

**A SURVEY ON THOUGHTS AND BEHAVIOURS OF EATING
DISORDERS AMONG UNDERGRADUATE STUDENTS IN A PRIVATE
UNIVERSITY IN KAJANG.**

By

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ABSTRACT

BACKGROUND: Eating disorders are complicated mental conditions and have shown to have the highest mortality rate among all psychiatric diseases. About 1 in every 5 university students are at risk of getting eating disorders. People with eating disorders can have high levels of thoughts and behavioural disturbances. Eating disorders thoughts and behaviours are significantly correlated. However, limited studies were found to be relating thoughts of ED with behaviours of ED in Malaysia.

OBJECTIVES: To assess the thoughts and behaviours of undergraduate students on eating disorders in a private university in Kajang, Malaysia.

METHODOLOGY: A cross-sectional survey study will be carried out among 234 undergraduate students in a private university in Kajang. Convenience sampling will be used to recruit participants that fit the inclusion and exclusion criteria. The questionnaire will be divided into three sections to assess sociodemographic data, thoughts of eating disorders, and behaviours of eating disorders. Data collected will be analysed using SPSS version 22.

CONCLUSION: This research focuses on thoughts and behaviours of eating disorders among undergraduate students in a private university. The findings can be used to formulate interventions to increase awareness towards eating disorders.

KEYWORDS: eating disorders, thoughts, behaviour, and undergraduate students

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CHAPTER 1

INTRODUCTION

CHAPTER 1: INTRODUCTION

1.0 CHAPTER OVERVIEW

In this chapter, background, problem statement, significance of study, general objectives, specific objectives, research questions, and operational definition of the research will be highlighted.

1.1 BACKGROUND

Eating disorders (ED) are complicated mental conditions that are characterized by severe disordered eating patterns, physical fitness concerns, altered perception towards own body image, and weight-controlling behaviours that can potentially cause physical or psychological impairment (Klein, Sylvester and Schvey, 2021; Napolitano, et al., 2019). ED can be categorized into Anorexia nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), and Other Specific Feeding or Eating Disorders (OSFED) (American Psychiatric Association, 2020).

According to a review conducted to conclude the burden of ED in terms of mortality, disability, quality of life (QOL), economic cost, and family burden. It was estimated 3.3 million lives were lost globally due to ED in the year 2017. Moreover, the years lost due to disability (YLD) rates for ED has contributed 2.8% out of all YLD rates of mental disorders. Furthermore, YLD rates have also increased by 6% and 10% for AN and BN respectively from the year 2007 to 2017 (van Hoeken and Hoek, 2020). ED have been revealed to have the

highest mortality rate among all psychiatric diseases (Abd El-Azeem Taha, Abu-Zaid and El-Sayed Desouky, 2018). According to a systematic literature review of studies from the year 2000 to 2018, individuals with ED have showed high mortality rate, especially in AN (Galmiche, et al., 2019). Next, in a global burden of disease study (GBD), on a scale 0 (perfect health) to 1 (death), ED such as AN and BN had occupied 0.224 and 0.223 of disability weights (Vos, et al., 2015). In term of QOL, a study conducted among 468 ED patients has shown lower level of well-being compared to general population (de Vos, et al., 2018). ED has also shown to increase economic cost and family burden due to excessive treatment costs, unemployment, and direct financial burden (Samnaliev, et al., 2015).

People with ED can have high levels of thoughts and behavioural disturbances, specifically with their diet and weight (Masuda, Marshall and Latner, 2018). ED are becoming one of the major community health problem as it often comes with several other health issues (Napolitano, et al., 2019). Furthermore, it is often associated with other mental health diagnoses such as anxiety disorders, depression, and suicidal behaviour (Abd El-Azeem Taha, Abu-Zaid and El-Sayed Desouky, 2018; Manaf, Saravanan and Zuhrah, 2016; Napolitano, et al., 2019) . This could lead to huge negative impact on their QOL.

ED can be triggered when an individual has developed negative thoughts towards own appearance, or chronic body dissatisfaction. The cognitive behavioural models of disordered eating concerns have stated that individuals

with ED often engaged in unhealthy beliefs with weight controlling, endorsing thinness as the “standard of beauty”, and believe in self-worth comes from appearance (Manaf, Saravanan and Zuhrah, 2016; Masuda, Marshall and Latner, 2018). According to Masuda, Marshall and Latner (2018), indications of ED thoughts include extreme fear of weight gain, believe having an ideal weight and shape as a way of being accepted by others, and perceive diet and weight control are connected to self-worth.

ED may also affect an individual’s physical health when behavioural problems had developed. This could be extremely dangerous as affected individuals tend to perform life-threatening behaviours to control their weight. Disordered behaviours include long hours of fasting, misusing appetite suppressants, diuretics, or laxatives, extreme exercise or practicing purging after eating (Manaf, Saravanan and Zuhrah, 2016).

1.2 PROBLEM STATEMENT

ED frequently happens in adolescents or young adults, age ranging in between 18 to 24. Majority of the university students’ age group falls under this age bracket (Galmiche, et al., 2019; Nagata, et al., 2018). According to a study conducted among 7 universities in Malaysia, about 1 in every 5 university student was found to have disordered eating pattern (Chin, et al., 2020). University students are at high risk of getting ED due to many contributing factors. The greatest impact could be from the social environment, such as perception from friends and family, and stress due to sudden emerging adulthood

(Chan, et al., 2020; Rashmi, et al., 2016). The transition from secondary school to university also contribute to risk of developing ED as young adults often experience increased self-consciousness and lowered self-esteem during this period. Moreover, while dealing with academic stress, university students often encounter many other issues such as personal, family, social, and financial issues. High amount of stress can trigger addiction-like eating behaviour, leading to ED (Talwar P, 2012; Ngan, et al., 2017). According to another study done among 206 undergraduate students in Malaysia, private university students experience more stress due to pressure to secure higher grades as compared to public university students (Manaf, Saravanan and Zuhrah, 2016).

In fact, various studies have been done to investigate the prevalence of ED among university students. A study conducted in Terengganu, Malaysia in the year 2020 had reported a prevalence rate of 30.1% of disordered eating behaviour; whereas an earlier study conducted in year 2011 in Malaysia had only 18.2% of prevalence (Mazubir, et al., 2020). The epic rise of rate in a 9-year period had shown a big concern of prevalence of ED in Malaysia. According to a study conducted among 463 female undergraduate students in United States, ED thoughts and ED behaviours are significantly correlated (Masuda, Marshall and Latner, 2018). However, limited studies were found relating thoughts of ED with behaviours of ED in Malaysia.

This topic came to the researcher's interest when the researcher had seen an undergraduate female student who went to the toilet to purge herself after the

lunch hour break. The researcher approached the student to check if she was in a good state and had been notified that she was trying to vomit out excessive calories that she had consumed during the lunch break. This experience has increased the curiosity of the researcher regarding different types of disordered eating thoughts and behaviours. Hence, the researcher has decided to explore under this topic.

1.3 SIGNIFICANCE OF THE STUDY

Upon completion of the study, the result of this study can serve as an evidence-based reference for future research related to ED. Further to that, this study also aims to increase public awareness towards ED especially among university students. Furthermore, nurses may use the findings as guidelines to create awareness to the public, helping in early detection of the disorder, as well as developing prevention of ED. Awareness and prevention of ED may improve the quality of life and psychosocial well-being of people presenting with signs and symptoms of eating disorders. Lastly, this study will encourage counselling department, club, and society of the university to organize awareness programs to increase student's knowledge towards ED and understand its danger.

1.4 GENERAL OBJECTIVES

To assess the thoughts and behaviours of undergraduate students on eating disorders in a private university in Kajang, Malaysia.

1.5 SPECIFIC OBJECTIVES

1. To determine the thoughts of eating disorders among undergraduate students in a private university in Kajang, Malaysia.
2. To determine the behaviours of eating disorders among undergraduate students in a private university in Kajang, Malaysia.
3. To determine the prevalence of people at risk for eating disorders among undergraduate students in a private university in Kajang, Malaysia.
4. To determine the differences between scores of eating disorder thoughts and sociodemographic variables (gender, age, ethnicity, body mass index (BMI)) among undergraduate students in a private university in Kajang, Malaysia.
5. To determine the differences between scores of eating disorder behaviours and sociodemographic variables (gender, age, ethnicity, BMI) among undergraduate students in a private university in Kajang, Malaysia.
6. To determine the correlation between thoughts and behaviours of eating disorders among undergraduate students in a private university in Kajang, Malaysia.

1.6 RESEARCH QUESTIONS

1. What are the thoughts of eating disorder among undergraduate students in a private university in Kajang, Malaysia?
2. What are the behaviours of eating disorder among undergraduate students in a private university in Kajang, Malaysia?

3. What is the prevalence of people at risk of eating disorders among undergraduate students in a private university in Kajang, Malaysia?
4. What are the differences between scores of eating disorder thoughts and sociodemographic variables (gender, age, ethnicity, BMI) among undergraduate students in a private university in Kajang, Malaysia?
5. What are the differences between scores of eating disorder behaviours and sociodemographic variables (gender, age, ethnicity, BMI) among undergraduate students in a private university in Kajang, Malaysia?
6. What are the correlation between thoughts and behaviours of eating disorders among undergraduate students in a private university in Kajang, Malaysia?

1.7 HYPOTHESIS

1.7.1 NULL HYPOTHESIS

H₀1: There will be no statistically significant difference between scores of eating disorder thoughts and sociodemographic variables among undergraduate students in a private university in Kajang, Malaysia.

H₀2: There will be no statistically significant difference between scores of eating disorder behaviours and sociodemographic variables among undergraduate students in a private university in Kajang, Malaysia.

H₀3: There will be no statistically significant correlation between thoughts and behaviours of eating disorders among undergraduate students in a private university in Kajang, Malaysia.

1.7.2 ALTERNATIVE HYPOTHESIS

H_{a1}: There will be statistically significant difference between scores of eating disorder thoughts and sociodemographic variables among undergraduate students in a private university in Kajang, Malaysia.

H_{a2}: There will be statistically significant difference between scores of eating disorder behaviours and sociodemographic variables among undergraduate students in a private university in Kajang, Malaysia.

H_{a3}: There will be statistically significant correlation between thoughts and behaviours of eating disorders among undergraduate students in a private university in Kajang, Malaysia.

1.8 CONCEPTUAL FRAMEWORK

In Diagram 1.1, the conceptual framework shows the relationship between the variables. In a number of studies, sociodemographic characteristics included in Diagram 1.1 were found to be highly associated with thoughts of ED (Chin et al., 2020; Manaf, Saravanan and Zuhrah, 2016; Shin and Nam, 2015; Talwar P, 2012). Sociodemographic characteristics were also found to be associated with behaviours of ED in many studies (Abd El-Azeem Taha, Abu-Zaid and El-Sayed Desouky, 2018; Chin et al., 2020; Gupta et al., 2017; Mellor et al., 2009; Nagata et al., 2018; Yan et al., 2018). Thoughts of ED were found to be associated with behaviours of ED in a few studies (Chin et al., 2020; Manaf, Saravanan and Zuhrah, 2016; Zarychta, Luszczynska and Scholz, 2014).

