RESEARCH ARTICLE

Consultation-liaison psychiatry services in Pakistan: bridging gaps and revealing new opportunities

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Abstract

Objective: To determine the demographic, clinical and service-related characteristics of psychiatric referrals received by a consultation-liaison service in a multidisciplinary setting.

Method: The descriptive, observational, retrospective study was conducted from January 2022 at the Aga Khan University Hospital, Karachi, and comprised data from March 2020 to December 2021 of all inpatients and those reporting to the Accident and Emergency Department who were referred to institutional consultation-liaison psychiatry service. Data was analysed using SPSS 19.

Results: Of the 2,838 referrals, 1,427(50.3%) were for female patients and 1,411(49.7%) were for male patients. The most referred age group was 21-40 years 1,049(37%), followed by 61-100 years 744(26.2%). Among the referred patients, 1,522(53.6%) were inpatients and 1,316(46.4%) were those who had reported to the Accident and Emergency Department. There were 2,273(80%) urgent referrals, with confused and agitated behaviour being the most common reason 618(21.8%). Delirium was the most frequent diagnosis 524(18.5%), followed by depressive disorder 341(12%). Outpatient clinic follow-up was completed by 1,902(67%) patients. Delirium was more prevalent in males compared to females (p<0.001), while females were more frequently diagnosed with depression than males (p<0.001). Inpatients were more often referred for confused and agitated behaviour (p=0.014), whereas those referred by the Accident and Emergency Department related to anxiety (p<0.001).

Conclusion: The consultation-liaison psychiatry service received a large number of referrals, highlighting the growing demand for integrated mental health services in healthcare settings.

Keywords: Consultation-liaison psychiatry, Referral and consultation, Mental health services. (JPMA 76: 856; 2026)

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Introduction

Consultation-liaison (CL) psychiatry is a subspecialty focussed on the interface between psychiatric and general medical conditions.[1] It bridges the gap between medicine and psychiatry by addressing the psychosocial aspects of physical illnesses.[2] C-L psychiatry offers mental healthcare through various models, including consultation and liaison approaches, which vary across regions and institutions globally.[3] Despite its global expansion,[4] C-L psychiatry remains an evolving field in Pakistan.

Pakistan, a multi-ethnic country in South Asia, is the world's fifth-most populous nation, with approximately 220 million people.[5] It faces significant health challenges, including poor mental health indicators. The government allocates only 0.4% (2.4 billion Pakistani rupees [PKR]) of the overall health budget to mental health.[6] In South Asian countries, the prevalence of common mental disorders (CMDs) is 14.2% range: 12.9-15.7%), with Pakistan reporting the highest prevalence.[7] The uneven distribution of healthcare professionals, with most concentrated in urban centres, further exacerbates this issue, as the majority of the population resides in rural areas.[8] This imbalance in healthcare is compounded by economic, sociocultural[9] and religious factors, further exacerbating psychological issues.[10] The economic burden of psychiatric disorder has been rising at an alarming rate, increasing from PKR250.5 billion in 2006 to PKR616.9 billion in 2020.[11]

The history of mental healthcare in Pakistan reflects a shift from asylum-based settings to community care, allowing individuals with psychiatric disorders to receive outpatient treatment within their communities. Despite facing shortages of mental health professionals, psychiatric units have been gradually introduced in government hospitals associated with medical colleges. The private sector has also contributed by establishing psychiatric hospitals and departments nationwide. Additionally, non-governmental organisations (NGOs) have been pivotal in providing psychiatric services, often at minimal or no cost. Currently, mental health services in Pakistan are delivered through a

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combination of government hospitals, private healthcare facilities, psychiatric clinics and NGOs. Despite this progress, challenges remain, including the lack of a formal, structured referral system for psychiatric evaluations.[12]

The current state of mental health services in Pakistan highlights the need for initiatives to improve accessibility, quality and coordination in meeting psychological needs.[13] This calls for a comprehensive evaluation of existing data within the established mental health facilities, providing insights crucial for the establishment and improvement of C-L psychiatric services.

