SUICIDE LITERACY AMONG FIRST YEAR UNDERGRADUATE HEALTHCARE STUDENTS IN UNIVERSITI SAINS MALAYSIA

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LIST OF SYMBOLS, ABBREVIATION OR NOMENCLATURES

LOSS	Literacy of Suicide Scale
D-Lit	Depression Literacy
WHO	World Health Organizations
USM	Universiti Sains Malaysia

ABSTRAK

LATARBELAKANG

Isu bunuh diri merupakan cabaran kepada perkhidmatan kesihatan mental memandangkan tanda-tanda amarannya boleh berlaku tanpa disedari ataupun secara tiba-tiba. Literasi bunuh diri adalah satu pendekatan yang dikenalpasti boleh mencegah perbuatan bunuh diri, dengan mengenalpasti dan merawat individu yang berisiko tinggi. Kajian ini bertujuan untuk mengenalpasti tahap literasi bunuh diri dalam kalangan pelajar prasiswazah tahun satu dalam jurusan penjagaan kesihatan di Universiti Sains Malaysia (USM) dan faktor-faktor yang berkaitan dengannya.

METODOLOGI

Kajian keratan rentas ini telah dijalankan dalam kalangan 246 orang pelajar prasiswazah tahun satu jurusan penjagaan kesihatan di kampus kesihatan USM yang terletak di semenanjung Malaysia. Pelajar-pelajar ini direkrut dengan menggunakan kaedah persampelan mudah. Mereka diminta melengkapkan satu set soalan kaji selidik yang mengandungi data sosiodemografi, *Literacy of Suicide Scale* (LOSS) dan *Depression Literacy* (D-Lit). Data ini telah dianalisa dengan menggunakan IBM SPSS Statistical Software Versi 24.

KEPUTUSAN

Keputusan menunjukkan skor literasi bunuh diri atas tahap biasa iaitu 4.9 (1.33). Kajian juga menunjukkan korelasi positif dan berkadar langsung antara skor keseluruhan D-Lit dan LOSS (p=0.002, r=0.197). *Multiple regression analysis* menunjukkan hubungan yang signifikan antara skor LOSS dengan skor D-Lit (p=0.012) dan jenis kursus yang diambil (p=0.046), di mana pelajar perubatan

didapati mempunyai tahap literasi yang lebih baik berbanding pelajar paramedik.

KESIMPULAN

Tahap literasi bunuh diri dalam kalangan pelajar prasiswazah tahun satu jurusan penjagaan kesihatan didapati atas tahap biasa. Ia mempunyai hubungan dengan literasi kemurungan dan jenis kursus yang diambil oleh pelajar. Adalah satu keperluan untuk meningkatkan lagi pengetahuan tentang bunuh diri dan kemurungan dalam kalangan pelajar, terutamanya pelajar paramedik menerusi pendidikan yang berterusan dan penglibatan langsung dalam perkhidmatan kesihatan mental sebagai sebahagian daripada latihan sebagai '*gatekeeper*'.

Kata kunci: *bunuh diri, kemurungan, literasi, pelajar-pelajar siswazah, penjagaan kesihatan*

ABSTRACT

BACKGROUND

Suicide has become a formidable challenge to the mental health practice as the warning signs could manifest subtly or they could be instantaneous. Suicide literacy is a recognised approach to prevent suicide, which involves improving the identification and treatment of individuals at high risk. This study aims to examine the level of suicide literacy among first year healthcare student in Universiti Sains Malaysia (USM) and its predictors.

METHODOLOGY

A cross-sectional study was conducted among 246 first year undergraduate healthcare students in USM health campus, which is situated in West Malaysia. They were campus students in USM who were recruited via convenient sampling. They were required to complete a set of self-administered questionnaires which include sociodemographic profile, Literacy of Suicide Scale (LOSS) and Depression Literacy (D-Lit). Data was analysed using IBM SPSS Statistical Software Version 24.

RESULT

The study has found above-average score of suicide literacy 4.9(1.33). There is a positive linear correlation between total D-Lit and LOSS score ($p=0.002$, $r=0.197$). Multiple regression analysis showed a significant association between LOSS score and D-Lit score ($p=0.012$) and courses enrolled by the students ($p=0.046$), where medical students were found to have a higher level of suicide literacy compared to paramedical students.

CONCLUSION

There is above-average level of suicide literacy among first year undergraduate healthcare students. It was associated with the courses enrolled by the students and depression literacy. There is a need to enhance the knowledge about suicide and depression among the students, particularly among the paramedical students through continuous psychoeducation and direct involvement in mental health service as part of the gatekeeper training.

