THE RISK FACTORS OF SELF-DESTRUCTIVE BEHAVIOURS AMONG MALAYSIAN YOUNG ADULTS: A PRELIMINARY FINDING

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ABSTRACT

Young adulthood has been identified as the developmental stage with highest suicidal risks in Malaysia. This study aimed to examine the risk factors associated with self-destructive behaviours (i.e. non-suicidal self-injury, suicidal ideation and suicide attempt) among Malaysian young adults. This is a preliminary finding of a survey on 531 university students aged 18 to 25 years old based on a self-reported questionnaire and the General Health Questionnaire – 28(GHQ-28). The prevalence for non-suicidal self-injury, suicidal ideation and suicide attempt was 8.5%,8.4%, 5.8% and 3.6% 3.5% respectively. Further analysis found that severe depression were positively associated with these self-destructive behaviours as well as overall psychological distress. Furthermore, some chronic physical health problems found to be associated with self-destructive behaviours. Insights on the risk factors of self-destructive behaviours among Malaysian youth are crucial in comprehensive mental health management of this alarming problem, as most research rarely focuses on effective measures of treatment and intervention of such behaviours. The findings of the current study may of benefits to policy makers, parents and mental health professional as self-destructive behaviours may be a signal of psychological distress among young adulthood.

Keywords: *risk factors; self-destructive behaviours; non-suicidal self-injury; suicidal ideation; suicide attempt; Malaysian young adults.*

INTRODUCTION

Each year, there are over 800,000 people died from committing suicides and Asia contributes more than half of the numbers (Armitage, Panagioti, Rahim, Rowe, & O'Connor, 2014; World Health Organization, 2014). Although Malaysia has lower suicide rates compared to the average of suicides globally, National Suicide Registry Malaysia (NSRM) recorded by 2010, for every 100,000 people, there are 1.3 deaths by suicide (Sipalan, 2012; Tan, 2014). The actual numbers of suicides in Malaysia remains unknown and could be higher as the numbers reported are only based on medically verified cases (Bernama, 2015; Ministry of Health, Malaysia, 2011).

Reports by World Health Organization (WHO) indicated the suicide is the second leading causes of death for the 15 – 29 years old (World Health Organization, 2014). Based on the National Health and Morbidity Survey 2011, the 16 – 24 years olds are the age group that reported to have the highest suicidal risk which recorded highest suicidal ideation, suicide plan and suicide attempt compare to other

developmental stage (Ministry of Health, Malaysia, 2011). In 2014, survey by the United States Centers for Disease Control and Prevention reported adults ageing 18 to 25 was the highest in making suicide plans in adulthood (Centers for Disease Control and Prevention, 2015).

There are a number of factors that contribute to suicides. Studies found that different socio demographic variables are associated to certain suicide behaviours. The adolescent and young adults are more prevalent to ideation, plan and attempt suicide (Maniam et al., 2014; Ministry of Health, Malaysia, 2011). People who are inactive economically and the unmarried or widowed recorded higher risk of ideation and suicide attempts (Maniam et al., 2014; Ministry of Health, Malaysia, 2011). Among these, studies have also found that mental disorders are important contributors to such behaviours. Some retrospective research found more than half of the of suicide cases (60 – 90%) studied reported to have history of psychiatric illnesses before death (Law, Wong, & Yip, 2010; Cavanagh, Carson, Sharpe, & Lawrie, 2003; Chen et al., 2006; Cheng et al, 2000; Phillips et al.,2002). The risks of suicide are different among different disorders; the risk increases significantly with having more than one disorder (World Health Organization, 2014). Mood disorders, alcohol dependence, bipolar disorder and schizophrenia are common disorders that are associated to risk of suicide (World Health Organization, 2014). Studies investigating the local context indicated mental disorders such as depression, anxiety, and alcohol dependence increases suicidal risk (Maniam et al., 2014; Ibrahim, Amit, & Suen, 2014).

Despite the seriousness of the issue, researches on these self-destructive behaviours (non-suicidal self-injury, suicidal ideation and suicide attempts) in Malaysia often focus on specific ethnic groups and their types of self-destructive behaviours (Armitage,et.al 2014). The present study aims to investigate the prevalence of psychological distress, non-suicidal self-injury, suicidal ideation and suicide attempts among Malaysian young adults in private higher learning institution, as well as identifying the associate risk factors. With these findings, it can assist respective parties in the institution to identify at risk students and plan preventive interventions.

