



UNIVERSITI PUTRA MALAYSIA

***KNOWLEDGE AND PERCEPTION OF OUTDOOR ACTIVITIES
RELATED WITH NATURE AS A MEDIUM OF STRESS RELIEVER
AMONG BACHELOR OF SCIENCE (ENVIRONMENTAL AND
OCCUPATIONAL HEALTH) STUDENTS IN UNIVERSITI PUTRA
MALAYSIA***

NUR SUHADAH BINTI ABDUL BASIT

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BY

NUR SUHADAH BINTI ABDUL BASIT

**Thesis submitted in fulfillment of the requirement for the degree of Bachelor
Science (Environmental and Occupational Health) from the Faculty of Medicine
and Health Sciences, Universiti Putra Malaysia**

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ABSTRACT

KNOWLEDGE AND PERCEPTION OF OUTDOOR ACTIVITIES RELATED WITH NATURE AS A MEDIUM OF STRESS RELIEVER AMONG BACHELOR OF SCIENCE (ENVIRONMENTAL AND OCCUPATIONAL HEALTH) STUDENTS IN UNIVERSITI PUTRA MALAYSIA

NUR SUHADAH BINTI ABDUL BASIT

Introduction: The untreated stress may lead to depression and anxiety. Hence, outdoor activities such as hiking, camping, jogging, visiting recreational parks, and other activities that enjoying nature help to relieve the stress. **Objective:** To study the knowledge and perception of outdoor activities related with nature as a medium of stress reliever among Bachelor of Science (Environmental and Occupational Health) students in Universiti Putra Malaysia. **Methodology:** Cross-sectional study was conducted among Bachelor of Science (Environmental and Occupational Health) students. A total of 170 students were enrolled in this study through universal sampling. They were required to answer a set of modified questionnaires. The questionnaire consist of 4 sections to assess the level of knowledge and perception of outdoor activities related with nature as a medium of stress reliever and the prevalence of stress. Then, the data analysis was performed by using SPSS Version 25.0. **Results and Discussion:** The result showed that the prevalence of stress among the students who experienced moderate level of stress is the highest (66.5%), followed by high perceived stress (24.0%) and low stress (9.4%). The majority of the respondents had good knowledge (57.6%) and good perception (74.7%). There was a significant association between knowledge of outdoor activities related with nature as a medium of stress reliever and the prevalence of stress ($X^2=13.053$, $p=0.006$). However, there was no significant association between perception of outdoor activities related with nature as a medium of stress reliever and the prevalence of stress ($X^2=2.302$, $p=0.301$). Respondents also suggest to assess the level of association between attitudes and practices towards the prevalence of stress. **Conclusion:** Outdoor activities related with nature such as hiking, camping, kayaking and others are suggested to be conducted under the clubs, faculty or university to avoid stress and sustain the mental health.

Keywords: knowledge, perception, prevalence of stress, students

ABSTRAK

PENGETAHUAN DAN PERSEPSI AKTIVITI LUAR BERKAITAN DENGAN ALAM SEMULA JADI SEBAGAI MEDIUM UNTUK PELEGA STRES DALAM KALANGAN PELAJAR BACELOR SAINS (KESIHATAN PERSEKITARAN DAN PEKERJAAN) DI UNIVERSITI PUTRA MALAYSIA

NUR SUHADAH BINTI ABDUL BASIT

Pendahuluan: Stres yang tidak dirawat berkemungkinan mendorong kepada kemurungan dan kegelisahan. Justeru, aktiviti luar seperti mendaki, berjoging, melawat taman rekreasi dan aktiviti lain berkaitan menikmati alam sekitar membantu untuk melegakan stres. **Objektif:** Objektif kajian adalah untuk mengenalpasti pengetahuan dan persepsi aktiviti luar berkaitan dengan alam semula jadi sebagai medium untuk pelega stress dalam kalangan pelajar Bacelor Sains (Kesihatan Persekitaran dan Pekerjaan) di Universiti Putra Malaysia. **Metodologi:** Kajian keratan rentas telah dijalankan dalam kalangan pelajar Bacelor Sains (Kesihatan Persekitaran dan Pekerjaan). Sejumlah 170 orang pelajar telah terlibat melalui persampelan rawak. Mereka diminta untuk menjawab satu set borang soal selidik yang telah diubahsuai. Borang kaji selidik tersebut mengandungi tiga bahagian untuk menilai tahap pengetahuan dan persepsi aktiviti luar berkaitan dengan alam semula jadi sebagai medium untuk pelega stress dan prevalens stress. Selanjutnya, analisis data dijalankan dengan menggunakan SPSS versi 25.0. **Keputusan dan perbincangan:** Hasil kajian menunjukkan bahawa prevalens stress dalam kalangan pelajar yang mengalami tahap stress sederhana adalah paling tinggi (66.5%), diikuti tahap stress tinggi (24.0%) dan stress rendah (9.4%). Majoriti daripada responden mempunyai pengetahuan yang baik (57.6%) dan persepsi yang baik (74.7%). Terdapat perkaitanan yang signifikan di antara pengetahuan aktiviti luar berkaitan dengan alam semula jadi sebagai medium untuk pelega stress dan prevalens stress ($X^2=13.053$, $p=0.006$). Namun begitu, tiada kaitan yang signifikan di antara persepsi aktiviti luar berkaitan dengan alam semula jadi sebagai medium untuk pelega stress dan prevalens stress ($X^2=2.302$, $p=0.301$). Responden juga mencadangkan untuk mengakses tahap perkaitan di antara sikap dan praktis terhadap prevalens stress. **Kesimpulan:** Aktiviti luar yang berkaitan dengan alam semula jadi seperti mendaki, berkhemah, berkayak dan lain-lain perlu diadakan di bawah kelab-kelab, fakulti atau universiti untuk mengelakkan stress dan melestarikan kesihatan mental.

Kata kunci: pengetahuan, persepsi, prevalens stress, pelajar

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LIST OF ABBREVIATIONS

%	Percentage
P	Significant value
Freq	Frequency
et al.	And others
SPSS	Statistical Package for Social Science
PSS	Perceived Stress Scale
MCO	Movement Control Order
UPM	Universiti Putra Malaysia
JKEUPM	Jawatankuasa Etika Universiti Untuk Penyelidikan Melibatkan Manusia

CHAPTER 1

INTRODUCTION

1.1 Study Background

Stress happened due to several factors of stressors. Secondary school and higher education students are the most likely experiences stress in their life that mostly related with academic performances and several other stressors (Pascoe et al., 2019). The higher the level of experience of academic-related stress, the higher the risk of young people developing preventable health problems later.

A quick fact mentioned in article 'What Is Stress?' by University of Minnesota where young and middle-aged Americans experience higher stress than seniors. As one gets older, stress level tends to decrease according to Gallup polls. Hence, based on National Health and Morbidity Survey (NHMS) in 2017, the mental health of Malaysian adolescents in the age of 13 to 17 years old also reach the worrying state and approximately half a million of Malaysian aged 16 years and above are suffering from depression on 2019 as they are facing several problems such as personal matters, family, friends and teachers issues (Chonghui et al., 2018).

In order for the students to achieve and maintain their academic performances, they are having stress. After not knowing they are actually experience one, other factors such as time and money constraints, environments, friends and family. Moreover, the academic demands increase throughout the studies. Therefore, in this situation, if the students fail to cope with their stress, they need to overcome by

benefiting from Mother Nature. The untreated stress may lead to depression and anxiety (Riberio et al., 2017).

There are many types of recreational outdoor activities and beliefs in benefitting for finding peace in nature, enjoying the life and more relaxing in some several studies (Javed et al., 2015). Some of the outdoor activities such as hiking, camping, jogging, visiting to recreational parks and some other activities that enjoying the nature will help to relieve the stress.

Nowadays, the activity such as cycling and hiking are some of the outdoor activities related with nature that are very popular and become a trend to youth especially the students (Kamal et al., 2010).

1.2 Problem Statements

Students who experiences academic-related stress may increase the chances of getting preventable health problems (Pascoe et al., 2019). As the imbalance of homeostasis occur, the non-communicable disease will easily develop to the students such as cardiovascular diseases, chronic respiratory diseases, diabetes and cancer.

They possibly having difficulties to overcome the stress by themselves and not taking any preventive measures such as visiting to recreational park, meeting friends and going for the vacation to release their stress.

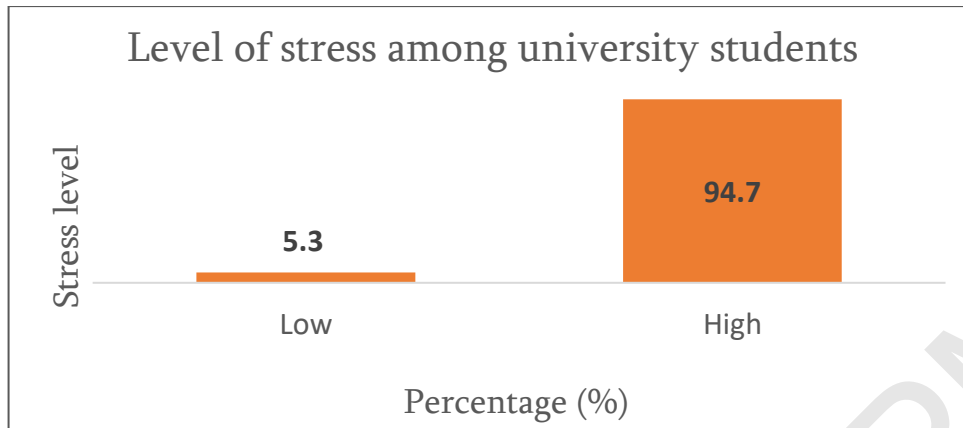


Figure 1.1: Level of stress among university students

Figure 1.1 shows a graph of level of stress among university students. Stress among university students also significant as students who are experiencing high stress level are much higher which is 94.7% compared to 5.3% only as for them who are experiencing low stress level (Rhoda et al., 2017).

Nowadays, students experienced stress related illness and hold their responsibilities so they need to balance their live and find something that can helps them manage their stress level correctly.

1.3 Study justification

The goal of this research is to fill the gaps and to validate the evidence of the relationship between outdoor activities related with nature and level of stress. Based on a previous study by Ewert and Chang (2018) on Levels of Nature and Stress Response, the participants were assigned at the respective sites such as natural setting, semi-natural and urban built.

As the finding, the levels of stress can be reduce greatly by visiting the location with highest level of nature. The researcher also suggesting for larger sample size with

varies of socio-demographic characteristics. Meanwhile, in this study, the targeted respondents are the students. The benefits of nature have been supported by several previous studies.

This study aimed to focus on how the outdoor activities related with nature such as hiking, walking and others will act as a stress reliever to Environmental and Occupational Health students. Environmental Health degree is a course that focuses on human health due to the environmental conditions either manmade or natural surroundings (Environmental Health Degree, n.d.).