Keywords: *suicide, depression, literacy, undergraduate students, healthcare*

CHAPTER 1: INTRODUCTION

1.1 Suicide literacy and mental health

Suicide is a global phenomenon and poses a significant public health challenge. It can be defined as an act with fatal outcome (if completed) that is deliberately carried out with the knowledge or expectation of its fatality. Suicide was the second leading cause of death among young people aged 15-29 years, after the motor vehicle accident. The global age-standardized suicide rate for year 2016 was 10.5 per 100 000. The rates varied widely, however, between countries, from 5 suicide deaths per 100 000 to more than 30 per 100 000 (1). In Malaysia, the rate of suicide is comparable to the global suicide rate, which is approximately 6–8 suicides per 100,000 per year (2).

Suicide is tragic, as it may result in lasting psychological, physical and social consequences for those who are exposed to it. Those who are bereaved are forced to endure complicated or traumatic grief (3). The grief of bereaved parents who have lost a son or daughter to suicide will be compounded due to the disruption of the "natural" generational order of death as well as isolation and societal exclusion that may result as the aftermath of suicide (4). Additionally, those bereaved by suicide are deemed to be at a greater risk of developing mental and physical health conditions as opposed to people bereaved by other causes of death (5).

The aftermath of suicide does not only pose consequences to the loved ones, but it may also cause detrimental effects to the suicide survivors. A systematic review conducted to examine these effects demonstrated that suicide survivors experience stigma in the form of shame, blame, and avoidance. The stigma was linked to concealment of the death, social withdrawal, reduced psychological and somatic functioning and grief difficulties (6).

Due to the impact of the suicide aftermath, the phrase “prevention is better than cure” is due. One recognised approach to prevent suicide involves improving the identification and treatment of individuals at high risk, including those who plan or attempt suicide, the term that has been coined as suicide literacy.

Suicide literacy can be defined as knowledge about the causes, risk factors, signs or symptoms, and treatments for suicidality (7). Adequate knowledge about suicide may facilitate seeking professional support, while false and imperfect knowledge hampers it (8). Suicide literacy among the general population, however, was found to be inadequate (9). Raising awareness and reducing stigmatising attitudes may lead to increasing the likelihood that someone who is at risk might reach out for help without fear of dismissive, derisive, or discriminatory responses.

Suicide literacy among students has become one of the most discussed mental health topics in this recent time. Chan et al. (2014) suggested that exposure to suicidal people through clinical experience may improve knowledge of about suicide amongst Australian medical students (10). A more recent study that supported this finding, revealed clinical years’ students appear to have higher suicide literacy, and this is predicted by previous exposure to psychiatric patients (11). Other than clinical experience, students who previously had a psychiatric consultation or received a psychiatric diagnosis also scored a higher level of suicide literacy compared to students who had not received psychiatric support (12). Another study that aimed to determine the suicide and depression literacy among healthcare students in South India reported that depression and suicide literacy is poor among healthcare professional students, particularly paramedical students, while suicide literacy was positively associated with depression literacy (13).

1.2 Suicide literacy measures

In order to address this purpose, Literacy of Suicide Scale (LOSS) will be used in this study. This scale is composed of twelve "true" or "false" items that measure knowledge about suicide in four dimensions: signs and symptoms, causes/nature of suicide, risk factors, and treatment and prevention (8). However, this study will be using the modified LOSS, retained eight of twelve items (9, 13). The LOSS has been validated using an item-response theory approach, as items from the scale have correct or incorrect answers. Classical psychometric testing was not applied to this scale, as the LOSS is a knowledge scale (e.g., there are correct/incorrect answers) rather than an attitudinal scale. The modified LOSS categorised "true", "false" and "don't know" responses as "false". Higher scores indicated higher suicide literacy levels.

1.3 Justification of study

Due to the increasing rate of suicide globally and locally as shown by the data, a lot of research has been done to study its etiological factors, risk factors, and methods of prevention. From these studies, it has come to light that suicide literacy is one of the most recognised preventing factors against suicide. As far as researchers are concern, there is limited study on health literacy focusing on suicide among healthcare students. It is crucial for these groups of student to have this knowledge, given that they are future health providers. Exploring the factors associated with the level of suicide literacy is also crucial, as it may lead to the appropriate recommendation of psychoeducation and advocacy of the literacy based on the findings. The result of the study may provide information for future intervention in order to improve the suicide literacy.