THEORETICAL FOUNDATION OF THE STUDY

The ecological risk-factor model has been widely used to explain many risk behaviours including suicidal tendency (Small & Luster, 1994; Mandara, Murray, & Bangi, 2003; Perkins & Hartless, 2002; Alcantara & Gone, 2007).

According to the ecological risk-factor model, risk factors that predispose one to suicidal behaviour are present in one's social environment. When one is exposed to risk factors at different levels of social environment, it increases the likelihood in engaging in suicidal behaviour (Small & Luster, 1994). These risk factors can be grouped into different areas: systemic, societal, community, relationship (social connectedness to immediate family and friends) and individual risk factors. These risk factors can have direct or indirect effect on suicidal behaviour (World Health Organization, 2014).

However, the main framework for this model is derived from Bronfenbrenner (1979), in which an individual's ecology can be categorized into four: the individual (usage of drugs history of depression), the family, extrafamilial contexts (neighborhood, peers) and the macrosystem (public policies, cultural system.) The ecological model suggests that individual factors interact with the environmental factors that predispose one to participate in suicidal behaviour (Small & Luster, 1994). In this current study, only the individual risk factors are explored in regards to self-destructive behaviours.

CONCEPTUAL FRAMEWORK

The framework (**figure 1**) was developed to establish the relationship between the psychological distress risk factors and self-destructive behaviours. WHO (2014) indicated based on studies in Asia region, the prevalence of mental disorder among victims of suicide is around 60%, which is lower compare to some of the higher incomes countries (prevalence up to 90%).

Although the National health Morbidity Survey Malaysia (NHMS) reported among the suicide cases there are only 28.7 % that have history of mental disorder, most of the researches that investigated risk factors of self-destructive related behaviours indicated different mental disorder as predictors (Ministry of Health, Malaysia, 2011). Depression and anxiety are some of the common mental disorder that was investigated in predicting self-destructive related behaviours (Ahmad, Cheong, Ibrahim, & Rosman, 2014; Ibrahim et al, 2014; Maniam et al., 2014; Tan et al., 2014). In this present study, the GHQ-28 subscales (somatic complaint, insomnia/anxiety, social dysfunction and severe depression) were utilized to predict the self-destructive behaviours.

METHODOLOGY

Participants

A total of 538 young adults aged 18 – 25 years old from private universities participated in the study. Students were recruited via convenient sampling method. They completed a set of self-reported questionnaire assessing psychological distress. The sample size was estimated based on Krejice and Morgan (1970) table. By estimating the maximum population size of 100,000, the minimum sample size needed is 384.

The characteristics of the participants are presented in **Table 1**. The mean age of participants was 21.54 years (SD = 1.96). Female students made up 70.45% of the participants, and men represented 29.55%. Seventy-one percent of the participants are pursuing Bachelor's degree, while the rest are working towards diploma or certificate. The greatest percentage of students (81.78%) represented the social science and humanities disciplines. The remaining students were distributed among science and engineering (11.34%), business and finance (3.16%) and vocational education (3.53%).

The highest proportion of students is first-year students (40.89%), following by Second-year students (21.56%), and third-year students (20.07%). The remaining students are in their fourth or fifth year of study (17.47%). With respects to the ethnicity, majority of the participants were Malay (37.36%) and Chinese (37.36%) and Indians were 23.23%. The remaining 2.04% of students classified themselves as "Others". Majority of students reported their relationship status as single (67.66%), while nearly a third of them reported of in being in a relationship (28.81%). The remaining reported being engaged (2.04%), married (1.30%) and divorced (0.19%).

About a quarter of the respondents were coming from middle class of family, with monthly household income of RM3000.00 – RM4999 (25.46%). Another quarter of respondent (25.28) reported monthly household income of RM5000 and above. The remaining participants were having monthly household income in between RM 2000 and RM 2999 (21.75%), RM1000 – RM 1999 (17.66%) and below RM1000 (9.85%). The characteristics of participants were roughly representative for students' population in private higher learning institutions.