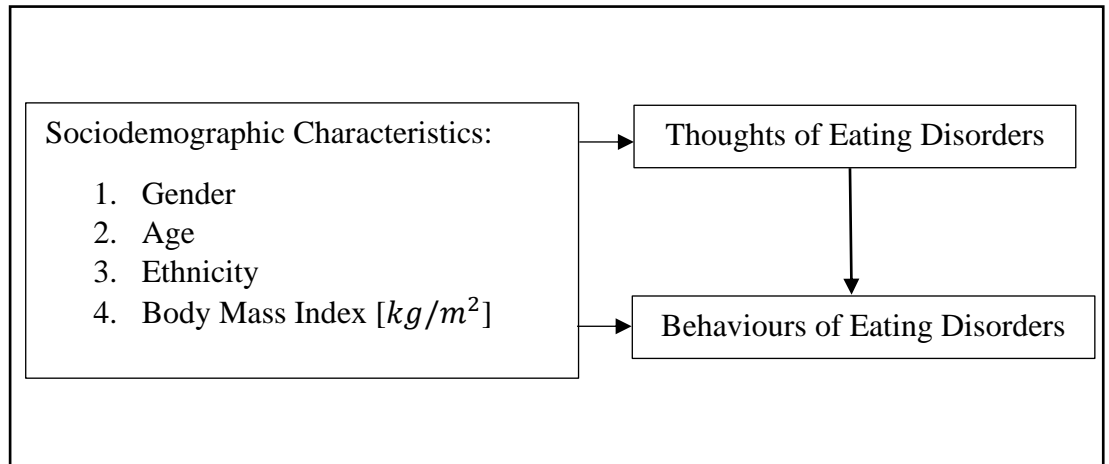


Diagram 1.1: The Conceptual Framework of the Sociodemographic Variables, Thoughts, and Behaviours of Eating Disorders.

1.9 CONCEPTUAL AND OPERATIONAL DEFINITIONS

1.9.1 EATING DISORDERS THOUGHTS

Conceptual definition: The pattern of thinking, perception, cognition, or the psychological thinking that causes an individual to suffer from low self-esteem and feeling of lack of self-worth (Healthtalk Organization, 2021).

Operational definition: A questionnaire developed by Mizes, et al. (2000) consisting of 24 items assessing three factors: weight regulation (8 items), acceptance (8 items), and self-control subscales (8 items). It is rated on a 5-point Likert scale, where 1 indicates “strongly disagree” and 5 indicates “strongly agree”, with 10 reversed scoring items. The total score of a participant will be ranging from 24 to 120, where higher scores indicate greater ED thoughts (Carrard, et al., 2017; Masuda, et al., 2018).

1.9.2 EATING DISORDERS BEHAVIOURS

Conceptual definition: The symptoms or habits that an individual with ED will carry out (NAMI, 2021).

Operational definition: A questionnaire consisting of 26 questions, measuring disordered eating behaviours through three subscales: dieting, bulimia and food preoccupation, and oral control. This questionnaire used a 6-point Likert scale, where 0 is the lowest score and 78 is the highest score, higher scores indicate greater ED behaviours (Abd El-Azeem Taha, Abu-Zaid and El-Sayed Desouky, 2018).

1.9.3 AT RISK OF EATING DISORDERS

Conceptual definition: Possibility of having eating disorder.

Operational definition: A questionnaire consisting of 26 questions, adopted from Garner, et al. (1982), will be used to assess the risk of ED. This questionnaire used a 6-point Likert scale, where 0 is the lowest score and 78 is the highest score. Scoring of 0-19 indicate not at risk of ED; 20-78 indicates at risk of ED.

1.9.4 SOCIODEMOGRAPHIC DATA

Conceptual definition: Combination of social and demographic data of respondent.

Operational definition: Gender, age, ethnicity, and BMI will be included in this study.

1.9.4.1 GENDER

Conceptual definition: A term used to describe the characteristics of female or male (Regional office for Europe, 2021).

Operational definition: Female and male will be the nominal data for this study.

1.9.4.2 AGE

Conceptual definition: The duration of time a person has been alive (Cambridge Dictionary, 2021a).

Operational definition: Age will first be collected as continuous data. Then, it will be categorised. Age categories include in this study are 18 to 19, 20 to 21, 22 and above.

1.9.4.3 ETHNICITY

Conceptual definition: A group of people sharing similar characteristics such as culture, language, history background, et cetera (Cambridge Dictionary, 2021b).

Operational definition: Chinese, Malay, Indian, other ethnicity groups will be the nominal data to measure ethnicity in this study.

1.9.4.4 BODY MASS INDEX

Conceptual definition: Body mass index (BMI) is a measurement of body fat in the ratio of weight in kilograms divided by height in meter square (Cambridge Dictionary, 2021c).

Operational definition: BMI is calculated as weight divided by the square of height in meter (kg/m^2) (Regional office for Europe, 2020). Metric system is used for both height and weight. Height is measured to the nearest 0.1cm; weight measurement is recorded as the nearest 0.1kg. The BMI categories designed to fit the Asian population will be used to classify respondent's BMI (Lim, et al., 2017). Ordinal data include underweight, normal weight, overweight, and obese.

1.9.5 UNDERGRADUATE STUDENTS

Conceptual definition: University or college student who is studying a bachelor's degree.

Operational definition: Students studying bachelor's degree in University Tunku Abdul Rahman in Sg Long.

1.10 SUMMARY

This chapter has summarized the previous studies related to ED carried out within or outside Malaysia, showing high prevalence of ED among university undergraduate students. In addition, the researcher was motivated to investigate under this topic based on the researcher's own experience. Hence, more research needs to be carried out to raise the awareness of ED. The purpose of the study was determined. The researcher intends to investigate the thoughts and behaviours that an individual with ED will present, the prevalence of ED among undergraduate students, and its differences with sociodemographic

characteristics (gender, age, ethnicity, BMI). Chapter 2 will be focusing on the literature search relating to this study objectives.

CHAPTER 2 LITERATURE REVIEW

CHAPTER 2: LITERATURE REVIEW

2.0 CHAPTER OVERVIEW

In this chapter, search strategy and literature review will be discussed.

2.1 SEARCH STRATEGY

A literature search was conducted using UTAR library database and Google Scholar. Keywords used include eating disorders, thoughts, behaviour, and undergraduate students. Boolean Operators such as “AND” and “OR” were used to filter out irrelevant journal articles. To further narrow down the search, the researcher filtrated out articles before 2014, non-academic journals, non-English journals, non-full text journal articles, and duplicated articles. A total of 24 relevant journal articles were chosen. The search strategy is illustrated in Diagram 2.1 below.

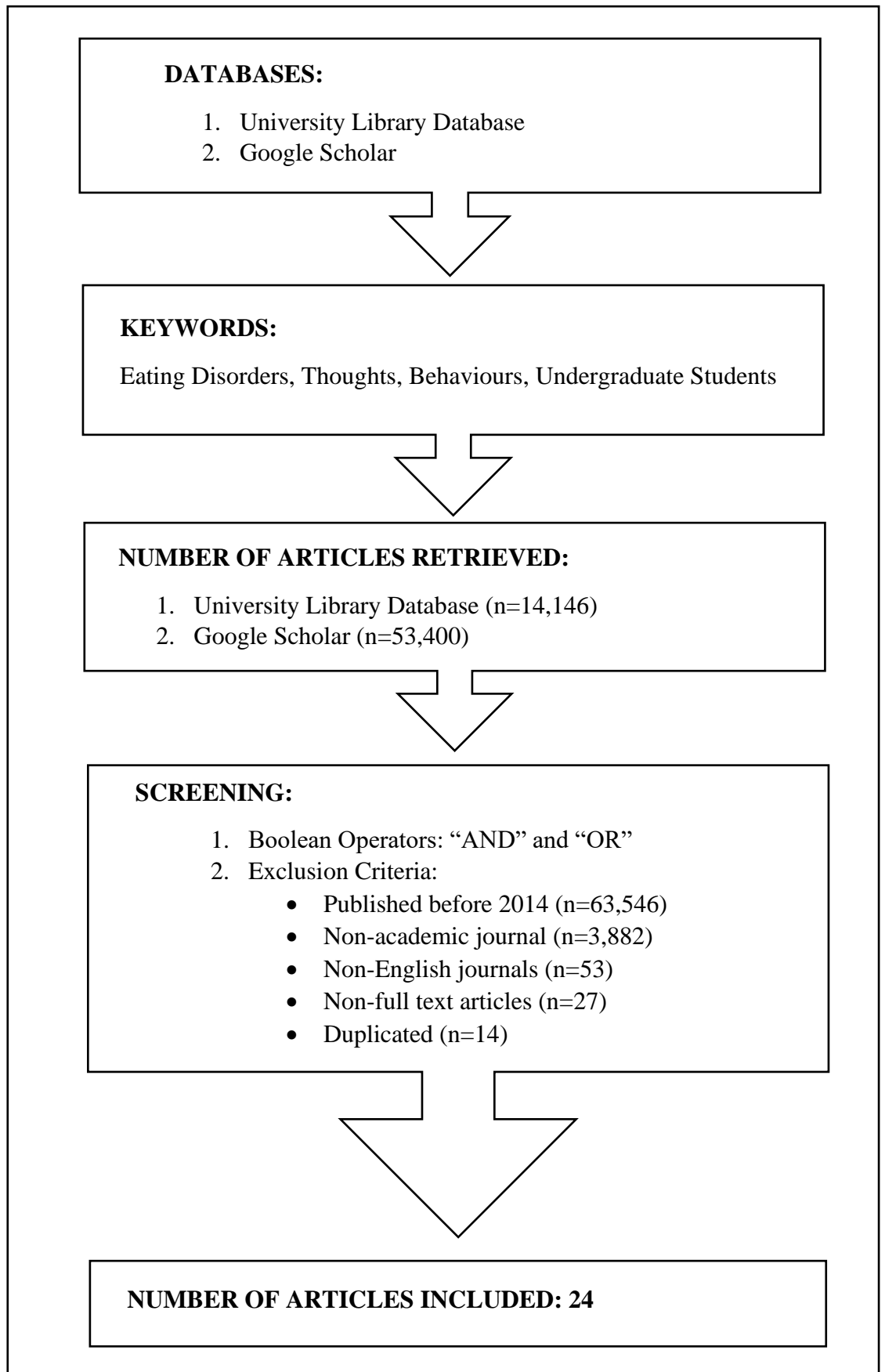


Diagram 2.1: Search Strategy Flowchart

2.2 LITERATURE REVIEW

2.2.1 PREVALENCE OF EATING DISORDERS

According to a systemic literature review of ED prevalence studies between the year 2000 to 2018, individuals diagnosed with ED are prevalent among adolescent and adults, with point prevalence of 5.7% and 8.8% respectively (Galmiche, et al., 2019). Among the Asia continent, a study done among 238 undergraduates medical students in India, 13.6% of the participants showed probable ED signs and symptoms; in another study conducted in India among 340 university students, 21.2% participants showed positive results on the Eating Attitude Test; one study in Singapore also has shown 42.7% of the population screening positive for ED, while 19.5% are at high risk of developing the disorder (Abdelrahim, Abdelmutti and Alshaikh, 2012; Chua, et al., 2021; Thangaraju, et al., 2020). Whereas in Malaysia, a study conducted among 1017 undergraduate students from Kuala Lumpur (KL) has reported a prevalence of 13.9%; another study from Melaka with 263 medical undergraduate students reported 11% were at risk of getting ED (Chan, et al., 2020; Ngan, et al., 2017).