1.4 Objectives

1.4.1 General Objectives

This study intends to determine the level of suicide literacy among first year undergraduate healthcare students in Universiti Sains Malaysia (USM) Health Campus, Kubang Kerian, Kelantan.

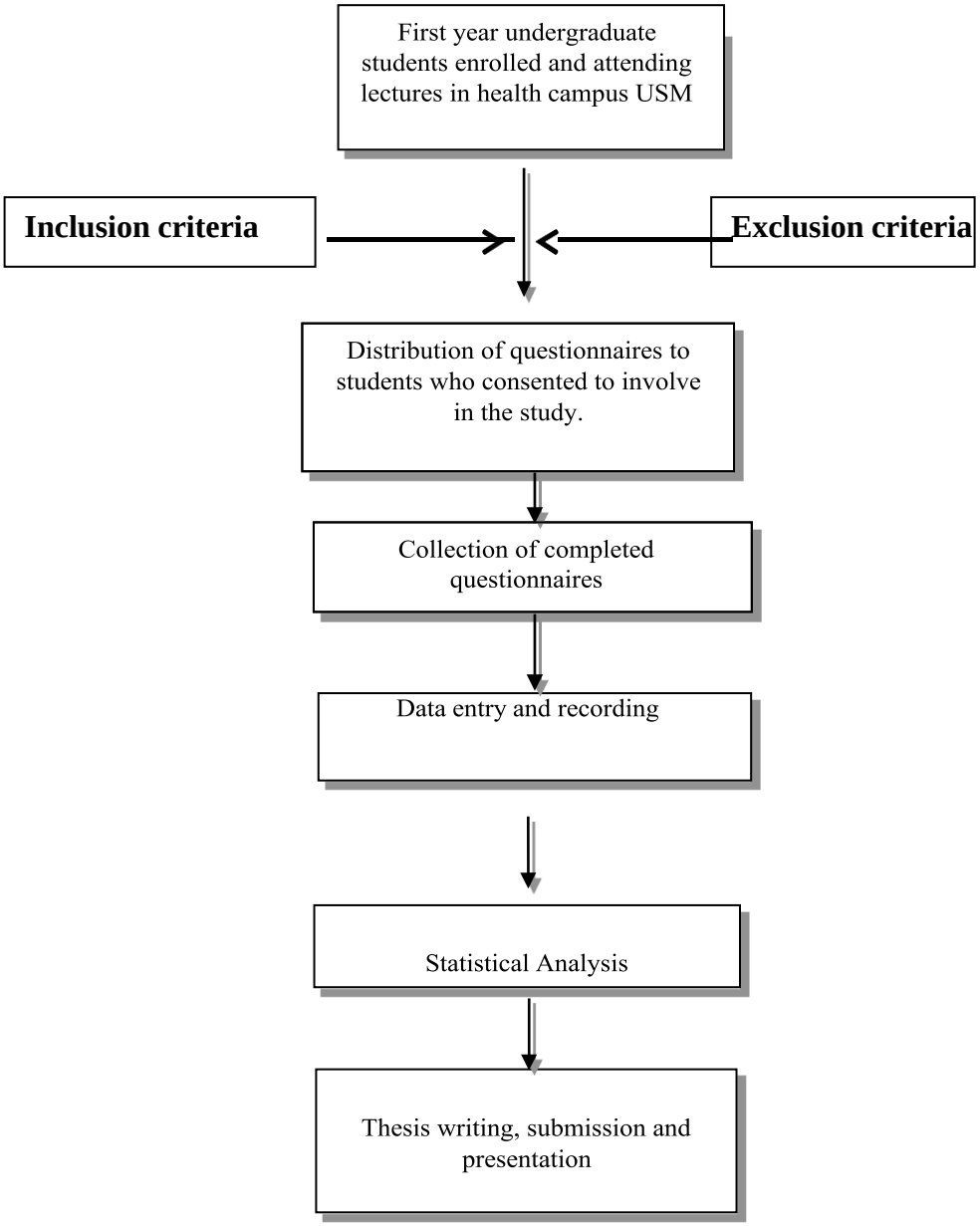
1.4.2 Specific objectives

- To determine the level of suicide literacy among first year undergraduate healthcare students.
- To determine the correlation between suicide literacy and depression literacy.
- To determine the predictors for suicide literacy among first year undergraduate healthcare students.