They are chosen as respondents to study the effectiveness and adaptiveness that related from what they have studied. As the student of this course, they should apply of what have they learn and benefitting from the nature as the stress level among university students were significantly high (Oduwaiye et al., 2017).

Knowledge and perception are related as knowledge can affect the perception of someone towards something (Rock, 2002). Knowledge can be based on facts and reality while perception is own taught and ideas. After all, the knowledge and perception towards the nature beliefs can helps to reduce the level of stress towards university students. They should be aware with their level of stress even though it will gradually change with time. This is because stress can affect their daily life routine without the right treatment.

1.4 Conceptual framework

Figure 1.2 shows a conceptual framework that represent how this research topic related to each other. The research is focused on students' stress. Independent variable represents as in blue colour, which is knowledge and perception of outdoor activities related with nature. The example of outdoor activities related with nature such as hiking, walking, cycling, camping and others where the students can do to reduce their stress level. As for the dependent variable, represent as in green colour, which is level of students' stress. The stress level consists of low stress, moderate stress and high perceived stress that can be assess by using questionnaire. There are also some factors influencing the level of stress which are academic demands, financial issue, relationship problems and parental pressure.

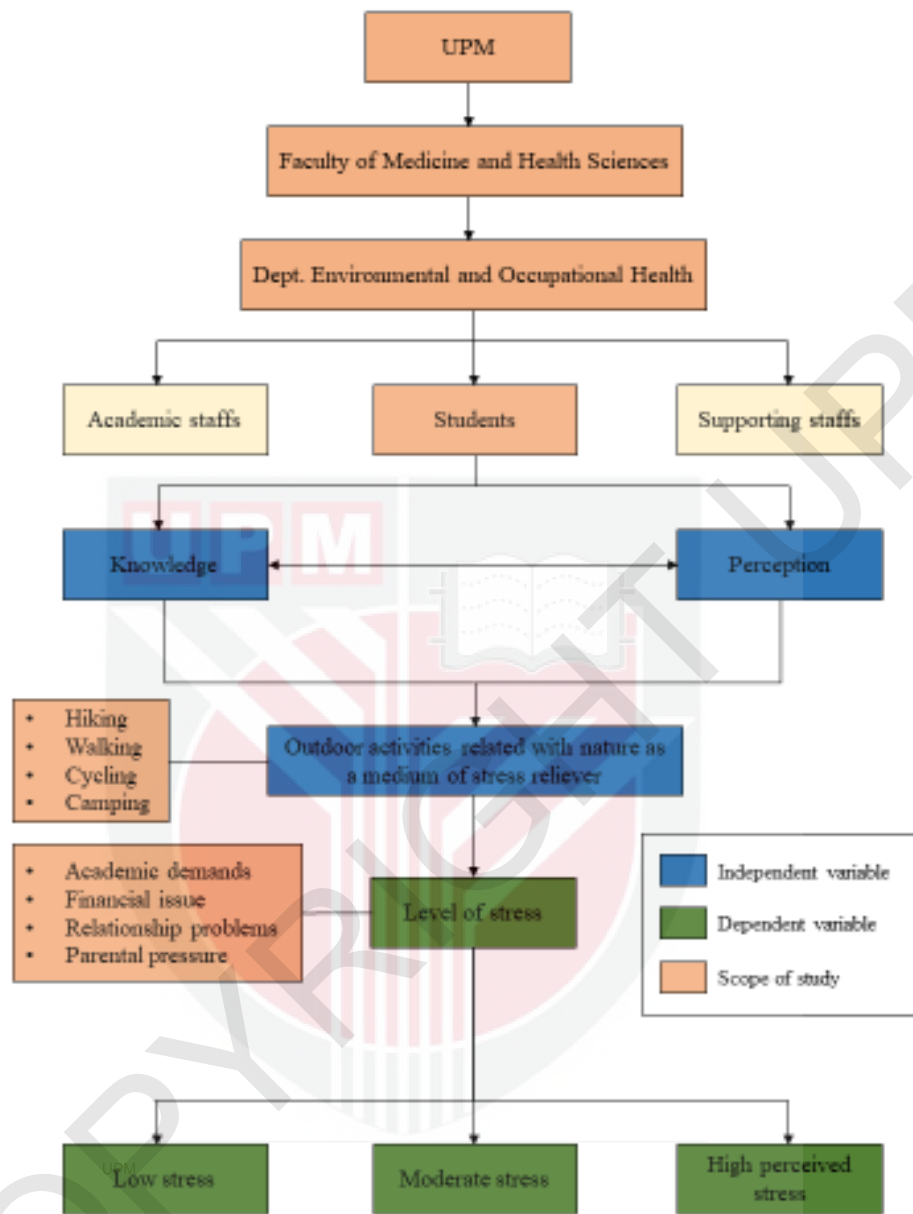


Figure 1.2: Conceptual framework

1.5 Research Objectives

1.5.1 General Objective

To study the knowledge and perception of outdoor activities related with nature as a medium of stress reliever among Bachelor Science (Environmental and Occupational Health) students in Universiti Putra Malaysia.

1.5.2 Specific Objectives

1. To determine the sociodemographic characteristic among Bachelor Science (Environmental and Occupational Health) students.
2. To determine the prevalence of stress among Bachelor Science (Environmental and Occupational Health) students.
3. To determine the knowledge and perception of outdoor activities related with nature as a medium of stress reliever among Bachelor Science (Environmental and Occupational Health) students.
4. To determine the association between the knowledge and perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress among Bachelor Science (Environmental and Occupational Health) students.

1.6 Research Hypothesis

There is significant association between the knowledge and perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress among Bachelor Science (Environmental and Occupational Health) students.

1.7 Definition of Variables

1.7.1 Conceptual definition

Knowledge

Understanding of or information about a subject that you get by experience or study, either known by one person or by people generally (Cambridge Dictionary, 2021).

Perception

A belief or opinion, often held by many people and based on how things seem (Cambridge Dictionary, 2021).

Outdoor activities

Phipps (1990) defines outdoor recreation includes activities that occur outdoors in an urban and man-made environment as well as those activities traditionally associated with the natural environment.

Nature

According to Oxford dictionary (2021), nature can be defined as the phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations.

Stress

Stress can be defined operationally which means the body's coping mechanism adapts to external stimuli and changes in the surrounding environment, as claimed by Frank Morelli, M.A. (Reference, 2021).

1.7.2 Operational definition

Knowledge

Knowledge towards outdoor activities that related with nature as a medium of stress reliever was determined through the questionnaires.

Perception

Perception towards outdoor activities that related with nature as a medium of stress reliever was determined through the questionnaires.

Outdoor activities

The variable being studied to identify whether the outdoor activities related with nature associates with level of stress of the respondents. The variable being assessed through knowledge and perception questionnaires.

Nature

Nature will be assessed by using questionnaire to measure the knowledge and perception of the respondents towards nature as a medium of stress reliever. It is consisting of 16 questions with multiple choice answers, Yes, No or Not sure that need to answer by the respondents. The questionnaire is adapted from several studies to obtain the suitable questions for their knowledge and perception.

Stress

Stress will be measured by using a questionnaire that is adopted from Perceived Stress Scale (PSS) by Sheldon Cohen in 1994. It is self-administered questionnaire that consist of 10 items where the scoring method is based on written 0 (never), 1 (almost never), 2 (sometimes), 3 (fairly often) and 4 (very often) by the respondents. The scores that ranging from 0-13 would be considered low stress. Meanwhile, the scores ranging from 14-26 would be considered moderate stress and scores ranging from 27-40 would be considered high perceived stress.

CHAPTER 2

LITERATURE REVIEW

2.1 Nature

Nature defines as living plants and animals, geological process, weather, and physics, such as matter and energy. It is also referring to the 'natural environment' such as wild animals, rocks, forest, beaches, and in general areas that have not been substantially altered by humans, or which persist despite human intervention.

2.1.1 Benefits of nature

Nature consist of a park, a garden or even a single tree can deliver a heavy dose of nature therapy into humans' life, as long as it will bring a sense of purpose to the experience. There also studies that shown spending time outdoors can improve humans' health physically and mentally.

The outdoor activities that related with nature are hiking, camping, jogging, walking, vacation, kayaking, cycling, fishing and others. According to Shin et al. (2001) escaping pressure at the recreational park was found as the second most desired in Sorak-San National Park in Korea. They enjoyed the benefits from the park to reduce stress, solitude and enjoying freedom. The recreational park is actually playing the main role as the place to give our mind a rest and being away from the noise.

Enjoying the nature was found to be able to release the students' stress from the varieties of stressors.

Walking, hiking and backpacking are some of the activities that becomes famous nowadays where it can release students' stress that related with academic mostly to enjoy and experience the nature (Marafa et al., 2007). The more often they visited the nature, it should be the less stress level experienced by the students (Jain & Singhai, 2018).

The American Institute of Stress mentioned that endorphin and dopamine which two types of hormone and the levels of this hormone production increase as people enjoying the outdoor activities related with nature. The increasing of this types of hormone will promote the happiness, improve the mood and also the self-esteem for them who are enjoying the nature.

A study related with nature therapy that can helps to reduce in human heart rate and blood pressure also increase the relaxation level after expose to natural green spaces (Hansen et al., 2017). By using all of the five senses which are smell, sight, hearing, taste and touch, people can immerse themselves in the nature which called Forest Bathing or in Japanese, Shinrin-Yoku. It is one of the health-promotion ways which can be apply to reduce the stress level.

People who benefitting outdoor activities in the natural environment can prevent themselves from the disease related with stress. Shinrin-Yoku relates with the activity of forest bathing such as staying or walking in the forest. However, it is also found that study recently revealed that dose-dependent plays the role of therapeutic benefits from the nature (Oh et al., 2017).

As students proceed with the higher level of education, they will tend to experience various stressful events in their life. They need to balance with the tough syllabus, assignments and tasks, and also examination (Asif, 2020). Due to this heavy burden, students having psychological problem such as stress, depression and anxiety.

According to University of Minnesota, anxiety and depression are two of the most common health concern in the society. Depression involves a low mood and a loss of enjoyment in activities while anxiety is an unconscious responses to the depressive behavior either real or imaginary that leads to severe fear or panic (Ranita Manap, 2019).

There is some previous study on visiting natural environment would be beneficial to reduce physical and psychological stress levels based on Cornell University. There is also a study on the health problems if associated with lack of nature. However, there are still lack of study on how the students can benefit the nature through outdoor activities.

2.2 Stress

According to Lazarus and Folkman (1984), stress is defined as physical and psychological response to the situation that may appear as a threat to the individuals'.

Based on Selye (1956) cited by Schneiderman et al. (2005) represent stress as anything that may seriously threaten the homeostasis. The term 'stressor' is actually the perceived threat to any organism and 'stress response' referred to the response towards the stressor. Stress may portray different meaning to each people under varieties situations or conditions facing.