Despite the high comorbidity of depression among inpatients,[14] C-L psychiatry services in Pakistan remain largely unexplored. Research in this area is often limited by small sample sizes, short study durations[15] and outdated diagnostic classifications. Existing research also indicates that patients with psychiatric disorders often seek care from non-mental health specialties.[16] Although low referral rates have been consistently observed, it remains unclear whether this trend is consistent across different healthcare facilities.[17] Despite Karachi's status as Pakistan's largest city with an extensive healthcare infrastructure that serves both rural and urban populations, not many studies have been conducted based in the city. Given the global increase in the complexity of hospital care,[18] holistic health system planning has become more critical than ever. No prior study in the city has explored referral patterns to C-L psychiatric services across both Accident and Emergency Department (A&ED) and ward settings covering both adolescent and adult age groups, highlighting a significant gap in current research.[19]

The current study was planned to address the existing gaps in literature by determining the demographic, clinical and service-related characteristics of psychiatric referrals received by a consultation-liaison service in a multidisciplinary setting.

Materials and Methods

The descriptive, observational, retrospective study was conducted from January 2022 to June 2022 at the Aga Khan University Hospital (AKUH), Karachi, and comprised data from March 2020 to December 2021 of all inpatients and those reporting to the A&ED who were referred to institutional C-L psychiatry service. The C-L psychiatric service at AKUH is available 24/7, offering comprehensive care to patients in both general wards and the A&ED. An FCPS postgraduate psychiatry trainee is physically present in the hospital, while a consultant psychiatrist is available on-site until 5pm Pakistan time, and on-call over the phone thereafter to ensure seamless delivery of C-L psychiatric services. For the purpose of the study, terms are defined as below. Psychiatric disorders referred to all mental illnesses. Postgraduate-Psychiatry trainees meant candidates from year I to year IV of the Fellowship of the College of Physicians and Surgeons (FCPS part II). Consultant psychiatrist referred to a qualified psychiatrist serving as faculty in the AKUH Psychiatry department.

The sample comprised data of all male and female patients regardless of age who were admitted to any ward or presented to the A&ED and who were referred to C-L psychiatry service. Patients with incomplete or missing psychiatric consultation records, lacked essential clinical information for analysis (such as diagnosis or treatment details), or whose consultations occurred outside the study period were excluded.

Patient medical record numbers were obtained from multiple sources, including the Software Designer, the Solutions and Innovation Department, the Human Information Management System (HIMS), and the registers used by postgraduate psychiatry trainees for patient handovers. The research team extracted relevant information from medical records using a standardised proforma that was developed by expert mental health professionals. The proforma included data from physicians' notes, nurses' notes, assessment forms and discharge summaries. Basic demographic details and consultation specifics were retrieved from electronic records. Two researchers retrieved the data, maintaining close communication with the principal investigator to ensure consistency in data recording, and to promptly resolve any emerging issues.

As this was a descriptive, retrospective chart review, no pre-determined sample size or power analysis was conducted.[20] The large sample size, derived from all eligible referrals during the study period, ensured a robust and reliable depiction of consultation characteristics, providing high confidence in the findings despite the absence of a primary exposure or formal hypothesis. An exemption was obtained from the institutional ethics review committee. At the time of admission, all patients or their next of kin had filled in a consent form. Anonymity and confidentiality of data and participants were ensured at all times.

Data was analysed using SPSS 19. Data was expressed as frequencies and percentages. $P<0.05$ was considered statistically significant.

Results

Of the 2,838 referrals, 1,427(50.3%) were for female patients and 1,411(49.7%) were for male patients. The most referred age group was 21-40 years 1,049(37%), followed by 61-100 years 744(26.2%). Among the referred patients, 1,522(53.6%) were inpatients and 1,316(46.4%) were those who had reported to the A&ED. The highest number of referrals required a response within 30 minutes 1,158(40.8%), followed by those needing assessment within 4 hours 958(33.7%). Overall, there were 2,273(80%) urgent referrals (Table 1).