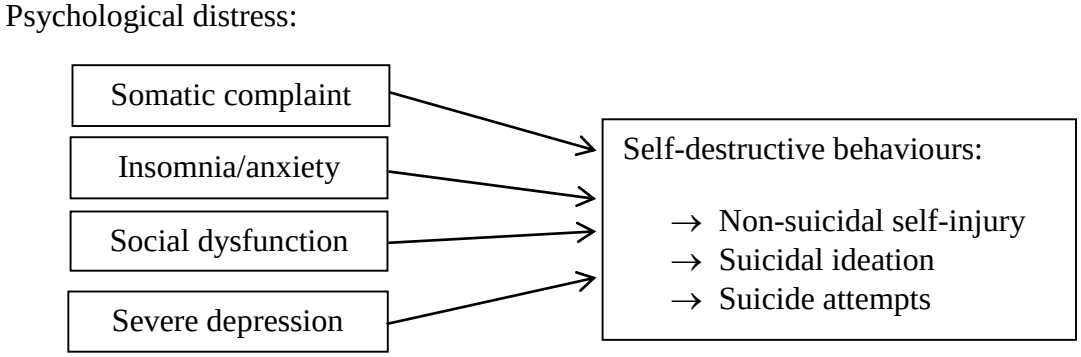

Figure 1
Relationship between psychological distress and self-destructive behaviours

Table 1
Demographic Characteristics of Participants

Variables		*M* (SD)	*n*	%
Age		21.54 (1.96)		
Gender	Male		159	29.55
	Female		379	70.45
Level of Study	Diploma / Certificate		154	28.62
	Bachelor's degree		384	71.38
Field of Study	Business and Finance		17	3.16
	Science Technology, Engineering and Math		61	11.34
	Social Sciences and Humanities		440	81.78
	Vocational Education		19	3.53
Year of Study	Year 1		220	40.89
	Year 2		116	21.56
	Year 3		108	20.07
	Year 4 and 5		94	17.47
Ethnicity	Malay		201	37.36
	Chinese		201	37.36
	Indian		125	23.23
	Others		11	2.04
Relationship Status	Single		364	67.66
	In a relationship		155	28.81
	Engaged		11	2.04
	Married		7	1.30
	Divorced		1	0.19
Household income	Below RM1000		53	9.85
	RM 1000 – RM 1999		95	17.66
	RM 2000 – RM 2999		117	21.75
	RM 3000 – RM 3999		84	15.61
	RM 4000 – RM 4999		53	9.85
	RM 5000 and above		136	25.28

Procedure

Surveys were completed using printed questionnaire. The university's Scientific and Ethical Review Committee approved the study protocol. The survey was conducted over a three-month period, in between March – June 2015. Questionnaires were distributed to the participants in selected classes. The enumerators explained objectives of the study and confidentiality assurance. Students who agreed to participate in the study completed the self-administered questionnaire, while those chose not to participate the survey return the questionnaire to enumerators.

Measures

This study employed General Health Questionnaire – 28 (GHQ-28) to assess psychological distress of the participants (Goldberg & Williams, 1978). It is a 28-item self-administered screening test to identify non-psychotic psychological disorders. It shows excellent internal consistency in the present study, with Cronbach's alpha of .91. The GHQ-28 contains four subscales, namely somatic complaint, insomnia/anxiety, social dysfunction and severe depression. In the present study, GHQ binary scoring method, ranges from 0 to 1 was used in this survey. Two less symptomatic answers (better than usual; same as usual) were classified as 0, while two more symptomatic answer (worse than usual; much worse than usual) were classified as 1. Scores for each subscale of GHQ-28 were generated, ranges from 0 – 7, where the higher scores indicate higher level of distress. Overall score of 6 and above is considered as "caseness". Permission for its use was obtained from the publisher. The instrument has been validated in the Malaysia population (Institute of Public Health, 2008).

We measured life-time self-destructive behaviours using a similar approach as the World Health Organization Global School-Based Student Health Survey 2013 (WHO, 2013). Non-suicidal self-injury behaviours were identified through endorsement on the item "I have purposely injuring myself without suicide intent". On the other hand, suicidal ideation and suicide attempt was assessed by the endorsement of "Seriously considered attempting suicide" and "Made a suicide attempt" respectively. Participants responded to these items in Yes/No dichotomy form.

Data Analysis

The analysis of this paper is divided into two parts. The first parts examine students' self-reported level of psychological distress as well as prevalence of self-destructive behaviours. The second step of data analysis uses a logistic regression model with dichotomous dependent variable to determine whether or not students had experienced self-injury, suicidal ideation or suicide attempt. Independent variables include the four subscales of GHQ-28, and others demographic variables. All data analyses were performed using SPSS 22.0 software.

