded. Statistical analysis was done using SPSS 25.0 software and kappa value was used to estimate the diagnostic concordance.

Results: In the sample of 100 referrals studied, the mean age of the sample was 40.96 ± 13.42 years. The majority of the cases referred were inpatients (61%), from the department of general medicine and allied branches (85%), (General medicine -55, Neurology- 21). The most common diagnosis was alcohol dependence syndrome 24 (24%), followed by depression (18%) and phobic anxiety (18%).

The concordance of the diagnosis between the referral and the psychiatry team was in perfect agreement ($\kappa=0.81-1.00$) for paranoid schizophrenia, bipolar affective disorder, delirium, dissociative disorder, delusional disorder, and alcohol dependence syndrome. Very low concordance was observed in diagnosing obsessive-compulsive disorder ($\kappa=0$) and adjustment disorder ($\kappa=0$).

Conclusion: The overall diagnostic concordance was poor for adjustment disorder, OCD, and vascular dementia, and good for paranoid schizophrenia, delirium, dissociative disorder, delusional disorder, and BPAD.

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1. Introduction

Consultation-Liaison Psychiatry (CLP) is essentially the study, practice, and teaching of the relation between medical and psychiatric disorders and serves as a bridge between

psychiatry and other specialties.¹ CLP has emerged in the past decade as a subspecialty of psychiatry, one concerned with mental health problems among medical and surgical patients.² According to Lipowski, “Consultation” refers to the provision of expert opinion about the diagnosis and advice on management regarding a patient’s mental state and behavior at the request of another health professional.

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"Liaison" refers to the linking up of groups for effective collaboration.² In a study conducted in Telangana by Srilakshmi Pingali et al (2020), most of the referrals were in the age group of 25-35 years, the majority were males (65%) and Hindu by religion (85%) and residing in rural areas (53.6%). Most of the patients were illiterate (37.9%), unemployed (30%), and belonged to low socioeconomic status (95%).³

Studies conducted by Kennedy J et al (2018), Macharapu R et al (2018), Reddy VV (2016), and Keertish N et al (2013) showed that the majority of cases were referred from the Department of General Medicine.⁴⁻⁷ In A study done by Iniyan Selvamani et al (2022) in 310 referral patients, the mean age of the sample was 40.6 years with an SD of 16.3, majority were males (64.19%).⁸ Earlier studies by Srilakshmi Pingali et al (2020) and Sandeep Grover et al (2017) showed the most common diagnosis by the psychiatry team is delirium (36.4%), followed by depression (12.1 %).^{3,9}

In India, a study on the concordance of diagnosis between the referral team and psychiatrist has shown low concordance ($\kappa < 0.3$) for depressive disorders and delirium, while substance dependence ($\kappa = 0.678$) and suicidality ($\kappa = 0.655$) had better diagnostic concordance.⁹ A study conducted by Keerthy Reji et al (2020) reported diagnostic concordance as 40.9%.¹⁰ Medical-psychiatric comorbidity has huge impacts on health, functioning, and quality of life in patients and caregivers, as well as on the organization of the health care system.¹¹

Physical illness is shown to have a strong association with psychiatric co-morbidity. Such association complicates the course and outcome of both conditions.^{12,13} Timely identification and intervention of such patients not only enhances recovery and prognosis but also helps to avoid wastage of resources and unnecessary investigations.¹⁴

Quality of health care is strongly influenced by efficient communication between different levels of care. Hence, CLP services can be regarded as a linchpin between psychiatry and other medical specialties.¹⁵ Earlier studies have evaluated referral rates and psychiatric diagnosis in India, but diagnostic concordance between the physicians/surgeons and the psychiatrists was rarely addressed.

This research is undertaken with the aim to study the patterns of referrals to the Department of Psychiatry and diagnostic concordance between referring physicians to psychiatrists.

2. Materials and Methods

The present study was a cross-sectional study conducted in the Department of Psychiatry of a tertiary care hospital after obtaining approval from the Institutional Ethics Committee. All the patients referred to the Psychiatry department from other specialties over 4 months, (September 1, 2022 –

February 28, 2023), whose referral notes had a reason for referral or psychiatric diagnosis mentioned were taken as samples for the study after excluding referrals sent for disability assessment. Patients above 18 years of age and willing to give consent were included.

Socio-demographic details were obtained using a questionnaire developed in the department of psychiatry with age, gender, region, education, occupation, socioeconomic status, marital status, family type (joint/nuclear), family support, referral department, reason for referral, psychiatric diagnosis by referring physician/surgeon, CL psychiatry diagnosis. The diagnosis was based on clinical interviews and other available information in accordance with the International Classification of Diseases-10 (ICD-10) Diagnostic Criteria for research, 10th revision. ICD-10, Diagnostic Criteria for Research was devised by the World Health Organization to standardize diagnosis and classification of mental disorders.¹⁶

Statistical analysis was done using SPSS 25.0 software and the kappa value was used to estimate the diagnostic concordance between the referring physicians to the CL psychiatric team. k value: Perfect agreement 0.81-1.0, Substantial agreement 0.61-0.8, Moderate agreement 0.41-0.6, Fair agreement 0.21-0.4, Slight agreement 0.01-0.2, No agreement 0.0.