2.2.1 Symptoms and effects of stress

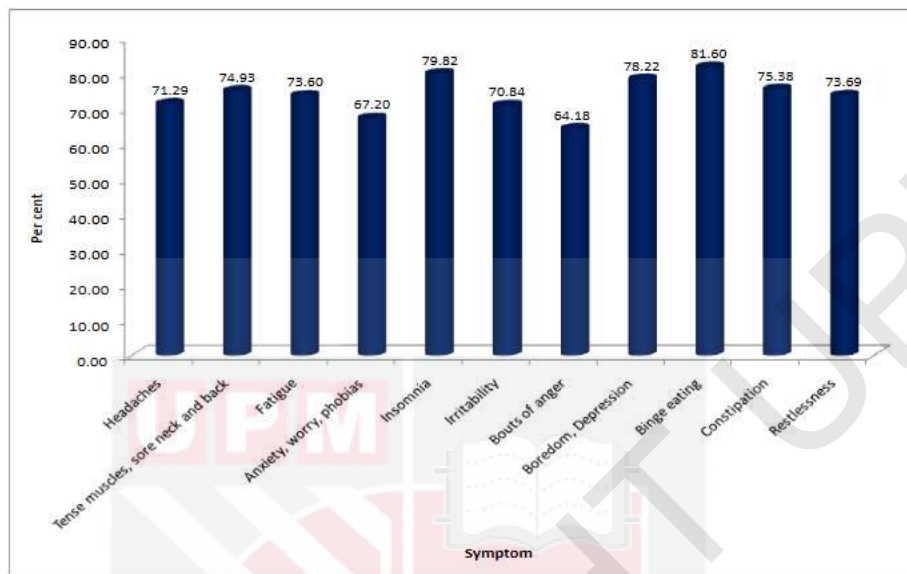


Figure 2.1: Stress symptoms among youth

Figure 2.1 shows a graph of stress symptoms among youth. There are few symptoms of stress that will be differently experience by people such as headaches, constipation, insomnia, excess sweating, dry mouth, shaking, ringing in the ear and others. The highest percentage of the stress symptoms experienced by the youth is binge eating 81.60%, followed by insomnia and boredom, depression 79.82% and 78.22% respectively (Bhargava & Trivedi, 2018).

Stress can contribute to various health problems also lead to non-communicable diseases such as cardiovascular diseases, chronic respiratory diseases, diabetes and cancer as stated in World Health Organization (WHO). As someone experiencing stress, they will tend to have binge eating and however, this will lead to diabetes. Meanwhile, if they having the panic attack due to stress it is somehow similar to heart attacks.

There are also three types of stress which are acute stress, episodic acute stress and chronic stress according to American Psychological Association (Anusuya, 2019). Acute stress happens on both positive (eustress) and negative (distress) way. The symptoms that mostly occurs are irritability, anxiety, depression, headache, cold hands or feet, muscle tension, stomach ache, high blood pressure, increased heart rate, sweaty palms and dizziness where they come on sudden in dramatic and stimulate in short but gives big impact to the students.

Meanwhile, as for the episodic acute stress occurs only during certain periods in life. Headache, high blood pressure, increased heart rate, fatigue, chest pain, concentration problems, migraines, insomnia, hypertension and shortness of breath are the most likely symptoms that will experience by the students. For the examples of episodic acute stress are examination pressure, peer pressure and parental pressure.

As for the chronic stress, it is a harmful type of stress which also known as grinding stress and long term stress. The students who experienced this type of stress will develop the high blood pressure, heart attack, cancer, chronic pain, anxiety, fatigue, depression, stroke, increased heart rate, stomach ache and lead to suicidal ideation. Chronic stress happens due to the death of a loved one, losing a job, illness, loneliness, financial problems and marital problems where it spoils the mental health of the students.

2.2.2 Factors of Stress

Students and stress are highly related even though attending college is the positive experience, yet most of the students will experience one due to academic demands such as examinations, assignments and other activities (Yikealo et al., 2018). Based on Asnusuya et al. (2005), other type of stressors that contribute to the higher level of stress among students are environment, relationship, extra-curricular activities and parental pressure.

According to Pfeiffer (2001), academic-related stress is most likely happens because of test or examination anxiety. Their performances are affected due to over worry about the test. Students are also reflecting their performances then by comparing with their friends and classmates. This will lead to the depression.

Then, stress also due to environment surrounding the students. For examples, noise, air quality, water availability, food availability, extreme temperature, climate change, colours, light, insects and natural disasters are the stressors to students' life. They might experience more health problems due to environmental stress.

Relationship also can cause stress. Students are most likely spend their time with their friend so stress may occur due to roommates' conflict, college mates' conflict, classmates' conflict and peer pressure issue. They need to be wise to tackle and solving the problems occurred. They also need to choose the right friends to gain the success life together.

According to Watling (2015), students also experiences stress due to commitment with extra-curricular activities in their college and faculty. They were

forced to join and take part in the activities unwillingly. As the academic demands already causing stress to students, extra-curricular activities such as clubs, sports or volunteer work also causes students having lack of time to focus on their studies.

Parental pressure also causes stress students as they always want their children to succeed in their future. However, they keep insist to see the excellent grades and not even thinking about their children' feelings. Parents are the one who should motivate and advice their children but seems like they are actually forcing them not encourage them (Reddy et al., 2018).

As they also need to commit with the extra co-curricular activities, so the marks also need to be consider to be measure. Despite on downtime students' have, they need to involve with the activities to keep stay in the college. They are having difficulties to balance their time with studies and co-curricular activities. According to Rivera et al. (2012), sense of coherence also one of the factor that related with someone's health in the adolescence stage. The demographic factors such as family, school, peers and neighbourhood affect the sense of coherence development. Students are exposed to the varieties of life contexts and they are in the stage of developments.

One of the conference paper presented on Emotional Stress Indicator (ESI) kit where it is actually a sensor device used to measure the human stress level (Azian Azamimi & Umida Hafsah, 2012). The device able to covert the reading into a signal by measuring the physical quantity. However, due to the financial constraints and other factors, the level of stress still can be identified using the reliable questionnaire as for the example in the Appendix.

2.2.3 Management of Stress

Stress may lead to a state of sadness in students' life. They are varieties ways on how to cope with the stress. According to Alharbi and Smith (2018), there are several types of coping strategies where the effectiveness depends on the type of stressors and how they encounter individually.

Meditation and breathing exercises believed can help to relieve stress for students during examination season (Jain & Singhai, 2018). Getting enough sleep and listening to music also can help to subside students' stress. They have to know and find on how to release their stress by their own (Nonis et al., 1998).

Harvard Health Publishing (2019) mentioned that the massive drop in cortisol levels was associated with the spending about 25 minutes in a nature setting based on a study where they measured the samples, saliva before and after experiencing nature. To avoid any bias, the respondents must avoid social media, phone calls, conversations and reading.

Meanwhile, in another research from Cornell University found that spending time in a nature setting with minimum of 10 minutes will help college students feel happier and reduce the stress physically and mentally. The age of college students involved in the research is in between 15 to 30 years old and the activities in nature setting assessed are only sitting and walking.

CHAPTER 3

METHODOLOGY

3.1 Study design

The type of study design for this research study is cross-sectional study where we need to measure the stress level and the relationship of nature at the same time and the data collection will be collected in short duration of time. The outcome and the exposure are measures at certain point of time. It is a type of descriptive research. This research study is a quantitative study as the data will be collected and analyze using a set of self-administered questionnaire will be distributed to each of the respondent to answer.

3.2 Sampling Method

3.2.1 Study location

The universal sampling will be conducted to choose the group of students in the study location. This method is useful as this study will be conducted in short duration of time. The exact location of sampling site is shown in the map below:

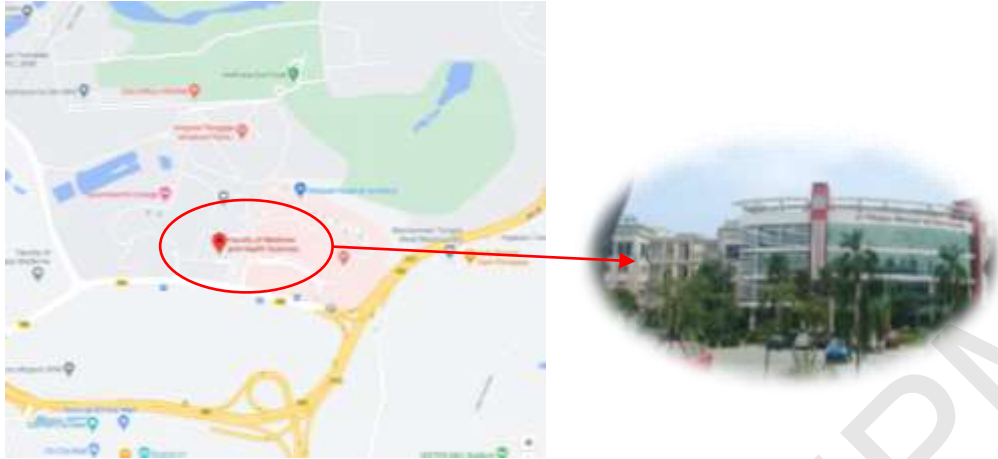


Figure 3.1: Map of study location

Figure 3.1 shows a map of the study location. This study will be located at Faculty of Medicine and Health Sciences, Universiti Putra Malaysia (Google, n.d.). It is located in Serdang, Selangor.

3.2.2 Sampling population

Universal sampling will be conducted where a decision about who will be able to provide the desired information is made by the researcher. The study sample which is Bachelor of Science (Environmental and Occupational Health) students from first until fourth year student is chosen to be the representative. As they were in small population of interest, all the students will be the study sample. This group of subject is chosen to represent the population in the faculty to indicate their level of stress and whether nature helps them to reduce their level of stress. There was a study on the prevalence of stress among medical students so environmental and occupational students are now chosen to identify their prevalence of stress.

The total number of students from Bachelor of Science (Environmental and Occupational Health) is around 211 people. In general, the larger the sample, the better accuracy of the results. However, sample size alone does not guarantee the accuracy of the results if the sample is not representing the population. So, the selection of sampling method is very crucial. The sample size formula is from Krjcie and Morgan as this formula is for known population.

In cross sectional study conducted at Jimma University, Ethiopia, the prevalence of stress among nursing students was 47.7% (Mamo et al., 2018). For the population size, Table 3.1 shows the number of students who are taking the course of Bachelor of Science (Environmental and Occupational Health) in Universiti Putra Malaysia.

Table 3.1: The number of students in each year of study

Year of study	Number of students
First year	55
Second year	54
Third year	52
Forth year	50
Total	211

3.2.3 Sampling frame

The list of all students from first and forth year who are taking Bachelor of Science (Environmental and Occupational Health) course will obtain from Environmental and Occupational Health Department.

3.2.4 Sample unit

Sampling unit involved the respondents who are selected based on sampling frame above.