RESULTS AND DISCUSSION

Results

The mean and standard deviation scores of participants were presented in **Table 2**. It is noted that the mean score of overall distress, (M = 7.34; SD = 6.26) is well above the prescribed cut-off score of 6. The prevalence of reported non-suicidal self-injury was 8.4% (95% confidence interval [CI] = 6.1 – 10.6), for suicidal ideation was 5.8% (CI = 3.9 – 7.6) and for suicide attempt was 3.5% (CI = 2.0 – 5.2). An independent-samples t-test was run to determine if there were differences in self-destructive behaviours between males and females.

Table 2
Participant's level of psychological distress as measured by GHQ-28 (n = 538)

	Mean	Standard Deviation
Somatic Complaint	1.95	1.93
Insomnia / Anxiety	2.25	2.20
Social Dysfunction	1.70	1.88
Severe Depression	1.45	1.84
Overall Distress	7.34	6.26

Table 3
Gender differences in self-destructive behaviours among participants (n= 538)

	t	df	p	Cohen's d
Non-suicidal self-injury	1.133	525.0	0.258	0.108
Suicidal ideations	-0.333	525.0	0.739	-0.032
Suicide attempt(s)	-0.877	525.0	0.381	-0.084

Table 4
Predictors of non-suicidal self-injury, suicidal ideation, and suicide attempt

Variables	Non-suicidal self-injury			Suicidal ideation			Suicide attempt		
	aOR	95% CI	p-value	aOR	95% CI	p-value	aOR	95% CI	p-value
Somatic complaint	1.14	0.93 – 1.38	.16	1.13	0.89 – 1.43	.38	1.23	0.92 – 1.64	.20
Anxiety	1.14	0.94 – 1.37	.09	1.16	0.92 – 1.45	.17	1.16	0.92 – 1.45	.24
Social dysfunction	1.10	0.89 – 1.35	.33	0.97	0.76 – 1.23	.99	1.05	0.78 – 1.42	.57
Severe depression	1.27	1.05 – 1.52	.04*	1.55	1.24 – 1.93	.00**	1.31	1.00 – 1.71	.06

*p<0.05; **p<0.01; aOR – Adjusted Odds Ratio; CI – Confidence Limits

As shown in **Table 3**, there is no statistically significance difference among male and female participants in self-destructive behaviours.

Table 4 shows the significant predictors of non-suicidal self-injury, suicidal ideation, and suicide attempt. An analysis using logistic regression revealed that severe depression was positively associated with non-suicidal self-injury (aOR: 1.27; 95% CI: 1.05 – 1.52, p=.04) and suicidal ideation (aOR: 1.55; 95% CI: 1.24 – 1.93, p<.001). Severe depression is also found to be marginally significant associated with suicide attempt (aOR: 1.31; 95% CI: 1.00 – 1.71, p=.06) However the others three subscales such as somatic complaint, anxiety and social dysfunction are insignificant predictors of non-suicidal self -injury, suicidal ideation and suicide attempt.

Discussion

This study aimed at discovering the prevalence of self -destructive behaviour among young adults which are reflected by the psychological distress subscales of GHQ-28. The four sub scales include somatic complaints, insomnia or anxiety, social dysfunction and severe depression. The findings of this study showed that generally the Malaysian young adults experienced high psychological distress (M=7.34; SD=6.26) which is above the prescribed cut-off score of 6. Adolescents and young adult encounter a critical period of development at this developmental stage of life span. The development of mental health and well-being may be influenced by social, economic emotional and physical factors (Rickwood, Deane, Wilson, & Ciarrochi, 2005). Being separated from their parents, the search of independent identity, the need for intimate relationships and the development of peer group affiliations have major impact influences on the individual development.

Although the prevalence of non-suicidal self-injury was high (8.4%) in comparison to suicidal ideation (5.8%) and suicide attempt (3.5%), this did not imply that Malaysian young adults are not in danger of suicidal ideation. Whitlock et al. (2012) in their study found that non-suicidal self- injury can be the "gateway" to suicidal ideation and suicide attempt. It was found that non-suicidal self-injury may reduce inhibition through habituation to self-injury and contributes to suicide thoughts and behaviours.

