

## BRIEF REPORT

## Sexual abuse and substance abuse increase risk of suicidal behavior in Malaysian youth

Lai Fong Chan<sup>1</sup> MD MMed (Psych), T. Maniam<sup>1</sup> MPsych Med FAMM, Suriati Mohamed Saini<sup>1</sup> MBBS MMed (Psych), Shamsul Azhar Shah<sup>2</sup> MD MCommHealth PhD, Sit Fong Loh<sup>1</sup> B. Econs M. Clin. Psych, Aishvarya Sinniah<sup>1</sup> BA M. Clin. Psych, Zawaha Haji Idris<sup>3</sup> BSSc MHSSc, Sulaiman Che Rus<sup>3</sup> MBBS MPH M.Sc, Siti Sa'adiah Hassan Nudin<sup>3</sup> MHPEd & Susan Mooi Koon Tan<sup>1</sup> MD DCH MMed (Psych) Adv.M.Ch AdoPsych

1 Department of Psychiatry, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

2 Department of Community Health, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

3 Institute of Health Behavioural Research, Ministry of Health, Kuala Lumpur, Malaysia

### Keywords

adolescent, sexual abuse, substance abuse, risks, suicidal behavior

### Correspondence

Suriati Mohamed Saini MBBS MMed,  
Department of Psychiatry, Faculty of Medicine,  
Universiti Kebangsaan Malaysia, Jalan Yaacob  
Latif, 56000 Cheras, Kuala Lumpur, Malaysia.  
Email: suriati@medic.ukm.my or  
suriati.saini@yahoo.com.my  
Tel: +60391456035  
Fax: +60391737841

DOI:10.1111/appy.12057

### Abstract

**Introduction:** The aim of this study was to determine the association between sexual abuse, substance abuse and socio-demographic factors with suicidal ideation (SI), plans (SP) and deliberate self-harm (DSH) and propose steps to prevent youth suicidal behavior.

**Methods:** This was a cross-sectional study of 6786 adolescents aged 17–18 years, selected randomly from all Malaysian adolescents to undergo compulsory youth camps located in Selangor, Malaysia (2008–2009). Participants were assessed using self-administered questionnaires developed to reflect the local cultural setting. However, only 4581 subjects were analyzed after excluding incomplete data.

**Results:** The rates of SI, SP and DSH were 7.6%, 3.2% and 6.3%, respectively. The multivariable-adjusted odds ratio showed that sexual abuse was associated with SI 1.99 (95% CI: 1.56–2.55), SP 1.57 (95% CI: 1.09–2.27) and DSH 2.26 (95% CI: 1.75–2.94); illicit drug use was associated with SI 4.05 (95% CI: 2.14–7.67), SP 2.62 (95% CI: 1.05–6.53) and DSH 2.06 (95% CI: 1.05–4.04); for alcohol use DSH was 1.34 (95% CI: 1.00–1.79). Being female was associated with all suicidal behaviors: SI 2.51 (95% CI: 1.91–3.30), SP 2.07 (95% CI: 1.39–3.08) and DSH 1.59 (95% CI: 1.19–2.11).

**Discussion:** Given the well-founded concern of increasing risk of suicidal behavior among youth, preventive efforts should adopt a more comprehensive approach in dealing with sexual abuse and substance abuse, and their sequelae, especially in girls.

## Introduction

Suicide is a leading cause of death among young people (Patel *et al.*, 2007) with youth suicidal behavior being a major public health problem. Sexual abuse and substance use are important predictors for suicidal ideation and attempts even after accounting for other significant risk factors such as depression and other life adversities (Fergusson *et al.*, 2003). Nevertheless, there is still a lack of non-Western studies that focus on the role of sexual abuse and

substance use on suicidal behavior. Suicidal behavior encompasses suicidal ideation (SI), plans (SP) and deliberate self-harm (DSH). The findings from such studies would have implications for culturally appropriate strategies in youth suicide prevention efforts.

This study aims to determine the association between sexual abuse, alcohol and substance abuse and socio-demographic factors with SI, SP and DSH and propose steps to prevent suicidal behavior among Malaysian adolescents.

## Methods

### Subjects

The study population consists of a sample of Malaysian high-school leavers who were randomly selected from a national computerized database and allocated to compulsory youth camps in all Malaysian states. This cross-sectional study included all 6786 adolescents aged 17–18 years in nine camps in one of the states, Selangor, between 2008 and 2009. Camp participants who were on sick leave who did not give informed consent or who had incomplete data were excluded from the study, leaving 4581 subjects. The Medical Research and Ethics Committee (MREC), Ministry of Health approved this study.

### Instrument

The study instrument was a self-administered questionnaire in the Malay language that was developed by local experts to reflect the local cultural setting. The following variables were assessed: age, gender, ethnicity, religion, urban/rural residence, lifetime history of SI, SP and DSH, lifetime history of sexual abuse involving some form of physical contact and substance use (i.e. alcohol and illicit drugs).

### Statistical analysis

Statistical Package for the Social Sciences (SPSS Inc., Chicago, IL, USA) software version 19.0 was used in data analysis. Univariate tests included  $\chi^2$  and independent *t*. Multivariate logistic regression was conducted to estimate the independent predictive risk factors of SI, SP and DSH.

