ONLINE FIRST

ORIGINAL ARTICLE

Patterns of Psychiatric Referrals at the Emergency Department of a Tertiary Care Hospital

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doi: 10.22442/jlumhs.2026.01517

ABSTRACT

OBJECTIVE: To examine the pattern of referrals in patients undergoing psychiatric consultation in the ED at PNS Shifa Hospital, Karachi.

METHODOLOGY: This cross-sectional study was conducted at PNS Shifa Hospital, Karachi, from January to July 2024 among 289 patients referred to the psychiatry department by the emergency department using non-probability consecutive sampling. Data were collected on demographics, clinical presentation, vital signs, comorbidities, drug use, triage category, referral timing, and duration of stay from Emergency Department records, patient interviews, and psychiatric consultation notes. SPSS v27 was used to analyze the data.

RESULTS: 58.8% were male, with an average age of 39.96 ± 17.48 years. Most of the patients were of low-income urban origins (50.2%), married (56.7%), and only completed secondary school (46.4%). The highest proportion (58.8%) was referred by medicine/physician units. The most common presenting complaints included somatic symptoms (26.3%), anxiety/panic (23.5%), agitation/violent behavior (14.9%), substance-related problems (14.2%), depressive symptoms (12.5%), and disturbed mental state (7.6%). The highest prevalence was found with somatoform disorders (41.5%), followed by delirium/neurocognitive (5.9%), mood/substance-related (12.8% each), and psychotic (10%) disorders. The average ED stay was 10.24± 9.08 hours.

CONCLUSION: Medically stable young to middle-aged people with somatic, behavioral, anxiety, or substance-related problems are the primary patients referred to the emergency department for psychiatric treatment. The results highlight the necessity of prompt psychiatric assessment and improved mental health service integration in emergency treatment.

KEYWORDS: Emergency psychiatry, Neurotic disorders, Psychiatric Referral, Somatic Symptoms, Substance use, Consultation-liaison psychiatry

INTRODUCTION

Incidences of high or even growing rates of mental illnesses in the world have been reported over the past few decades, which have augmented the economic burden on the world economy[1]. Pakistan is estimated to have 20 million people with mental disorders, and mental illness is 10% common in the country and has a high cost implication[2].

About 1 out of 8 Emergency Department (ED) visits in the country has some mental health issues and substance use concerns, and psychiatric emergencies are becoming a larger proportion of ED visits[3]. About 5.9 million of the 38.4 million ER visits analyzed in a countrywide U.S. research study had a primary psychiatric diagnosis. While major depressive disorder, anxiety disorders, and alcohol intoxication were the most frequent causes of emergency department presentation, patients with mental illnesses were more likely to originate from lower-income families[4].

The ED serves as a safety net for those individuals who have serious mental health needs. However, the capacity of EDs to provide evidence-based intervention in relation to mental illness is limited[5]. A study found that most of the referrals (61 percent) came through family members, and 25 percent came through nonspecialized medical professionals. The most common causes of psychiatric referrals were coexisting mental and physical symptoms (38%), while 25% were referred as they had predominant psychiatric symptoms. The least common triage category was red, and the most common was yellow (38%). Schizophrenia (33.3%), mania (16.7%) and alcohol dependency (25%) were the most common psychiatric diagnoses. BPRS score and triage-based severity were significantly correlated[6]. Anxiety disorders (75.4%) and mood disorders (38.6%) were the primary causes of the 28.5% rise in psychiatric presentations, especially among younger people, according to a new French retrospective analysis of 69,764 psychiatric emergency department visits (2016–2023). Hospital admissions fell by 11.9% despite the increase in visits, underscoring the need to improve outpatient mental health treatment and the growing need for emergency psychiatric services[7].

As per a different study, the chief cause of Referral was altered sensorium (24.5%), followed by undefinable medical symptoms accompanied by low mood (21%), and attempts to commit suicide with various methods, including Deliberate Self-Harm (DSH) (17.5%)[8]. The need for localized research is also justified by a significant variation in the profile of diagnosis and in the referral pattern across locations. A big medico-surgical study with 2476 cases found substance use disorder (25.44%), anxiety (20.39%), and depression (12.27%) as the most prevalent psychiatric diagnoses. Almost a quarter of the referrals were associated with psychiatric crises, and patients were often prescribed psychotropic drugs before explicit examination[9].