1.5 Methodology

This study is using a cross-sectional observation method which involved first year undergraduate healthcare students in Universiti Sains Malaysia Health Campus. After receiving approval from the ethics committee, process of data collection was commenced. Convenient sampling method was used. After the permissions to conduct study were obtained from the Dean of School of Medical Science, Dental Science and Health Science, the list of faculties were obtained from the respective schools. All students in one lecture or class during the period of the study were invited for the purpose. They were briefed regarding the study. Information was also available in written form. Participation in the study was completely voluntary. After questionnaires were distributed and written consent obtained, the respondents were requested to answer the proforma and two questionnaires (LOSS, D-Lit). Data entry and analysis were done using SPSS version 24.0.

1.5.1 Flow Chart Methodology



1.6 Dissertation organisation

This dissertation is arranged according to Format B Manuscript Ready format according to guideline by Postgraduate Office, School of Medical Sciences (2016). The following chapters would be the study protocol that has been submitted for ethical approval. Chapter 3 is the manuscript of Suicide Literacy Among First Year Undergraduaate Healthcare Students in Universiti Sains Malaysia that is formatted for submission to the journal The Malaysian Journal of Medical Sciences. The raw data is included in the attached CD.

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healthcare profession students in tertiary care center in South India. Psychiatry and Behavioral Sciences. 2017;**7(3)**:149-55. doi:10.5455/jmood.20170830064910.

CHAPTER 2: STUDY PROTOCOL

2.1 Introduction & Study Background

Suicide is a global phenomenon and may occur throughout the lifespan. It is tragic and may cause negative emotional impact to the loved ones. Suicide can be defined as an act with fatal outcome (completed) which is deliberately carried out with the knowledge or expectation of its fatality. There were estimated 793 000 suicide deaths worldwide in 2016, with annual global age-standardized suicide rate of 10.5 per 100 000 population (1). By the year 2020, the World Health Organisation (WHO) estimates that approximately 1.53 million people or nearly 3% of all world deaths would be due to suicide, and 10–20 times more people would attempt suicide worldwide (2). In Malaysia, the rate of suicide is comparable to the global suicide rate. A systematic review has drawed together the fragmented literature on prevalence, correlates and reasons for suicide and self-harm in Malaysia (3). The principal findings were (a) thesuicide rate in Malaysia is approximately 6–8 suicides per 100,000 per year; (b) suicide and self-harm are associated with being younger than 40, being male and being from the Indian ethnic group; and (c) there seem to be emerging trends in the means of suicide and self-harm that might be related to the move from a rural to an industrial economy.

A wide spectrum of suicide risk factors have been recognized (4). There are societal risk factors that contribute to increasing suicide rate. They are access to means, inappropriate media reporting and stigma associated with help-seeking. Other risk factors that could be originating from the community are disasters, conflicts, discrimination, trauma or abuse. Other than that, individual risk factors list the most, they are previous suicide attempt, harmful alcohol use, job/financial loss, chronic pain, family history of suicide, as well as mental disorder.

Converging evidence points to psychiatric or mental disorders as well as a past history of suicidal behavior as the strongest predictors of suicidal behavior and death by suicide (5). Looking at this trend, it has come to light that mental health and suicide literacies are important in understanding and tackling this issue. Mental health literacy is a construct that has arisen from the domain of health literacy. It can be defined as an understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma related to mental disorders; and enhancing help-seeking efficacy (knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capabilities) (6,7). Poor mental health literacy may lead to failure in recognising symptoms of illness (8). It also held against people who committed suicide and previously identified as a factor preventing appropriate help-seeking behaviour (9). Thus, few focused investigations have been undertaken exploring the level of suicide literacy amongst the general population as well as those in medical profession. Suicide literacy can be defined as knowledge about the causes, risk factors, signs or symptoms, and treatments for suicidality (10).

2.2 Literature Review

2.2.1 Suicide Literacy

Adequate knowledge about suicide may facilitate seeking for professional support, while false and imperfect knowledge hampers it (11). Suicide literacy among general population, however, was found to be inadequate (10,12). There are few factors that may influence the level of one's knowledge about suicide. An online survey that recruited participants through online advertising on the social network site, reaching a diverse segment of the community living in Australia found that less

exposure to suicide, older age, male gender, less education, and culturally diverse backgrounds were associated with poorer knowledge (13). The associations of older age with reduced literacy and stigma have some support in existing literature (14). These relationships may reflect older people receiving less exposure than young people to the topic of suicide, possibly associated with greater taboos and restrictions around talking about suicide in the past (11). A Canadian sex comparison study on stigma in male depression and suicide found that a greater proportion of males endorsed stigmatizing views about male depression compared to female respondent (12). Male and female respondents with direct personal experience of depression or suicide strongly endorsed stigmatizing attitudes toward themselves and a greater proportion of male respondents indicated that they would be embarrassed about seeking help for depression.

