ADVERSE CHILDHOOD EXPERIENCES AND HEALTH RISK BEHAVIORS AMONG THE UNDERGRADUATE HEALTH CAMPUS STUDENTS

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CHAPTER 1:

THE PRELIMINARIES

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LIST OF ABBREBIATION AND NOMENCLATURE

ACE	Adverse childhood experiences
HRB	Health risk behaviors

ABSTRACT

Adverse childhood experiences (ACEs) have been shown to be linked with health risk behaviors (HRBs). The aim of this study is to evaluate ACEs among the undergraduate Health Campus of a university in the northeast of Malaysia, and the associated health risk behaviors. This cross-sectional study performed by recruiting 973 undergraduate students at the Health Campus of a public university from December 2019 to June 2021. An anonymous, self-reported questionnaire which consisted of the World Health Organization ACE-International Questionnaire and The Youth Risk Behavior Surveillance System (YRBSS) were distributed randomly to students according to the course and year of study by hard copies or via online questionnaires. This study found that ACEs were highly reported among participating university students ranging from 2.6 to 39.3%. The most commonly reported adversities were: emotional abuse (30.2%), emotional neglect (29.2%) and physical abuse (28.7%). The incidence of community violence was high, with about 39.3% of survey participants reporting the experience. The highest incidence of HRBs among respondents was 54.5% from physical inactivity, followed by overweight/obesity (28.8%) and safety negligence included text/email during driving (20.6%). The findings of this study showed that those who were exposed to ACEs were at risk of HRBs, for example participants with history of emotional neglect were more likely to have sexual risk behavior (AOR = 2.26, 95% CI 1.040 – 4.911). This study also supported that higher number of ACEs were associated with higher number of HRBs. Thus, the study has provided evidence on child maltreatment as one of the important public health problems in Malaysia.

Keywords

Adverse childhood experiences, health risk behaviors, university students.

ABSTRAK

Pengalaman buruk zaman kanak-kanak (ACE) telah dikaitkan dengan tingkah laku berisiko kesihatan (HRB). Matlamat kajian adalah untuk menilai ACE di kalangan mahasiswa Kampus Kesihatan di sebuah universiti di timur laut Malaysia, dan tingkah laku berisiko kesihatan yang berkaitan. Kajian keratan rentas yang dilakukan dengan merekrut 973 pelajar sarjana muda di Kampus Kesihatan sebuah universiti awam dari Disember 2019 hingga Jun 2021. Soal selidik tanpa nama yang dilaporkan sendiri yang terdiri daripada Soal Selidik ACE-International Organization of Health dan The Youth Risk Soal selidik Sistem Pengawasan Tingkah Laku (YRBSS) telah diedarkan secara rawak kepada pelajar mengikut kursus dan tahun pengajian samada secara salinan cetak atau melalui soal selidik dalam talian. Kajian ini mendapati bahawa ACE sangat lazim dalam kalangan pelajar universiti yang mengambil bahagian antara 2.6 hingga 39.3%. Keputusan menunjukkan bahawa insiden penganiayaan kanak-kanak dalam kalangan populasi kajian yang paling tinggi dilaporkan adalah : penderaan emosi (30.2%), pengabaian emosi (29.2%) dan penderaan fizikal (28.7%). Insiden keganasan komuniti adalah tinggi, dengan kira-kira 39.3% peserta tinjauan melaporkan pengalaman tersebut. Insiden HRB tertinggi dalam kalangan responden ialah 54.5% daripada ketidakaktifan fizikal, diikuti oleh berat badan berlebihan/obesiti (28.8%) dan kecuaian keselamatan termasuk teks/e-mel semasa memandu (20.6%). Penemuan mengesahkan bahawa mereka yang terdedah kepada ACE berisiko untuk HRB, contohnya peserta yang mempunyai sejarah pengabaian emosi lebih berkemungkinan mempunyai tingkah laku berisiko seksual (AOR = 2.26, 95% CI 1.040 – 4.911). Kajian ini mengesahkan bahawa bilangan ACE yang lebih tinggi dikaitkan dengan bilangan HRB yang lebih tinggi. Justeru, kajian ini telah memberikan bukti bahawa penganiayaan kanak-kanak adalah salah satu masalah kesihatan awam yang penting di Malaysia.

