Asian Journal of Psychiatry 19 (2016) 79–84

Contents lists available at ScienceDirect

Asian Journal of Psychiatry

journal homepage: www.elsevier.com/locate/ajp

Non-fatal self-poisoning across age groups, in Sri Lanka☆

Thilini Rajapakse [a,*], Helen Christensen [b], Sue Cotton [c], Kathleen Margaret Griffiths [d]

[a] Department of Psychiatry, Faculty of Medicine, University of Peradeniya, Sri Lanka
[b] Black Dog Institute, University of New South Wales, Hospital Road, Randwick 2013, NSW, Australia
[c] Centre for Youth Mental Health, University of Melbourne, 35, Poplar Road, Parkville 3052, VIC, Australia
[d] National Institute for Mental Health Research, Australian National University, Building 63, Canberra 0200, ACT, Australia

ARTICLE INFO

Article history:
Received 8 April 2015
Received in revised form 29 December 2015
Accepted 1 January 2016

Keywords:
Non-fatal self-poisoning
Age
Sri Lanka

ABSTRACT

Attempted or non-fatal self-poisoning in common in Sri Lanka, but little is known about variation of psychiatric morbidity and suicidal intent across differing ages. The aim of this study was to investigate factors associated with non-fatal self-poisoning in Sri Lanka across three different age groups (namely 14–24 years, 25–34 years and ≥35 years). It was anticipated that the findings of the study would inform and guide development of preventive interventions for non-fatal self-poisoning in this country. 935 participants were interviewed within one week of admission to hospital for medical management of non-fatal self-poisoning, over a consecutive 14-month period. Socio-demographic factors, types of poison ingested, triggers and psychiatric morbidity was examined as a function of age. Results showed that a majority (83%) of participants were aged below 35 years. Younger participants aged <25 years were significantly more likely to ingest medicinal overdoses, compared to older persons (aged 25–34 years, and ≥35 years), who were more likely to ingest pesticides. Recent interpersonal conflict was a proximal trigger seen in all age groups, but suicidal intent, depression and alcohol use disorders increased with age. The overall study findings indicate that most who carry out acts of non-fatal self-poisoning in Sri Lanka are young (aged <35 years). Interpersonal conflict as a trigger is common to *all* age groups, but psychiatric morbidity and suicidal intent is higher in the *older* age groups, as is pesticide ingestion. Age specific interventions may be efficacious in the prevention of non-fatal self-poisoning in Sri Lanka.

1. Introduction

Non-fatal or attempted self-poisoning in Sri Lanka is more commonly seen among young people (below 30 years) (De Silva and Ratnayake, 2008; van der Hoek and Flemming, 2006). Similarly, international studies indicate that the peak age for attempted suicide and self-harm falls within the first half of the life-cycle (Diekstra, 1993; Schmidtke et al., 1996; Shahid et al., 2009; Thanh et al., 2005). It has been suggested that non-fatal self-poisoning in Sri Lanka is an impulsive act, with low suicidal intent and psychiatric morbidity (Hettiarachchi and Kodituwakku, 1989). However the variations of non-fatal self-poisoning across age groups have not been examined in depth, and in particular, evidence regarding aspects such as psychiatric morbidity and suicidal intent are lacking. Based on international data (Hawton and Harriss, 2006; Merrill and Owens, 1990), such age associated differences seem likely; for example, rates of depression and alcohol use disorders maybe higher among older persons who ingest poison, compared to younger attempters. If identified, such differences might indicate the need for age-specific management strategies for those who carry out acts of non-fatal self-poisoning. Recent evidence from Sri Lanka also suggests that methods of self-poisoning may vary with age—for example medicinal drug overdoses may be more common than pesticide ingestion, among adolescents and young adults, compared to older people (De Silva and Ratnayake, 2008). Thus, the aim of this study was to compare non-fatal self-poisoning across age groups in Sri Lanka, with respect to types of poisons ingested, chronic stressors, prior history of suicidal attempts, psychiatric morbidity (specifically depression and alcohol use disorders), and degree of suicidal intent. For the purposes of this research, non-fatal self-poisoning is defined as intentional ingestion of a toxic substance or of

☆ Place where research was conducted: Teaching Hospital Peradeniya, Sri Lanka.

* Corresponding author at: Department of Psychiatry, Faculty of Medicine, University of Peradeniya, Sri Lanka. Tel.: +94 777386232.
E-mail addresses: gemba471@gmail.com (T. Rajapakse), h.christensen@blackdog.org.au (H. Christensen), smcotton@unimelb.edu.au (S. Cotton), Kathy.Griffiths@anu.edu.au (K.M. Griffiths).

http://dx.doi.org/10.1016/j.ajp.2016.01.001
1876-2018/

a medication in excess of its prescribed dosage, with a non-fatal outcome.

2. Methods

All persons admitted to the Toxicology Unit, Teaching Hospital Peradeniya, Sri Lanka, from February 2012 to April 2013 (14 months) due to non-fatal self-poisoning were eligible for the study. Teaching Hospital Peradeniya is a tertiary care hospital, situated in the second largest city in the Central Province of the country. Those admitted to this hospital include persons residing in urban and semi-urban areas around Peradeniya, as well as persons transferred from hospitals in rural agricultural areas in the central and north-central areas of the country; since the Toxicology Unit at Peradeniya Hospital serves as a referral unit for other hospitals in these areas. Inclusion criteria for the study required that participants be aged at least 14 years, and be conversant in Sinhalese and/or English. Those who gave written informed consent were included in the study. Ethical approval for the study was obtained from the Faculty of Medicine, University of Peradeniya, Sri Lanka, and the Australian National University.