A survey carried out in an emergency department, however, described a much different clinical picture, with psychotic symptoms being the most common in the presentation of 68 percent of patients. Depressive (9.8%), suicidal (7.6%), and manic symptoms (6.6%), on the other hand, were moderately infrequent, and 12.6% of the patients required hospital admission[10].

These discrepancies highlight a critical knowledge gap: the lack of credible regional data on the causes of patient referrals, who makes the Referral, and which mental health problems are most common in ERs. There is little information on the pattern of mental referrals from emergency rooms in Pakistan, despite the growing number of psychiatric emergencies. Poor patient outcomes, an extended stay in the emergency room, delayed treatment, and inappropriate use of medical resources can all arise from delayed diagnosis of mental problems in emergency care. Comprehending the trends in psychiatric referrals might enhance the early detection of mental

problems, bolster consultation-liaison psychiatry services, optimize referral procedures, and make it easier to include mental health in emergency treatment. To provide context-specific information, improve triage and management methods, and guide the development of effective consultation-liaison psychiatric services, it is essential to explore patterns of mental health referrals in a specific emergency department.

METHODOLOGY

This cross-sectional study was conducted at the Department of Psychiatry, PNS Shifa Hospital, Karachi, from January to July 2024. All patients aged 18 -60 years of either gender who received a formal psychiatric consultation/referral from the Emergency Department to the Psychiatry Department. Patients who were managed exclusively by emergency physicians without formal psychiatric Referral; brought to the Emergency Department dead on arrival; with purely medical or surgical conditions not requiring psychiatric evaluation; repeat visits by the same individual for the same complaint within the study period (only the first visit included); and those who left against medical advice (LAMA) or absconded before psychiatric assessment were excluded. A total of 289 referred patients were included using a non-probability consecutive sampling technique. The sample size was calculated using the WHO sample size calculator, assuming 25% of patients referred had predominant psychiatric symptoms, with a 95% confidence level and a 5% margin of error [6]. Data collection was carried out after obtaining written informed consent from all participants or their legal attendants. The study was conducted following approval from the Institutional Ethics Review Committee (ERC/2023/PSY/72) of PNS Shifa Hospital, Karachi (Approval No. ERC/2023/PSY/72). Written informed consent was obtained from all participants before data collection. Relevant data were collected using a structured proforma from emergency department records, patient interviews, and psychiatric consultation notes. Sociodemographic characteristics, clinical presentation, vital signs, medical and substance use history, and referral-related information were recorded at the time of emergency department admission. Clinical symptoms including agitation or violence, suicidal ideation, self-harm, anxiety or panic, depressive features, psychotic symptoms, substance-related manifestations, altered mental status, and somatic complaints with suspected psychiatric components were documented. Qualified consultant psychiatrists or psychiatry residents established psychiatric diagnoses using routine clinical assessment based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).

The pattern of psychiatric Referral was defined as the distribution and characteristics of referrals based on referring specialty within the emergency department, primary presenting complaint, triage category, and timing variables including arrival-to-referral time, referral-to-psychiatry evaluation time, and length of stay. Patients were classified as Green (non-urgent and clinically stable), Yellow (urgent with potential risk of deterioration), and Red (immediate and life-threatening condition requiring urgent intervention). We measured vital signs at triage, including systolic and diastolic blood pressure, pulse rate, respiratory rate, body temperature, and oxygen saturation. Medical comorbidities and current substance use were documented from medical records and patient history. We calculated time intervals, including arrival-to-referral time, referral-to-psychiatry evaluation time, and total emergency department length of stay, using electronic timestamps. Patient records with incomplete information for the study variables were excluded from the final analysis; therefore, no imputation of missing data was performed. All

collected data were anonymized and entered into a secure database for statistical analysis using Statistical Package for the Social Sciences (SPSS) version 27. Data were checked for completeness and consistency before analysis, and data entry was cross-verified to minimize transcription errors. Descriptive statistics were used to summarize the study variables. Continuous variables were presented as mean ± standard deviation, while categorical variables were expressed as frequencies and percentages.