Kata kunci

Pengalaman buruk zaman kanak-kanak, tingkah laku berisiko kesihatan, pelajar universiti.

CHAPTER II:

THE TEXT

2.1 Section A : Introduction

Introduction

Adverse childhood experiences (ACEs) are traumatic and stress-related events during childhood occurring before the age of 18 that the person remembers as an adult. Such events include multiple types of child abuse and neglect; exposure to violence between parents or household members; peer conflict and community violence; household dysfunction including having an alcohol and/or substance abuser in the family, single or no parent, growing up with a mentally ill household member, or incarcerated household members.[1]

ACEs can cause direct health consequences, such as somatic and psychosomatic disorders, cognitive-emotional reactions or even death.[2,3] Moreover, ACEs can also have a negative impact throughout the entire life course by affecting the individual's physical health and mental health.[4,5] It has been found that experiencing trauma during childhood can be linked to various health risk behaviors (HRBs) later in life.[6] Overall, there seems to be strong evidence to indicate that exposure to ACEs can lead to risky alcohol consumption, smoking, illicit drug use, sexual risk , and suicidal behavior.

Since the initial ACE study in 1998, health professionals around the world have started exploring the prevalence of ACEs. Stoltenborgh et al estimated that 36.3% of children and adolescent around the world were emotionally abused, 22.6% were physically abused, 18.4% were emotionally neglected and 16.3% were physically neglected.[7]

Research in Asian and Pacific Island countries points to the serious long-term effects of cumulative stress during childhood on physical and mental health and health risk behaviors of adolescents and adults. Community based research in

this region indicated that while the risk of specific types of violence and other adversities varies considerably across studies in different countries and cultures, the probable psychological and behavioral impacts were quite similar.[8]

In fact, child maltreatment does not usually occur as isolated incidents, but are experienced repeatedly and simultaneously in many forms. Child maltreatment may become recurrent or repetitive, especially if the child is not withdrawn from the setting in which the initial maltreatment occurred. Current knowledge of the effects of adverse life events in childhood focuses primarily on experiences in developed countries. There is a lack of evidence in developing countries. Certainly, the associated environmental and social concerns are aggravating factors that prevent children in developing countries from achieving their full potential.[9]

Study by Ahmed et al in Selangor, Malaysia on Child maltreatment experience among primary school children found that three-quarters of children aged 10 to 12 reported at least one type of maltreatment, with physical abuse of parents being the most common. The prevalence of parental physical maltreatment (53%) is close to the upper end of the range of physical abuse recorded in surveys from other countries reported in East Asia and the Pacific region. The prevalence figures presented in these studies support the finding that child abuse and neglect is not an uncommon phenomenon in Malaysia especially for physical maltreatment, neglect, and emotional maltreatment. More importantly, sexual assaults against children are far more common than what is reported to the authorities.[10]

In Malaysia, there have been some research about health risk behavior in young adolescent group, however, connection between ACEs and health risk behavior among young adults in Malaysia are presently unknown.[11] This study

investigated the incidence of ACEs and possible impacts of childhood adversities on health risk behavior among a large sample of undergraduates from Health Campus of a public university.

2.2 Section B : Study protocol

2.2.1

Documents submitted for ethical approval

Dissertation proposal

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ADVERSE CHILDHOOD EXPERIENCES AND HEALTH RISK BEHAVIORS AMONG THE UNDERGRADUATE HEALTH CAMPUS STUDENTS OF UNIVERSITI SAINS MALAYSIA

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1. INTRODUCTION

1.1 BACKGROUND

Adverse childhood experiences (ACEs) are traumatic and stress-related events during childhood occurring before the age of 18 that the person remembers as an adult.[1] Such events include multiple types of child abuse and neglect; exposure to violence between parents or household members; peer conflict and community violence; household dysfunction including having an alcohol and/or substance abuser in the family, single or no parent, growing up with a mentally ill household member, or incarcerated household members.[1,2]

ACEs can cause direct health consequences, such as somatic and psychosomatic disorders, cognitive-emotional reactions or even death.[3,4] Moreover, ACEs can also have a negative impact throughout the entire life course by affecting the individual's physical health and mental health.[5,6] It has been found that experiencing trauma during childhood can be linked to various health risk behaviors (HRBs) later in life.[7] Overall, there seems to be strong

evidence to indicate that exposure to ACEs can lead to risky alcohol consumption, smoking, illicit drug use, sexual risk behaviors, and suicidal behavior.[2]