## Results

Table 1 shows that there was an over-representation of indigenous groups from Sabah and Sarawak compared to the general population which consists of Malays (54.5%), Chinese (24.6%), Indians (7.3%), other indigenous groups (12.8%) and others (0.7%) (Department of Statistics, Malaysia, 2011). The rates of SI, SP and DSH in this sample were 7.6%, 3.2% and 6.3%, respectively.

Female gender, usage of illicit drugs and history of sexual abuse were all significantly associated with SI,

**Table 1.** Socio-demographic characteristics and health-risk behaviors among study subjects

Characteristic	All subjects n (% of characteristic)
Age, mean (SD)	17.68 (0.28)
Gender	
Female	2174 (52.5)
Male	2407 (47.5)
Ethnicity	
Malay	1882 (41.1)
Chinese	1018 (22.2)
Indian	299 (6.5)
Bumiputera Sabaht†	845 (18.4)
Bumiputera Sarawak†	345 (7.5)
Other	187 (4.1)
Religion	
Muslim	2711 (59.2)
Buddhist/Taoist	756 (16.5)
Hindu	262 (5.74)
Christian	814 (17.8)
Other	37 (0.8)
Residence	
Urban	3334 (72.8)
Rural	1247 (27.2)
Substance use	
Cigarette	
Yes	1105 (24.1)
No	3476 (75.9)
Alcohol	
Yes	1135 (24.8)
No	3446 (75.2)
Illicit drugs	
Yes	72 (1.6)
No	4506 (98.4)
History of sexual abuse	
Yes	977 (21.3)
No	3378 (73.7)

†Indigenous peoples of East Malaysian states of Sabah and Sarawak.

SP and DSH; cigarette smoking and alcohol use were also significantly associated with DSH ( $p < 0.05$ ). On multivariate analysis (Table 2), history of sexual abuse, illicit drugs and female gender were found to be associated with SI, SP and DSH, whereas alcohol was associated with DSH only.

## Discussion

Consistent with research worldwide, sexual abuse was associated with SI, SP and DSH (Evans *et al.*, 2004; Tsai *et al.*, 2011; Chen *et al.*, 2006; Pillai *et al.*, 2009). Adolescents with a history of sexual abuse involving physical contact were about twice more likely to experience SI, SP or DSH.

**Table 2.** Multivariate logistic regression on suicidal behavior among study subjects

Type of suicidal behavior	Factors	B	S.E.	Wald, $\chi^2$	P-value	Adjusted OR*	95%CI
Deliberate Self-harm	History of sexual abuse	0.82	0.13	38.04	<0.001	2.27	1.75–2.94
	Illicit drugs	0.72	0.34	4.45	0.035	2.06	1.05–4.04
	Alcohol	0.294	0.15	3.91	0.048	1.34	1.00–1.79
	Female gender	0.46	0.15	10.02	0.002	1.59	1.19–2.11
Suicidal plans	History of sexual abuse	0.45	0.19	5.74	0.017	1.57	1.09–2.27
	Illicit drugs	0.97	0.47	4.30	0.038	2.62	1.05–6.53
	Female gender	0.73	0.20	12.80	<0.001	2.07	1.39–3.09
Suicidal ideation	History of sexual abuse	0.69	0.13	30.31	<0.001	1.99	1.56–2.55
	Illicit drugs	1.40	0.33	18.41	<0.001	4.04	2.14–7.66
	Female gender	0.92	0.14	43.93	<0.001	2.51	1.91–3.30

OR, odds ratio; SE, standard error.

The relatively high rate of lifetime sexual abuse involving physical contact in this population (21.3%) compared to 8% in another Malaysian study (Choo *et al.*, 2011) and 10–20% in Pereda *et al.* (2009) international review is noteworthy. This study's rate of illicit drug use (1.6%) is exceptionally low compared to Spencer and Navaratnam's (1980) study in which 11.1% of Malaysian adolescents experienced drug use. There is a possibility of under-reporting of illicit drug use in this sample population within this regimented camp setting. Consistent with other suicidal behavior studies, illicit drug use was associated with SI, SP and DSH (Evans *et al.*, 2004; Matsumoto *et al.*, 2008). Alcohol use was associated with DSH but not associated with SI or SP. Verona and Javdani (2011) showed similar findings whereby alcohol was associated with suicidal threats or attempts but not suicidal thinking. Moeller *et al.* (2001) hypothesized that impulsivity may be a mechanism at work whereby alcohol is associated with overt self-harm behavior without necessarily being associated with suicidal thoughts.

In this study, girls were at higher risk of SI, SP and DSH. Beautrais (2002) showed that young women are at higher risk of thoughts of suicide and self-harm whereas young males are at higher risk of completed suicide, possibly due to males' choice of more lethal methods and better help-seeking behavior among females.