2.2.2 Suicide and health care professionals

The prevalence of burnout syndrome is increasing among doctors and nurses. The presence of risk factors derived from work organisation within the work place increases the probability of presenting this syndrome, in particular emotional exhaustion (15). These risk factors are psychological demands, job control, supervisors' social support and co-workers' social support. Furthermore, research also has identified elevated rates of suicidal ideation and death by suicide among health care professionals (nurses, physicians and dentists) compared to the general population (16). Ready access to medicinal drugs may influence risk in nurses, physicians and pharmacists.

In particular, among the doctors, the suicide rate has been variably estimated at between two and five times the rate of the general population (17,18). There were significant differences between specialties, with anaesthetists, community health

doctors, general practitioners and psychiatrists having significantly increased rates compared with doctors in general hospital medicine. There were no differences with regard to seniority and time period.

2.2.3 Mental health among undergraduate students

This hazard appears to manifest early as the overall prevalence of depressive symptoms among medical students was found higher (27.2%) than that reported in the general population (19). The prevalence of suicidal ideation (11.1%) in this study also was found higher than in general population (3.9%) (20). This is associated with the presence of chronic disease, major life events, female gender and being a student at the clinical level (21). Other than depression, a more recent study identified other mental health problems that are prevalent among medical students namely problematic alcohol use, burnout, stress, low sleep quality, excessive daytime sleepiness, and anxiety (22). These findings are alarming, as mental health problem is detrimental to the students' overall wellbeing.

Students with limited mental health literacy may be unable to recognise signs of distress in themselves or others, which can stop them from seeking support. A cross-sectional survey that examined the mental health literacy about depression among undergraduate students found that only one third of the participants were able to recognise depression. Professional help from formal sources such as mental health professionals, general practitioners or family doctors, and psychiatrists, in this study was not deemed necessary (23). A study among college students in Korea found the direct effect of mental health literacy on attitudes toward help-seeking was fully mediated by stigma (24).

2.2.4 Previous studies on suicide literacy

A study on suicide literacy has been conducted among medical students enrolled in the 6th year of studies in University of Niš, Serbia. Medical students have displayed a high level of knowledge of suicide risk factors and its related themes. Students of both sexes, without any significant difference, statistically analyzed declare that suicide is not about death, but about the end of suffering (25). Another study that was conducted to asses knowledge and attitude among student in their first, third, and fifth years in a Japanese medical school found that sympathetic comments increased along with student years, while critical comments decreased. Moreover, judgmental attitudes were common, especially in earlier school years (26). Chan et al. (2014) suggested that exposure to suicidal people through clinical experience may improve knowledge of about suicide amongst Australian medical students, but may lead to more negative attitudes toward informal help-seeking (27). Another study that aimed to determine the suicide and depression literacy among healthcare students in South India reported that depression and suicide literacy is poor among healthcare professional students, particularly paramedical students, while suicide literacy was positively associated with depression literacy (28).

2.3 Rationale of Study

Due to the increasing rate of suicide globally and locally, as shown by the data, a lot of research has been done to study its etiological factors, risk factors, and methods of prevention. From these studies, it has come to light that suicide literacy is one of the contributing factors. However, there appears to be inadequate awareness about suicide among health care professionals (29). While suicide literacy was associated with greater sensitivity to a person's risk of suicide, it also predicted fewer

recommendations for professional help, partly due to the stigma associated with seeking professional help (30). Apart from that, local study shows the prevalence of stress among medical students in USM is high, where academic-related problems were the major stressor among them (31). Since it has been highlighted that stress and depression are closely related to suicide, suicide literacy may predict the provision of more appropriate support to people experiencing psychological distress (32). By knowing signs, symptoms and behavior of depression and suicide, this may lead to appropriate recommendation to people who are suicidal, such as seeking professional help and providing psychological support. However, as the future health-providers, no local study done to look at suicide literacy among the healthcare students.