Confused and agitated behaviour was the most common reason 618(21.8%) for referral, followed by evaluations for depression 416(14.7%) and anxiety 406(14.3%). Delirium was the most frequent diagnosis 524(18.5%), followed by depressive disorder 341(12%) (Table 2).

Outpatient clinic follow-up was completed by 1,902(67%) patients. Delirium was more prevalent in males compared to females ($p<0.001$), while females were more frequently diagnosed with depression than males ($p<0.001$).

Table-1: Demographic and consultation data of patients (n=2,838).

Variables	n (%)
Age(years)	
1-10	36 (1.3)
11-20	324 (11.4)
21-30	539 (19.0)
31-40	510 (18.0)
41-50	352 (12.4)
51-60	333 (11.7)
61-70	358 (12.6)
71-80	263 (9.3)
81-90	110 (3.9)
91-100	13 (0.5)
Gender	
Female	1427 (50.3)
Male	1411 (49.7)
Source of Referral	
Emergency Department (ED)	1316 (46.4)
Wards	1522 (53.6)
Urgency of Consultation	
**Routine Within 24 hours	565 (19.9)
*Rush Immediate	6 (0.2)
**Urgent (within 4 hours)	958 (33.8)
*Urgent (within 1 hour)	151 (5.3)
*Urgent (within 30 minutes)	1158 (40.8)

*Consults were generated from the Accident and Emergency Department (A&ED);
**Consults were generated from the ward.

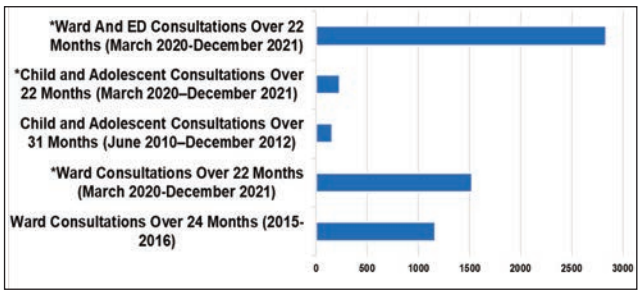

Figure-1: Referral patterns over time.

The figure compares consultation-liaison (C-L) psychiatry referral volumes reported in previous studies [19, 24] conducted at Aga Khan University Hospital with findings from the current study, while acknowledging differences in study durations and scope. Earlier data include ward-based consultations over 24 months (2015–2016; n = 1,166)[19] and child and adolescent consultations over 31 months (June 2010–December 2012; n = 160).[24] In contrast, the current study (*) reports substantially higher referral volumes over a 22-month period (March 2020–December 2021), including ward consultations (n = 1522), child and adolescent consultations (n=228), and combined ward and Accident & Emergency Department (A&ED) consultations (n=2,838).

Previous studies[19,24] examined selected subgroups, one focusing solely on ward consultations, and another exclusively on child and adolescent referrals. In contrast, the current study includes both ward and Accident and Emergency Department (A&E) consultations across all age groups, providing a more comprehensive view of consultation-liaison (C-L) psychiatry service activity. On average, ward consultations increased from approximately 49 per month in 2015–2016 to around 69 per month in the current study period. Similarly, child and adolescent consultations increased from approximately 5 per month to 10 per month over comparable time frames. When ward and A&ED referrals were combined, the current study documented an overall average of approximately 129 psychiatric consultations per month, reflecting a marked expansion in service utilisation over time. C&A stands for Children and Adolescents.

Table-2: Reasons for consultations, psychiatric diagnosis, and outcome of psychiatric referrals.