Since the initial ACE study in 1998, health professionals around the world have started exploring the prevalence of ACEs. Stoltenborgh et al. estimated that 22.6% of children and adolescents around the world were physically abused, and 36.3% emotionally abused, 16.3% were physically neglected, 18.4% were emotionally neglected, and 18% of the females compared to 13.4% of the males reported that they had experienced sexual abuse.[8]

Research in Asian and Pacific Island countries indicates the serious long-term effects of cumulative stress during childhood on physical and mental health and health risk behaviors of adolescents and adults. Community-based research in this region indicates that while risk of specific types of violence and other adversities varies considerably across studies in different countries and cultures the probable psychological and behavioral impacts are quite similar.[9-11]

In Malaysia, there have been some research about health risk behavior in young adolescent group, however, associations between ACEs and health risk behavior among young adults in Malaysia are presently unknown. This study investigated the prevalence and possible impacts of childhood adversities on health risk behavior among a large sample of undergraduate health campus of Universiti Sains Malaysia.

1.2 JUSTIFICATION TO CONDUCT THE STUDY

Problem statement/rationale:

1) There are no study or data in Malaysia (locally and nationally) related to adverse childhood experiences among the normal population.
2) This study intended to contribute to the development of local programs for preventing all forms of violence against children and contribute in developing a national child maltreatment prevention action plan and policy.
3) Furthermore, the study has received financial (bridging grant) support approved by the university.

2. RESEARCH QUESTIONS

1) What is the proportion of ACEs among undergraduate Health Campus students of Universiti Sains Malaysia?
2) Does adverse childhood experiences related to health risk behaviors in our setting?

3. RESEARCH HYPOTHESIS

Adverse childhood experiences are associated with increased health risk behaviors.

4. OBJECTIVE OF STUDY

4.1 GENERAL:

To evaluate ACEs among the undergraduate Health campus students of Universiti Sains Malaysia, and the associated health risk behaviors.

4.2 SPECIFIC:

a. To determine the proportion of ACE among undergraduate Health Campus students in USM.
b. To describe the association between different types of ACE.
c. To determine the proportion of health risk behavior among undergraduate Health Campus students in USM.
d. To determine the association between ACEs and health-risk behaviors in undergraduate health campus students of Universiti Sains Malaysia.

5. LITERATURE REVIEW

Adriana Baban, Alina Cosma, Robert Balazsi, Dinesh Sethi and Victor Olsavszky conducted a study regarding Survey of Adverse Childhood Experiences among Romanian university students which was published in 2013. The study was conducted on a national representative sample of 2088 Romanian students (1343 women and 745 men) in seven developmental regions of Romania between May-June 2012. The pretest Adverse Childhood Experiences (ACE) questionnaires include Family Health Questionnaire and Physical Health Appraisal Questionnaire were used for this study, both with separate versions for men and women. The questionnaires were translated from English to Romanian and backwards. Findings showed a high reported prevalence of physical abuse (26.9%), emotional abuse (23.6%), sexual abuse (12.7%), physical neglect (16.5%), and emotional neglect (26.3%) where female participants reported significantly more often being exposed to sexual and emotional abuse. Overall, more than 64% of participants were exposed to at least one type of ACE and 18% of students reported exposure to at least four types of ACE. The study showed participants who were exposed to adverse childhood experiences had a higher probability of getting involved in health risk behaviors.

In the other study Zakhozha et al conducted a similar in 2018 looking at ‘Adverse childhood experiences and health-harming behaviors among students in Ukraine’. A total of 1517 students (male and female) from 69 higher education institutions located in cities of Ukraine participated in the survey. The fieldwork was carried out during October–November 2017 by 35 professionally trained interviewers. A pretested local version of the Adverse Childhood Experiences

Questionnaires was used. Data were collected through self-administration of the paper questionnaire. Findings showed a high prevalence of child maltreatment among participants; 28% repeatedly experienced emotional neglect, physical neglect by 25%, physical abuse by 12%, emotional abuse by 10% and sexual abuse by 5%. The most reported household dysfunctions were parents' divorce/separation (34%). The proportion with raised ACEs was about the same in men and women. Findings confirm that those who were exposed to adverse experiences were at elevated risk of health-risk behaviors compared to those who experienced no ACEs, and the highest risk for negative outcomes was associated with having experienced multiple ACEs.