RESULTS

A total of 289 patients referred for psychiatric evaluation in the emergency department were included in the analysis. The mean age of the participants was 39.96 ± 17.48 years (range: 18–84 years). The number of male cases was 58.8% compared to females (41.2%).

More than half of the patients were married (56.7%), while nearly one-third were single (32.9%). The majority of the patients had completed secondary education (46.4%), followed by primary education (22.1%) and higher education (18.4%). In terms of occupational status, students formed the largest group (30.8%), followed by housewives (19.4%) and employed individuals (18.3%). The frequency of cases living in urban areas was 61.9%. Half of the participants were from low-income backgrounds (50.2%).

More than half of the patients were triaged as Green (55.4%), while 36.7% were classified as Yellow, and 7.9% were categorized as Red. Agitation or violent behavior was observed in 14.9% of patients. Suicidal ideation or attempts were reported in 3.8% of cases, while self-harm without suicidal intent was documented in 4.5%. Anxiety or panic symptoms were present in 23.5% of participants. Depressive symptoms were identified in 12.5% of patients, whereas psychotic features were noted in 8.0%. Substance-related symptoms were observed in 14.2% of cases. Altered mental status was present in 7.6% of patients. Somatic complaints with suspected psychiatric components were reported in 26.3% of participants.

The majority of participants (71.3%) had no documented major medical comorbidity. Current substance use was reported in 23.9% of patients. More than half of psychiatric referrals originated from the medicine or physician unit (58.8%). Neurotic, stress-related, and somatoform disorders were the most common, accounting for 41.5% of cases. Mood disorders and substance-related disorders each represented 12.8% of diagnoses, followed by psychotic disorders (10.0%). Notably, 7.3% of patients did not receive a psychiatric diagnosis.

The mean systolic and diastolic blood pressures were 131.00±18.38 mmHg and 81.51±11.33 mmHg. The mean pulse rate was 93.65±14.43 beats per minute. The mean time from emergency department arrival to psychiatric Referral was 45.46±33.60 minutes. The average length of stay in the emergency department was 10.24±9.08 hours.

Table I: Sociodemographic Characteristics of Patients (n = 289)

Variable	Category	n (%)
Sex	Male	170 (58.8)
	Female	119 (41.2)
Marital Status	Single	95 (32.9)
	Married	164 (56.7)
	Widowed/Separated	30 (10.4)
Education Level	No formal	38 (13.1)
	Primary	64 (22.1)
	Secondary	134 (46.4)
	Higher	53 (18.4)
Occupation	Employed	53 (18.3)
	Unemployed	41 (14.2)
	Laborer	35 (12.1)
	Student	89 (30.8)
	Retired	15 (5.2)
	Housewife	56 (19.4)
Residence	Urban	179 (61.9)
	Rural	110 (38.1)
Socioeconomic Status	Low	145 (50.2)
	Middle	101 (34.9)
	High	43 (14.9)

Table II: Clinical Presentation and Triage Status (n = 289)

Variable	Category	n (%)
Triage Category	Green	160 (55.4)
	Yellow	106 (36.7)
	Red	23 (7.9)
Agitation/Violence	Yes	43 (14.9)
	No	246 (85.1)
Suicidal Ideation/Attempt	Yes	11 (3.8)
	No	278 (96.2)
Self-Harm	Yes	13 (4.5)
	No	276 (95.5)
Anxiety/Panic	Yes	68 (23.5)
	No	221 (76.5)
Depressive Symptoms	Yes	36 (12.5)
	No	253 (87.5)
Psychotic Symptoms	Yes	23 (8.0)
	No	266 (92.0)
Substance-Related Symptoms	Yes	41 (14.2)
	No	248 (85.8)
Altered Mental Status	Yes	22 (7.6)
	No	267 (92.4)
Somatic Psychiatric Complaints	Yes	76 (26.3)
	No	213 (73.7)

Table III: Medical Comorbidities and Diagnostic Profile (n = 289)

