

Emergency Psychiatry in the General Hospital

The emergency room is the interface between community and health care institution. Whether through outreach or in-hospital service, the psychiatrist in the general hospital must have specialized skill and knowledge to attend the increased numbers of mentally ill, substance abusers, homeless individuals, and those with greater acuity and comorbidity than previously known. This Special Section will address those overlapping aspects of psychiatric, medicine, neurology, psychopharmacology, and psychology of essential interest to the psychiatrist who provides emergency consultation and treatment to the general hospital population.

Self-poisoning by drugs and chemicals: variations in demographics, associated factors and final outcomes

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Abstract

Objective: Drug overdose exposures were compared with chemical poisoning in terms of demographics, associated factors and final outcomes.

Method: Deliberate self-poisoning (DSP) cases admitted to Penang General Hospital during the years 2000–2004 were studied. Chi-square, independent *t*-test and binary logistic were used whenever applicable.

Results: Indian patients were more likely to use household products, whereas Malay and Chinese patients were more likely to take drug overdoses ($P=.001$). Drug overdose victims experienced more socioeconomic problems ($P=.05$) and were more likely to be admitted to the intensive care unit ($P=.052$). Chemical poisoning patients presented earlier ($P=.011$), were hospitalized for shorter time ($P=.001$) and had a higher rate of mortality ($P=.01$).

Conclusion: The present study has identified a unique ethnic variation in the choice of suicide attempts from toxic substances. DSP associated with drug overdose showed significant morbidity, but increased mortality was seen in chemical poisoning.

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1. Introduction

Deliberate self-poisoning (DSP) is the most common method of suicide attempt in developed countries and has been associated with significant morbidity and mortality [1–3]. The choice of toxic substance as a method for DSP varies greatly between different countries, which seems to depend more on substance availability rather than its lethality [4–6].

Factors associated with DSP include socio-economic, cultural, religion and health [7–9]. Those factors vary according to characteristics of the poisoned patients and choice of the toxic agents [9,10]. Other factors that may affect the choice of substance used include demographic characteristics of the self-poisoned victim like age, gender and ethnicity [9–11]. The choice of a toxic substance may predict the outcomes of a self-poisoning episode such as length of hospital stay and death [4,12,13].

Previously, we reported the general demographic data of patients admitted for poisoning at Penang General Hospital (PGH), Malaysia [14,15]. In this paper, we analyzed data of patients admitted due to deliberate self-poisoning. Drug-

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overdose cases were compared with chemical poisoning victims to determine differences in characteristics, associated factors and final outcomes.

2. Methods

To be eligible and included in analysis, patients had to deliberately self-poison with a drug overdose or chemical poison. Diagnosis of DSP was based on psychiatrist's assessment reported in medical records. Data during the period from January 2000 to November 2002 were collected retrospectively from the medical record office using data collection form [14]. Data for the second period (September 2003 to February 2004) were collected prospectively from the hospital medical ward during patient's hospitalization [15]. The same data collection form was used to extract information from medical records. Histories of socioeconomic problems, previous poisoning and recent health problems, reported by the patient through self-administered questionnaire during the second period, were used to complete missing information in medical records [15].

Data collected included patients' demographics, the implicated substances, circumstances surrounding exposures, time of admission, time of discharge, whether there was any recent socioeconomic problem (e.g., boy- or girlfriend relationship, family, marital, financial or academic problem), any recent health problem (e.g., history of physical or psychiatric illnesses during the previous 2 months) and histories of alcohol use, smoking or poisoning. Final outcomes included admission to intensive care unit (ICU), death or survival, and type of discharge.

Poisoning episodes were categorized into drug overdose and chemical poisoning. Drugs included all prescribed or over-the-counter pharmaceutical preparations except those used as household products (e.g., Dettol). Chemical poisoning episodes included exposures to household products (e.g., kerosene, soaps and detergents) and pesticides.

Data were analyzed using SPSS ver. 11. Chi-square, independent *t*-test and binary logistic were used whenever applicable. Odds ratios (OR) and 95% confidence intervals (CI) were computed for each predictor variable. Findings were considered statistically significant at *P* value <.05. Calculation of DSP rates among different ethnic groups was based on the number of cases from specific ethnicity divided by the estimated proportion of the same race in the hospital catchment area.

3. Results

In the state of Penang, there are three major ethnic groups [16]: Chinese (46.5%), Malay (42.5%) and Indians (10.6%). The catchments' population of PGH during the year 2002 was estimated to be 652,050 people [14]. During the studied period, there were a total of 320 hospital admissions due to self-poisoning. The average monthly admission due to self-poisoning in our setting was found to be 8.1 cases, with an estimated annual rate of 14.9 per 100,000 populations.

A total of 70.3% of poisoning cases were females. Patients below 45 years old constituted 92% of cases. Based on the distribution of each race in the general population, the

Table 1

Demographic characteristics, socioeconomic and health factors predicting drug overdose and chemical poisoning (univariate analyses)*

Independent variables		Drug overdose (n=198)	Chemical poisoning*** (n=122)	<i>P</i> value
Demographic variables	Middle aged (31–60 years old)*	0.55 (0.33–0.89)	1.83 (1.12–2.98)	.016
	Age ≤30 or > 60 years old*	1.83 (1.12–2.98)	0.55 (0.33–0.89)	.016
	Malay* ^a	2.10 (1.11–3.96)	0.48 (0.25–0.89)	.020
	Chinese* ^a	1.61 (1.01–2.55)	0.62 (0.39–0.98)	.042
	Indians* ^a	0.37 (0.23–0.59)	2.73 (1.68–4.42)	.000
	Female*	0.99 (0.60–1.62)	1.01 (0.62–1.66)	.956
	Male*	1.01 (0.62–1.66)	0.99 (0.60–1.62)	.956
Marital status** ^b	Married	0.91 (0.53–1.57)	1.09 (0.64–1.88)	.742
	Single	1.20 (0.66–2.16)	0.84 (0.46–1.51)	.551
	Divorced or widowed	0.52 (0.16–1.66)	1.92 (0.60–6.10)	.270
	Socioeconomic and health			
Socioeconomic problems*	1.96 (0.99–3.88)	0.51 (0.26–1.00)	.050	
Psychiatric problems*	2.17 (0.85–5.57)	0.46 (0.18–1.18)	.099	
Chronic illness*	1.41 (0.62–3.21)	0.71 (0.31–1.61)	.410	
Acute illness*	0.73 (0.22–2.45)	1.37 (0.41–4.58)	.611	
Drug and substance abuse*	5.76 (0.72–46.05)	0.17 (0.02–1.39)	.063	
Alcohol intake*	1.73 (0.83–3.61)	0.58 (0.28–1.20)	.139	
Smoking*	1.50 (0.83–2.73)	0.66 (0.37–1.20)	.177	
History of previous poisoning*	1.39 (0.66–2.95)	0.72 (0.34–1.52)	.387	
History of previous suicide attempt*	1.36 (0.50–3.67)	0.74 (0.27–1.99)	.545	

*Chi-square test; **binary logistic: ^areference — “others,” ^breference — “unknown”; ***household products and pesticides.

Values are shown as OR (95% CI).

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