Another study in Turkey, conducted by Sevtap V. et al that was published in 2014 on Adverse childhood experiences survey among university students in Turkey. The survey was implemented in 2012–2013 and covered 2257 students of five universities from five different regions of Turkey. The pretest ACE Questionnaire developed by the United States Center for Disease Control and Prevention and Kaiser Permanente in 1997 was adapted and used as the survey questionnaire. From this study, overall prevalence of childhood physical abuse was 21.1%, emotional abuse was 9.8%, emotional neglect was 8.8%, childhood physical neglect was 5.7%, exposure to domestic violence was 18.4% where the ACE scores indicate that half of all respondents had a history of at least one ACE. Male respondents had higher exposure to ACEs both in number and type. This study conclude that ACE score was positively associated with health risk behaviors of respondents and the risk of smoking, harmful alcohol using and drug using increases dependently on the ACE score.

In 2018, a study entitled ‘How adverse childhood experiences relate to single and multiple health risk behaviors in German public university students: a cross-sectional analysis was completed by Wiehn et al. The study involved 1466 students among German public universities students from May to June 2017 using the web-based survey tool “EFS Survey”. The widely applied ACE questionnaire was used and extended to operationalize 13 categories of childhood adversity. The study showed the prevalence rates of ACEs ranged from 3.9 to 34.0%. Furthermore, high family socioeconomic status seemed to be a consistent protective factor for most ACEs. The study provides strong evidence that the number of ACEs may play a role in single or multiple HRBs (High risk behaviors). Reducing the number of ACEs could thus decrease high risk behaviors, which account for many of the leading causes of morbidity and death.

Another study from Vietnam, conducted by Quynh Anh Tran et al was published in 2015 entitled Adverse Childhood Experiences and the Health of University Students in Eight Provinces of Vietnam. The total number of people invited was 2111, of whom 2099 completed the questionnaires during class time. The World Health Organization (WHO) Adverse Childhood Experiences International Questionnaires (ACE-IQ) were used in this study. Mental health was measured by the Center for Epidemiological Studies-Depression (CES-D) scale, an anxiety scale developed in Vietnam, the WHO-5 Well-being Index, and the Subjective Happiness Scale. The result showed three quarters (76%) of the students reported at least one exposure to ACEs and 21% had 4 or more ACEs. The most reported adversities were emotional abuse, physical abuse, and witnessing a household member being treated violently (42.3%, 39.9%, and

34.6%, respectively). They conclude that the co-occurrence of ACEs had dose–response relationships with poor mental health, suicidal ideation, and low physical health–related quality of life.

In addition, there was a study regarding health risk behavior among medical students that was recently published in 2019. This study on Adverse Childhood Experiences in Medical Students: Implications for Wellness was conducted by Andrés F. Sciolla, Michael S. Wilkes and Erin J. Griffin. This study involved All third-year medical students (N = 98) from one medical school on the West Coast of the USA were eligible to participate. The authors developed a web-based anonymous survey included the 10-item ACE Study questionnaire, a list of childhood protective factors (CPF) and questions to assess students' perception of the impact of ACEs on their physical and mental health. The study showed 44% students (51%) reported at least one ACE exposure and 10 (12%) reported ≥ 4 exposures which were all female. Students with an ACE score of ≥ 4 were significantly more likely to report a moderate or significant effect on their mental health. They conclude that a sizeable minority of medical students reported exposure to multiple ACEs. If replicated, findings suggest a significant vulnerability of these medical students to health risk behaviors and physical and mental health problems during training and future medical practice.

6. METHODOLOGY

6.1 STUDY DESIGN

The study design used is Cross-Sectional Study.

6.2 STUDY PERIOD

Study will be conducted from year 2019-2020.

6.3 STUDY LOCATIONS

Health Campus, Universiti Sains Malaysia.

6.4 REFERENCE POPULATION

Undergraduate students at the Health Campus of Universiti Sains Malaysia.

6.5 SOURCE OF POPULATION

Undergraduate students who enrolled at Health Campus of Universiti Sains Malaysia in study period from December 2019 to January 2020.

