

## SHORT REPORT

## Characteristics of Patients Referred for Consultation-liaison Psychiatry in a Regional Referral Hospital in Malaysia

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### Abstract

**Objective:** To determine consultation-liaison psychiatry (CLP) referral rate and patient characteristics in a regional referral hospital. **Methods:** Retrospective review of CLP referral records at Hospital Raja Permaisuri Bainun, Ipoh over 12 weeks. **Results:** The inpatient referral rate was 12.1 per 1,000 patients (Median age: 43 years, male: 58%). The emergency department referred most cases (51.1%), followed by the medical wards (29.6%). Top referral reasons were depression (22.8%), suicide assessment (15.9%), and substance-related problems (13.0%). Depressive disorders (20.6%), substance-related disorders (17.2%), and schizophrenia (14.3%) were the commonest diagnoses. Male, Malay, and orthopaedic patient were factors associated with substance-related referrals. Deliberate self-harm patients were younger, more likely to be female, Indian, and without a psychiatric disorder. **Conclusion:** Substance-related disorders and DSH contributed much to CLP workload at the regional hospital studied.

**Keywords:** Deliberate Self-harm, Hospitals, General, Psychiatry, Referral and Consultation, Substance-related Disorders

### Introduction

Consultation-liaison psychiatry (CLP) is a psychiatric subspecialty that provides psychiatry care to non-psychiatric departments of a general hospital (1). About 20% to 50% of general hospital inpatients have psychiatric comorbidity (2), and early referrals to CLP services are cost-effective (3). Nonetheless, CLP referrals tend to be low (4). In Malaysia, there is little information on CLP referral patterns and patient characteristics in general hospitals.

The general objective of this study was to determine the CLP referral rate and patient characteristics in a regional referral hospital, with specific objectives to determine factors associated with referrals for substance-related problems (substance use disorder and substance-induced psychosis) and deliberate self-harm (DSH).

### Methods

This was a retrospective review of CLP referrals from a register in Hospital Raja Permaisuri Bainun, Ipoh, Perak over 12

weeks from December 2017 to February 2018. Data from all documented referrals in the register during the study period were entered into a data collection form by the first researcher, and the inpatient referral rate was calculated (number of inpatient referrals from non-psychiatric wards ÷ total number of admissions to non-psychiatric wards × 1000). Variables studied were (1) demographic data (age, gender, and ethnicity), (2) time of referral (office or non-office hours), (3) case status (old versus new case), (4) source of referral (referring department), (5) reasons for referral, (6) psychiatric diagnosis, and (6) method of self-harm for DSH cases.

Data were analysed using SPSS 20. Mann-Whitney U test was employed for comparison of continuous variable between groups, whereas Chi-square test was used for categorical variables. Logistic regression was performed to

identify significant clinical factors for substance-related and DSH cases. All tests were two-tailed. The significance level ( $\alpha$ ) was set at 0.05.

This study was registered with the National Medical Research Register of Malaysia (Research ID: NMRR-18-2485-41064) and received ethical approval from the Medical Research Ethics Committee of the Ministry of Health Malaysia (Reference No.: KKM.NIHSEC.P18-2082[6]).

## Results

Total number of referrals was 378 (Median: 4 referrals/day; IQR: 3–6). There were 185 inpatient referrals from non-psychiatric wards out of 15,236 admissions, giving a referral rate of 12.1 per 1,000 patients. Patient characteristics are summarized in Table 1.

**Table 1. Patient characteristics of consultation-liaison psychiatry referrals in Hospital Raja Permaisuri Bainun, Ipoh**

Variable	N=378
	Number of cases (percentage [%])
Gender	
Male	219 (57.9)
Female	159 (42.1)
Ethnicity	
Malay	145 (38.4)
Chinese	117 (31.0)
Indian	105 (27.8)
Aboriginal people	4 (1.1)
Foreigner	7 (1.9)
Time of referral	
Office hour	178 (47.1)
After office hour	107 (28.3)
Non-working day	93 (24.6)