2.1. Predictors and outcome measures

2.1.1. Age

Age was examined as a categorical measure, grouped into three age categories, namely 14–24 years, 25–34 years, and ≥35 years. The age groups were chosen based on the age distribution of the participants, and also to match age groups of young persons (14–24 years), young adults (25–34 years) and older adults (35 years and above). The older adult group (aged 35 years and above) were not further categorized due to low numbers (for instance, there were only 10 participants in the age group 65 years and above; hence this age group was not considered separately) (Zhao et al., 2010).

Details of the non-fatal self-poisoning act and associated triggers, type of substance ingested, and socio-demographic details were assessed by the use of an interviewer-administered questionnaire, which was administered by a medical graduate. Pertinent items relevant to assessment of socio-demographic data, previous suicide attempts and substance misuse, were selectively adopted from the questionnaire used for the World Health Organization Multisite Intervention Study on Suicidal Behaviors (WHO Supre-Miss) (Fleischmann et al., 2005).

2.1.2. Degree of suicidal intent

Suicidal intent associated with the act was assessed based on the total score on the Pierce Suicide Intent Scale (PSIS) (Pierce, 1981). The PSIS is an interviewer administered standardized tool with a good inter-rater reliability (correlation coefficient 0.97) (Pierce, 1981), and high correlation with the Beck Scale of Suicide Intent ($r = 0.9288$, $p < 0.001$) (Beck et al., 1974b; Pierce, 1977). Although the PSIS has not been validated in Sri Lanka, it has been used previously in Sri Lankan research (Kathriarachchi and Perera Ramani, 2011).

2.1.3. Significant life events in prior six months

Significant life events in the six months prior to the act of non-fatal self-poisoning were examined using the self-administered Bughra Life Threatening Events Questionnaire (LTE-Q) questionnaire (Brugha and Cragg, 1990). The LTE-Q is a tool designed to elicit events that are construed as long-term threats, and has been shown to have a good sensitivity (0.89) and specificity (0.74) for events in the 6-months prior to data collection (when compared to interview). Further, several items were added to the life stressors listed in the LTE-Q, to take into account the local cultural context. These additional statements explored the occurrence of significant problems with a parent or child, with a father due to his alcohol misuse, or with a spouse due to latter's alcohol use or mistrust. The participant was also separately asked about a history of physical or sexual abuse. Each item in the scale was treated separately, and the modified LTE-Q was translated to Sinhala and back translated prior to use. The translations were carried out by those who were fluent in both Sinhala and English, who were however not professional translators.

2.1.4. Psychiatric morbidity

Depression was diagnosed based on ICD criteria for depression, by the use of a locally created and validated screening tool, the Peradeniya Depression Scale (PDS) (Abeyasinghe et al., 2012). The PDS has been created and validated for screening of depression (as a disorder) in a Sinhala-speaking Sri Lankan population (Abeyasinghe et al., 2012), based on the ICD10 diagnostic criteria for the diagnosis of depression. A total score of 10 or more out of 25 is positive for depression, with a sensitivity of 88.5% and a specificity of 85.0% (Abeyasinghe et al., 2012). The Receiver Operating Characteristic (ROC) curve analysis showed that the area under the curve for the PDS in diagnosing depression was 0.95, indicating that the test discriminates well between persons with and without major depression (Abeyasinghe et al., 2012).

Alcohol misuse was assessed by using the World Health Organizations' (WHO) Alcohol Use Disorders Identification Test (AUDIT), which has been validated in Sinhala for a Sri Lankan population (De Silva et al., 2007; Saunders et al., 1993). The locally validated AUDIT is a 10-item interviewer-administered scale, and the total score ranges from 0 to 40, and is interpreted as follows: 0–7 = low-risk drinking (LRD), 8–15 = hazardous drinking (HZD), 16–19 = probable harmful use, and 20 or more = probable dependence (harmful use and dependence were also considered together as Alcohol Use Disorder, AUD) (De Silva et al., 2007). The area under the ROC curve to differentiate AUD + HZD from LRD has been reported to be 0.96.

The Beck Hopelessness Scale (BHS) was used to assess the degree of hopelessness (Beck et al., 1985, 1974a). This scale has a good correlation with clinical assessment of hopelessness, and a high inter-rater reliability (Beck et al., 1985). The scale was translated to Sinhala and back translated prior to use.

2.2. Data analysis

Age differences in the characteristics of non-fatal self-poisoning were examined using chi-square tests (χ^2) for categorical measures, and one-way analysis of variance (ANOVAs) models for continuous measures. Significant χ^2 results for cross-tabulations greater than a 2×2 table were explored more closely via the IBM® SPSS® option for pairwise comparison of column proportions using the Bonferroni correction. If the F statistic from the ANOVA was significant, Bonferroni post hoc tests were used to determine which of the three age groups differed significantly.

3. Results

3.1. Participation rates

A total of 1334 persons met eligibility criteria to be included in the study, of whom 9.1% ($n = 121$) refused consent, and 19.8% ($n = 264$) could not be included because they either left hospital before the interviews could be conducted, or they were in hospital but were too physically unwell to participate. A small proportion (1.4%, $n = 14$) of the survey participants ($n = 949$) did not provide their dates of birth so were excluded from the study. Therefore, valid data was available for 935 participants.