3.2.5 Sample size calculation

The following formula by Krejcie and Morgan (1970) was used in calculating the sample size of this study:

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

Where,

S = required sample size

N = the given population size

P = prevalence

d = the degree of accuracy

$X^2 = 3.841$ for the 95% confidence level

$$S = \frac{(3.841)^2(211)(0.477)(1 - 0.477)}{(0.05)^2(211 - 1) + (3.841)^2(0.477)(1 - 0.477)}$$

$$S = 184.66 \sim 185$$

However, due to non-response rate among the respondents which is 10% so the total sample size is 170.

3.3 Instrumentations

3.3.1 Questionnaire

Type of questionnaire that will be used in this study is self-administered questionnaire consist of close ended format and likert-scale questions by using online platform due to the current situation. The estimation duration to answer all those questions is about 15 minutes. The questionnaire is consist of both English and Malay language. The translation is from the English-version to Malay. The questionnaire comprises several parts to collect the respondents' data.

Section A: Socio-demographic information

The aim of this section is to obtain the background information related to age, gender, marital status, number of siblings, parents' background, academic-related performance and mental health status of the respondents.

Section B: Stress scale

The stress scale will be measure and will be classified into three categories which are low stress, moderate stress and high perceived stress. It is adopted from Perceived Stress Scale (PSS) questionnaires by Cohen et al. (1983). The scoring method for this section is based on written 0 (never), 1 (almost never), 2 (sometimes), 3 (fairly often) and 4 (very often) by the respondents.

Scoring:

- ▶ Scores ranging from 0-13 would be considered low stress.
- ▶ Scores ranging from 14-26 would be considered moderate stress.
- ▶ Scores ranging from 27-40 would be considered high perceived stress.

Section C: Knowledge and perception

This section requires the respondents to give the information regarding on how their knowledge and perception on outdoor activities related with nature as a medium of stress reliever. This section also assesses how well their knowledge and perception of the respondents such as non-communicable diseases, symptoms of stress and others. It is adapted from Ladiwala et al. (2021). The questions also in close-response format where Yes, No and Not sure. The scoring method was referred to a previous study by Aminrad et al. (2013).

Scoring:

- ▶ Poor = $\text{Score} < \text{Mean} - \text{Standard deviation}$
- ▶ Good = $\text{Score} > \text{Mean} + \text{Standard deviation}$

If neither poor nor good, falls to Moderate

Section D: Recommendation

This section requires the respondents to provide any suggestions that related for the study.

3.3.2 Data collection

Before proceed with the questionnaire, a short briefing regarding the aim of the research will be given and the respondents are required to fill up the consent form. Then, they need to submit to the researcher after completed. The respondents must be the one from this course and then proceed to answer. All the information gathered and received will be keep secured and confidential. The data obtained will be analyzed using IBM SPSS ® Software Version 25.0.

3.4 Data analysis

The results gained will be analyze using IBM SPSS® Software Version 25.0 to get the findings of the relationship of knowledge and perception of outdoor activities related with nature and level of stress. The statistical procedures that will be used are Kolmogorov-Smirnov to test the normality distribution of the data collected of sample size 211 of respondents are more than 100.

Table 3.2: Statistical test for each specific objectives

Specific objectives	Statistical test
1. To determine the sociodemographic characteristic among Bachelor Science (Environmental and Occupational Health) students.	Descriptive analysis
2. To determine the prevalence of level of stress among Bachelor Science (Environmental and Occupational Health) students.	Descriptive analysis
3. To determine the knowledge and perception of outdoor activities related with nature as a medium of stress reliever among Bachelor Science (Environmental and Occupational Health) students.	Descriptive analysis
4. To determine the association between the knowledge and perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress among Bachelor Science (Environmental and Occupational Health) students.	Chi Square test

3.5 Quality control (QC)

One of the ways to control the quality of the study is by verification of questionnaire by supervisor and ethical consideration. The questionnaire is translated from English-version to Malay. A pre-test which is 21 of respondents or equal with 10% of the total sample conducted to test the questionnaire where it is required to ensure the questions are understandable. The questionnaire also needed to fulfil the reliability towards Cronbach's alpha where at least more than 0.7, acceptable.

3.6 Ethical consideration

As the data collection should not begin until written approval has been received from Ethical Committee for Research Involving Human Subjects, JKEUPM, UPM. This study research should not have any issues with the ethical concern as only the questionnaires are being used. Each respondent will be given consent form along with the questionnaire. The study participants is voluntarily and any participant can withdraw from the study at any time. The anonymity of the respondents will be maintained all the time. There will be no such potential harm or risk that could be experienced by the respondents. The study purpose is for the student research of undergraduate study. The reference number for JKEUPM ethical approval is JKEUPM-2020-486.

CHAPTER 4

RESULTS

4.1 Response rate

Data was collected from total of 170 respondents from Bachelor Science (Environmental and Occupational Health) students in UPM, which gives the response rate of 90%. This good response rate was achieved because of the cooperation between the respondents and researcher.

4.2 Reliability

The reliability of the questionnaire was measured by checking the internal consistency using Cronbach's alpha and values above 0.7 were accepted.

4.3 Socio-demographic characteristics of the respondents

Table 4.1 demonstrates the socio-demographic characteristics of the respondents. About 34 (20.0%) were in the age of 20 year, while 51 (30.0%) in the age of 21, 40 (36.0%) and 36 (21.2%) in the age of 22 and 23 respectively. The remaining respondents who were within the age 24 and above is 8 (4.8%) and below 19 is 1

(0.6%). The male respondents 41 (24.1%) and the majority female respondents 129 (75.9%). For the race, the majority of the respondents is Malay 155 (91.2%) followed by the Chinese and Others 7 (4.1%) and Indian 1 (0.6%). Next, for year of study, first year 37 (21.8%), second year 46 (27.1%), third year 43 (25.3%) and fourth year 44 (25.9%).

Table 4.1: Distributions of socio-demographic of the respondents (N=170)

Variables	n (%)
Age (Years)	
<19	1 (0.6)
20	34 (20.0)
21	51 (30.0)
22	40 (36.0)
23	36 (21.2)
>=24	8 (4.8)
Gender	
Male	41 (24.1)
Female	129 (75.9)
Race	
Malay	155 (91.2)
Chinese	7 (4.1)
Indian	1 (0.6)
Others	7 (4.1)
Year Study	
First year	37 (21.8)
Second year	46 (27.1)
Third year	43 (25.3)
Fourth year	44 (25.9)

4.4 Prevalence of stress

Table 4.2 shows the distribution of answers by the respondents regarding their prevalence of stress. 66 (38.8%) and 55 (32.4%) of the respondents had fairly often upset because of something that happened unexpectedly and felt they were unable to control the important in their life respectively. The respondents 70 (41.2%) also fairly often felt nervous and stressed. 70 (41.2%) and 68 (40.0%) of the respondents had sometimes felt confident about the ability to handle their personal problems and felt that things were going their way respectively. The 66 (38.8%) respondents fairly often found that they could not cope with all the things that they had to do. The respondents had very often 2 (1.2%) and 5 (2.9%) being able to control irritations in their life and were on top of things respectively. They felt fairly often been angered because of things that happened were outside of their control 58 (34.1%) and felt sometimes difficulties were piling up so high that they could not overcome them 56 (32.9%).

Table 4.2: Stress scale of the respondents (N=170)

	Never	Almost never	Sometimes	Fairly often	Very often	
	0	1	2	3	4	
No.	Questions					
	Frequency (%)					
	0	1	2	3	4	
1.	In the last month, how often have you been upset because of something that happened unexpectedly?	2 (1.2)	21 (12.4)	51 (30.0)	66 (38.8)	30 (17.6)
2.	In the last month, how often have you felt that you were unable to control the important things in your life?	4 (2.4)	39 (22.9)	38 (22.4)	55 (32.4)	34 (20.0)

3.	In the last month, how often have you felt nervous and stressed?	2 (1.2)	15 (8.8)	36 (21.2)	70 (41.2)	47 (27.6)
4.	In the last month, how often have you felt confident about your ability to handle your personal problems?	15 (8.8)	57 (33.5)	70 (41.2)	27 (15.9)	1 (0.6)
5.	In the last month, how often have you felt that things were going your way?	6 (3.5)	60 (35.3)	68 (40.0)	33 (19.4)	3 (1.8)
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?	3 (1.8)	30 (17.6)	43 (25.3)	66 (38.8)	28 (16.5)
7.	In the last month, how often have you been able to control irritations in your life?	17 (10.0)	62 (36.5)	56 (32.9)	33 (19.4)	2 (1.2)
8.	In the last month, how often have you felt that you were on top of things?	15 (8.8)	50 (29.4)	67 (39.4)	33 (19.4)	5 (2.9)
9.	In the last month, how often have you been angered because of things that happened that were outside of your control?	5 (2.9)	32 (18.8)	45 (26.5)	58 (34.1)	30 (17.6)
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	8 (4.7)	20 (11.8)	56 (32.9)	51 (30.0)	35 (20.6)

Table 4.3 and Figure 4.1 present the frequency and percentage of prevalence of stress of 170 respondents. The respondents experiencing low stress 16 (9.4%), moderate stress 113 (65.5%) and high perceived stress 41 (24.0%).

Table 4.3: Distribution of prevalence of stress of the respondents (N=170)

Category	n (%)
Prevalence of stress	
Low stress	16 (9.4)
Moderate stress	113 (66.5)
High perceived stress	41 (24.0)

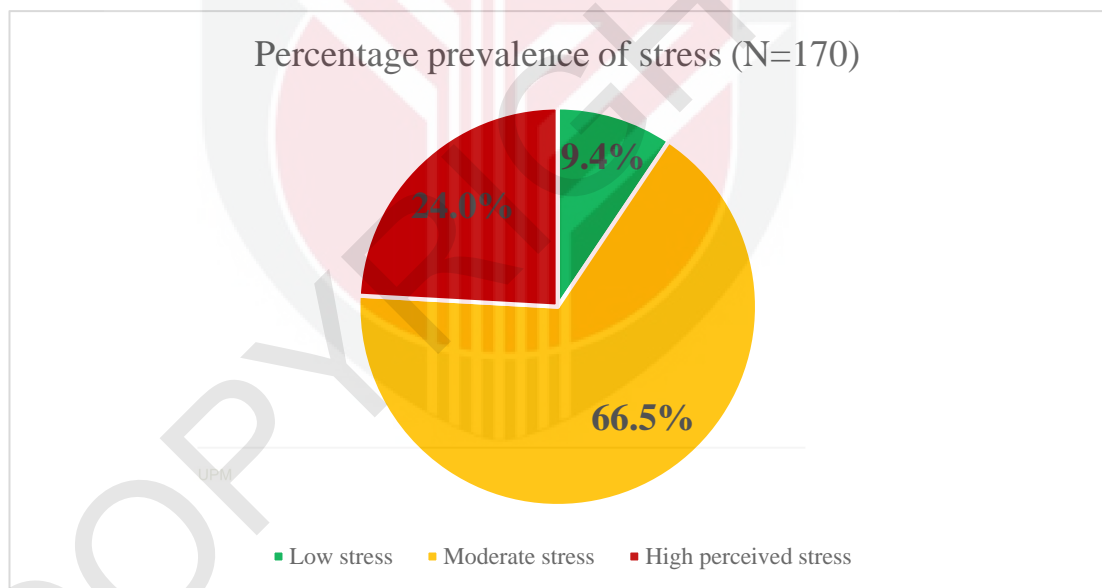


Figure 4.1: Percentage prevalence of stress (N=170)

4.5 Knowledge and perception of respondents

Table 4.4 shows the distribution of answers by the respondents regarding their knowledge and perception of outdoor activities related with nature as a medium of stress reliever. Majority of the respondents answered 'Yes' to all of the questions. Then, followed by 'Not sure' except for the questions asking their opinion whether they have experiencing any of the symptoms of stress 12 (7.1%) where 10 (5.9%) respondents choose 'No'. 60 (35.3%) of the respondents not sure that nature also called as forest bathing and Eco therapy. Then, only 1 respondent answered no to the question No. 2 which is 'by spending time in nature can help relieve stress and anxiety, improve your mood and boost feelings of happiness and wellbeing', question No. 8 which is 'in your opinion, will your level of stress reduce after involving with the activities that related with nature' and question No. 13 where 'Do you believe that academic demands, financial issue, environment, relationship and parental pressure are some of the factors that may contribute to stress'.