2.2.2 EATING DISORDER THOUGHTS

In a study conducted in Italy, the results show only one out of five participants were satisfied with their weight and more than one third of the participants have fear of getting fat (Napolitano, et al., 2019). In several other studies, it has shown that having altered thoughts of own weight and body status can increase the likelihood of getting ED related behaviours (Fan and Jin, 2015; Sarafrazi et al., 2014; Shin and Nam, 2015; Yan, et al., 2018). In study conducted in Singapore among 1104 adults, all participants that were screened positive for ED were

found having elevated weight and shape concerns (Chua, et al., 2021). Furthermore, one study conducted in Malaysia among undergraduate female medical students has shown students who are susceptible to ED often are not satisfied with their own body image (Mazubir, et al., 2020).

2.2.3 EATING DISORDER BEHAVIOURS

According to a study in Italy, about one in five participants were engaged in weight controlling behaviour. Behaviours include aware of caloric content of foods, avoid eating when hungry, avoid high carbohydrate foods, and eating diet food (Napolitano, et al., 2019). Secondly, in a study conducted among 1200 female undergraduate students in Saudi Arabia, the results have shown higher ED related behaviours among participants who screened positive for ED. Behaviour like “gone on eating binges” has obtained 38.7% of positive respondents, “ever used laxatives/diuretics to control weight or shape” has obtained 28.3% among positive respondents, followed by 27.8 % of “ever made yourself vomited to control weight or shape”, “exercised more than 60 minutes/day to lose or control weight” and “lost 9 kg or more in the last 6 months” in 9% and 9.2% respectively (Abd El-Azeem Taha, Abu-Zaid and El-Sayed Desouky, 2018). Furthermore, according to a study in Singapore, binge-eat, exercised excessively, and fasting were common behaviours among participants who screened positive for ED. Whereas misuse of laxative/diuretics and self-induce vomiting were less common behaviours (Chua, et al., 2021).

2.2.4 SOCIODEMOGRAPHIC DATA

2.2.4.1 GENDER

Females were always said to be vulnerable to ED, with a great desire to have a thin figure. In several studies, female participants are shown to be more likely to overestimate their body weight (Shin and Nam, 2015; Yan, et al., 2018). In a study conducted in Vijayapur among female college students, the results have shown underweight (72%) and overweight (88.9%) females tend to perceive themselves as normal weight (Rashmi, et al., 2016). In a cross-sectional study conducted in KL and Selangor among 716 students, female students have shown higher dissatisfaction towards own body which has contributed to ED thoughts (Chin, et al., 2020).

In the same study, female students also scored higher mean score in the Eating Attitude Test (EAT-26), and 22.9% of female were engaged in ED behaviour while only 13.3% of male engaged in ED behaviour (Chin, et al., 2020). The result is proportional to a study conducted among medical students in Chandigarh, where females scored higher scores on EAT-26 and Body Shape Questionnaire (BSQ) (Gupta, et al., 2017). According to another study in Ipoh using the SCOFF questionnaire, the results also reported high prevalence of female at risk of having ED (80.7%) compared to male (19.3%). This study also found out that female are more prone to AN and BN as compared to male (Rasman, et al., 2018). Whereas, male are accountable for 36% of BED based on a systemic literature review of over 94 studies (Galmiche, et al., 2019). Moreover, according to a study conducted in China, females are more likely to engage in disordered eating behaviour compared to males. However, the results

of the study have shown males are more likely to engage in muscle gaining strategies as compared to females (Yan, et al., 2018). A gap has been identified in a study conducted among 797 adults in Singapore, the results show no differences in gender for the frequency of disordered weight control behaviours or the prevalence of ED. They suggested gender disparity in ED in Asia cannot be assumed (Chua, et al., 2021).

2.2.4.2 AGE

In several studies, ED are shown to be more prevalent among adolescent and young adults (APA, 2014; Galmiche, et al., 2019). According to a study conducted among 206 undergraduate female students in Malaysia, as age increases, older adults tend to have more positive and healthy thoughts towards own body, thus, likelihood of getting eating-related disorders are lesser. Younger females are prone to ED due to body dissatisfaction (Manaf, Saravanan and Zuhrah, 2016). The result is proportional to another study conducted among 217 female university students, the age group 19-21 had higher anorectic eating concerns as compared to the age group 22-24 (Talwar P, 2012).

2.2.4.3 ETHNICITY

As different ethnics practice different eating pattern, and Malaysia as a multi-racial country, it is important to study regarding the association between ethnicity and ED related thoughts and behaviours. In a study in KL and Selangor, results show no significant association between ethnics and ED behaviours (Chin, et al., 2020). This study has shown contrary with several other local studies (Gan,

Mohamad and Law, 2018; Rahim, Chin and Sulaiman, 2019). Another study in Ipoh has shown highest risk of ED among Indian respondents, followed by Malay and Chinese (Rasman, et al., 2018). Lastly, one study in Selangor shown Indian and Malay are more likely to engage in weight loss behaviour and muscle gaining behaviour than Chinese (Mellor, et al., 2009). Since gaps between studies are found, inclusion of this variable is necessary to discover the differences between ED and ethnicity.

2.2.4.4 BODY MASS INDEX

According to a study conducted in Korea, underweight females are more likely to overestimate their weight, thus forming ED thoughts and practices (Shin and Nam, 2015). According to a study conducted among 112 Asian American undergraduate students in United States (US), the results had shown a positive association between ED thoughts and behaviours with BMI (Masuda, Marshall and Latner, 2018). Another study conducted in US also reported disordered eating behaviour in higher BMI participants (Nagata, et al., 2018). The result is proportional to a study conducted in Saudi Arabia, where obese participants obtained higher EAT-26 scores compared to underweight and normal weight participants (Abd El-Azeem Taha, Abu-Zaid and El-Sayed Desouky, 2018). A study conducted in KI and Selangor among 716 students, disordered eating behaviour was also found to have significant association with BMI (Chin, et al., 2020).

2.3 SUMMARY

In conclusion, the prevalence of ED is high globally, even among the Asian continent. Sociodemographic characteristics also have shown to play a role in affecting individuals psychologically and behaviourally. A few gaps were identified between studies for the “gender” and “ethnicity” variables.

CHAPTER 3

METHODOLOGY

CHAPTER 3: METHODOLOGY

3.0 CHAPTER OVERVIEW

In this chapter, research design, research settings, target population, sample size, sampling technique and criteria, instruments, validity and reliability, pilot study, data collection procedures, ethical considerations, data analysis, Gantt chart, and budget will be discussed.

3.1 STUDY DESIGN

A cross-sectional survey study will be conducted to assess the thoughts and behaviours of ED. According to Polit and Beck (2017), cross-sectional studies are “appropriate for describing the status of phenomena or describing relationships among phenomena at a fixed point in time”. It is also economical. A survey study will be conducted as it is designed to help researcher to obtain interrelations of phenomena within a population.

3.2 RESEARCH SETTING

This research will be conducted in a private university in Kajang.

3.3 POPULATION

3.3.1 TARGET POPULATION

Undergraduate students aged 18 and above in Malaysia.

3.3.2 ACCESSIBLE POPULATION

University students in a private university in Kajang, accessible and consent to answer questionnaire during time of study.

3.5 SAMPLE

Undergraduate students aged 18 and above, accessible and consent to answer questionnaire during time of study, in a private university in Kajang.

3.4 SAMPLING

3.4.1 SAMPLING TECHNIQUE

This research will be using convenience sampling technique to recruit participants. Convenience sampling is a nonprobability sampling technique. The researcher has selected this sampling method as it is cost effective and is not time-consuming (Polit and Beck, 2017). Furthermore, according to Gray, Grove, and Sutherland (2017), it is often impossible to obtain random sample in nursing and health-related studies. Thus, researcher often only recruit those who are willing to participate. Data collection process will be continued until sample size has been reached.

3.4.2 SAMPLE SIZE

Krejcie and Morgan (1970), will be applied to calculate the sample size.

$$S = \frac{X^2 NP(1 - p)}{d^2(N - 1) + X^2 P(1 - P)}$$

S = sample size

N = Population size = 8417

P = Prevalence of previous study = 0.139 (Chan et al., 2020)

d = Margin of error = 0.05

X^2 = 0.95 confidence level = 3.841

Hence with the formula,

$$S = \frac{(3.841)(8417)(0.139)(1 - 0.139)}{[0.05^2(8417 - 1)] + [(3.841)(0.139)(1 - 0.139)]}$$

N = 180 + 0.3 (180)

N = 234 (Total sample size)

A total of 234 participants will be needed according to the calculated sample size. According to Hochheimer, et al., (2016), online surveys have lower response rate, therefore a 30% of attrition rate was used.

3.4.3 SAMPLING CRITERIA

3.4.3.1 INCLUSION CRITERIA

Inclusion criteria will include undergraduate students, aged 18 years old and above, has given consent, and is accessible during the time of research.

3.4.3.2 EXCLUSION CRITERIA

Exclusion criteria will include foundation and postgraduate students, is pregnant, aged below 18, refuse to participate, or inaccessible during the time of research.

3.5 VARIABLES

The independent variable is the variable that could bring effect to the dependent variable. The dependent variable is the variable that could be affected by the independent variable (Polit and Beck, 2017). In this study, when determining the differences between sociodemographic characteristics and ED thoughts and behaviours, the sociodemographic characteristics will be the independent variables and the ED thoughts and behaviours will be the dependent variables. Whereas, when determining the correlation between thoughts and behaviours of ED, the ED thoughts will be the independent variable, the ED behaviour will be the dependent variable.

3.6 INSTRUMENT

A web-based questionnaire will be performed via Google Form. The form will be consisting of 3 sections: Section A: Sociodemographic data, Section B: The Mizes Anorectic Cognitions Questionnaire-Revised (MAC-R), and Section C: Eating Attitude Test (EAT-26). The instrument can be referred from Appendix C.

3.6.1 SECTION A: SOCIODEMOGRAPHIC DATA

Section A will be consisting sociodemographic data which are the gender, age, ethnicity, and BMI.