Condition	n (%)	Diagnosis at emergency	n (%)
None	206 (71.3)	Neurotic/Stress/Somatoform	120 (41.5)
Cardiovascular	22 (7.6)	Mood Disorders	37 (12.8)
Neurologic	22 (7.6)	Substance-Related Disorders	37 (12.8)
Diabetes/Metabolic	12 (4.2)	Psychotic Disorders	29 (10.0)
Respiratory	4 (1.4)	Delirium/Neurocognitive	17 (5.9)
Other	23 (7.9)	Personality Disorders	12 (4.2)
		Adjustment Disorder	9 (3.1)
		Somatic Symptom/Functional	7 (2.4)
		No Psychiatric Diagnosis	21 (7.3)

Table IV: Referral Sources and Substance Use (n = 289)

Variable	Category	n (%)
Referring Specialty	Medicine/Physician	170 (58.8)
	Surgery	25 (8.7)
	Orthopedics	23 (8.0)
	Dermatology	20 (6.9)
	Neurology	12 (4.2)
	Trauma	9 (3.1)
	Others	30 (10.3)

Table V: Demographic, Clinical Parameters and Emergency Department Time Intervals (n= 289)

Variable	Mean ± SD	Min–Max
Age (years)	39.96 ± 17.48	18–84
Distance from Hospital (km)	17.56 ± 17.26	0.5–78
Systolic BP (mmHg)	131.00 ± 18.38	80–201
Diastolic BP (mmHg)	81.51 ± 11.33	49–114
Pulse (bpm)	93.65 ± 14.43	51–139
Respiratory Rate (/min)	16.44 ± 3.15	11–30
Temperature (°C)	36.93 ± 0.47	35.6–38.7
SpO_2 (%)	96.89 ± 2.02	89–100
Arrival to Referral (min)	45.46 ± 33.60	5–213
Referral to Psychiatry Evaluation (min)	49.33 ± 38.80	5–272
ED Length of Stay (hours)	10.24 ± 9.08	0.7–72

DISCUSSION

Integration of mental health services into the mainstream of the general health care system started in the 1990s. Patients presenting to the emergency department (ED) with a psychosocial impairment might be suffering from several comorbidities that have led to an acute crisis [11]. The ED clinical staff might lack extensive knowledge of trauma-informed care or mental health care [12]. Consequently, adults and children with a mental health or suicide crisis are over-restrained and secluded in the ED [13].

The current study provides an overview of psychiatric referrals made to the emergency department, and important demographic, clinical, and referral-related patterns are identified. The mean age of participants was 39.96±17.48 years, and most of them were male (58.8%), which is comparable with previous studies reporting male representation in psychiatric referrals as 50.2–67% [14,15]. Previous research indicates that the mean age of emergency psychiatric patients is about 30–33 years old, confirming that most acute psychiatric presentations are made by middle-aged and young adults [16].

In our study, more than half of patients were married (56.7%) and had completed secondary school (46.4%), which aligns with other hospital-based studies. Since a significant proportion of participants (50.2%) were born in low-income households, socioeconomic stressors may contribute to psychiatric morbidity and emergency presentations [17].

Regarding sources of referrals, most referrals (58.8%) were from the medicine/physician unit, a finding supported by previous studies where 51.3% and 50% of referrals were made by medicine departments [9, 17]. A case study in Karachi also showed that 60.1% of psychiatric referrals were from inpatient departments rather than emergency services, highlighting the importance of medical settings in diagnosing psychiatric morbidity [14].

Somatic symptoms with possible psychiatric elements were most common (26.3%), followed by anxiety/panic, agitation or violent behavior, depressive features, and substance-related symptoms (12.5%). These findings align with literature reporting unexplained somatic complaints at 39.14% in Bangladesh [18]. Anxiety-related referrals were also frequent, with 13.01% in Bangladesh and 25.1% panic attacks in an Indian emergency study [16, 18]. Agitation/violence (14.9%) is consistent with earlier reports showing behavioral disturbances in 31.3% of referrals [14].