Category	n (%)
***Complaints**	
Confused & agitated behaviour	618 (21.8)
Assessment for depression	416 (14.7)
Assessment for anxiety	406 (14.3)
Assessment of the psychological causes of symptoms	315 (11.1)
Self-harm/suicidal ideas	258 (9.1)
Drug abuse/ withdrawal/ toxicity/ detoxification	234 (8.2)
Psychotropic adjustment	86 (3.0)
Postpartum psychological issues	30 (1.1)
Assessment for dementia	28 (1.0)
Screening of trauma victims	13 (0.5)
**Others	764 (26.9)
Diagnosis	
Delirium	524 (18.5)
Depressive Disorder	341 (12.0)
Anxiety Disorder	313 (11.0)
Adjustment Disorder	238 (8.4)
Outcome of Psychiatric Referral	
Follow-up in Clinic after Discharge	1902 (67.0)
Admitted to Psychiatry Ward	376 (13.2)
Follow-up by Psychiatry as Consultations With ongoing involvement of other medical teams and recommended workup	289 (10.2)
***Consultations not assessed by Psychiatry	203 (7.2)
Leave Against Medical Advice (LAMA).	35 (1.2)
No Clinic Follow-up required	33 (1.2)

* The total number of presenting complaints (n=3,168) exceeds the total number of consultations (n=2,838) as some patients presented with more than one primary complaint at the time of referral, resulting in overlapping counts; **Represents system-generated entries for complaints that did not match predefined categories. While the total count appears high, this category comprises numerous infrequently occurring complaints, each representing distinct individual reasons for consultation that did not align with predefined categories. It also reflects the heterogeneous nature of referrals received, which represent individualised clinical needs prompting psychiatric consultation; ***Consultations are initiated by the primary team and may remain un-reviewed by psychiatry due to cancellations, family refusals, or patients leaving before a psychiatry team member's arrival to review the consult.

Table-3: Association of gender with diagnosis, and the association of source of referral with the reason for consultation.

Diagnosis	Gender n=2838		*p*-value
	Male	Female	
Psychotic			0.009
Present	95 (6.7)	64 (4.5)	
Absent	1316 (93.3)	1363 (95.5)	
Adjustment			0.857
Present	117 (8.3)	121 (8.5)	
Absent	1294 (91.7)	1306 (91.5)	
Depression			< 0.001
Present	116 (8.2)	225 (15.8)	
Absent	1295 (91.8)	1202 (84.2)	
Anxiety			0.001
Present	129 (9.1)	184 (12.9)	
Absent	1282 (90.9)	1243 (87.1)	
Delirium			<0.001
Present	316(22.4)	208(14.6)	
Absent	1095 (77.6)	1219(85.4)	
Reason for Consultation	**Source of referral n=2838**		
	***A&ED**	**Inpatient**	
Confused & agitated behaviour			0.014
Present	260 (19.8)	358 (23.5)	
Absent	1056 (80.2)	1164 (76.5)	
Assessment of depression			0.163
Present	206 (15.7)	210 (13.8)	
Absent	1110 (84.3)	1312 (86.2)	
Assessment of anxiety			< 0.001
Present	253 (19.2)	153 (10.1)	
Absent	1063 (80.8)	1369 (89.9)	
Assessment of the psychological causes of symptoms			0.626
Present	142 (10.8)	173 (11.4)	
Absent	1174 (89.2)	1349 (88.6)	
Drug abuse/withdrawal/toxicity/detox			0.838
Present	110 (8.4)	124 (8.1)	
Absent	1206 (91.6)	1398 (91.9)	

*A&ED: Accident and Emergency Department.

Inpatients were more often referred for confused and agitated behaviour (p=0.014), whereas those referred by the A&ED mostly related to anxiety (p<0.001) (Table 3).

Figure-1 illustrates an increasing trend in consultation-liaison (C-L) psychiatry referral volumes over time, comparing ward, child and adolescent, and combined ward–Accident & Emergency Department consultations in the current study with previously published AKUH data.[19,21]

Discussion

The current study is among the few from Pakistan that describe the patterns and characteristics of C-L psychiatry referrals, highlighting the growing need to strengthen psychiatry consultation models across tertiary healthcare settings in Pakistan.