3.6.2 SECTION B: MIZES ANORECTIC COGNITIONS-REVISED

In section B, the MAC-R will be adopted to assess the thoughts of ED. MAC-R is a self-report questionnaire consisting 24 items measuring all distorted ED thoughts in three subscales: weight regulation (8 items), approval (8 items), and self-control (8 items). Each item is rated on a 5-point Likert scale, where 1 means “strongly disagree” and 5 means “strongly agree”, with 10 reversed scoring items. Total score will be ranging from 24 to 120. Where higher scores indicate greater eating disorder thoughts. The MAC-R has demonstrated good psychometric properties. Furthermore, the Cronbach’s alpha score for MAC-R was 0.73, 0.77, and 0.80 for the three subscales in a study conducted among 315 undergraduate female students in United States (Masuda, et al., 2018). However, Malaysia is still lacking on study using this tool.

3.6.3 SECTION C: EATING ATTITUDE TEST

EAT-26 will be adopted to assess the behaviours and prevalence of people at risk of ED. EAT-26 consists of 26 questions, divided into 3 subscales which are dieting (13 items), bulimia and food preoccupation (6 items), and oral control (7 items). All items except item 26 will be rated with a 6-point Likert scale, where

(1) = always, (2) = usually, (3) = often, (4) = sometimes, (5) = rarely, and (6) = never. A score of 0 will be given for responses “never”, “rarely”, and “sometimes” while score of 1, 2, 3 will be given for responses “often”, “usually”, and “always” respectively. Item 26 will be scored in a reversed manner. The score will be ranging from 0 to 78. Higher scores indicate greater ED behaviours. Respondent who scores 20 or above indicate at risk for or has developed ED. Whereas respondent who scores below 20 indicate not at risk of developing ED. A few studies have been done in Malaysia using EAT-26 and have shown good validity and internal consistency with score ranging from 0.779 to 0.87 (Chin et al., 2020; Manaf, Saravanan and Zuhrah, 2016).

3.7 VALIDITY AND RELIABILITY

3.7.1 VALIDITY

Validity is used to examine if an instrument has included all important element to measure what it is intended to be measured (Gray, Grove, and Sutherland, 2017). Both MAC-R and EAT-26 have been validated by the original authors (Mizes, et al., 2000; Garner, et al., 1982). The questionnaire will be sent to one internal and external content expert for content validity upon ethical approval has been obtained.

3.7.2 RELIABILITY

Reliability shows the consistency of the instrument after repeated measures (Gray, Grove, and Sutherland, 2017). Both MAC-R and EAT-26 have been found to be highly reliable. Reliability test will be conducted after pilot study.

3.8 PILOT STUDY

A pilot study is done on a smaller sample prior to the research population, to foresee implementation to be done when the study is applied into a larger scale (Gray, Grove, and Sutherland, 2017). The researcher will recruit 10% of the sample size for the pilot study. Participants included in the pilot study will be excluded from the actual study.

3.9 DATA COLLECTION PROCEDURE

Data collection procedure will begin once ethical approval is obtained, which is estimated to be in January 2022. As the country is under Conditional Movement Control Order due to a pandemic, study mode of next year January remains uncertain. Thus, two data collection procedures are proposed. First, if the university is still conducting Online Teaching Learning (OTL), the questionnaire will be sent out via Google form through university mail master. However, if physical classes have been resumed, face-to-face data collection will be used. First page of the questionnaire will be consisting the title of the research, along with a short explanation of the topic. All items will be set as compulsory to

answer to minimize sampling error due to missing data. Data collected will be analysed and report writing will be done.

3.10 ETHICAL CONSIDERATION

Approval from the ethical board and committee of the private university in Kajang will be obtained 6 weeks prior to the data collection procedure. A consent will be obtained from the participant prior to the data collection (refer Appendix D). The researcher will maintain anonymity and confidentiality of all participants. Participants can withdraw from the study at any time. All related documents will be encrypted with password and can only be accessed by the researcher. Last but not least, the data will be kept for 7 years before disposal.

3.11 PLAN OF DATA ANALYSIS

Data collected will be entered into SPSS software (version 27.0) for analysis. The analysis detailed will be as shown in Table 3.1.

Table 3.1: Research objectives, types of data, and statistical analysis.

Objectives	Types of Data	Statistical Analysis
Sociodemographic Data	<ul style="list-style-type: none"> • Gender (Nominal data) • Age (Nominal data) 	Descriptive analysis will be used. Nominal and ordinal data will be presented in frequency and percentage.

	<ul style="list-style-type: none"> • Ethnicity (Nominal data) • BMI (Ordinal data) 	
1. To determine the thoughts of eating disorders among undergraduate students in a private university in Kajang, Malaysia.	Interval data: 5-point Likert scale (MAC-R)	Descriptive analysis will be used. Data will be presented in mean score and standard deviation.
2. To determine the behaviours of eating disorders among undergraduate students in a private university in Kajang, Malaysia.	Interval data: 6-point Likert scale (EAT-26)	
3. To determine the prevalence of people at risk of eating disorders	Nominal data: EAT-26 No ED (0-19) At risk of ED (20-78)	Descriptive analysis will be used. Nominal data will be presented

<p>among undergraduate students in a private university in Kajang, Malaysia.</p>		<p>in frequency and percentage.</p>
<p>4. To determine the differences between scores of eating disorder thoughts and sociodemographic variables among undergraduate students in a private university in Kajang, Malaysia.</p>	<p>Sociodemographic data: Categorical data Thoughts of ED: Continuous data</p>	<p>Independent t-test: - Gender and thoughts/behaviours One-way analysis of variance (ANOVA):</p>
<p>5. To determine the differences between scores of eating disorder behaviours and sociodemographic variables among</p>	<p>Sociodemographic data: Categorical data Behaviours of ED: Continuous data</p>	<p>- Age and thoughts/behaviours - Ethnicity and thoughts/behaviours - BMI and thoughts/behaviours</p>

<p>undergraduate students in a private university in Kajang, Malaysia.</p>		
<p>6. To determine the correlation between thoughts and behaviours of eating disorders among undergraduate students in a private university in Kajang, Malaysia.</p>	<p>Thoughts of ED: Interval data (Continuous data)</p> <p>Behaviours of ED: Interval data (Continuous data)</p>	<p>Correlation test</p>

3.12 BUDGET AND PLANNING

Upon evaluating, the researcher has decided there will be no cost needed.

3.13 GANTT CHART

Refer to Appendix G.

3.14 SUMMARY

This cross-sectional survey study will be conducted in a private university in Kajang. Sample size of 234 undergraduate students will be required. Convenience sampling will be used to recruit participants together with inclusion and exclusion criteria. Questionnaires will be distributed through Google form.

REFERENCES

- Abd El-Azeem Taha, A.A., Abu-Zaid, H.A. and El-Sayed Desouky, D., 2018. Eating disorders among female students of Taif university, Saudi Arabia. *Archives of Iranian medicine*, 21(3), pp.111–117.
- Abdelrahim, F.A.A.M., Abdelmutti, N.H. and Alshaikh, A., 2012. Eating disorders symptoms among a university students: an exploratory study. *Sudan Med Journal*, 48(3), pp.186–193.
- APA, 2020. What are eating disorders? *Eating Disorders*. [online] pp.27–41. Available at: <<https://www.psychiatry.org/patients-families/eating-disorders/what-are-eating-disorders>> [Accessed 23 February 2021].
- Cambridge Dictionary, 2021a. *AGE* / meaning in the Cambridge English Dictionary. [online] Available at: <<https://dictionary.cambridge.org/dictionary/english/age>> [Accessed 12 March 2021].
- Cambridge Dictionary, 2021b. *ETHNICITY* / meaning in the Cambridge English Dictionary. [online] Available at: <<https://dictionary.cambridge.org/dictionary/english/ethnicity>> [Accessed 12 March 2021].
- Cambridge Dictionary, 2021c. *BODY MASS INDEX* / meaning in the Cambridge English Dictionary. [online] Available at: <<https://dictionary.cambridge.org/dictionary/english/body-mass-index>> [Accessed 30 April 2021].
- Carrard, I., Rothen, S., Kruseman, M. and Khazaal, Y., 2017. Assessment of dysfunctional cognitions in binge-eating disorder: Factor structure and validity of the Mizes Anorectic Cognitions Questionnaire-Revised (MAC-R). *Frontiers in Psychology*, pp.1–10.
- Chan, Y.L., Samy, A.L., Wen, T.T., Islam, M.A. and Wah, Y.L., 2020. Eating disorder among Malaysian university students and its associated factors. *Asia-Pacific Journal of Public Health*, 32(6–7), pp.334–339.
- Chin, Y.S., Appukutty, M., Kagawa, M., Gan, W.Y., Wong, J.E., Poh, B.K., Shariff, Z.M. and Taib, M.N.M., 2020. Comparison of factors associated with

disordered eating between male and female Malaysian university students. *Nutrients*, 12(2), pp.1–15.

Chua, S.N., Fitzsimmons-Craft, E.E., Austin, S.B., Wilfley, D.E. and Taylor, C.B., 2021. Estimated prevalence of eating disorders in Singapore. *International Journal of Eating Disorders*, 54(1), pp.7–18.

de Vos, J.A., Radstaak, M., Bohlmeijer, E.T. and Westerhof, G.J., 2018. Having an eating disorder and still being able to flourish? Examination of pathological symptoms and well-being as two continua of mental health in a clinical sample. *Frontiers in Psychology*, 9(NOV), pp.1–13.

Fan, M. and Jin, Y., 2015. The effects of weight perception on adolescents' weight-loss intentions and behaviors: Evidence from the youth risk behavior surveillance survey. *International Journal of Environmental Research and Public Health*, 12(11), pp.14640–14668.

Galmiche, M., Déchelotte, P., Lambert, G. and Tavolacci, M.P., 2019. Prevalence of eating disorders over the 2000-2018 period: A systematic literature review. *American Journal of Clinical Nutrition*, 109(5), pp.1402–1413.

Gan, W.Y., Mohamad, N. and Law, L.S., 2018. Factors associated with binge eating behavior among Malaysian adolescents. *Nutrients*, 10(1).

Garner, D.M., Olmsted, M.P., Bohr, Y., Garfinkel, P.E, 1982. The eating attitudes test: psychometric features and clinical correlates. *Psychol Med.* 12(4):871-8.

Gray, J.R., Grove, S.K. and Sutherland, S., 2017. *Burns and grove's the practice of nursing research: Appraisal, synthesis, and generation of evidence.* [e-book] Missouri: Elsevier. Available at: Google Books <<https://www.elsevier.com/books/burns-and-groves-the-practice-of-nursing-research/gray/978-0-323-37758-4>> [Accessed 3 April 2021].

Gupta, N., Bhargava, R., Chavan, B.S. and Sharan, P., 2017. Eating attitudes and body shape concerns among medical students in Chandigarh. *Indian Journal of Social Psychiatry*, 33(3), pp.219–224.

Healthtalk Organization, 2021. *Eating disorders (young people) - Eating disorders and thought patterns*. [online] Available at: <<https://healthtalk.org/eating-disorders/eating-disorders-and-thought-patterns>> [Accessed 12 March 2021].