2.4 Objectives

2.4.4 General Objectives

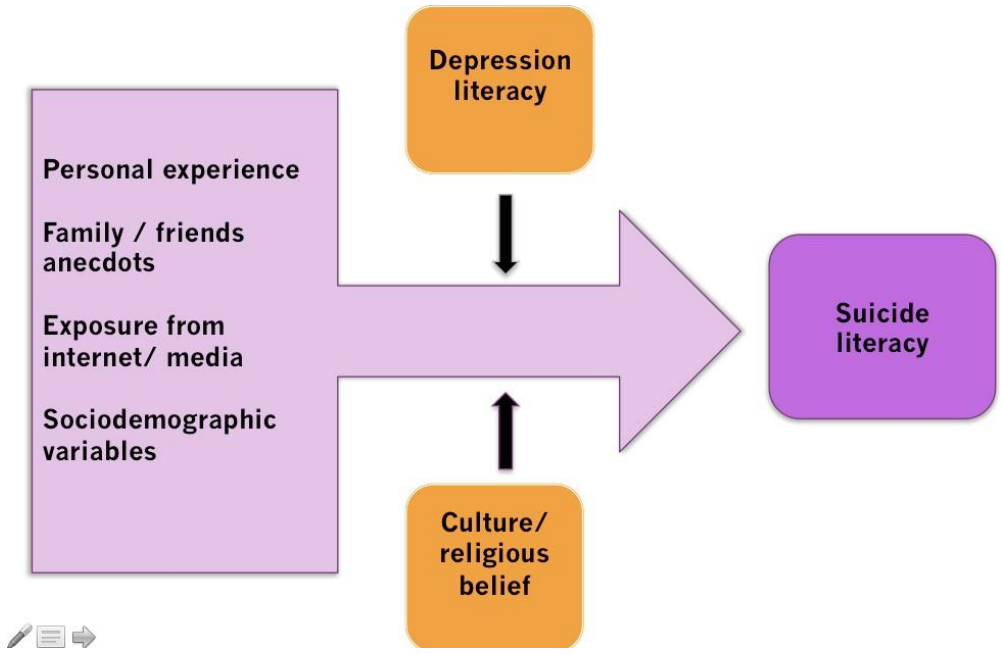
This study intends to determine the level of suicide literacy among first year undergraduate healthcare students in Universiti Sains Malaysia (USM) Health Campus, Kubang Kerian, Kelantan.

2.4.5 Specific objectives

1. To determine the level of suicide literacy among first year undergraduate healthcare students.
2. To determine the correlation between suicide literacy and depression literacy.
3. To determine the predictors for suicide literacy among first year undergraduate healthcare students.

2.5 Conceptual Framework

Figure 1 showed predictors for suicide literacy among health campus students in USM.



2.5.4 Operational definition

Healthcare students: Universiti Sains Malaysia Health Campus, Kubang Kerian is constituted of 3 main science schools. There are School of Medical Sciences, School of Dental Sciences and School of Health Sciences. All first year undergraduate students of the schools will be invited for the study.

2.6 Research Methodology

2.6.4 Study design

This study is using cross-sectional observation method which involves first year undergraduate healthcare students in Universiti Sains Malaysia Health Campus.

2.6.5 Study period

This study starts in September 2018 until September 2020 in which the duration will cover the overall timeline for this research, starting from the project initiation until final thesis submission. The timeline will be presented using Gantt chart as presented below.

2.6.6 Study location

The study will be conducted in Universiti Sains Malaysia Health Campus, Kelantan.

2.6.7 Study population

The source of the population will be the first year undergraduate healthcare students in health campus, Universiti Sains Malaysia.

2.6.8 Study sample

Inclusion criteria

2.6.8.1 All first year undergraduate healthcare students in USM

2.6.8.2 Able to read and write in English

Exclusion criteria

a. Those who are not consented for study

2.6.9 Sampling method and data collection procedure

After receiving approval from ethics committee, process of data collection will be commenced. Convenient sampling method will be used. After permission of conducting study obtained from Deans of School of Medical Science, Dental Science and Health Science, list of faculties will be obtained from respective schools.

Timetable of the lectures or classes of the faculties will be obtained. All

students in one lecture or class during the period of the study will be involved. Students will be briefed regarding the study. Information is also available in written form. After questionnaires are distributed and written consent obtained, the respondents will have to answer proforma and the 2 questionnaires (LOSS, D-Lit). The questionnaires will take about 15-20 minutes to be completed. Then, all questionnaires will be returned back to the researcher. Participation in the study is completely voluntary.

2.6.10 Sample size estimation

The sample size based on specific objective was calculated as below :

- **Objective 1:** To determine the level of suicide literacy among first year undergraduate healthcare students.