The 2,838 psychiatric referrals received demonstrate a significant rise in C-L service utilisation compared to a prior study,[19] which recorded 1,166 referrals, of which only 995 were evaluated at the same hospital. This increase may reflect the rising complexity of patients as well as improved awareness among healthcare professionals, patients and caregivers.

The data on age groups reveal that most psychiatric consultations occurred among individuals in early and middle adulthood (21-40 years). This is broadly consistent with epidemiological evidence that many psychiatric disorders begin before or during early adulthood, while mood disorders tend to have a later median age at onset (around 30 years).[22,23]

A secondary peak was observed among older adults aged 61 years and above, reflecting their healthcare needs due to complex comorbidities. This trend is consistent with findings from another liaison service for elderly patients, where referral rates for psychogeriatric consultations increased over time.[24] The rise in child and adolescent consultations in the current study (228 consults over 22 months) compared to an earlier study (160 consults over 31 months)[21] suggests an expansion of the child and adolescent psychiatry team. This increase may also be partly attributed to greater awareness among paediatricians, in contrast to findings from Lahore, where limited paediatric knowledge affected referrals.[25] These findings reinforce the need for well-integrated C-L psychiatry services that actively support and guide primary medical teams through effective liaison and consultation, ensuring comprehensive management of psychological issues across all age groups.

There was a near-equal distribution of referrals between females (n=1,427) and males (n=1,411), which contrasts with findings from India, where a male predominance of 56% was reported.[26] This suggests that psychological issues requiring psychiatric evaluation do not disproportionately affect one gender over the other during hospitalisation, underscoring the need for inclusive mental health services. Additionally, it is important to consider gender-specific health issues, social roles, and stressors that might contribute to mental health problems in hospitalised patients.

The higher number of referrals from inpatient units (n=1,522) underscores the burden of psychiatric comorbidities during hospital stays, consistent with a previous study reporting a high prevalence of mental health issues in medical wards.[27] In contrast, referrals from the A&ED (n=1,316) highlight the need for early psychiatric assessment at the point of hospital entry, as many patients initially present with psychological symptoms as their

primary complaint. In this study, anxiety was more frequently observed among A&ED referrals, while inpatients were more often referred for confused and agitated behaviour, highlighting differences in clinical urgency and symptom recognition between inpatient and emergency settings. These findings underscore the importance of adopting structured protocols, such as those recommended by the National Institute for Health and Care Excellence (NICE), to guide timely assessment and management of psychiatric emergencies, which can improve outcomes and optimise resource use.

The consultation urgency data (n=2,273 urgent vs. n=565 routine) indicate that most referrals required priority psychiatric evaluation. Highly urgent consultations (within 30-60 minutes) primarily originated from the A&ED, reflecting acute behavioural or psychiatric presentations. In contrast, routine referrals were more often generated from inpatient wards, where pre-existing, previously unrecognised, or newly emerging psychological issues were identified during hospital stays. This distribution highlights the responsiveness of the C-L service to varying levels of clinical urgency across hospital settings. While the current model remains largely reactive, activated once acute symptoms arise, a gradual transition towards a more proactive system could help reduce crisis-driven referrals over time.