Maniam et al. (2014) in the study of risk factors for suicidal ideation, plans and suicide attempts among 19,039 Malaysian found that youth aged 16-24 had suicide ideation rate of 2.6%, suicidal plan of 4.5% and suicidal attempt of 4.8%. However this current study showed a higher suicidal prevalence ideation of 5.8% and a lower suicidal attempt of 3.5%. This is consistent with the 2013 American National survey on Drug Use and health where it was reported that young adult aged 18-25 years had the highest suicidal ideation. This is probably because undergraduate and college students are less likely to attempt suicide as they might seek help from friends and family members for personal and emotional people. Additionally they are more aware of the availability of professional mental help resources (Rickwood et al., 2005).

Although in this current research the participants with reported chronic pain are 0.02 times more likely to engage in non-suicidal self-injury, it is not considered as risk factor for other self-destructive behaviour such as suicide ideation and suicide attempt. This is probably a mean of releasing the intense and unbearable pain due to psychological distress (Kumar, Pepe, & Steer, 2004; Nixon, Cloutier, & Jansson, 2008; Rodham, Hawton, & Evans, 2004; Ross, & Heath, 2002; Yip, Ngan, & Lam; 2002 as cited in Greydanus & Shek, 2009). This research findings also suggested a positive association of severe depression (aOR: 1.27; 95% CI: 1.05 – 1.52, p=.04) with non-suicidal self-injury, suicidal ideation (aOR:1.55;95% CI:1.24-1.93, p<.001). This showed that although severe depression is not only a risk factor of non-suicidal self-injury, but it is also associated with suicidal ideation, and eventually suicide attempt. Tan, Sherina, Rampal and Normala (2014) in their study on public university students found that depression was the strongest psychological predictor for suicidality where those with depression had 5.9 times higher suicidality risk.

Overall, only the severe depression subscale of psychological distress is positively associated to the self-destructive behaviours. The result

confirms the findings of Maniam et al (2014) and Tan et al (2014) which also indicated depression as strongest predictor of suicidal behaviours. The findings in present study might suggest also support that non-suicidal self- injury may serve as a "gateway" for suicidal behaviours. This is consistent with the findings of Whitlock et al. (2012) in their study of 1,466 students of 5 American Colleges.

There are a number of limitations to this study. First, the study focused on only 538 young adults of private universities and convenience sampling was used in data collection. Thus the findings may not be representative of the Malaysian young adult population and could not be generalized. Second, the study did not make a comparative study among the different ethnicity which might reveal if the different cultural values will influence non-suicidal self - injury behaviour. This is important for studies have suggested that cultural values might influence the pattern of help seeking behaviours.(Rickwood, et al., 2005). As this is a cross-sectional study, its findings cannot reflect the causality effect.

CONCLUSION

The prevalence of non-suicidal self- injury among undergraduates of private tertiary institutions was 8.4%. The indicators comprised of somatic complaint, insomnia or anxiety, social dysfunction and severe depression. Although in the present study, non-suicidal self-injury may not be predictor of other self-destructive behaviours but it may serve as a "gateway" for other suicidal risk behaviours as all the subscale of psychological distress are risk factors for the self-destructive behaviours. One of the recommendation based on the finding of this study is that mental health professional may use GHQ-28 for mental health screening of young adults for early detection of self-destructive behaviours. Additionally Ministry of health and mental health professional can organize intervention programs in assisting young adults to cope with anxiety and stress thus preventing the onset of depression.

REFERENCES

Ahmad, N., Cheong, S., Ibrahim, N., & Rosman, A. (2014). Suicidal Ideation Among Malaysian Adolescents. *Asia-Pacific Journal of Public Health,26*(5), 63-69. doi:10.1177/1010539514540746

Alcantara, C., & Gone, J.P. (2007). Reviewing suicide in native American communities: Situating risk and protective factors within a transactional-ecological framework. *Death Studies, 31*, 457-477. Doi: 10.1080/07481180701244587

Armitage, C., Panagioti, M., Rahim, W., Rowe, R., & O'Connor, R. (2014). Completed suicides and self-harm in Malaysia: A systematic review. *General Hospital Psychiatry, 37*, 153-165.

Bernama. (2015, October 1). Between one and two suicides reported daily in Malaysia. Retrieved November 10, 2015, from http://www.bernama.com/bernama/v8/newsindex.php?id=1175874

Bronfenbrenner, U. (1979). The ecology of human development [e-book]. Cambridge, MA: Harvard University Press.

Cavanagh, J., Carson, A., Sharpe, M., & Lawrie, S. (2003). Psychological autopsy studies of suicide: A systematic review. *Psychological Medicine Psychol. Med*., 395-405.