7. STUDY PARTICIPANTS

7.1 INCLUSION CRITERIA

Malaysian undergraduate students who have been enrolled in Health Campus of USM during the study academic session – Medical (PPSP), Dentistry (PPSG), Allied health (PPSK).

7.2 EXCLUSION CRITERIA

1) Students who attached temporarily in health campus, but from another site of USM.
2) Foreigner students.

8. SAMPLING FRAME

All undergraduate students who fulfilled the inclusion criteria.

8.1 SAMPLE SIZE CALCULATION

Sample size from first objective: To determine the proportion of ACE among undergraduate Health Campus students in USM.

$$n = \frac{z^2 p (1- p)}{\Delta^2}$$

n = minimum required sample

z = value of standard normal distribution = 1.96

Δ = precision = 0.04 %

p = 0.76

P value taken from Adverse Childhood Experiences and the Health of University Students in Eight Provinces of Vietnam, Quynh Anh Tran et al, 2015, Asia-Pacific Journal of Public Health.

n = 438

Considering 10% non-response, minimum required sample is + 10% = 482

After considering the design effect (see sampling method), the minimum sample size is 964 (482 X 2)

9. SAMPLING METHOD

Simple random sampling will be used to select year (batch) from each school including Medical (PPSP), Dentistry (PPSG), Allied health (PPSK). All eligible students from the selected year (batch) will be recruited.

10. RESEARCH TOOL

1) Socio-demographic perfoma.
2) Adverse Childhood Experiences International Questionnaires (ACE-IQ) by WHO.
   i. Adopted from Geneva: WHO, 2018. http://www.who.int/violence_injury_prevention/violence/activities/adverse_childhood_ex
   ii. English version will be used for the study.
   iii. Questionnaires comprises of family dysfunction; physical, sexual, and emotional abuse and neglect by parents or caregivers; peer violence; and witnessing community violence.
   iv. The questionnaire consisted of 31 questions.
   v. All questions are yes/no - if the participant entered yes for any of the categories, mark as 1, except for question no .25, for this question, it's the "no" answer which scores a 1.
3) The Youth Risk Behavior Surveillance System (YRBSS) year 2019 questionnaires by CDC.
   i. Adopted from www.cdc.gov/yrbss
   ii. English version will be used for the study.

iii. A set of questionnaires were developed to suit local circumstances and setting. It measures six categories of priority health behaviors among youth: behaviors that contribute to unintentional injuries and violence; sexual behaviors related to unintended pregnancy and sexually transmitted diseases, including HIV infection; alcohol and other drug use; tobacco use; unhealthy dietary behaviors; and inadequate physical activity plus obesity, overweight, and asthma.

iv. The questionnaire consisted of 58 questions.

11. DEFINITION OF OPERATIONAL TERMS

Physical abuse:	The intentional use of physical force against a child that results in harm for the child's health, survival, development or dignity. Q: 1. Did a parent, guardian or other household member spank, slap, kick, punch or beat you up? OR 2. Did a parent, guardian or other household member hit or cut you with an object, such as a stick (or cane), bottle, club, knife, whip etc?
Sexual abuse:	The involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared, or else that violates the laws or social taboos of society. Children can be sexually abused by both adults and other children who are by

	virtue of their age or stage of development in a position of responsibility, trust or power over the victim.[12] Q: 1. Did someone touch or fondle you in a sexual way when you did not want them to? OR 2. Did someone make you touch their body in a sexual way when you did not want them to? OR 3. Did someone attempt oral, anal, or vaginal intercourse with you when you did not want them to? OR 4. Did someone actually have oral, anal, or vaginal intercourse with you when you did not want them to?
Emotional/psychological abuse:	A pattern of failure over time on the part of a parent or caregiver to provide a developmentally appropriate and supportive environment. Abuse of this type includes rejecting, degrading, blaming, threatening, frightening, terrorizing, isolating, corrupting, discriminating against or ridiculing, exploiting and other non-physical forms of rejection or hostile treatment. It also includes denying emotional responsiveness.[13] Q: 1. Did a parent, guardian or other household member yell, scream or swear at you, insult or humiliate you? OR