Hochheimer, C.J., Sabo, R.T., Krist, A.H., Day, T., Cyrus, J., and Woolf, S., 2016. Methods for evaluating respondent attrition rate in web-based surveys. *Journal of medical Internet research*. [online] Available at: <<https://doi.org/10.2196/jmir.6342>> [Accessed 10 April 2021].

Klein, D.A., Sylvester, J.E. and Schvey, N.A., 2021. Eating disorders in primary care: Diagnosis and management. *American family physician*, [e-journal] 103(1), pp.22–32. Available at: <<http://eds.b.ebscohost.com.libezp2.utar.edu.my/eds/pdfviewer/pdfviewer?vid=8&sid=b71175f0-97fc-4b4d-98f5-ca1dbabf6e61%40sessionmgr103>> [Accessed 23 February 2021].

Krejcie, R. and Morgan, D., 1970. Determining sample size for research activities - Robert V. Krejcie, Daryle W. Morgan, 1970. *SAGE Journals* [online]. Available at: <<https://journals.sagepub.com/doi/abs/10.1177/001316447003000308?journalCode=epma>> [Accessed 8 April 2021].

Lim, J.U., Lee, J.H., Kim, J.S., Hwang, Y. Il, Kim, T., Yong, S. and Yoo, K.H., 2017. Comparison of World Health Organization and Asia-pacific body mass index classifications in COPD patient. *Respirology*, 22, pp.4–4.

Manaf, N.A., Saravanan, C. and Zuhrah, B., 2016. The prevalence and inter-relationship of negative body image perception, depression and susceptibility to eating disorders among female medical undergraduate students. *Journal of Clinical and Diagnostic Research*, 10(3), pp.VC01–VC04.

Masuda, A., Latner, J.D., Barlie, J.P. and Sargent, K., 2018. Understanding self-concealment within a framework of eating disorder cognitions and body image flexibility: Conceptual and applied implications. *Eating Behaviors*, [online], pp.49–54. Available at: <<https://doi.org/10.1016/j.eatbeh.2018.05.005>>.

Masuda, A., Marshall, R.D. and Latner, J.D., 2018. Mindfulness as a moderator of the association between eating disorder cognition and eating disorder behavior among a non-clinical sample of female college students: A role of ethnicity. *Frontiers in Psychology*, 9(JUN), pp.1–9.

Mazubir, N.N., Hassan, N.M., Aziz, A.A. and Wee, B.S., 2020. Disordered eating behaviour among school-going adolescents: Prevalence and associated factors. *International Journal of Academic Research in Progressive Education & Development*, [online] 9(1), pp.193–207. Available at: <https://hrmars.com/papers_submitted/6987/Disordered_Eating_Behaviour_among_School-going_Adolescents_Prevalence_and_Associated_Factors.pdf>.

Mizes, J. S., Christiano, B., Madison, J., Post, G., Seime, R., and Varnado, P., 2000. Development of the Mizes anorectic cognitions questionnaire—revised: Psychometric properties and factor structure in a large sample of eating disorder patients. *International Journal of Eating Disorders*, 28(4), 415–421.

Nagata, J.M., Garber, A.K., Tabler, J.L., Murray, S.B. and Bibbins-Domingo, K., 2018. Prevalence and correlates of disordered eating behaviors among young adults with overweight or obesity. *Journal of General Internal Medicine*, 33(8), pp.1337–1343.

NAMI, 2021. *Eating Disorders | NAMI: National Alliance on Mental Illness*. [online] Available at: <<https://www.nami.org/About-Mental-Illness/Mental-Health-Conditions/Eating-Disorders>> [Accessed 12 March 2021].

Napolitano, F., Bencivenga, F., Pompili, E. and Angelillo, I.F., 2019. Assessment of knowledge, attitudes, and behaviors toward eating disorders among adolescents in Italy. *International Journal of Environmental Research and Public Health*, 16(8).

Ngan, S.W., Chong, B.K.C., Rajarathnam, D.D., Balan, J., Tan, S.H. and Tiang, K.-P., 2017. The relationship between eating disorders and stress among medical undergraduate: A cross-sectional study. *Open Journal of Epidemiology*, 07(02), pp.85–95.

Polit, D.F. and Beck, C.T., 2017. *Nursing research: generating and assessing evidence for nursing practice*. 10th ed. Philadelphia: Lippincott Williams & Wilkins.

Rahim, N.N.A., Chin, Y.S. and Sulaiman, N., 2019. Socio-demographic factors and body image perception are associated with bmi-for-age among children living in welfare homes in Selangor, Malaysia. *Nutrients*, 11(1).

Rashmi, B.M., Patil, S.S., Angadi, M.M. and Pattankar, T.P., 2016. A cross-sectional study of the pattern of body image perception among female students of BBM college in Vijayapur, north Karnataka. *Journal of Clinical and Diagnostic Research*, 10(7), pp.LC05–LC09.

Rasman, N.S., Kay, N.A.K.M.R., Ahmed, S.U. and Ahmed, M.K., 2018. Prevalence of eating disorders among medical students in Ipoh, Perak, Malaysia. *Indian Journal of Natural Sciences*, 8(46), pp.976–997.

Regional office for Europe, 2021. WHO/Europe | Gender: definitions. *World Health Organization*. [online] Available at: <<https://www.euro.who.int/en/health-topics/health-determinants/gender/gender-definitions>> [Accessed 12 March 2021].

Regional office for Europe, 2020. WHO/Europe | Nutrition - Body mass index - BMI. [online] *World Health Organization*. Available at: <<https://www.euro.who.int/en/health-topics/disease-prevention/nutrition/a-healthy-lifestyle/body-mass-index-bmi>>

Samnaliev, M., Noh, H.L.A., Sonnevile, K.R. and Austin, S.B., 2015. The economic burden of eating disorders and related mental health comorbidities: An exploratory analysis using the U.S. Medical Expenditures Panel Survey. *Preventive Medicine Reports*, [online] 2(December), pp.32–34. Available at: <<http://dx.doi.org/10.1016/j.pmedr.2014.12.002>>.

Sarafrazi, N., Hughes, J.P., Borrud, L., Burt, V. and Paulose-Ram, R., 2014. Perception of weight status in U.S. children and adolescents aged 8-15 years, 2005-2012. *NCHS data brief*, (158), pp.1–7.

Shin, A. and Nam, C.M., 2015. Weight perception and its association with socio-demographic and health-related factors among Korean adolescents. *BMC Public Health*, [online] 15(1), pp.1–9. Available at: <<http://dx.doi.org/10.1186/s12889-015-2624-2>>.

Talwar P, 2012. Self-esteem and anorectic eating concerns among female university students in Malaysia. *Malaysian Journal of Psychiatry*. [online] Available at: <<https://www.mjpsychiatry.org/index.php/mjp/article/viewFile/197/145>>.

Thangaraju, S., Karpagalakshmi, R., Arumuganathan, S., Usaid, S., Devi, Ss. and Sethumadhavan, V., 2020. A cross-sectional study on prevalence of eating

disorder and body image disturbance among female undergraduate medical students. *Journal of Mental Health and Human Behaviour*, [online] 25(1), p.53. Available at: <<http://www.jmhbb.org/text.asp?2020/25/1/53/297410>>.

van Hoeken, D. and Hoek, H.W., 2020. Review of the burden of eating disorders: mortality, disability, costs, quality of life, and family burden. *Current opinion in psychiatry*, 33(6), pp.521–527.

Vos, T., Barber, R.M., Bell, B., Bertozzi-Villa, A., Biryukov, S., Bolliger, I., Charlson, F., Davis, A., Degenhardt, L., Dicker, D., Duan, L., Erskine, H., Feigin, V.L., Ferrari, A.J., Fitzmaurice, C., Fleming, T., Graetz, N., Guinovart, C., Haagsma, J., Hansen, G.M., Hanson, S.W., Heuton, K.R., Higashi, H., Kassebaum, N., Kyu, H., Laurie, E., Liang, X., Lofgren, K., Lozano, R., MacIntyre, M.F., Moradi-Lakeh, M., Naghavi, M., Nguyen, G., Odell, S., Ortblad, K., Roberts, D.A., Roth, G.A., Sandar, L., Serina, P.T., Stanaway, J.D., Steiner, C., Thomas, B., Vollset, S.E., Whiteford, H., Wolock, T.M., Ye, P., Zhou, M., Ávila, M.A., Aasvang, G.M., Abbafati, C., Ozgoren, A.A., Abd-Allah, F., Aziz, M.I.A., Abera, S.F., Aboyans, V., Abraham, J.P., Abraham, B., Abubakar, I., Abu-Raddad, L.J., Abu-Rmeileh, N.M.E., Aburto, T.C., Achoki, T., Ackerman, I.N., Adelekan, A., Ademi, Z., Adou, A.K., Adsuar, J.C., Arnlov, J., Agardh, E.E., Al Khabouri, M.J., Alam, S.S., Alasfoor, D., Albittar, M.I., Alegretti, M.A., Aleman, A. V., Alemu, Z.A., Alfonso-Cristancho, R., Alhabib, S., Ali, R., Alla, F., Allebeck, P., Allen, P.J., AlMazroa, M.A., Alsharif, U., Alvarez, E., Alvis-Guzman, N., Ameli, O., Amini, H., Ammar, W., Anderson, B.O., Anderson, H.R., Antonio, C.A.T., Anwari, P., Apfel, H., Arsenijevic, V.S.A., Artaman, A., Asghar, R.J., Assadi, R., Atkins, L.S., Atkinson, C., Badawi, A., Bahit, M.C., Bakfalouni, T., Balakrishnan, K., Balalla, S., Banerjee, A., Barker-Collo, S.L., Barquera, S., Barregard, L., Barrero, L.H., Basu, S., Basu, A., Baxter, A., Beardsley, J., Bedi, N., Beghi, E., Bekele, T., Bell, M.L., Benjet, C., Bennett, D.A., Bensenor, I.M., Benzian, H., Bernabe, E., Beyene, T.J., Bhala, N., Bhalla, A., Bhutta, Z., Bienhoff, K., Bikbov, B., Abdulhak, A. Bin, Blore, J.D., Blyth, F.M., Bohensky, M.A., Basara, B.B., Borges, G., Bornstein, N.M., Bose, D., Boufous, S., Bourne, R.R., Boyers, L.N., Brainin, M., Brauer, M., Brayne, C.E.G., Brazinova, A., Breitborde, N.J.K., Brenner, H., Briggs, A.D.M., Brooks, P.M., Brown, J., Brugha, T.S., Buchbinder, R., Buckle, G.C., Bukhman, G., Bulloch, A.G., Burch, M., Burnett, R., Cardenas, R., Cabral, N.L., Campos-Nonato, I.R., Campuzano, J.C., Carapetis, J.R., Carpenter, D.O., Caso, V., Castaneda-Orjuela, C.A., Catala-Lopez, F., Chadha, V.K., Chang, J.C., Chen, H., Chen, W., Chiang, P.P., Chimed-Ochir, O., Chowdhury, R., Christensen, H., Christophi, C.A., Chugh, S.S., Cirillo, M., Coggeshall, M., Cohen, A., Colistro, V., Colquhoun, S.M., Contreras, A.G., Cooper, L.T., Cooper, C., Cooperrider, K., Coresh, J., Cortinovis, M., Criqui, M.H., Crump, J.A., Cuevas-Nasu, L., Dandona, R., Dandona, L., Dansereau, E., Dantes, H.G., Dargan, P.I., Davey, G., Davitoiu, D. V., Dayama, A., De La Cruz-Gongora, V., De La Vega, S.F., De Leo, D., Del Pozo-Cruz, B., Dellavalle, R.P., Deribe, K., Derrett, S., Des Jarlais, D.C., Dessalegn, M., DeVeber, G.A., Dharmaratne, S.D., Diaz-Torne, C., Ding, E.L., Dokova, K., Dorsey, E.R., Driscoll, T.R., Duber, H., Durrani,