3. Results

The total sample size comprised 100 referrals according to fixed criteria. The mean age of the sample was 40.96 ± 13.42 years. The majority were males (63%), married (76%), residing in rural areas (55%), belonging to middle socioeconomic status (55%), and from nuclear families (88%). Most patients were illiterate (34%), and doing skilled jobs (45%). The majority of the cases referred were inpatients (61%), and most of them were from the medical specialties (85%), [General medicine - 55, Neurology- 21] followed by surgical branches (15%). Alcohol dependence syndrome (24%) was the most common psychiatric diagnosis in patients referred to the CL psychiatric team, followed by depressive disorder (18%), and phobic anxiety disorder (18%). Tables 1, 2, 3, 4 and 5

Diagnostic concordance has not been seen for cases referred for counseling for self-harm and phantom limb (17 cases). After excluding those cases, among 83 cases, diagnostic concordance was seen in 70 cases. The diagnostic concordance between the referring physician and the diagnosis made by the psychiatrist was found to be 84.3%. . $k = > 0.8$ (perfect agreement) was seen with Alcohol dependence syndrome, depressive disorder, BPAD, delirium, delusional disorder, dissociative disorder, somatoform disorder, and paranoid schizophrenia. $k = > 0.6-0.8$ (substantial agreement) was seen with phobic anxiety disorder and ATPD. Concordance was low ($k = 0$)

Table 1: Demographic data of the study population

		Number (%)
Age	≤30 years	27 (27)
	31-40 years	28 (28)
	41-50 years	22 (22)
	51-60 years	13 (13)
	61-70 years	10 (10)
Gender	Male	63 (63)
	Female	37 (37)
Region	Rural	55 (55)
	Urban	45 (45)
Education	Post-graduate	5 (5)
	Graduate	16 (16)
	Intermediate & diploma	10 (10)
	High school	12 (12)
	Middle school	17 (17)
	Primary school	6 (6)
	Illiterate	34 (34)
Socioeconomic status	Low	42 (42)
	Middle	55 (55)
	High	3 (3)
Occupation	Professional	5 (5)
	Manager	2 (2)
	Clerks/shops	8 (8)
	Semi-professional	1 (1)
	Skilled	45 (45)
	Semi-skilled	5 (5)
	Unskilled	17 (17)
Marital status	Unemployed	17 (17)
	Unmarried	11 (11)
	Married	76 (76)
	Divorced	4 (4)
	Widowed	9 (9)
Type of family	Nuclear	88 (88)
	Joint	5 (5)
	Extended	7 (7)

Table 2: Source of referral

Referring department	Inpatients (number)	Outpatients (number)	Total
General Medicine	46	9	55
Neurology	9	12	21
Nephrology	2	1	3
Cardiology	2	1	3
Gastroenterology	1	0	1
Dermatology	0	1	1
Pulmonology	0	1	1
Surgery	4	0	4
Urology	1	0	1
CTVS	0	1	1
ENT	1	0	1
Ophthalmology	0	1	1
Orthopaedics	1	2	3
Obs/Gyn	0	4	4
Total	61	33	100

Table 3: Department-wise CL Psychiatry diagnosis of the sample

CL Psychiatry diagnosis	General Medicine	Neurology	Nephrology	Obg.	Cardiology	CTVS	Dermatology	ENT	Gastroenterology	Urology	General surgery	Pulmonology	Orthopaedics	Ophthalmology	Total
Alcohol dependence syndrome	16	5					1		1	1					24
Suicide	16														16
Depressive episode	6	5	3	1							2			1	18
Phobic anxiety disorder	10	2		2	1	1		1				1			18
BPAD	1	1									1				3
Delirium	2	1													3
Delusional disorder		1											2		3
Dissociative disorder	1	1													2
OCD	1														1
Adjustment disorder	1														1
ATPD		2		1	1										4
Paranoid schizophrenia	1	1									1				3
Phantom limb													1		1
Somatoform disorder		1			1										2
Vascular dementia		1													1
Total	55	21	3	4	3	1	1	1	1	1	4	1	3	1	100

Table 4: Diagnostic concordance

Diagnostic Concordance	Number (%)
Present	70 (84.3)
Absent	13 (15.6)
Total	83 (100)

Table 5: Psychiatric diagnosis of the sample

Final diagnosis	As per referral department (number)	As per CL-Psychiatry (number)	Kappa [k] value	Agreement
Alcohol dependence syndrome	23	24	0.936	Perfect agreement
Depressive episode	23	18	0.841	Perfect agreement
Phobic anxiety disorder	11	18	0.735	Substantial agreement
Acute and transient psychotic disorder	4	4	0.762	Substantial agreement
Bipolar affective disorder	3	3	1.000	Perfect agreement
Adjustment disorder	0	1	0	No agreement
Delirium	3	3	1.000	Perfect agreement
Delusional disorder	3	3	1.000	Perfect agreement
Dissociative disorder	2	2	1.000	Perfect agreement
Obsessive compulsive disorder	0	1	0	No agreement
Somatoform disorder	4	2	1.000	Perfect agreement
Paranoid schizophrenia	3	3	1.000	Perfect agreement
Vascular dementia	0	1	0	No agreement
Total	79	83		

in diagnosing OCD, adjustment disorder, and vascular dementia.