Table 4.4: Knowledge and perception of outdoor activities related with nature as a medium of stress reliever (N=170)

No.	Questions	Frequency (%)		
		Yes	No	Not sure
Knowledge				
1.	Nature also called as forest bathing and Eco therapy	107 (62.9)	3 (1.8)	60 (35.3)
2.	Stress can be defined as any type of change that causes physical, emotional or psychological strain	164 (96.5)	3 (1.8)	3 (1.8)
3.	Stress is the feeling of being overwhelmed or unable to cope with mental or emotional pressure	158 (92.9)	6 (3.5)	6 (3.5)
4.	Stress consist of two types which are acute stress and chronic stress	112 (65.9)	12 (7.1)	46 (27.1)
5.	Stress can be categorized into eustress and distress	116 (68.2)	10 (5.9)	44 (25.9)
6.	Stress can lead to non-communicable diseases	141 (82.9)	7 (4.1)	22 (12.9)
7.	Non-communicable diseases are also known as chronic diseases	114 (67.1)	10 (5.9)	46 (27.1)
8.	Cardiovascular disease, chronic respiratory disease, diabetes and cancer are the non-communicable diseases due to stress	121 (71.2)	21 (12.4)	28 (16.5)
Perception				
9.	By spending time in nature can help relieve stress and anxiety, improve your mood, and boost feelings of happiness and wellbeing	158 (92.9)	1 (0.6)	11 (6.5)
10.	Jogging, hiking, walking and vacation are examples of the	161 (94.7)	2 (1.2)	7 (4.1)

activities that most related with nature that believes will release stress

11.	In your opinion, will your level of stress reduce after involving with the activities that related with nature	131 (77.1)	1 (0.6)	38 (22.4)
12.	In your opinion, involving with the activities that related with nature will reduce the risk to develop non-communicable diseases	136 (80.0)	5 (2.9)	29 (17.1)
13.	Do you believe that academic demands, financial issue, environment, relationship and parental pressure are some of the factors that may contribute to stress	164 (96.5)	1 (0.6)	5 (3.0)
14.	Headaches, fatigue, insomnia, upset stomach, worry, phobias, binge eating, dry mouth and shaking are some of the symptoms believe happens due to stress	159 (93.5)	3 (1.8)	8 (4.7)
15.	In your opinion, have you ever experiencing any of this symptoms	148 (87.1)	12 (7.1)	10 (5.9)
16.	Do you believe that symptoms you are experiencing due to stress	126 (74.1)	16 (9.4)	28 (16.5)

Table 4.5 and Figure 4.2 present the frequency and percentage of knowledge level of 170 respondents. Majority of the respondents have a good level of knowledge (57.6%) while respondents with moderate knowledge (40.0%) and poor knowledge (2.4%).

Table 4.5: Distribution of knowledge level of the respondents (N=170)

Category	n (%)
Respondents' knowledge	
Good	98 (57.6)
Moderate	68 (40.0)
Poor	4 (2.4)

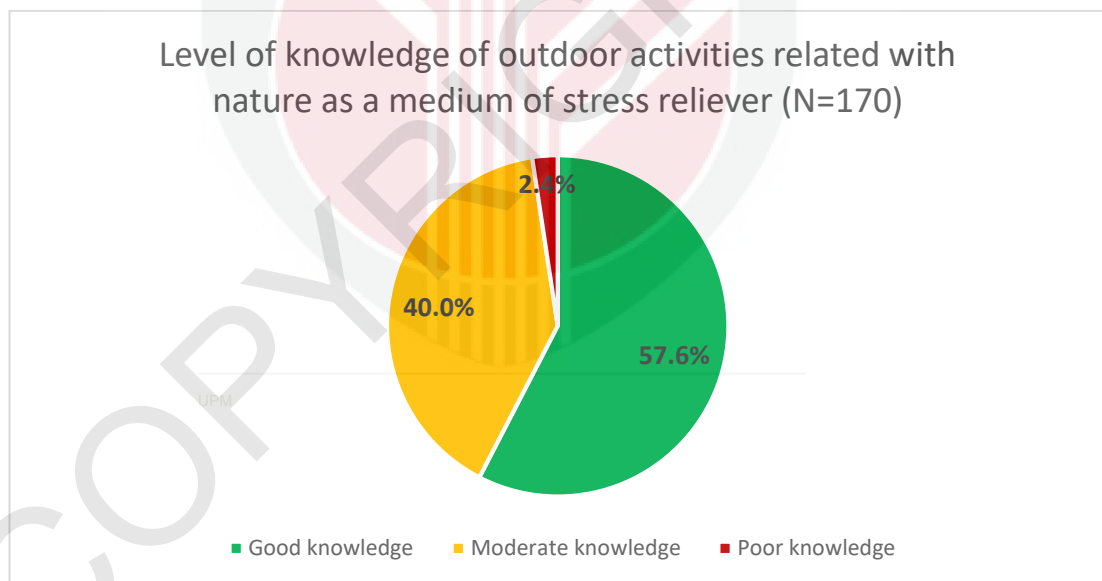


Figure 4.2: Level of knowledge of the respondents (N=170)

Table 4.6 and Figure 4.3 present the frequency and percentage of perception level of 170 respondents. Majority of the respondents have a good level of perception (74.7%) while respondents with moderate knowledge (25.3%) and poor knowledge (0.0%).

Table 4.6: Distribution of perception level of the respondents (N=170)

Category	n (%)
Respondents' perception	
Good	127 (74.7)
Moderate	43 (25.3)
Poor	0 (0.0)

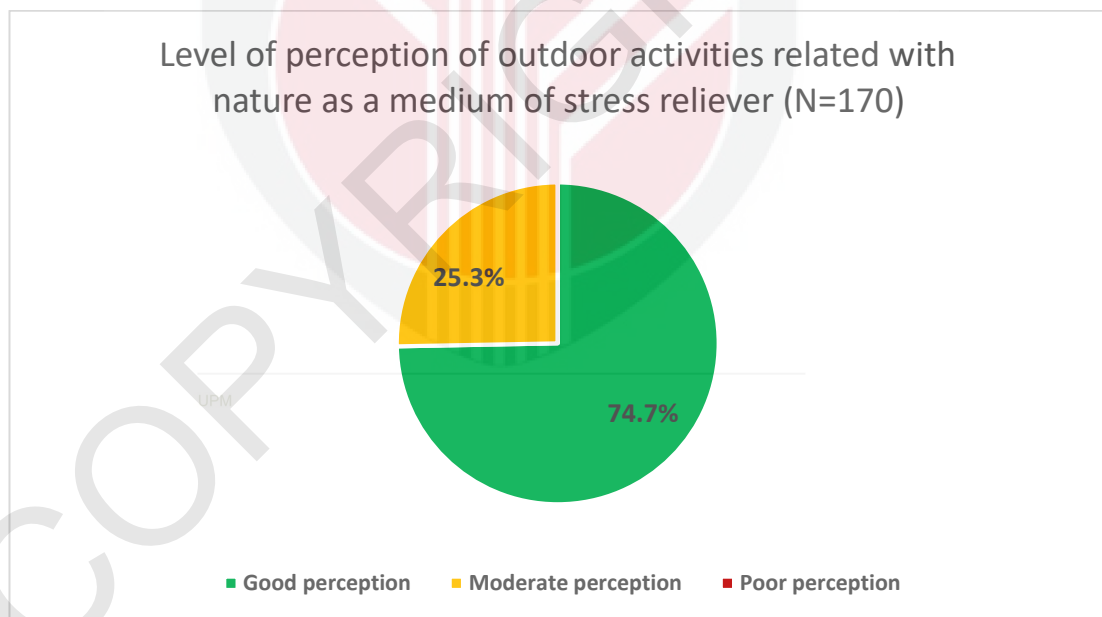


Figure 4.3: Level of perception of the respondents (N=170)

4.6 The association between the knowledge and perception of outdoor activities related with nature and prevalence of stress

Based on Table 4.7, the association between knowledge and perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress was determined by using Chi-Square test. There is a significant association between the knowledge of outdoor activities related with nature as a medium of stress reliever and prevalence of stress where the ($X^2=13.053$) and ($p=0.006$) which is $p<0.05$. However, there is no significant association between the perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress since the p-value is >0.05 .

Table 4.7: Association between knowledge and perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress (N=170)

Variables	n	Prevalence of stress			X ²	P-value
		Low stress	Moderate stress	High perceived stress		
		Freq (%)	Freq (%)	Freq (%)		
Knowledge						
Good	98	12 (12.2)	59 (60.2)	27 (27.6)	13.053	0.006*
Moderate	68	2 (2.9)	53 (77.9)	13 (19.1)		
Poor	4	2 (50.0)	1 (25.0)	1 (25.0)		
Perception						
Good	127	12 (9.4)	88 (69.3)	27 (21.3)	2.302	0.301
Moderate	43	4 (9.3)	25 (58.1)	14 (32.6)		

Poor	0	0 (0.0)	0 (0.0)	0 (0.0)
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*p<0.05 is considered significant



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CHAPTER 5

DISCUSSION

5.1 Socio-demographic of the respondents

The main objective of this research is to study the knowledge and perception of outdoor activities related with nature as a medium of stress reliever among Bachelor of Science (Environmental and Occupational Health) students in UPM. The population size is 211 students and based on the calculated sample size, only 185 respondents needed to answer the survey. However, there was only 170 respondents obtain so the non-response rate is 10%.

All of the respondents enrolled in this study were from this course and majority of them were female 129 (75.9%) while male 41 (24.1%). A survey conducted by Calaguas (2012) on college academic stressors towards students showed relatable results where most of the respondents were female (60.25%) compared to male (39.75%).