Using one mean formula and value from previous study (Batterham, Calear, & Christensen, 2013)

$$n = \left(\frac{Z * \sigma}{\Delta} \right)^2$$

$$n = [1.96 \times 2.47 / 0.5]^2$$

$$= 94$$

Additional 20% for dropout rate from 94 = 94 + 18 = **112.**

- **Objective 2**: To determine the correlation between suicide and depression literacy

This is calculated using sample size calculator for Correlation Analysis, using value from previous study **(Ram et al., 2017):**

Correlation coefficient, r	0.24
Type I error, α	5%
Type II error, β	20%
Calculated sample size, n	128
Anticipated dropout rate	10%
Corrected sample size , n	**143**

- **Objective 3:** To determine the predictors for suicide and depression literacy

Based on multiple linear regression formula, calculated using G Power Software and value from previous study (Batterham et al., 2013):

Type I error, α	0.05
Type II error, β	0.8
Effect size	0.15
Number of tested predictors	5
Total number of predictors	12
Estimated sample size + 20% dropout	**110**

- **Therefore, the largest sample size calculated for this study is 143 participants (from objective 2).**

2.6.11 Research tools

Sociodemographic background

All respondents that participated in this study will be asked of several demographic background questions such as age, sex, race, religion, area of living, course, culture and belief regarding suicide and exposure to suicide.

Literacy of Suicide Scale (LOSS)

This scale is comprised of twelve true/false items that measure knowledge about suicide in four dimensions: signs and symptoms, causes/nature ofsuicide, risk factors, and treatment and prevention (11). However, this study will be using the modified LOSS, retained eight of twelve items (12, 28). The short version of the questionnaire is used for the self-administration. Items that did not provide additional information or distinction from others were removed. The LOSS has been validated using an item-response theory approach, as items from the scale have correct or incorrect answers. Classical psychometric testing was not applied to this scale, as the LOSS is a knowledge scale (e.g. there are correct/incorrect answers) rather than an attitudinal scale. The LOSS solicited "true", "false", "don't know" responses was classified as "false". Correct responses are scored as 1, while incorrect responses are scored as 0. Literacy scores are the sum of correct items. Higher scores indicated higher suicide literacy levels. No cut-off points indicating level of suicide literacy. English version of the tool will be used in the present study, since the students' curriculum is in English and they are expected to be English-literate.

Depression Literacy (D-Lit)

D-lit assesses knowledge about depression including common symptoms related to it. The original D-Lit comprises of 22 items with Cronbach alpha=.70 and test-

retest reliability=.74 (32). In the present study, 12 of the 22 items were removed from the D-Lit, and 10 retained (28). The modified D-Lit had acceptable internal consistency with Cronbach's alpha of 0.74 (12). D-Lit solicited "true", "false", "don't know" responses was classified as "false". Correct responses are scored as 1, while incorrect responses are scored as 0. Literacy scores are the sum of correct items. Higher scores indicate higher mental health literacy of depression. No cut-off points indicating level of suicide literacy.

2.6.12 Data handling and confidentiality

Confidentiality is assured in this study. The person involved in this study is the primary researcher and supervisor only. No outsider is involved. Subject's information will be kept confidential by the researchers and will not be made publicly available unless disclosure is required by law. The subject's information will be held and process on a computer with limited access and password. All forms are anonymous and will be entered into SPSS software. The data will be presented as a group data and will not identify the subject individually. Data that has been collected will be kept for at least 3 years for the purpose of study before it is discarded from the system (both paperwork and digital data).