A.M., Edmond, K.M., Ellenbogen, R.G., Endres, M., Ermakov, S.P., Eshrati, B., Esteghamati, A., Estep, K., Fahimi, S., Farzadfar, F., Fay, D.F.J., Felson, D.T., Fereshtehnejad, S.M., Fernandes, J.G., Ferri, C.P., Flaxman, A., Foigt, N., Foreman, K.J., Fowkes, F.G.R., Franklin, R.C., Furst, T., Futran, N.D., Gabbe, B.J., Gankpe, F.G., Garcia-Guerra, F.A., Geleijnse, J.M., Gessner, B.D., Gibney, K.B., Gillum, R.F., Ginawi, I.A., Giroud, M., Giussani, G., Goenka, S., Goginashvili, K., Gona, P., De Cosio, T.G., Gosselin, R.A., Gotay, C.C., Goto, A., Gouda, H.N., Guerrant, R.L., Gugnani, H.C., Gunnell, D., Gupta, R., Gupta, R., Gutierrez, R.A., Hafezi-Nejad, N., Hagan, H., Halasa, Y., Hamadeh, R.R., Hamavid, H., Hammami, M., Hankey, G.J., Hao, Y., Harb, H.L., Haro, J.M., Havmoeller, R., Hay, R.J., Hay, S., Hedayati, M.T., Pi, I.B.H., Heydarpour, P., Hijar, M., Hoek, H.W., Hoffman, H.J., Hornberger, J.C., Hosgood, H.D., Hossain, M., Hotez, P.J., Hoy, D.G., Hsairi, M., Hu, H., Hu, G., Huang, J.J., Huang, C., Huiart, L., Hussein, A., Iannarone, M., Iburg, K.M., Innos, K., Inoue, M., Jacobsen, K.H., Jassal, S.K., Jeemon, P., Jensen, P.N., Jha, V., Jiang, G., Jiang, Y., Jonas, J.B., Joseph, J., Juel, K., Kan, H., Karch, A., Karimkhani, C., Karthikeyan, G., Katz, R., Kaul, A., Kawakami, N., Kazi, D.S., Kemp, A.H., Kengne, A.P., Khader, Y.S., Khalifa, S.E.A.H., Khan, E.A., Khan, G., Khang, Y.H., Khonelidze, I., Kieling, C., Kim, D., Kim, S., Kimokoti, R.W., Kinfu, Y., Kinge, J.M., Kissela, B.M., Kivipelto, M., Knibbs, L., Knudsen, A.K., Kokubo, Y., Kosen, S., Kramer, A., Kravchenko, M., Krishnamurthi, R. V., Krishnaswami, S., Defo, B.K., Bicer, B.K., Kuipers, E.J., Kulkarni, V.S., Kumar, K., Kumar, G.A., Kwan, G.F., Lai, T., Laloo, R., Lam, H., Lan, Q., Lansingh, V.C., Larson, H., Larsson, A., Lawrynowicz, A.E.B., Leasher, J.L., Lee, J.T., Leigh, J., Leung, R., Levi, M., Li, B., Li, Y., Li, Y., Liang, J., Lim, S., Lin, H.H., Lind, M., Lindsay, M.P., Lipshultz, S.E., Liu, S., Lloyd, B.K., Ohno, S.L., Logroscino, G., Looker, K.J., Lopez, A.D., Lopez-Olmedo, N., Lortet-Tieulent, J., Lotufo, P.A., Low, N., Lucas, R.M., Lunevicius, R., Lyons, R.A., Ma, J., Ma, S., MacKay, M.T., Majdan, M., Malekzadeh, R., Mapoma, C.C., Marcenes, W., March, L.M., Margono, C., Marks, G.B., Marzan, M.B., Masci, J.R., Mason-Jones, A.J., Matzopoulos, R.G., Mayosi, B.M., Mazorodze, T.T., McGill, N.W., McGrath, J.J., McKee, M., McLain, A., McMahan, B.J., Meaney, P.A., Mehndiratta, M.M., Mejia-Rodriguez, F., Mekonnen, W., Melaku, Y.A., Meltzer, M., Memish, Z.A., Mensah, G., Meretoja, A., Mhimbira, F.A., Micha, R., Miller, T.R., Mills, E.J., Mitchell, P.B., Mock, C.N., Moffitt, T.E., Ibrahim, N.M., Mohammad, K.A., Mokdad, A.H., Mola, G.L., Monasta, L., Montico, M., Montine, T.J., Moore, A.R., Moran, A.E., Morawska, L., Mori, R., Moschandreas, J., Moturi, W.N., Moyer, M., Mozaffarian, D., Mueller, U.O., Mukaigawara, M., Murdoch, M.E., Murray, J., Murthy, K.S., Naghavi, P., Nahas, Z., Naheed, A., Naidoo, K.S., Naldi, L., Nand, D., Nangia, V., Narayan, K.M.V., Nash, D., Nejjari, C., Neupane, S.P., Newman, L.M., Newton, C.R., Ng, M., Ngalesoni, F.N., Nhung, N.T., Nisar, M.I., Nolte, S., Norheim, O.F., Norman, R.E., Norrving, B., Nyakarahuka, L., Oh, I.H., Ohkubo, T., Omer, S.B., Opio, J.N., Ortiz, A., Pandian, J.D., Panelo, C.I.A., Papachristou, C., Park, E.K., Parry, C.D., Caicedo, A.J.P., Patten, S.B., Paul, V.K., Pavlin, B.I., Pearce, N., Pedraza, L.S., Pellegrini, C.A., Pereira, D.M., Perez-Ruiz, F.P., Perico, N., Pervaiz, A., Pesudovs, K., Peterson, C.B., Petzold, M., Phillips, M.R., Phillips, D., Phillips, B., Piel, F.B., Plass, D., Poenaru, D., Polanczyk, G. V., Polinder, S., Pope, C.A., Popova, S., Poulton, R.G., Pourmalek, F., Prabhakaran, D., Prasad, N.M.,

Qato, D., Quistberg, D.A., Rafay, A., Rahimi, K., Rahimi-Movaghar, V., Rahman, S.U., Raju, M., Rakovac, I., Rana, S.M., Razavi, H., Refaat, A., Rehm, J., Remuzzi, G., Resnikoff, S., Ribeiro, A.L., Riccio, P.M., Richardson, L., Richardus, J.H., Riederer, A.M., Robinson, M., Roca, A., Rodriguez, A., Rojas-Rueda, D., Ronfani, L., Rothenbacher, D., Roy, N., Ruhago, G.M., Sabin, N., Sacco, R.L., Ksoreide, K., Saha, S., Sahathevan, R., Sahraian, M.A., Sampson, U., Sanabria, J.R., Sanchez-Riera, L., Santos, I.S., Satpathy, M., Saunders, J.E., Sawhney, M., Saylan, M.I., Scarborough, P., Schoettker, B., Schneider, I.J.C., Schwebel, D.C., Scott, J.G., Seedat, S., Sepanlou, S.G., Serdar, B., Servan-Mori, E.E., Shackelford, K., Shaheen, A., Shahraz, S., Levy, T.S., Shangguan, S., She, J., Sheikhbahaei, S., Shepard, D.S., Shi, P., Shibuya, K., Shinohara, Y., Shiri, R., Shishani, K., Shiue, I., Shrimme, M.G., Sigfusdottir, I.D., Silberberg, D.H., Simard, E.P., Sindi, S., Singh, J.A., Singh, L., Skirbekk, V., Sliwa, K., Soljak, M., Soneji, S., Soshnikov, S.S., Speyer, P., Sposato, L.A., Sreeramareddy, C.T., Stoeckl, H., Stathopoulou, V.K., Steckling, N., Stein, M.B., Stein, D.J., Steiner, T.J., Stewart, A., Stork, E., Stovner, L.J., Stroupoulis, K., Sturua, L., Sunguya, B.F., Swaroop, M., Sykes, B.L., Tabb, K.M., Takahashi, K., Tan, F., Tandon, N., Tanne, D., Tanner, M., Tavakkoli, M., Taylor, H.R., Te Ao, B.J., Temesgen, A.M., Have, M. Ten, Tenkorang, E.Y., Terkawi, A.S., Theadom, A.M., Thomas, E., Thorne-Lyman, A.L., Thrift, A.G., Tleyjeh, I.M., Tonelli, M., Topouzis, F., Towbin, J.A., Toyoshima, H., Traebert, J., Tran, B.X., Trasande, L., Trillini, M., Truelsen, T., Trujillo, U., Tsilimbaris, M., Tuzcu, E.M., Ukwaja, K.N., Undurraga, E.A., Uzun, S.B., Van Brakel, W.H., Van De Vijver, S., Dingenen, R. Van, Van Gool, C.H., Varakin, Y.Y., Vasankari, T.J., Vavilala, M.S., Veerman, L.J., Velasquez-Melendez, G., Venketasubramanian, N., Vijayakumar, L., Villalpando, S., Violante, F.S., Vlassov, V. V., Waller, S., Wallin, M.T., Wan, X., Wang, L., Wang, J., Wang, Y., Warouw, T.S., Weichenthal, S., Weiderpass, E., Weintraub, R.G., Werdecker, A., Wessells, K.R., Westerman, R., Wilkinson, J.D., Williams, H.C., Williams, T.N., Woldeyohannes, S.M., Wolfe, C.D.A., Wong, J.Q., Wong, H., Woolf, A.D., Wright, J.L., Wurtz, B., Xu, G., Yang, G., Yano, Y., Yenesew, M.A., Yentur, G.K., Yip, P., Yonemoto, N., Yoon, S.J., Younis, M., Yu, C., Kim, K.Y., Zaki, M.E.S., Zhang, Y., Zhao, Z., Zhao, Y., Zhu, J., Zonies, D., Zunt, J.R., Salomon, J.A. and Murray, C.J.L., 2015. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, 386(9995), pp.743–800.

Yan, H., Wu, Y., Oniffrey, T., Brinkley, J., Zhang, R., Zhang, X., Wang, Y., Chen, G., Li, R. and Moore, J.B., 2018. Body weight misperception and its association with unhealthy eating behaviors among adolescents in China. *International Journal of Environmental Research and Public Health*, 15(5), pp.1–11.