The majority of the respondents were Malay 155 (91.2%) because this sample frame is known to have the highest number of Malay students compared to other races. The highest rate of the respondents falls for second year students 46 (27.1%) out of 54 students.

5.2 Prevalence of stress among respondents

A prevalence of stress among Bachelor of Science (Environmental and Occupational Health) students was determined in this study. By using the PSS questionnaire, the majority of the respondents was experiencing moderate stress 113 (66.5%). In cross sectional study conducted among undergraduate students at Universiti Putra Malaysia, the prevalence of stress among the respondents was moderate (Elias et al., 2011). Currently, students are having online learning for almost one and half year. This is quite challenging and might be one of the contribution factor to the prevalence of stress. Besides, during this MCO, people are not allowed to do any outdoor activities so this will restrain respondents from enjoying the nature.

5.3 Knowledge and perception of the respondents

Overall, majority of the respondents have good knowledge and good perception. Educational establishments in promoting good mental health are important to promote the emotional well-being for the young people (Kassymova et al., 2018).

Based on the questionnaire regarding knowledge and perceptions, a total of 16 questions were asked and majority of the respondents answered correctly. The background study the course of Environmental and Occupational Health contribute to the knowledge of respondents because knowledge is based on facts and reality from the study and experience. The perception always comes before knowledge or own thoughts and ideas. However, it is also may lead to the knowledge of someone.

The highest percentage (96.5%) respondents answered 'Yes' to the knowledge where 'Stress can be defined as any type of change that causes physical, emotional or psychological strain' and also the perception (96.5%) respondents answered 'Yes' where 'Do you believe that academic demands, financial issue, environment, relationship and parental pressure are some of the factors that may contribute to stress'. Based on a study by Yikealo et al. (2018), academic commitments, financial pressures, and lack of time management skills are the contribution factors to higher levels of stress to undergraduate university students.

Most of the respondents answered 'Not sure' to the knowledge question where 'Nature also called as forest bathing and Eco therapy' (35.3%). This shown that the students are not familiar with the term and usually define 'nature' itself as the outdoor environment (Eco-therapy, 2020).

5.4 The association between the knowledge and perception of outdoor activities related with nature and prevalence of stress

There is a significant association between knowledge and prevalence of stress as the p-value is <0.05 . Outdoor activities enhance mental health among young adults who also the students that well-educated (Mutz & Müller, 2016). Meanwhile, there is no significant association between the perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress since the p-value is >0.05 . So, the research hypothesis where the perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress is rejected.

The chi-square test being used to determine the value. However, as for the Chi-square test, there are several assumptions that need to meet where the expected count (EC) less than 5, EC less than 20% of total number of cells and the smallest EC must at least 2. So, as for the variable of the knowledge, there are 3 cells (33.3%) have EC less than 5 and the minimum EC is 0.38. The cells was less than 20% of the total number cells. So, Fisher's Exact test used to obtain the p-value since the assumptions are not met where the ($X^2=13.053$) and ($p=0.006$).



CHAPTER 6

CONCLUSION

6.1 Conclusion

In conclusion, based on this study there were more than half of the respondents suffering from moderate of stress which is 113 (66.5%) from 170 respondents. This result revealed that the prevalence of stress similar with the previous study as students are currently experiencing online distance learning that may contribute to the stress.

Besides, the study also found that majority of the respondents had a good knowledge 98 (56.7%) and good perception 127 (74.7%). Educational establishments in promoting good mental health are important to promote the emotional well-being for the young people (Kassymova et al., 2018).

In terms of association of knowledge and perception toward prevalence of stress, there was a significant association between the knowledge of outdoor activities related with nature as a medium of stress reliever and prevalence of stress where ($X^2=13.053$) and ($p=0.033$). Meanwhile, there was no significant association between the perception of outdoor activities related with nature as a medium of stress reliever and prevalence of stress.

6.2 Study limitation

This study has several limitations found that may affect the final results. First, there is lack of information regarding the study on nature and level of stress. One of the study found that the researcher was using biomarker which is saliva samples to analyze the changes of stress hormones level in humans and a set of questionnaire to measure the level of stress (Ewart & Chang, 2018). Then, due to COVID-19, the distribution of questionnaire is through online platform which is Google form only. Hence, the respondents were less efficient to approach to fill up the survey and might create recall bias as the online questionnaire has no limitation of times.

6.3 Recommendation

Outdoor activities related with nature such as hiking, camping, kayaking and others are suggested to be conducted. Students also advised to join any clubs under the university or faculty that offers activities that related to avoid stress and sustain the mental health.

The information in this study also can be used as the baseline to identify the prevalence of stress of the respondents which is Environmental and Occupational Health students. This demonstrates the need of reviewing existing knowledge and perception on outdoor activities related with nature to ensure the good mental health of students.

In order to obtain more information and accurate results of the study, few recommendations were collected from the questionnaire, the level of attitude and

practice also need to be assessed. This will help to obtain the association of attitude and practice towards the prevalence of stress of the respondents.

Next, as for the future recommendation, this study should also be conducted to other than health sciences students to obtain the results whether the study background influence the knowledge and perception towards outdoor activities related with nature as their medium of stress reliever.



REFERENCES

- Alharbi, E. S., & Smith, A. P. (2018). Review of the literature on stress and wellbeing of international students in english-speaking countries. *International Education Studies*, *11*(6), 22-44.
- Aminrad, Z., Sayed Zakariya, S. Z. B., Samad Hadi, A., & Sakari, M. (2013). Relationship between awareness, knowledge and attitudes towards environmental education among secondary school students in Malaysia. *World Applied Sciences Journal*, *22*(9), 1326–1333. <https://doi.org/10.5829/idosi.wasj.2013.22.09.275>
- Anusuya, A., Balaji, S., & Frenny, F. C. (2018). A literature assessment on stress among students using various techniques. *IJRAR*, *6*(1), 1238-1246.
- Asif, S., Mudassar, A., Shahzad, T. Z., Raouf, M., & Pervaiz, T. (2020). Frequency of depression, anxiety and stress among university students. *Pakistan journal of medical sciences*, *36*(5), 971–976. <https://doi.org/10.12669/pjms.36.5.1873>
- Azian Azamimi, & Umida Hafsah. (2012, October 6-9). *Design and Development of an Emotional Stress Indicator (ESI) Kit*, Kuala Lumpur. 10.1109/STUDENT.2012.6408414
- A 20-minute nature break relieves stress. Harvard Health. (2019, July 1). <https://www.health.harvard.edu/mind-and-mood/a-20-minute-nature-break-relieves-stress>.
- Bhagavathula, A. S., Aldhaleei, W. A., Rahmani, J., Mahabadi, M. A., & Bandari, D. K. (2020). Novel Coronavirus (COVID-19) Knowledge and Perceptions: A Survey of Healthcare Workers. <https://doi.org/10.1101/2020.03.09.20033381>

- Bhargava, Deepti & Trivedi, Hemant. (2018). A Study of Causes of Stress and Stress Management among Youth. *IRA-International Journal of Management & Social Sciences (ISSN 2455-2267)*, 11, 108. [10.21013/jmss.v11.n3.p1](https://doi.org/10.21013/jmss.v11.n3.p1).
- Chonghui, L., Rebecca, R., & Sandhya, M. (2018). *Too Many Teens Suffering from Stress*. <https://www.thestar.com.my/news/nation/2018/10/12/too-many-teens-suffering-from-stress-exam-oriented-culture-not-only-affecting-students-but-teachers-a/>.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.
- Dzahamov, A., M. (2014). Perceived benefits of nature questionnaire: Preliminary results. *Ecopsychology*, 6(2), 109-115.
- ECO-THERAPY. Bangalore Environment Trust. (2020, June 4). <http://bngenvtrust.org/work/eco-therapy/>.
- Elias, H., Ping, W. S., & Abdullah, M. C. (2011). Stress and Academic Achievement among Undergraduate Students in Universiti Putra Malaysia. *Procedia - Social and Behavioral Sciences*, 29, 646-655. <https://doi.org/10.1016/j.sbspro.2011.11.288>.
- Environmental Health Degree*. EnvironmentalScience.org. (n.d.). <https://www.environmentalscience.org/degree/environmental-health>.
- Ewert, A., & Chang, Y. (2018). Levels of Nature and Stress Response. *Behavioral sciences (Basel, Switzerland)*, 8(5), 49. <https://doi.org/10.3390/bs8050049>

Google. (n.d.). [Google Maps of Faculty of Medicine and Health Sciences]. Retrieved 2021, from <https://goo.gl/maps/fJA4TQ4auDx3wbobA>

Hansen, M. M., Jones, R., & Tocchini, K. (2017). Shinrin-Yoku (Forest Bathing) and Nature Therapy: A State-of-the-Art Review. *International Journal of Environmental Research and Public Health*, 14(851), 1-48.

Jackson, S. B., Stevenson, K. T., Larson, L. R., Peterson, M. N., & Seekamp, E. (2021). Outdoor Activity Participation Improves Adolescents' Mental Health and Well-Being during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, 18(5), 2506. <https://doi.org/10.3390/ijerph18052506>.

Jain, G., & Singhai, M. (2018). Academic stress amongst students: A review of literature. *Prestige e-Journal of Management and Research*, 5(1), 58-67.

Javed, A., Naeem, M. A., Waheed, A., & Vohra, I. A. (2015). Visitors' Perception of Outdoor Recreational Facilities in Murree City, Pakistan. *GMSARN International Journal*, 9, 125-136.

Kassymova, G. & Aigerim, Kosherbayeva & Ospan, Sangilbayev & Schachl, Hans & Cox, Nigel. (2018). Stress management techniques for students. 47-56. [10.2991/ictppfms-18.2018.10](https://doi.org/10.2991/ictppfms-18.2018.10).

Krejcie, R.V. & Morgan, D.W. (1970). Determining sample size for research activities. *Educational & Psychological Measurement*, 30, 607-610.

Ladiwala, Z.F.R., Dhillon, R.A., Zahid, I. *et al.* (2021). Knowledge, attitude and perception of Pakistanis towards COVID-19; a large cross-sectional

survey. *BMC Public Health* 21, 21. <https://doi.org/10.1186/s12889-020-10083-y>

Loo, Y. T. (2018). Prevalence and determinants of perceived stress among undergraduate students in a Malaysian university. *JUMMEC*, 21(1), 1-5.

Maajida. M. A., Vishnu. V. P., & Gayathri. R. (2018). Effect of stress on academic performance of students in different streams. *Drug Invention Today*, 0975(7619), 1776-1780.

Mamo, A. A., Girma, Y. K., & Mengistu, F. (2018). Prevalence of stress and associated factors among regular students at Debre Birhan governmental and non governmental health science college North Showa Zone, Amhara Region, Ethiopia 2016. *Psychiatry Journal*, 2018, 1-7.

Marafa, L. M., Ting, H. Y., & Cheong, C. K. (2007). Perceived benefits of hiking as an outdoor recreation activity in Hong Kong. *LICERE-Revista do Programa de Pós-graduação Interdisciplinar em Estudos do Lazer*, 10(2).