	2. Did a parent, guardian or other household member threaten to, or actually, abandon you or throw you out of the house?
Physical neglect:	Failure to provide the child with basic necessities such as nutrition, housing, clothing, and cleaning. This may also include the neglect of the safety of the child. Physical neglect also involves abandonment and coercion for street-working or begging.[14,15] Q: 1. Did your parents/guardians not give you enough food even when they could easily have done so? OR 2. Were your parents/guardians too drunk or intoxicated by drugs to take care of you? OR 3. Did your parents/guardians not send you to school even when it was available?
Emotional neglect:	Failure to provide emotional support to the child by maximizing his development, keeping with his potential.[14,15] Q: 1. Did your parents/guardians understand your problems and worries? OR 2. Did your parents/guardians really know what you were doing with your free time when you were not at school or work?

Household dysfunction:	Household dysfunction includes. a. Community violence 1. Did you see or hear someone being beaten up in real life? OR 2. Did you see or hear someone being stabbed or shot in real life? OR 3. Did you see or hear someone being threatened with a knife or gun in real life b. Separated families 1. Were your parents ever separated or divorced? OR 2. Did your mother, father or guardian die? c. Having a family member who has chronically depressed, mentally ill, institutionalized or suicidal 1. Did you live with a household member who was depressed, mentally ill or suicidal? d. Alcohol and/or drug abuser in the household 1. Did you live with a household member who was a problem drinker or alcoholic, or misused street or prescription drugs? e. Incarcerated household member 1. Did you live with a household member who was ever sent to jail or prison? These negative factors in living conditions increase the risk of

	both maltreatment and health risk behaviors and problems for the children.[16]
Health risk behavior	In my study, health risk behavior defines as students who were involved in any of these act or behaviors; a. Cigarette smoking/ electronic vapor b. Alcohol abuse c. Marijuana/ Illicit drug use d. Sexual risk behaviors e. Suicide attempts/ sad feelings f. Bullying g. Lack of physical activity (sedentary) h. Self-safety neglect