Zarychta, K., Luszczynska, A. and Scholz, U., 2014. The association between automatic thoughts about eating, the actual-ideal weight discrepancies, and

eating disorders symptoms: A longitudinal study in late adolescence. *Eating and Weight Disorders*, 19(2), pp.199–207.

APPENDICES

APPENDIX A: PERMISSION TO USE MAC-Q

June Lam Yun Kei
Bachelor of Nursing (HONS)
Faculty of Medicine and Health Sciences
Universiti Tunku Abdul Rahman
Jalan Sungai Long
Bandar Sungai Long
43000 Kajang Selangor
Malaysia

Dear Dr Akihiko Masuda,

PERMISSION TO USE THE MIZES ANORECTIC COGNITIONS QUESTIONNAIRE-REVISED (MAC-R)

I am June Lam Yun Kei, a nursing student from Universiti Tunku Abdul Rahman (UTAR), Malaysia. I am currently doing my research project titled 'A survey on eating disorders related thoughts and behaviours among undergraduate students in a private university in Malaysia', under the guidance of my research supervisors.

I have read one of your articles titled "**Mindfulness as a moderator of the association between eating disorder cognition and eating disorder behavior among a non-clinical sample of female college students: A role of ethnicity**" and since I could not reach Dr. Mizes' email, may I ask if there is any permission needed to use the MAC-R questionnaire? If yes, how may I contact the person?

Appreciate it if I could get a reply from you. Thank you so much.

Sincerely,
June Lam Yun Kei

Akihiko Masuda

Mar 25, 2021, 12:40 AM



to me ▾

Hi June,

There is no permission needed. You can use it as long as it is not for making profits off from administering it.

best wishes,

Aki Masuda

Akihiko (Aki) Masuda, Ph.D.
Associate Professor
Department of Psychology
University of Hawai'i at Mānoa
2530 Dole Street
Sakamaki C400
Honolulu, HI 96822-2294
office: (808) 956-0287

APPENDIX B: PERMISSION TO USE EAT-26

11 March 2021

June Lam Yun Kei
Bachelor of Nursing (HONS)
Faculty of Medicine and Health Sciences
Universiti Tunku Abdul Rahman
Jalan Sungai Long
Bandar Sungai Long
43000 Kajang Selangor
Malaysia

Dear Dr. David Garner,

PERMISSION TO USE EATING ATTITUDES TEST-26 (EAT-26)

I am June Lam Yun Kei, a nursing student from Universiti Tunku Abdul Rahman (UTAR), Malaysia. I am currently doing my research project titled 'A survey on eating disorders related thoughts and behaviours among undergraduate students in a private university in Malaysia', under the guidance of my research supervisors.

I would like to obtain your permission to use the EAT-26 instrument in my research study. I would like to use and print your survey under the following conditions:

- I will use the questionnaire only for my research study and will not sell or use it with any compensated or curriculum development activities.
- I will include the copyright statement on all copies of the instrument.
- At your request, I will send a copy of my completed research study to your attention upon completion of the study.

If you do not control the copyright of these materials, I would appreciate any information you can provide concerning the proper person or organization I should contact.

If these are acceptable terms and conditions, please indicate so by replying to me through this e-mail: junelamyunkei@utar.my.

Sincerely,
June Lam Yun Kei

dm.garner@gmail.com

Mar 11, 2021, 1:51 AM



to me ▾

Dear June Lam Yun Kei,

Thank you for your request to use the EAT-26. The EAT-26 is protected under copyright; however, all fees and royalties have been waived because it has been our wish for others to have free access to the test. Please consider this email as granting you permission to reproduce the EAT-26 for the purpose suggested in your e-mail as long as the EAT-26 is cited properly. The correct citation is: "The EAT-26 has been reproduced with permission. Garner et al. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, 12, 871-878."

Again, thank you for requesting permission to use the EAT-26. If you intend on publishing your work, please send me your results so that they can be included in a research database being developed on the EAT-26 website (www.eat-26.com).

Best wishes,

David M. Garner, Ph.D.,
President, Eating Attitudes Test, LLC
6897 Brentwood Ct.
Arvada, CO 80004

APPENDIX C: INSTRUMENT

Section A: Sociodemographic Data

1. Gender Male

Female

2. Age _____

3. Ethnicity Chinese

Malay

Indian

Other

4. Height _____

5. Weight _____

Section B: The Mizes Anorectic Cognitions-Revised

No.		Strongly Disagree 1	Moderately Disagree 2	Neither Agree nor Disagree 3	Moderately Agree 4	Strongly Agree 5
1.	I feel victorious over my hunger when I am able to refuse sweets.					
2.	No matter how much I weigh, fats, sweets, breads, rice, and cereals are bad food because they always turn into fat.					
3.	No one likes fat people; therefore, I must be (or remain) thin to be liked by others.					
4.	I am proud of myself when I control my urge to eat.					
5.	When I eat desserts, I get fat. Therefore, I must never eat desserts so I won't be fat.					
6.	How much I weigh has little to do with how popular I am.					
7.	If I don't establish a daily routine, everything will be chaotic and I won't accomplish anything.					
8.	My friends will like me regardless of how much I weigh.					
9.	When I am overweight, I am not happy with my appearance. Gaining weight will take away the happiness I have with myself.					
10.	People like you because of your personality, not whether you are overweight or not.					
11.	When I eat something fattening, it doesn't bother me that I have temporarily let myself eat something I'm not supposed to.					

12.	If I eat sweet, it will be converted instantly into stomach fat.					
13.	If my weight goes up, my self-esteem goes down.					
14.	I can't enjoy anything because it will be taken away.					
15.	It is more important to be a good person than it is to be thin.					
16.	When I see someone who is overweight, I worry that I will be like him/her.					
17.	All members of the opposite sex want a mate who has a perfect, thin body.					
18.	Having a second serving of a high calorie food I really like doesn't make me feel guilty.					
19.	If I can cut out all carbohydrates, I will never be fat.					
20.	When I overeat, it has no effect on whether or not I feel like a strong person.					
21.	Members of the opposite sex are more interested in "who" you are, rather than whether or not you are thin.					
22.	If I gain one pound, I'll go on and gain a hundred pounds, so I must keep precise control of my weight, food, and exercise.					
23.	I rarely criticize myself if I have let my weight go up a few pounds.					
24.	I try to attract members of the opposite sex through my personality rather than by being thin.					

Section C: Eating Attitude Test (EAT-26)

No.		Always	Usually	Often	Sometimes	Rarely	Never
1.	Am terrified about being overweight.						
2.	Avoid eating when I am hungry.						
3.	Find myself preoccupied with food.						
4.	Have gone on eating binges where I feel that I may not be able to stop.						
5.	Cut my food into small pieces.						
6.	Aware of the calorie content of foods that I eat.						
7.	Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)						
8.	Feel that others would prefer if I ate more.						
9.	Vomit after I have eaten.						
10.	Feel extremely guilty after eating.						
11.	Am preoccupied with a desire to be thinner.						
12.	Think about burning up calories when I exercise.						
13.	Other people think that I am too thin.						
14.	Am preoccupied with the thought of having fat on my body.						
15.	Take longer than others to eat my meals.						
16.	Avoid foods with sugar in them.						
17.	Eat diet foods.						
18.	Feel that food controls my life.						
19.	Display self-control around food.						
20.	Feel that others pressure me to eat.						
21.	Give too much time and thought to food.						
22.	Feel uncomfortable after eating sweets.						
23.	Engage in dieting behaviour.						
24.	Like my stomach to be empty.						
25.	Have the impulse to vomit after meals.						
26.	Enjoy trying new rich foods.						

APPENDIX D: SAMPLE ETHICAL APPROVAL APPLICATION FORM

UNIVERSITI TUNKU ABDUL RAHMAN			
Form Title : APPLICATION FOR ETHICAL CLEARANCE TO INVOLVE HUMAN SUBJECTS IN RESEARCH			
Form Number : FM-IPSR-R&D-056	Rev No : 2	Effective Date: 30/04/2019	Page No : 1 of 8
Application No. <i>(Official use only)</i>			
PRINCIPAL INVESTIGATOR/SUPERVISOR (FOR STUDENT'S PROJECT)			
Full Name	:		
Chinese character <i>(if applicable)</i>	:		
Staff No.	:		
New Identity Card / Passport No.	:		
Designation	:		
Qualification(s)	:	Specialization	:
Faculty / Institute	:	Department	:
Institution Address	:		
Telephone	:	Mobile Phone	:
Fax	:	E-mail	:
STUDENT			
Full Name	:		
Student No.	:		
New Identity Card / Passport No.	:		
Programme Name	:		
Faculty / Institute	:		
Mobile Phone	:		
E-mail	:		
PROPOSED RESEARCH PROJECT			
1.	Title of proposed research project:		
2.	Objectives of the research:		

UNIVERSITI TUNKU ABDUL RAHMAN

Form Title : APPLICATION FOR ETHICAL CLEARANCE TO INVOLVE HUMAN SUBJECTS IN RESEARCH

Form Number : **FM-IPSR-R&D-056**

Rev No : 2

Effective Date: 30/04/2019

Page No : 2 of 8

3. **Location of the research:**

4. **Specific Outcomes and Expected Contribution of Study:**

5. **Human Subject Involvement:** *Please tick appropriate box*

- A. Questionnaires/ Interviews
- B. Clinical trials of drugs/ formulations
- C. Clinical trials of devices
- D. Use of human tissue samples
- E. Use of body fluids (e.g. blood)
- F. Human genetics research
- G. Others (*please state*) _____

6. **Prior Review:**

Do you intend to submit or have you submitted this project to any other ethics committee(s)?

- YES NO

Name of ethics committee :

If yes, please provide details :

7. **Possible risks / discomforts to subjects/ patients or volunteers:**

8. **What are the direct or potential benefits (e.g. medical and financial) to participant?**

9. **What are the potential benefits to humanity?**

UNIVERSITI TUNKU ABDUL RAHMAN

Form Title : **APPLICATION FOR ETHICAL CLEARANCE TO INVOLVE HUMAN SUBJECTS IN RESEARCH**

Form Number : **FM-IPSR-R&D-056**

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Effective Date: **30/04/2019**

Page No : **3 of 8**

10. If the research is conducted together with other researchers, please state:
(Details of co-researcher(s))

	Name	Identity Card No*	Faculty / Institution	Signature
a.				
b.				
c.				
d.				
e.				

* Passport No. for Foreign Researcher

11. Name of other relevant external parties involved (if any):

	Name	Identity Card No.	Faculty / Institution	Signature
a.				
b.				
c.				
d.				
e.				

* Passport No. for Foreign Researcher

12. Who will be responsible for the research related costs?

(For sponsored research, please attach a copy of the sponsorship letter)

For sponsored research, list thoroughly the costs that will be borne by the sponsor.