Mutz, M., & Müller, J. (2016). Mental health benefits of outdoor adventures: Results from two pilot studies. *Journal of Adolescence*, 49, 105–114. <https://doi.org/10.1016/j.adolescence.2016.03.009>

Nonis, S. A., Hudson, G. I., Logan, L. B., & Ford, C. W. (1998). Influence of perceived control over time on college students' stress and stress-related outcomes. *Research in Higher Education*, 39(5), 587-605.

Oduwaiye, R. O., Yahaya, L. A., Amadi, E. C., & Tihamiyu, K. A. (2017). Stress level and academic performance of university students in Kwara State, Nigeria.

Oh, B., Lee, K. J., Zaslowski, C., Yeung, A., Rosenthal, D., Larkey, L., & Back, M. (2017). Health and well-being benefits of spending time in forests: systematic review. *Environmental Health and Preventive Medicine*, 22(71), 1-11.

Oxford University Press (2021). *Definition of nature* [online]. Oxford University Press. Available at: <https://www.lexico.com/definition/nature> (Accessed: 14 June 2021).

Pascoe, M. C., Hetrick, S. E., & Parker, A. G. (2019). The impact of stress on students in secondary school and higher education. *International Journal of Adolescence and Youth*, 25(1), 104-112.

Phipps, M. L. (1990). *Definitions of Outdoor Recreation and Other Associated Terminology*. ERIC. <https://eric.ed.gov/?id=ED335189>.

Pfeifer, T. A., Kranz, P. L., & Scoggin, A. E. (2008). Perceived stress in occupational therapy students. *Occupational Therapy International*, 15(4), 221-231.

Ranita Manap, Sohana Abdul Hamid, & Marhaini Abdul Hamid. (2019). Depression, anxiety and stress among undergraduate students. *Journal of Science and Humanities*, 16(2), 1-7.

Reddy, K. J., Karishmarajanmenon, M., & Anjanathattil. (2018). Academic stress and its sources among university students. *Biomedical & Pharmacology Journal*, 11(5), 531-537.

- Ribeiro, I. J. S., Pereira, R., Freire, I. V., Oliveira, B. G., Casotti, C. A., & Boery, E. N. (2017). Stress and quality of life among university students: a systematic literature review. *Health Professions Education, 4*, 70-77.
- Rivera, F., Garcia-Moya, I., Moreno, C., & Ramos, P. (2012). Developmental contexts and sense of coherence in adolescence: A systematic review. *Journal of Health Psychology, 18*(6), 800-812.
- Rock, I. (2002, June 3). Perception and knowledge. *Acta Psychologica*.
<https://www.sciencedirect.com/science/article/pii/0001691885900393>.
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: Psychological, behavioral, and biological determinants. *Annu Rev Clin Psychol., 1*, 1-19.
- Shin, W. S., Jaakson, R., & Kim, E. I. (2001). Benefits-based analysis of visitor use of Sorak-San National Park in Korea. *Environmental Management, 28*(3), 413-419.
- Watling, C. (2015). Tackling medical student stress: beyond individual resilience. *Perspect Md Educ., 4*, 105-106.
- Yikealo, D., Tareke. W., & Karvinen, I. (2018). The level of stress among college students: a case in the college of education, Eritrea Institute of Technology. *Open Science Journal, 3*(4), 1-18.



APPENDIX 1

CONSENT FORM (ENGLISH)



UPM
UNIVERSITI PUTRA MALAYSIA

**JAWATANKUASA ETIKA UNIVERSITI UNTUK
PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,
SELANGOR, MALAYSIA**

FORM 2.4: RESPONDENT'S INFORMATION SHEET AND INFORMED CONSENT FORM

Please read the following information carefully and do not hesitate to discuss any questions you may have with the researcher.

1. STUDY TITLE :

Knowledge and Perception of Outdoor Activities Related with Nature as a Medium of Stress Reliever among Bachelor of Science (Environmental and Occupational Health) Students in Universiti Putra Malaysia.

2. INTRODUCTION:

Nature or environment act as a medium reliever of stress to university students. Stress happened due to several factors of stressors. Secondary school and higher education students are the most likely experiences stress in their life that mostly related with academic performances and several other stressors. The higher the level of experience of academic-related stress, the higher the risk of young people developing preventable health problems later. There are also several factors that contribute to the level of stress that needed to determine in this study.

3. WHAT WILL YOU HAVE TO DO?

Fill up online questionnaire that comprises information on socio-demographic background, stress scale and knowledge and perception. It is self-administered questionnaire that available in English and Malay language. It is adapted from Perceived Stress Scale (PSS) questionnaires. Participation is specifically for Environmental and Occupational Health students. As the subject in this study, I will not be paid for my participation and voluntarily involve with this study to obtain the benefits for myself.

4. WHO SHOULD NOT PARTICIPATE IN THE STUDY?

Subjects who are taking other than this course should not participate in this study due to different course background and might influence the result that will be obtained.

5. WHAT WILL BE THE BENEFITS OF THE STUDY:

(a) TO YOU AS THE SUBJECT?

As the subject, I will be able to know the level of stress that I faced. At the same

time, the awareness level regarding the outdoor activities related with nature as medium of stress reliever will increase throughout this study.

(b) TO THE INVESTIGATOR?

Investigator will be able to determine socio-demographic background, stress scale and knowledge and perception. The investigator also able to indicate the main factors that contributing to the level of stress. Therefore, the knowledge and perception of outdoor activities related with nature as a medium of stress reliever of the subjects and their level of stress able to determine.

6. WHAT ARE THE POSSIBLE RISKS?

There will be no possible risk that will be faced by the subjects.

7. WILL THE INFORMATION THAT YOU PROVIDE AND YOUR IDENTITY REMAIN CONFIDENTIAL?

The information provided and the identity of the respondents will be remain confidential. The data that will be collected in this study is for education and research purpose.

8. WHO SHOULD YOU CONTACT IF YOU HAVE ADDITIONAL QUESTIONS DURING THE COURSE OF THE RESEARCH?

If there is any additional questions during the course of the research, subjects can reach Assoc. Prof. Dr. Haliza binti Abdul Rahman, the supervisor of this research study at +60389472403 / +60122111129 or through email dr.haliza@upm.edu.my or Nur Suhadah binti Abdul Basit, the researcher of this study at +60107183298 or through email nursuhadahabdbasit@gmail.com

Please initial here if you have read and understood the contents of this page _____

9. CONSENT

I Identity Card No.
address.....
.....hereby voluntarily agree to take part in
the research stated above *(clinical /drug trial/video recording/ focus group/interview-based/
questionnaire-based).

I have been informed about the nature of the research in terms of methodology, possible adverse effects and complications (as written in the Respondent's Information Sheet). I understand that I have the right to withdraw from this research at any time without giving any reason whatsoever. I also understand that this study is confidential and all information provided with regard to my identity will remain private and confidential.

I* wish / do not wish to know the results related to my participation in the research

I agree/do not agree that the images/photos/video recordings/voice recordings related to me be used in any form of publication or presentation (if applicable)

* delete where necessary

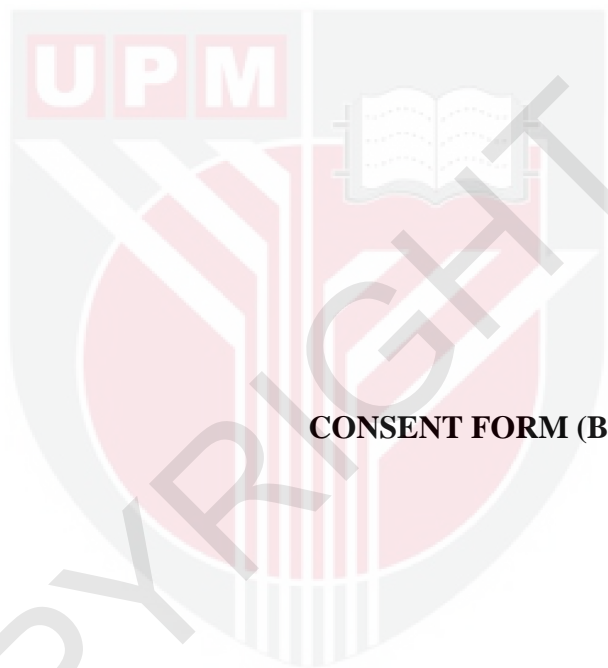
Signature Signature
(Respondent) (Witness)

Date : Name :

I/C No. :

I confirm that I have explained to the respondent the nature and purpose of the above-mentioned research.

Date Signature
(Researcher)



APPENDIX 2

CONSENT FORM (BAHASA MALAYSIA)



UPM
UNIVERSITI PUTRA MALAYSIA

**JAWATANKUASA ETIKA UNIVERSITI UNTUK
PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,
SELANGOR, MALAYSIA**

BORANG 2.4: PENERANGAN DAN PERSETUJUAN RESPONDEN

Sila baca maklumat berikut dengan teliti. Sekiranya anda mempunyai sebarang pertanyaan, sila kemukakan kepada penyelidik.

1.TAJUK KAJIAN

Pengetahuan dan Persepsi Aktiviti Luar Berkaitan dengan Alam Semulajadi Sebagai Medium untuk Pelega Stres dalam kalangan Pelajar Bacelor Sains (Kesihatan Persekitaran dan Pekerjaan) di Universiti Putra Malaysia.

2. PENGENALAN

Alam semula jadi atau alam sekitar bertindak sebagai medium untuk pelega stres kepada pelajar-pelajar universiti. Stres berlaku disebabkan oleh beberapa faktor tekanan. Pelajar-pelajar sekolah menengah dan pendidikan tinggi adalah mereka yang cenderung mengalami stres di dalam kehidupan yang kebanyakan berkaitan dengan pencapaian akademik dan beberapa faktor tekanan yang lain. Semakin tinggi tahap mereka mengalami stres berkaitan akademik, semakin tinggi golongan muda mengalami risiko masalah kesihatan yang boleh dielakkan. Beberapa faktor yang menyumbang kepada tahap stres perlu dikenalpasti didalam kajian ini.

3. APAKAH YANG PERLU ANDA LAKUKAN?

Responden perlu mengisi maklumat mengenai sosio-demografik, skala stres dan pengetahuan dan persepsi. Ia adalah borang soal selidik yang perlu diisi sendiri dan terdiri dalam Bahasa Inggeris dan Bahasa Malaysia. Soalan-soalan tersebut diadaptasikan daripada soalan *Perceived Stress Scale (PSS)*. Penyertaan dikhususkan kepada pelajar-pelajar Kesihatan Persekitaran dan Pekerjaan. Sebagai peserta di dalam kajian ini, saya tidak akan menerima bayaran untuk penyertaan saya dan secara sukarela terlibat di dalam kajian ini untuk memperoleh kelebihan-kelebihan kepada diri saya sendiri.