Self-harm presented as suicidal attempts (3.8%) and non-suicidal self-harm (4.5%), comparable to previous findings where suicide and intentional self-harm constituted 2.1% and 4.3% of referrals [14]. Another study from Lahore reported 14.5% suicidal or self-harm behavior [19]. Drug use was also important, with 14.2% showing substance-related symptoms and 23.9% being current users. This agrees with a consultation-liaison study reporting substance use conditions as the most common mental diagnosis (25.44%) [9]. Other studies reported substance use history in about 20% of referred patients [16, 19].

Most diagnoses were neurotic, stress-related, and somatoform disorders (41.5%), followed by mood disorders (12.8%), substance-related disorders (12.8%), and psychotic disorders (10%). Similar patterns were reported, with high prevalence of generalized anxiety disorder, somatic symptom disorders, and conversion disorders [18]. Psychotic presentations may be higher in certain emergency contexts, reaching 68% in one ED-based study [10].

Altered mental status was seen in 7.6% of patients, consistent with delirium accounting for 9.3% of diagnoses in consultation-liaison settings [9]. Nevertheless, it was noted that it was high among psychiatric referrals related to COVID-19, particularly in older patients (47.1 percent) [15].

Equally, in a study of Indian emergency departments, altered sensorium was the cause of 23.5% of the referrals [16]. Only 7.3% of patients did not receive a mental diagnosis, similar to previous reports where 17.7% of emergency psychiatric presentations lacked psychiatric diagnosis [20].
The mean emergency stay was 10.24±9.08 hours and mean referral time was approximately 45 minutes, reflecting the complexity of emergency psychiatric care. It is estimated that 3–12% of ED patients receive a primary mental diagnosis, with hospitalization rates above 12.6% [10].
As reported by another study that corroborated our results, most of the patients were referred in an inpatient environment (75.5%), and most of them were referred by the general medicine department (81%). Common medical issues were alcoholic liver disease (7.5) and poisoning (39%). The most frequent reasons of Referral were self-harm behavior (40%), inexplicable medical problems (12.5%), and alcohol withdrawal (11.5%). Delirium (10%), acute stress reaction (12.5%), adjustment disorder (12.5%) and major depressive disorder (14%) were most frequently diagnosed [21].
Our study showed that patients with emergency psychiatric referrals are mostly young to middle-aged males, and the most common medicine/physician unit, with somatic, anxiety, behavioral disturbances, or substance-related, most frequently diagnosed neurotic, stress-related, and somatoform disorders. The research should be addressed in the long term, in the future, follow-up adherence, unidentified psychiatric morbidity, and ways to improve early diagnosis and incorporation of mental health services in the emergency room to better patient care.

LIMITATIONS OF STUDY

This cross-sectional study is also single-centered and might not be a reflection of other environments, but it represents a point in time. The use of emergency records may not be sufficient to capture psychiatric history or psychosocial factors. We used only referred cases, which may not capture undiagnosed cases. Diagnoses were temporary and may change after a complete assessment.

CONCLUSION

Patients referred for psychiatric evaluation in the emergency department are mostly young to middle-aged adults with somatic complaints, anxiety, behavioral problems, and substance-related problems. The findings highlight the significance of consultation-liaison psychiatry, timely assessment, and the integration of mental health into emergency care.

Ethical permission: PNS Shifa Hospital, Karachi, Pakistan, ERC approval letter No. ERC/2023/PSY/72.
Conflict of Interest: The author states no conflict of interest.
Financial Disclosure/Grant Approval: No funding agency was involved in this research.
Data Sharing Statement: The corresponding author can provide the data proving the findings of this study on request. Privacy or ethical restrictions bound us from sharing the data publicly.

AUTHOR CONTRIBUTION

Waseem A: Substantial contributions to study design, acquisition of data, Manuscript drafting or reviewing it, critical for important intellectual Content, has given final approval of the version to be published, Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
Muhammad S: Substantial contributions to acquisition of data, Manuscript drafting or reviewing it, critical for important intellectual Content, has given final approval of the version to be published, and agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
Iqbal H: Substantial contributions to analysis and interpretation of data, Critical review, has given final approval of the version to be published, and agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
Zehra R: Substantial contributions to concept, study design, Critical review, and has given final approval of the version to be published.
Singh P: Substantial contributions to concept, study design, Critical review, has given final approval of the version to be published, and agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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