Case status	
New case	271 (71.7)
Old case	107 (28.3)
Diagnosis	
Depressive disorders	78 (20.6)
Schizophrenia	54 (14.3)
Substance use disorder	45 (11.9)
DSH without major mental illness	31 (8.2)
Delirium	31 (8.2)
No major mental illness	29 (7.7)
Adjustment disorder	21 (5.6)
Substance-induced psychosis	20 (5.3)
Brief psychotic/schizophreniform disorder	16 (4.2)
Major neurocognitive disorder	12 (3.2)
Psychosis due to GMC	12 (3.2)
Bipolar disorder	9 (2.4)
Mental retardation/autism	9 (2.4)
Anxiety disorders	3 (0.8)
Schizoaffective disorder	2 (0.5)
Medication-induced psychosis	2 (0.5)
Acute stress disorder/PTSD	2 (0.5)
Dissociative/conversion disorders	2 (0.5)

The median age was 43 years (IQR: 30 years). The commonest age group was 20–39 years old (n=136, 36%). There were more males (57.9%) than females; 38.4% were Malays. The highest number of referrals were by the emergency department (ED, 51.1%), followed by medical wards (29.6%) and orthopaedic wards (8.7%). The commonest referring reasons were assessment of depression (22.8%) and assessment of suicide risk (15.9%). Substance-related reasons, including ‘withdrawal symptoms’, ‘management of addiction’, and ‘methadone

therapy’ consisted 13.0% of all referrals. Acute psychosis comprised of 9.5% of cases. The commonest psychiatric diagnoses were depressive disorders (including major depression and dysthymia, 20.6%), substance-related disorders (17.2%, including substance use disorder and substance-induced psychosis), and schizophrenia (14.3%).

#### ***Substance-related problems***

For substance-related disorders, the commonest age group was 20–39 years old (46.2%). Almost all were males (n=64,

98.5%). About 35% were referred for methadone therapy. The second commonest reasons were combined management of acute psychosis and withdrawal symptoms (21.5%). There was one case each referred for assessment of suicide risk and depression.

When significant factors from univariate analysis i.e. gender, ethnicity, and referring department were entered into a logistic regression model, all three factors remained statistically significant. Males were about 62 times more likely to have substance-related problems. Similarly, there was increased likelihood for Malay patients (OR: 2.746, CI: 1.487–5.072) and orthopaedic patients (OR: 4.479, CI: 1.888–10.625) to have substance-related disorders.

### ***Deliberate self-harm***

There were 57 DSH cases, consisting 15.1% of all referrals. The median age was 28 years (IQR: 18 years). The commonest

age group was 20 – 39 years old (57.9%), followed by the 19 years and below group (22.8%). Two-third of the patients was female. More than half (52.6%) of patients presented with DSH were Indians. The most common method employed was medication overdose (54.4%). Four patients died following paraquat ingestion. No major mental illness was found in 54.4%. Depressive disorders were diagnosed in 28.1%.

Significantly different factors between DSH and non-DSH cases, namely age, gender, ethnicity, case status, referring source, timing of referral and diagnosis were included in logistic regression. Increasing age was associated with a reduced likelihood of DSH. Females were 2.32 times more likely to be involved in DSH. ED referrals had an OR of 10.40 compared to non-ED cases. DSH cases were 32 times more likely to have no psychiatric diagnosis after assessments (Table 2).

**Table 2. Logistic regression analysis of deliberate self-harm cases**

Variable	Wald estimate	<i>p</i> value	Odds ratio	95% CI	
				Lower	Upper
Age	12.207	<0.001	0.955	0.931	0.980
Female	4.241	0.039	2.320	1.041	5.169
Indian	12.547	<0.001	4.336	1.926	9.762
New case	0.849	0.357	0.625	0.230	1.698
Non-office hour referral	2.664	0.103	2.780	0.814	9.491
ED referral	10.733	0.001	10.396	2.562	42.190
No psychiatric diagnosis	36.026	<0.001	31.976	10.314	99.132

$n = 378$ ;  $df = 1$ ; model  $\chi^2(7) = 154.152$ ,  $p < 0.001$ ; Nagelkerke  $R^2 = 0.586$ .