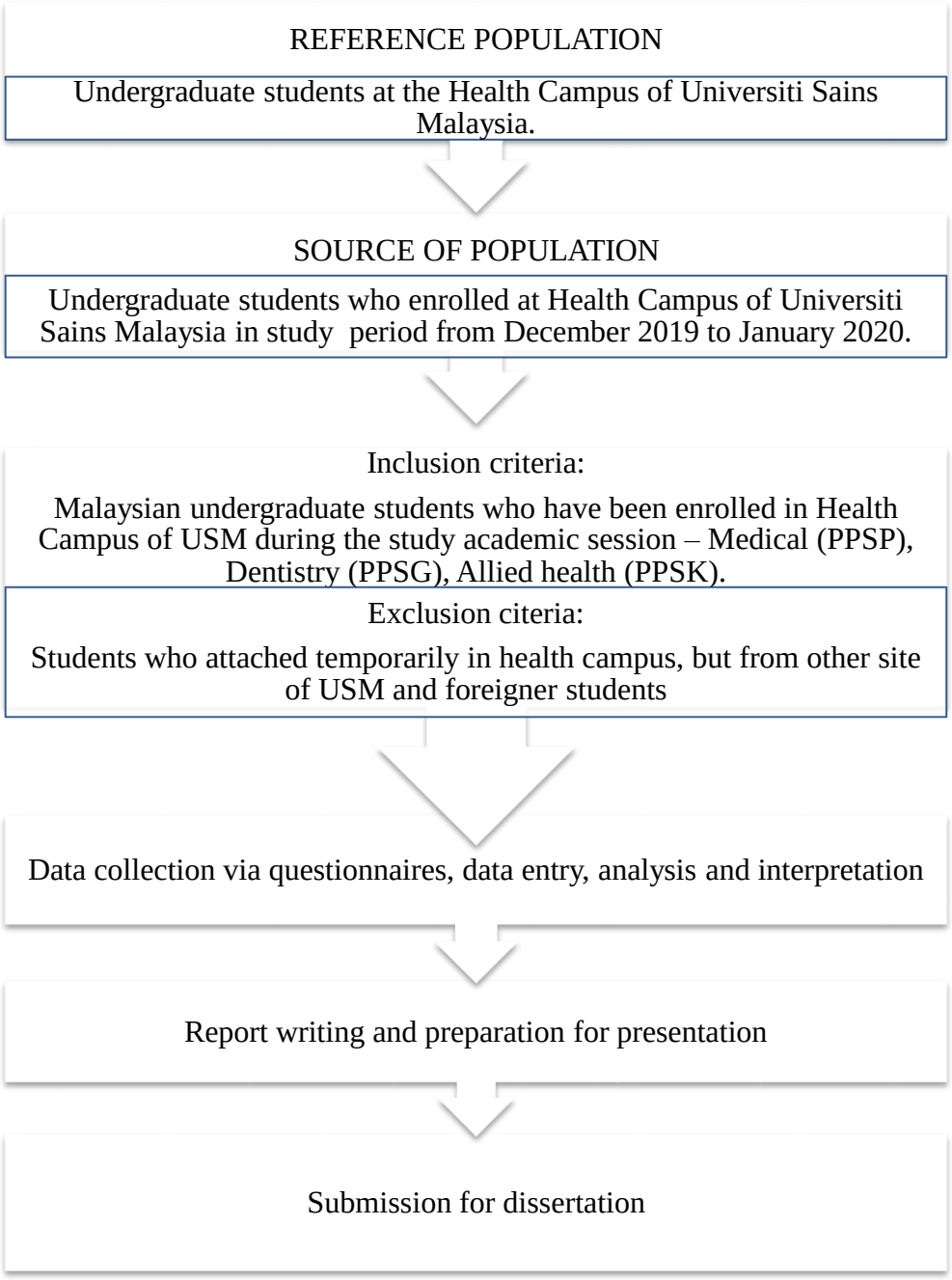
12. DATA COLLECTION METHOD

Two methods of data collection will be used in this study in the data collection due to movement control order (MCO) during this pandemic period. The first method will be conducted in the Health Campus of University Sains Malaysia. After permission was sought from the ethical committee, a trained interviewer will be assigned to carry out the fieldwork. All eligible students from the selected year (batch) of each school including the Medical (PPSP), Dentistry (PPSG), and Allied Health (PPSK) will be recruited. Data will be collected using a self-completion questionnaire administer in classroom setting. Paper-based questionnaires will be used for this data collection. A trained interviewer will approach the group leader of each year prior to distributing the questionnaires.

This will be at the end of class session with invitation to participate and explanation of the study. Each participant will spend about 60 minutes to answer all the questions. There is no specific time allocated but the time frame is set in order not to disrupt the class progress. Data collection will only use code number to ensure participants' confidentiality. The form will be collected into a blank folder/collection box placed during the data collection. Each participant will be assured that the data collected, and its result will not be disclosed to others.

The second method will be by using online approach for participants who are not available in campus due to social distancing. Questionnaire will be built onto the online platform, via Google Form. The invitation to all participants will be done via WhatsApp, email, and other digital communication platforms. The Google Form includes the study information, informed consent, and self-assessment tools. The form will include the participant's name and contact number, but they will be identified by their unique subject number by the researcher, to ensure confidentiality.

13. STUDY FLOW CHART



14. INTENDED STATYSTICAL ANALYSIS

The analyses will be performed using the IBM SPSS Statistics for Windows Version 24.0. The following statistical methods were used: descriptive statistical for objective 1 and 3, Chi-square analysis for objective 2 and simple logistic regression and multiple logistic regressions analysis will be used for objective 4: the association between Adverse childhood experience and health risk behaviors. All probability values are two-sided, and a level of significance of less than 0.05 (p-value < 0.05) will be considered as statistically significant.

15. EXPECTED RESULTS

15.1 Dummy tables

Table 1: Sociodemographic characteristics of study participants

Characteristic		n	%
Individual age (in years) Mean (SD)			
Gender	Male		
	Female		
Current marital status	Single		
	Married		
	Divorced		
Race	Malay		
	Chinese		

	Indian		
	Other: ……		
Family type	Nuclear		
	Extended		
	Other: ……		
Mother's level of education	Didn't go to school		
	Primary school		
	Secondary school		
	College/ University		
Father's level of education	Didn't go to school		
	Primary school		
	Secondary school		
	College/ University		
Mother's employment status	Employed		
	Unemployed		
	Retired		
Father's employment status	Employed		
	Unemployed		
	Retired		