Centers for Disease Control and Prevention (CDC). (2015) Suicide: Facts at a Glance, 2015. Retrieved November 10, from http://www.cdc.gov/violenceprevention/pdf/suicide-datasheet-a.pdf

Chen, E., Chan, W., Wong, P., Chan, S., Chan, C., Law, Y., . . . Yip, P. (2006). Suicide in Hong Kong: A case-control psychological autopsy study. Psychological *Medicine Psychol. Med., 36* (6), 815-825

Goldberg, D., & Williams, P. (1978). A User Guide to the General Health Questionnaire. London: GL Assessment.

Greydanus, D., & Shek, D. (2009). Deliberate Self-harm and Suicide in Adolescents. *The Keio Journal of Medicine, 58*(3), 144-151.

Ibrahim, N., Amit, N., Suen, M.W.Y. (2014) Psychological Factors as Predictors of Suicidal Ideation among Adolescents in Malaysia. PLoS ONE 9(10): e110670. doi:10.1371/journal.pone.0110670

Institute of Public Health. (2008). The Third National Health and Morbidity Survey (NHMS III) 2006: Psychiatry. Kuala Lumpur.

Krejcie, R.V., & Morgan, D.W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement, 30*, 607-610.

Law, Y. W., Wong, P. W.C., Yip, P.S.F. (2010). Suicide with psychiatric diagnosis and without utilization of psychiatric service. *BMC Public Health 2010, 10*:431. doi:10.1186/1471-2458-10-431

Mandara, J., Murray, C.B., & Bangi, A. K. (2003). Predictors of African American adolescent sexual activity: An ecological framework. *Journal of Black Psychology, 29*(3), 337-356. Doi: 10.1177/0095798403254214

Maniam, T., Marhani, M., Firdaus, M., Kadir, A., Mazni, M., Azizul, A., . . . Ani, A. (2014). Risk factors for suicidal ideation, plans and attempts in Malaysia — Results of an epidemiological survey. *Comprehensive Psychiatry, 55*(1), 231-240.

Ministry of Health, Malaysia. (2011). National health and morbidity survey 2011. Kuala Lumpur: Ministry of Health Malaysia, 2011.

Perkins, D. F., & Hartless, G. (2002). An ecological risk-factor examination of suicide ideation and behavior of adolescents. *Journal of Adolescent Research, 17*(1), 3-26. Retrieved from http://jar.sagepub.com/content/17/1/3.full.pdf

Phillips, M., Yang, G., Zhang, Y., Wang, L., Ji, H., & Zhou, M. (2002). Risk factors for suicide in China: A national case-control psychological autopsy study. *The Lancet*, 1728-1736.

Rickwood. D., Deane, F. P, Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *.Australian e-Journal for the Advancement of Mental Health, 4* (3) pp1446-7984.

Sipalan, J. (2012, June 5). Suicide rate on the rise in Malaysia. The Star Online. Retrieved November 10, 2015, from http://www.thestar.com.my/News/Nation/2012/06/05/Suicide-rate-on-the-rise-in-Malaysia/

Small, S.A., & Luster, T. (1994). Adolescent sexual activity: An ecological, risk-factor approach. *Journal of Marriage and Family, 56*(1), 181-192. Retrieved from http://www.jstor.org/stable/352712

Tan, V. (2014, September 10). Suicide prevention in Malaysia – The way forward. Malaymail Online. Retrieved November 10, 2015, from http://www.themalaymailonline.com/what-you-think/article/suicide-prevention-in-malaysia-the-way-forward-victor-tan

Tan, S. T., Sherina, M. S, Rampal, L., & Normala, L. (2014) Prevalence and predictors of suicidality among medical students in a public university. *Medical Journal of Malaysia. 2015 Feb, 70*(1), 1-5.

Whitlock, J., Muehlenkamp, J., Eckenrode, J., Purington, A., Abrams, G., Barreira, P., & Kress, V. (2012). Nonsuicidal self-injury as a gateway to suicide in young adults. *Journal of Adolescent Health*, 1-7.

World Health Organization. (2014). *Preventing suicide: a global imperative A global imperative*. Retrieved November 10, 2015, from http://apps.who.int/iris/bitstream/10665/131056/8/9789241564878_eng.pdf?ua=1&ua=1

World Health Organization. (2015). *Suicide*. Retrieved November 10, 2015, from http://www.who.int/mediacentre/factsheets/fs398/en/