2.6.13 Minimizing error

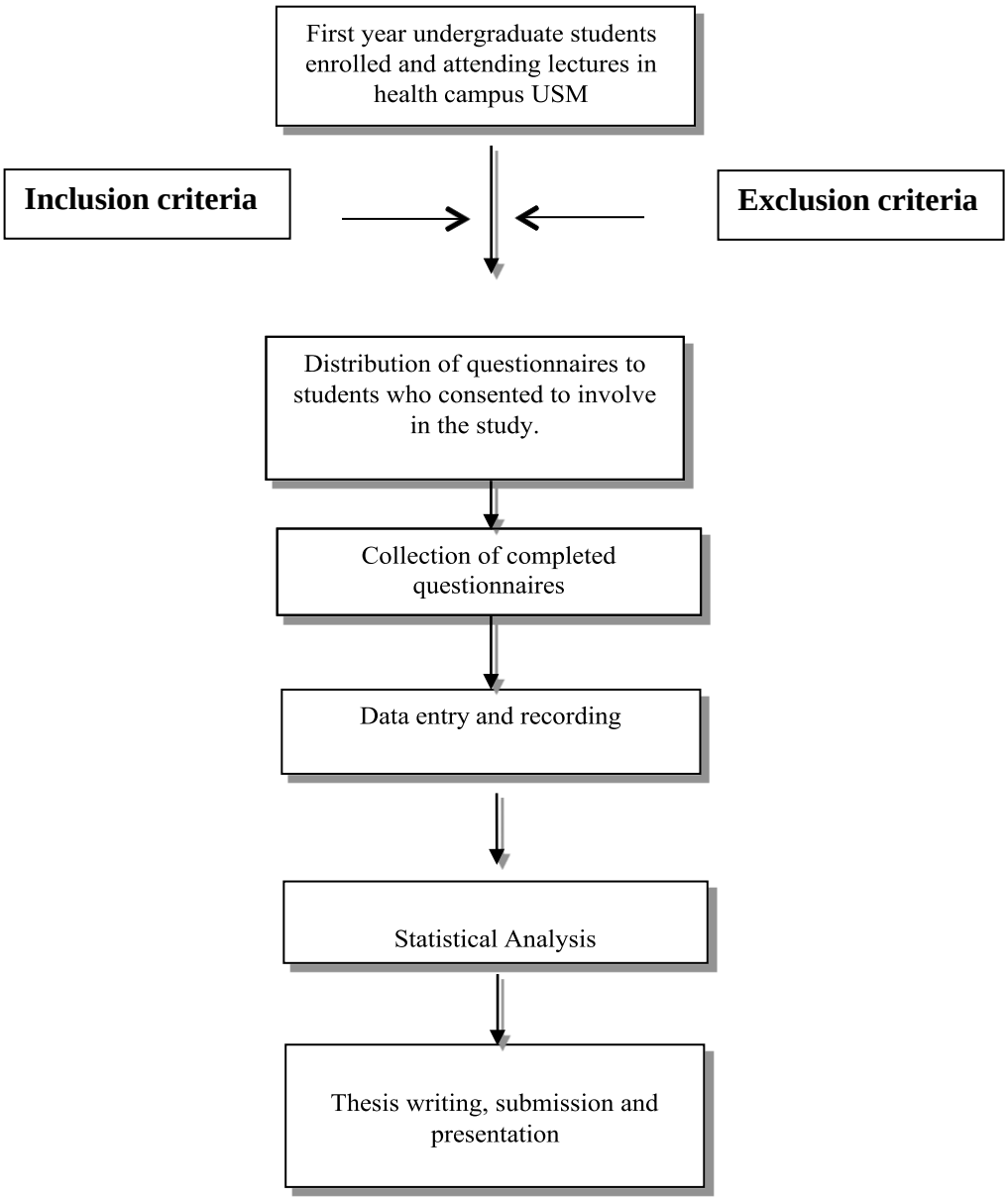
Explanation regarding the study will be provided in the questionnaires. Should the participants have any question or doubt, they may clarify with the researcher during the study or contact the researcher via email or phone number provided.

2.6.14 Data entry and statistical analysis

Data entry and analysis will be done with SPSS version 24.0. For descriptive analysis, numerical variables presented using mean (SD) for normal distribution of data, median (IQR) for not normally distributed data and for categorical variables

using number of samples, n (%). Pearson's correlation coefficient will be used to determine the correlation between suicide literacy and depression literacy. Simple (SLR) and multiple linear regression (MLR) analysis will be performed to identify the predictors for suicide literacy. Forward, backward and stepwise analysis will also be conducted to obtain the preliminary main effect model. Assumption of normality, linearity and equal variance will be checked. The variables with a p-value of < 0.25 or clinically important will be selected for multivariable analysis. P-value of less than 0.05 will be taken as a statistically significant result.

2.6.15 Flow Chart Methodology



2.7 Expected Results

Descriptive Statistic of Demographic background of Participant

Variable	Mean	Frequency, n (%)
Age		
Gender Male Female		
Race Malay Chinese Indian Others		
Religion Islam Buddha Hindu Others		
Residence Rural Urban		
Family income		
Course Medical Paramedical		
Acceptance of suicide from belief / culture view Yes No		
Exposure to suicide Yes No		

LOSS score difference between demographic characteristics and suicide literacy

Variables		**LOSS-M Means(SD)**	**p- value**
Gender	Male Female		
Race	Malay Chinese Indian Others		
Religion	Islam Buddha Hindu Others		
Residence	Rural Urban		
Course	Medical Paramedical		
Acceptance of suicide from belief / culture view	Yes No		
Exposure to suicide	Yes No		

Multiple regression analysis of suicide literacy and each factors.

Variables	**B**	**p-value**	**95% CI**
Gender			
Race			
Religion			
Residence			
Course			
Belief / culture			
Exposure			
Depression literacy			