In the current study, confused or agitated behaviour (n=618) emerged as the predominant reason for psychiatric consultations. This finding contrasts with European services, where issues, such as substance misuse and self-harm, are more prevalent. The lower proportion of self-harm cases in the current sample (n=258) may be explained by the overall lower number of such presentations at AKUH, where approximately 60-65 self-harm cases are seen annually.[28] Self-harm presentations are more frequently managed in public-sector hospitals, many of which previously served as medicolegal centres before the decriminalisation of suicide. Addressing stigma and improving pathways of care following decriminalisation could enhance help-seeking and early referral for self-harm cases. Similarly, the relatively small number of referrals for substance use disorders (n=234) may reflect under-recognition by non-mental health professionals, particularly in differentiating between harmful use and dependence. Incorporating focused psycho-education and training in motivational interviewing techniques for medical teams could help improve referral rates for substance use disorders. Assessment for depression (n=416) and anxiety (n=406) were also among the commonest reasons for psychiatric consultations, reflecting their high prevalence among hospitalised patients. This emphasises the need for management protocols for depressive and anxiety disorders in the hospital setting. The assessment of psychological causes of symptoms among (n=315) patients underscores the need for a holistic approach to patient care. Patients with medically unexplained symptoms (MUS) often present in non-mental health specialties, and extensive research highlights[29] the challenges faced by clinicians in managing them. Physicians frequently report feeling frustrated and helpless when dealing with such cases, which can negatively impact both the therapeutic relationship and clinical outcomes. A study done in Rawalpindi, Pakistan, found that a substantial proportion of psychiatry referrals originated from patients presenting with medically unexplained somatic complaints.[17] Given that the AKUH psychiatry team also receives many referrals for similar issues, enhancing postgraduate training and faculty development in the assessment and management of MUS remains a critical priority. The large number of consultations categorised as 'other' (n=764) reflects the frequency of referrals that did not clearly align with predefined electronic categories. This highlights the need for clearer communication and documentation between psychiatric and primary medical teams. Strengthening this dialogue can improve the focus of referrals and promote more targeted, effective interventions, ultimately enhancing the quality of patient care. A relatively small number of consultations (n=13) were for the screening of trauma victims. This low percentage suggests that trauma-related psychological issues may often go under-recognised in the hospital setting. Strengthening the capacity of non-mental health professionals through training on trauma-informed care and screening can help ensure timely recognition and referral of trauma-related mental health needs.

Delirium (n=524) was the most common diagnosis in the current study, contrasting with other inpatient C-L psychiatry studies in Pakistan,[15,17] where depression was more prevalent. The current findings are consistent with a previous study from the same centre, which also reported delirium as the leading diagnosis.[19] This variation across studies may reflect the higher likelihood of complex medical cases, particularly those developing delirium in multidisciplinary hospital settings.

C-L psychiatry services provide a crucial platform to engage with patients and address mental health needs that might otherwise remain unrecognised. Challenges inherent in retrospective reviews, such as incomplete or inconsistently recorded data, underscore the need to strengthen the accuracy and comprehensiveness of clinical documentation. With delirium emerging as the leading diagnosis, hospitals should prioritise prevention protocols,

adopt clinical practice guidelines for standardised management, and invest in capacity-building of medical and nursing teams. Collaboration with tertiary healthcare settings, particularly in the public sector, can facilitate the development of C-L services through shared protocols and training, improving care for patients with coexisting medical and psychiatric conditions. Building on the established experience at AKUH, future efforts should focus on sustaining these services through strategic workforce planning, expansion of postgraduate psychiatry training opportunities, and continued integration within multidisciplinary hospital teams.

Conclusion

C-L psychiatry service plays a pivotal role in addressing the complex psychological needs of patients within hospital-based care. The large number of referrals received highlights the growing demand for integrated mental health services in healthcare settings. The findings highlight the feasibility of adapting this model to other tertiary healthcare institutions across Pakistan. Sustaining and expanding C-L psychiatry will require strategic workforce planning, multidisciplinary collaboration, and targeted training to strengthen its role as an essential component of comprehensive patient care.

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AN: Concept, data acquisition, drafting, analysis, revision and final approval.
IH: Data collection, analysis and final approval.
ZI: Concept, design, data collection and final approval.
MZ: Design the proforma, data collection, analysis and final approval.
SP: Literature search, editing, drafting and final approval.
MMK: Concept, intellectual input, worked as mentor and final approval.