The implications of this study for suicide prevention include the following strategies: early detection of identified risk factors, such as sexual abuse, substance use in female adolescents, and appropriate intervention. Weatherley *et al.*'s study (2012) has shown the potential utility of a school-based sexual abuse prevention curriculum among Malaysian 9 year-olds. Balaji *et al.* (2011) found that a population-based intervention that consists of a peer education program, teacher training program and health information materials were feasible and potentially

effective in reducing sexual abuse, substance use and suicidal behavior among Indian adolescents.

Botvin *et al.* (2000) showed some benefit of a school-based cognitive-behavioral-skills-training prevention program in reducing illicit drug use among US adolescents. The Malaysian law prohibits the selling of alcohol to those below 18 years of age but such restrictions of alcohol accessibility to adolescents may not be very effective without proper implementation.

## Limitations

This study has some limitations: the psychometric properties of the questionnaires used, though developed by local experts to reflect local culture, have not been fully studied; confounding factors such as depression and life adversities other than sexual abuse, were not accounted for; and an over-representation of indigenous groups from East Malaysia, limits the generalizability of this study findings to Malaysian adolescents in the general population.

## Conclusion

This study highlights that sexual abuse, substance use and female gender were associated with suicidal behavior ranging from SI, SP to DSH. This has implications for effective prevention strategies for adolescent suicidal behavior.

## Conflict of interest

The authors declare no conflict of interest.

## References

- Balaji M., Andrews T., Andrew G., Patel V. (2011) The Acceptability, Feasibility, and Effectiveness of a

- Population-based Intervention to Promote Youth Health: An Exploratory Study in Goa, India. *J Adolesc Health*. 48(5), 453–460.
- Beautrais A.L. (2002) Gender issues in youth suicidal behaviour. *Emerg Med*. 14(1), 35–42.
- Botvin G.J., Griffin K.W., Diaz T., Scheier L.M., Williams C., Epstein J.A. (2000) Preventing illicit drug use in adolescents: long-term follow-up data from a randomized control trial of a school population. *Addict Behav*. 25(5), 769–974.
- Chen J.Q., Dunne M.P., Han P. (2006) Child sexual abuse in Henan province, China: associations with sadness, suicidality, and risk behaviors among adolescent girls. *J Adolesc Health*. 38(5), 544–549.
- Choo W.Y., Dunne M.P., Marret M.J., Fleming M.L., Wong Y.L. (2011) Victimization Experiences of Adolescents in Malaysia. *Journal of Adolescent Health* 49, 627–634.
- Department of Statistics, Malaysia (2011) Population Distribution and Basic Demographic Statistics 2010. Ethnic Composition (pp 5). Putrajaya, Department of Statistics, Malaysia. [http://www.statistics.gov.my/portal/index.php?option=com\\_content&view=article&id=363&Itemid=149&lang=en#8](http://www.statistics.gov.my/portal/index.php?option=com_content&view=article&id=363&Itemid=149&lang=en#8) (Accessed 20 June 2012).
- Evans E., Hawton K., Rodham K. (2004) Factors associated with suicidal phenomena in adolescents: A systematic review of population-based studies. *Clin Psychol Rev*. 24(8), 957–979.
- Fergusson D.M., Beautrais A.L., Horwood L.J. (2003) Vulnerability and resiliency to suicidal behaviours in young people. *Psychol Med*. 33(1), 61–73.
- Matsumoto T., Imamura F., Chiba Y., Katsumata Y., Kitani M., Takeshima T. (2008) Prevalences of lifetime histories of self-cutting and suicidal ideation in Japanese adolescents: Differences by age. *Psychiatry Clin Neurosci*. 62(3), 362–364.
- Moeller F.G., Barratt E.S., Dougherty D.M., Schmitz J.M., Swann A.C. (2001) Psychiatric aspects of impulsivity. *Am J Psychiatry*. 158(11), 1783–1793.
- Patel V., Flisher A.J., Hetrick S., McGorry P. (2007) Mental health of young people: a global public-health challenge. *Lancet*. 369(9569), 1302–1313.
- Pereda N., Guilerab G., Fornsa M., Gómez-Benitob J. (2009) The international epidemiology of child sexual abuse: A continuation of Finkelhor (1994). *Child Abuse & Neglect*. 33, 331–342.
- Pillai A., Andrews T., Patel V. (2009) Violence, psychological distress and the risk of suicidal behaviour in young people in India. *Int J Epidemiol*. 38(2), 459–469.
- Spencer C., Navaratnam V. (1980) Patterns of drug use amongst Malaysian secondary school children. *Drug Alcohol Depend*. 5(5), 379–391.
- Tsai M.H., Chen Y.H., Chen C.D., Hsiao C.Y., Chien C.H. (2011) Deliberate self-harm by Taiwanese adolescents. *Acta Paediatrica*. 100(11), e223–e226. doi: 10.1111/j.1651-2227.2011.02357.x
- Verona E., Javdani S. (2011) Dimensions of adolescent psychopathology and relationships to suicide risk indicators. *J Youth Adolesc*. 40(8), 958–971.
- Weatherley R., Siti Hajar A.B., Noralina O., John M., Preusser N., Yong M. (2012) Evaluation of a school-based sexual abuse prevention curriculum in Malaysia. *Children and Youth Services Review*. 34(1), 119–125.