4. Discussion

The mean age of the sample was 40.96 ± 13.42 (27.54–54.38) years. The majority were males (63%), residing in rural areas (55%), married (76%), and belonged to middle socioeconomic status (55%) and nuclear families (88%). Most patients were illiterate (34%), and doing skilled jobs (45%). A study conducted in Telangana by Srilakshmi Pingali et al (2020) showed similar results, but most referrals were of age 25–35 years, unemployed, and belonging to low SES.³ In a study conducted by Iniyan Selvamani et al (2022) in 310 referral patients, the mean age of the sample was 40.6 years with an SD of 16.3, and the majority (64.19%) were males.⁸ In our study, the majority of the cases referred were inpatients (61%), and most of them were from the medical specialties (85%), [General medicine -55, Neurology- 21] followed by surgical branches (15%). Similar results were reported by a study wherein the majority of the cases were from the department of medicine (44.8%) followed by surgery (17.4%).⁸

The present study found that alcohol dependence syndrome (24%) was the most common psychiatric diagnosis in patients referred to the CL psychiatric team,

and this was followed by depressive disorder (18%), and phobic anxiety disorder (18%). A possible reason for this increase in alcohol dependence syndrome is due to social drinking and binge usage of alcohol. A study done by Iniyan Selvamani et al (2022) showed the most common psychiatric disorder for referral was alcohol dependence syndrome.⁸ Another study conducted in North India by Sandeep Grover et al (2017) showed the most common diagnosis made by the psychiatric team was delirium (43.4%) followed by depressive disorder (26%).⁹

In India, a study on the concordance of diagnosis between the referral team and psychiatrist has shown low concordance ($\kappa < 0.3$) for depressive disorders and delirium, while substance dependence ($\kappa = 0.678$) and suicidality ($\kappa = 0.655$) had better diagnostic concordance.⁹ A study on the accuracy of psychiatric diagnoses in consultation liaison psychiatry in Saudi Arabia reported the concordance between the physician/surgeon's diagnosis, and the diagnosis made by the psychiatrist as only 41.5%–47.4%.¹⁷ The diagnostic concordance in the present study between the referring physician and the diagnosis made by the psychiatrist was found to be 84.3%. An earlier study done by Keerthy Reji et al (2020) reported diagnostic concordance as 40.9%.¹⁰ Another study showed higher concordance according to kappa values.⁸

When compared to other studies, the present study showed overall higher concordance according to kappa values. $k = >0.8$ (perfect agreement) was seen with Alcohol dependence syndrome, depressive disorder, BPAD, delirium, delusional disorder, dissociative disorder, somatoform disorder, and paranoid schizophrenia. $k = >0.6-0.8$ (substantial agreement) was seen with phobic anxiety disorder and ATPD. Concordance was low ($k=0$) in diagnosing OCD, adjustment disorder, and vascular dementia. In this study, although the concordance for many diagnoses was very high, the concordance for some illnesses like panic disorder and alcohol withdrawal was very poor. However, the present study suggests that the referral team was better at diagnosing psychiatric disorders.

Low concordance may be due to incomplete knowledge and training during undergraduate. This brings us to suggest that, including psychiatry as a full subject in the undergraduate medical curriculum may improve the diagnostic accuracy of clinicians in other departments.

5. Strengths of the Study

This was a prospective study. Both the inpatient and outpatient referrals were included. Diagnostic Concordance was estimated between the referring physician/surgeon and psychiatrist.

6. Limitations of the Study

The sample size was small; the results obtained cannot be generalized. Referrals below 18 years were not included.

7. Conclusion

The majority of the cases were referred from the Department of General Medicine followed by the department of Neurology. The present study suggests that the most common primary psychiatry diagnosis was alcohol dependence syndrome, followed by depressive disorder, and phobic anxiety disorder. The overall diagnostic concordance was poor for adjustment disorder, OCD, and vascular dementia, and good for delirium, dissociative disorder, delusional disorder, BPAD, somatoform disorder, and paranoid schizophrenia.

8. Future Directions

Evaluating the impact of psychiatric morbidity on the clinical outcome of the patient would throw light on the beneficial effect of early identification, appropriate diagnosis, and adequate management in consultation-liaison psychiatry.

9. Source of Funding

None.

10. Conflict of Interest

None.

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