### **Discussion**

The calculated inpatient referral rate is comparable to findings in other countries,

ranging from 4.3 to 30 per 1000 patients (4, 7). Surveys in various countries confirmed that the main source of CLP referrals is the emergency department (5, 6). The medical

department invariably contributed most inpatient liaison referrals (38.5%–56%) (6, 7).

The orthopaedic department contributed disproportionately to substance-related referrals. Road accidents mortality ratios among substance users were considerably higher than the general population in large population-based study (8). Estimated prevalence of lifetime substance dependence in a trauma inpatient unit was up to 80% (9), indicating the importance of screening trauma inpatients for substance dependence.

In a national population survey, DSH patients were more likely to be young female Indians (10). They were often without major mental illness but had difficulty handling stressful domestic situations. Hence, improving mental health literacy and access to services is important in this aspect. Pesticide bans in other countries, such as Sri Lanka led to sharp decrease in suicide mortality (11). Similar ban should be considered in Malaysia.

As the data was collected cross-sectionally at the point of referral, no causal relationships could be inferred. More comprehensive record might have allowed inclusion of other factors, e.g. financial status, in analyses. Indicators for service quality, such as timeliness of response, namely percentage of referrals seen within the next working day, should also be included in future reviews.

### Conclusion

In a Malaysian regional hospital, substance-related disorders and DSH contributed much to CLP workload. More attention has to be paid to the identified factors associated with these conditions.

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### References

- [1] Lipowski ZJ. Current trends in consultation-liaison psychiatry. *Can Psychiatry*. 1983;28(5):329–38. doi: 10.1177/070674378302800501.
- [2] Clarke DM, Minas IH, Stuart GW. The prevalence of psychiatric morbidity in general hospital inpatients. *Aust N Z J Psychiatry*. 1991;25(3):322–9. doi: 10.3109/00048679109062632.
- [3] Wood R, Wand APF. The effectiveness of consultation-liaison psychiatry in the general hospital setting: A systematic review. *J Psychosom Res*. 2014;76(3):175–92. doi: 10.1016/j.jpsychores.2014.01.002.
- [4] Maroufi M, Pedram A, Malekian A, Kianvash F, Maroufi M, Gerivani Z. Consultation-liaison psychiatry in a general hospital. *J Res Med Sci*. 2006;11(3):193–7.
- [5] Wimalaratne I. An evaluation of a general hospital-based consultation-liaison psychiatry service. *Aust N Z J Psychiatry*. 2013;47 Suppl 1:92. doi: 10.1177/0004867412486854
- [6] Wong MMC, Yiu M. Consultation-liaison service in a regional hospital in Hong Kong. *East Asian Arch Psychiatry*. 2014;24(2):51–7.
- [7] Athokpam RD, Mhetre BB. A consultation liaison psychiatry at a tertiary hospital in the north-

- eastern part of India. *Indian J Psychiatry*. 2015;57(5):S17-8.
- [8] Callaghan RC, Gatley JM, Veldhuizen S, Lev-Ran S, Mann R, Asbridge M. Alcohol- or drug-use disorders and motor vehicle accident mortality: A retrospective cohort study. *Accid Anal Prev*. 2013;53:149–55. doi: 10.1016/j.aap.2013.01.008.
- [9] Martins SS, Copersino ML, Soderstrom CA, Smith GS, Dischinger PC, McDuff DR et al. Risk of psychoactive substance dependence among substance users in a trauma inpatient population. *J Addict Dis*. 2007;26(1):71–7. doi: 10.1300/J069v26n01\_09.
- [10] Maniam T, Marhani M, Firdaus M, Kadir AB, Mazni MJ, Azizul A et al. Risk factors for suicidal ideation, plans and attempts in Malaysia-results of an epidemiological survey. *Compr Psychiatry*. 2014;55 Suppl 1:S121-5. doi: 10.1016/j.comppsy.2013.08.004.
- [11] Knipe DW, Chang SS, Dawson A, Eddleston M, Konradsen F, Metcalfe C, et al. Suicide prevention through means restriction: Impact of the 2008-2011 pesticide restrictions on suicide in Sri Lanka. *PLoS ONE*. 2017;12(3):e0172893. doi: 10.1371/journal.pone.0172893.

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