13. PROTOCOL CHECKLIST

13.1 Purpose of the study:

13.1.1 State concisely what are the specific objectives of the research?

UNIVERSITI TUNKU ABDUL RAHMAN

Form Title : **APPLICATION FOR ETHICAL CLEARANCE TO INVOLVE HUMAN SUBJECTS IN RESEARCH**

Form Number : **FM-IPSR-R&D-056**

Rev No : **2**

Effective Date: **30/04/2019**

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13.2 Background:

13.2.1 Describe the background of the study.

13.2.2 State concisely the importance of the research described in this application.

13.3 Preliminary Studies / Progress Reports:

13.3.1 Provide the report for the preliminary studies (if any) pertinent to the application.

13.4 Methodology

13.4.1 Briefly describe the study design (e.g. randomized, double blind, cross over, phase III)

13.4.2 Describe sequentially all procedures, interventions and evaluations to be applied to subjects, and identify any that are experimental or performed exclusively for research purposes.

13.4.3 Indicate who will carry out the research procedures. Describe where the research will be conducted.

13.4.4 Include details on sample size calculation and the statistical methods used to analyse the data.

13.4.5 List all trial related procedures. Please also describe the subject research visits (frequency and procedures involved). For studies with multiple visits, please attach visit schedule.

13.4.6 Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the aims.

13.4.7 Describe the anticipated benefits and risks to human subjects participating in this research.

Notes: Drawing of body fluids from volunteer can only be carried out by qualified doctor or nurse

13.5 Additional information on Methodology: (Please tick appropriate box)

13.5.1 If research involves databases, please complete the following:

13.5.1.1 Storage location of the research data, consent forms and personal data

13.5.1.2 Who will have access to the data?

13.5.1.3 Mode of disposal of data after completion of project.

13.5.1.4 Mode of disposal of consent forms after completion of project.

13.5.2 If research involves placebo, please complete the following:

13.5.2.1 Explain what "standard of care" therapy is available for this condition

13.5.2.2 Discuss the ethical implications of using placebo instead of "standard of care" therapy in this situation

13.5.2.3 Address the issues of safety and efficacy of other available therapies

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13.5.2.4 *The total duration the subject would be on placebo arm of the research*

13.5.2.5 *Greatest potential harm that the subject might be exposed to as a result of not receiving effective therapy*

13.5.2.6 *Protocol in place to safeguard participants receiving placebo*

13.5.3 If research involves tissues / body fluids, please complete the following:

13.5.3.1 *Describe the samples that will be collected and stored?*

13.5.3.2 *What tests will be performed on these samples?*

13.5.3.3 *What will happen to the tissues after the research is completed?*

13.5.3.4 *Will results from the tests be communicated to the subjects?*

13.5.4 If research involves cell cultures / cell lines, please complete the following:

13.5.4.1 *Describe the cells that will be used for the research.*

13.5.4.2 *Indicate the source of the cell cultures/lines. Please provide proof of purchase or catalog details of the cells.*

14. CHARACTERISTICS OF VOLUNTEERS

14.1 Provide the maximum number of subjects you seek approval to enroll from the entire subject populations you intend to use and justify the sample size.

14.2 Lower Age Limit: _____ Upper Age Limit: _____

14.3 Are there any subject recruitment restrictions based on race of the subject?

14.4 Inclusion criteria: *(Please tick appropriate box)*

Healthy Volunteers Outpatients Inpatients

Children Pregnant Women

Incompetent Patients *(Please specify)* _____

Others *(Please specify)* _____

14.5 Exclusion criteria

15. Attach the following with this application form:

15.1 Biodata of the applicant and any co-researcher(s).

15.2 List of previous research
Indicate the research in relation to this project with an asterisk ().*

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16. INDEMNITY

I shall indemnify, defend and hold harmless UTAR from any or all claims, demands, losses, damages, costs and liabilities made by any third party due to or arising out of any acts, omission or negligence in carrying out this study.

17. DECLARATION

- a) I will not initiate this research until I receive written approval from the UTAR Scientific & Ethical Review Committee and the regulatory authority or otherwise relevant authorities (if applicable).
- b) I will not initiate any changes in protocol without prior written approval from UTAR Scientific and Ethical Review Committee except when it is necessary to reduce or eliminate risk to the subject.
- c) I will promptly report any unexpected or serious adverse events, unanticipated problems or incidents that may occur in the course of this research.
- d) I will take all necessary steps to maintain confidentiality of all information, samples and specimens about the volunteers. Data, samples and specimen obtained will be stored securely and will be made available only to the Principal Investigator and the research team, the UTAR Scientific and Ethical Review Committee, the sponsor and the regulatory authorities for the purpose of verifying the research procedures info and/or data
- e) I declare that the name and other facts that might identify the volunteer will not appear when this study is presented or its results are published
- f) I declare that there is no existing or potential conflict of interest for any of the investigators participating in this research.
- g) I have read and understood, and hereby accept and agree to abide by UTAR Research Ethics & Code of Conduct and any applicable UTAR's Guidelines. I undertake that the information I have provided herein is complete and accurate and I agree to carry out the Project in accordance with the terms in the International Conference of Harmonization of Good Clinical Practice Guidelines. My involvement in this Project does not conflict with my University duties and I have no other conflict of interest to declare
- h) I further agree that I shall abide by all instructions and directions issued by UTAR pertaining to all aspects of the research herein including but not restricted to suspending and ceasing of the research herein.

Remarks (if any) :

Principal Investigator/Supervisor
Signature

Date

Name of Principal Investigator/
Supervisor : _____

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RECOMMENDATION BY DEAN

Recommended / Not Recommended for Approval

Signature

Date

Name of Dean: _____

VERIFICATION BY IPSR

Remarks (if any) :

Signature :

Name :

Date :

RECOMMENDATION BY UTAR SCIENTIFIC & ETHICAL REVIEW COMMITTEE

Comments :

UTAR Scientific & Ethical Review Committee : Minutes No.

.....
Signature of Secretary

Name of Secretary:

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COMPLETED BY THE CHAIRMAN OF THE UTAR SCIENTIFIC & ETHICAL REVIEW COMMITTEE

Approved

Approved subject to full review (of protocol, informed consent documents etc.)

Not Approved

Others (please state)

Signature of Chairman

Date:

Name of Chairman:

APPENDIX E: COVER LETTER OF RECRUITMENT

Cover letter of recruitment

Dear Participant,

I am June Lam Yun Kei, a year 3 nursing student from University Tunku Abdul Rahman, Sungai Long campus. I hereby invite you to participate in my research study titled "A Survey on Thoughts and Behaviours of Eating Disorders Among Undergraduate Students in a Private University in Kajang". The purpose of this study is to identify the thoughts and behaviours of eating disorder among undergraduate students in UTAR, Sungai Long campus.

This survey consists of 3 sections:

Section A: Sociodemographic Data

Section B: The Mizes Anorectic Cognition Questionnaire-Revised (MAC-R)

Section C: Eating Attitude Test (EAT-26)

Requirement to participate: (i) you are a undergraduate student from UTAR, (ii) aged 18 and above, (iii) not pregnant, and (iv) is willing to participate in this study voluntarily.

The following questionnaire will take around 10 minutes. There are no identified risks or compensation for participating in this research. Please be noted that your personal data will be kept confidential, and anonymity will be protected. You are allowed to withdraw the study at any point of time. Your participation is very much appreciated.

Yours sincerely,



JUNE LAM YUN KEI

18UMB07390

APPENDIX F: CONSENT FORM

PARTICIPANT CONSENT FORM

Research Title: A Survey on Thoughts and Behaviours of Eating Disorders among Undergraduate Students in a Private University in Kajang.

- I _____ voluntarily agree to participate in this research study.
- I confirm that I have read and understood the information.
- I understand that participation involve collecting sociodemographic data and other personnel data.
- I understand that all information that I provided for this study will be treated confidentially.
- I understand that if I decided not to participate, I will experience no penalty or loss of benefits to withdraw from the study.
- I agree that the data collected from me will be used in the future research.
- I permit members of the research team to access to my responses.
- I hereby give my consent to participate in this study.

Name of Participant

Date

Signature

I believe the participant has given me consent to participate in this study

June Lam Yun Kei

Name of Researcher

Date

Signature

APPENDIX G: GANTT CHART

	2021						2022													
	Mac	Apr	May				Dec	Jan	Feb	Mac	Apr	May								
Proposal Writing																				
Proposal Presentation & Submission																				
Ethics Approval																				
Pilot Study																				
Data Collection																				
Data Entry																				
Data Analysis																				
Results Interpretation																				
Report Writing																				
Thesis Presentation & Submission																				

APPENDIX H: DUMMY TABLE

TABLE H.1: DUMMY TABLE FOR SOCIODEMOGRAPHIC VARIABLES

Sociodemographic Variables	Total samples N (%)
Gender Male Female	
Age 18-19 20-21 22 and above	
Ethnicity Malay Chinese Indian Others	
Body Mass Index (kg/m^2) Underweight (<18.5) Normal weight (18.5-22.9) Overweight (23.0-24.9) Obese (≥ 25.0)	

TABLE H.2: DUMMY TABLE FOR OBJECTIVE 1 AND 2

Variables	Mean (SD)
Eating Disorder Thoughts (MAC-R)	
Eating Disorder Behaviours (EAT-26)	

TABLE H.3: DUMMY TABLE FOR OBJECTIVE 3

Variable	Total samples N (%)
Eating Disorder At risk (0-19) Not at risk (20-78)	

TABLE H.4: DUMMY TABLE FOR OBJECTIVE 4 AND 5

Sociodemographic Variables	Thoughts		Behaviours	
	Mean (SD)	t / F p-value	Mean (SD)	t / F p-value
Gender ^a Male Female				
Age ^b 18-19 20-21 22 and above				
Ethnicity ^b Malay Chinese Indian Others				
Body Mass Index (kg/m^2) ^b Underweight (<18.5) Normal weight (18.5-22.9) Overweight (23.0-24.9) Obese (≥ 25.0)				

TABLE H.5: DUMMY TABLE FOR OBJECTIVE 6

Variable	Mean (SD)	r (p-value)
Eating Disorder Thoughts (MAC-R)		
Eating Disorder Behaviours (EAT-26)		

APPENDIX I: TURNITIN ORIGINALITY REPORT

Written Proposal June Lam 1

ORIGINALITY REPORT

17%	13%	4%	9%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Universiti Tunku Abdul Rahman Student Paper	6%
2	worldwidescience.org Internet Source	1%
3	eprints.utar.edu.my Internet Source	1%
4	Daphne van Hoeken, Hans W. Hoek. "Review of the burden of eating disorders: mortality, disability, costs, quality of life, and family burden", Current Opinion in Psychiatry, 2020 Publication	1%
5	Akihiko Masuda, Jane Le, Lindsey L. Cohen. "The Role of Disordered-Eating Cognitions and Psychological Flexibility on Distress in Asian American and European American College Females in the United States", International Journal for the Advancement of Counselling, 2013 Publication	1%
6	irep.iium.edu.my Internet Source	<1%