4. SIAPA YANG TIDAK BOLEH MENYERTAI KAJIAN INI?

Pelajar-pelajar yang mengambil selain daripada kursus ini tidak boleh menyertai kajian ini disebabkan perbezaan latarbelakang kursus dan mampu mempengaruhi hasil yang bakal diperolehi.

5. APAKAH FAEDAH MENYERTAI KAJIAN INI?

a) KEPADA ANDA SEBAGAI PESERTA?

Sebagai subjek, saya akan dapat mengetahui tahap stres yang dihadapi. Pada masa yang sama, tahap kesedaran mengenai aktiviti luar berkaitan dengan Alam semula jadi sebagai medium pelega stres akan meningkat sepanjang kajian ini.

b) KEPADA PENYELIDIK?

Penyelidik dapat menentukan latar belakang sosio-demografik, skala stres dan pengetahuan dan persepsi. Penyelidik dapat mengetahui faktor utama yang menyumbang kepada tahap stres. Oleh itu, pengetahuan dan persepsi aktiviti luar berkaitan dengan Alam semula jadi sebagai medium pelega stres kepada subjek dan tahap stres mereka dapat ditentukan.

6. ADAKAH IA BERISIKO?

Tiada kemungkinan risiko yang bakal dihadapi oleh subjek.

7. ADAKAH MAKLUMAT DAN IDENTITI SAYA KEKAL RAHSIA?

Maklumat diberikan dan identiti responden yang diberikan adalah kekal sulit. Data yang dikumpulkan dalam kajian ini bertujuan untuk pendidikan dan penyelidikan.

8. SIAPA YANG SAYA PERLU HUBUNGI SEKIRANYA SAYA MEMPUNYAI SOALAN TAMBAHAN SEMASA MENGIKUTI PENYELIDIKAN INI?

Sekiranya terdapat sebarang pertanyaan tambahan semasa menjalankan penyelidikan, subjek boleh menghubungi Prof. Madya Dr. Haliza binti Abdul Rahman, penyelia kajian ini di talian +60389472403 / +60122111129 atau melalui email dr.haliza@upm.edu.my atau Nur Suhadah binti Abdul Basit, penyelidik kajian ini di talian +60107183298 atau melalui email nursuhadahabdbasit@gmail.com

Sila tandatangan di sini sekiranya anda telah membaca dan memahami kandungan halaman ini _____

9. PERSETUJUAN

Saya..... No Kad Pengenalan.
beralamat.....
.....dengan ini bersetuju untuk mengambil bahagian secara
sukarela dalam penyelidikan yang tersebut di atas *(kajian klinikal/percubaan ubat-
ubatan/rakaman video/kumpulan sasaran/temuduga/ soal selidik).

Saya telah diberi penjelasan secara menyeluruh mengenai penyelidikan ini dari segi
metodologi, risiko dan komplikasi (seperti tertulis pada Helaian Penerangan Responden).
Saya memahami bahawa saya berhak menarik diri dari penyelidikan ini pada bila-bila masa
tanpa memberi sebarang alasan.Saya juga memahami bahawa sebarang maklumat yang
berkaitan identiti saya akan dirahsiakan.

Saya* berminat / tidak berminat untuk mengetahui keputusan kajian yang melibatkan saya.

I setuju/tidak bersetuju untuk imei/gambar/rakaman video/ rakaman suara digunakan dalam
apa jua bentuk penerbitan atau pembentangan. (sekiranya berkaitan).

*potong yang tidak berkenaan

Tandatangan Tandatangan
(Responden) (Saksi)

Tarikh : Nama :

No. K/P:

Saya mengesahkan bahawa saya telah menerangkan kepada responden ini sifat dan tujuan
penyelidikan yang tersebut di atas.

Tarikh Tandatangan
(Penyelidik)



APPENDIX 3

QUESTIONNAIRES



QUESTIONNAIRE/*BORANG KAJI SELIDIK*

RESEARCH TITLE/TAJUK KAJIAN	RESEARCHER NAME/NAMA PENYELIDIK
KNOWLEDGE AND PERCEPTION OF OUTDOOR ACTIVITIES RELATED WITH NATURE AS A MEDIUM OF STRESS RELIEVER AMONG BACHELOR OF SCIENCE (ENVIRONMENTAL AND OCCUPATIONAL HEALTH) STUDENTS IN UNIVERSITI PUTRA MALAYSIA	NUR SUHADAH BINTI ABDUL BASIT

Instructions/*Arahan*

This questionnaire consist of four sections:
Borang soal selidik ini mengandungi empat bahagian:

1. Section A: Socio-demographic
Bahagian A: Sosio-demografik
2. Section B: Stress scale
Bahagian B: Skala stres
3. Section C: Knowledge and perception of outdoor activities related with nature as a medium of stress reliever
Bahagian C: Pengetahuan dan persepsi aktiviti luar berkaitan alam semula jadi sebagai medium pelega stres
4. Section D: Recommendation
Bahagian D: Cadangan

SECTION A: SOCIO-DEMOGRAPHIC
BAHAGIAN A: SOSIO-DEMOGRAFIK

INSTRUCTIONS: Please tick your answer and fill in the blanks for the questions below.

ARAHAN: Sila tandakan jawapan anda di dalam ruangan kosong pada soalan-soalan di bawah.

1. Age/Umur: _____

2. Gender/Jantina:

<input type="checkbox"/>	Male/Lelaki
<input type="checkbox"/>	Female/Perempuan

3. Marital status/Status perkahwinan:

<input type="checkbox"/>	Single/Bujang
<input type="checkbox"/>	Married/Berkahwin
<input type="checkbox"/>	Divorced/Bercerai

4. Race/Bangsa:

<input type="checkbox"/>	Malay/Melayu
<input type="checkbox"/>	Chinese/Cina
<input type="checkbox"/>	Indian/India
<input type="checkbox"/>	Others/lain-lain:

5. Number of siblings/Bilangan adik-beradik: _____

6. Household income/Pendapatan isi rumah:

<input type="checkbox"/>	Below RM1000/RM1000 dan kebawah
<input type="checkbox"/>	Between RM1000 – RM3000/Antara RM1001 ke RM3000
<input type="checkbox"/>	Above RM3001/RM3001 dan keatas

7. Types of house/Jenis rumah:

<input type="checkbox"/>	Apartment/Pangsapuri
<input type="checkbox"/>	Condominium/Kondominium
<input type="checkbox"/>	Terraced/Teres
<input type="checkbox"/>	Semi-detached/Berkembar
<input type="checkbox"/>	Bungalow/Banglo

8. Stays in which area/Tinggal di kawasan perumahan:

<input type="checkbox"/>	Urban/Bandar
<input type="checkbox"/>	Sub urban/Pinggir bandar
<input type="checkbox"/>	Rural/Luar bandar

9. Do you have any mental issues such as depression/*Adakah anda mempunyai masalah mental seperti kemurungan?*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>

10. What year you are/*Anda berada di tahun keberapa?*

	First year/ <i>Tahun pertama</i>
	Second year/ <i>Tahun kedua</i>
	Third year/ <i>Tahun ketiga</i>
	Final year/ <i>Tahun keempat</i>

11. What is your current CGPA/*Apakah keputusan CGPA anda?*

	Below 2.0/ <i>2.0 dan kebawah</i>
	2.1 – 2.9/ <i>Di antara 2.1 ke 2.9</i>
	3.0 – 3.6/ <i>Di antara 3.0 ke 3.6</i>
	Above 3.7/ <i>3.7 dan keatas</i>

12. How many hour/s you spend on finishing your assignments/tasks daily/*Berapa lamakah anda meluangkan masa untuk menyiapkan tugas setiap hari?*

	Less than 1 hour/ <i>Kurang daripada satu jam</i>
	2 – 4 hour/ <i>Dua hingga empat jam</i>
	Above 5 hour/ <i>Lima jam keatas</i>

SECTION B: STRESS SCALE
BAHAGIAN C: SKALA STRES

INSTRUCTIONS: This section will be used to determine and measure individual stress level. You may indicate whether you are **never (0)**, **almost never (1)**, **sometimes (2)**, **fairly often (3)** or **very often (4)** with the statement below.

ARAHAN: Bahagian ini akan digunakan untuk mengukur dan menentukan tahap stres individu. Anda boleh menentukan samada anda **tidak pernah (0)**, **hampir tidak pernah (1)**, **kadangkala (2)**, **dengan kerap (3)** atau **sangat kerap (4)** dengan kenyataan di bawah.

No/ Bil	Statements/Kenyataan	Scale/Skala				
		0	1	2	3	4
13.	In the last month, how often have you been upset because of something that happened unexpectedly? <i>Sepanjang bulan lepas, berapa kerapkah anda berasa sedih kerana perkara yang tidak dijangka berlaku?</i>					
14.	In the last month, how often have you felt that you were unable to control the important things in your life? <i>Sepanjang bulan lepas, berapa kerapkah anda berasa tidak mampu mengawal perkara-perkara penting di dalam hidup anda?</i>					
15.	In the last month, how often have you felt nervous and stressed? <i>Sepanjang bulan lepas, berapa kerapkah anda berasa gementar dan stres?</i>					
16.	In the last month, how often have you felt confident about your ability to handle your personal problems? <i>Sepanjang bulan lepas, berapa kerapkah anda berasa yakin mengenai kemampuan untuk menangani masalah peribadi anda?</i>					
17.	In the last month, how often have you felt that things were going your way? <i>Sepanjang bulan lepas, berapa kerapkah anda berasa perkara-perkara yang berlaku seperti yang diharapkan?</i>					
18.	In the last month, how often have you found that you could not cope with all the things that you had to do? <i>Sepanjang bulan lepas, berapa kerapkah anda sedar bahawa anda tidak mampu</i>					

	<i>menghadapi semua perkara yang sepatutnya anda lakukan?</i>					
19.	In the last month, how often have you been able to control irritations in your life? <i>Sepanjang bulan lepas, berapa kerapkah anda mampu mengawal keresahan/kejengkelan dalam hidup anda?</i>					
20.	In the last month, how often have you felt that you were on top of things? <i>Sepanjang bulan lepas, berapa kerapkah anda pasti untuk menangani perkara-perkara yang berlaku?</i>					
21.	In the last month, how often have you been angered because of things that happened that were outside of your control? <i>Sepanjang bulan lepas, berapa kerapkah anda berasa marah kerana perkara-perkara yang berlaku diluar kawalan anda?</i>					
22.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? <i>Sepanjang bulan lepas, berapa kerapkah anda berasa kesusahan semakin meninggi sehingga anda tidak mampu mengatasinya?</i>					

SECTION C: KNOWLEDGE AND PERCEPTION
BAHAGIAN C: PENGETAHUAN DAN PERSEPSI

INSTRUCTIONS: Please tick your answer for the questions below.

ARAHAN: Sila tandakan jawapan anda pada soalan-soalan di bawah.

23. Nature also called as forest bathing and Eco therapy/*Alam semula jadi juga disebut sebagai 'forest bathing' dan ekoterapi*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

24. By spending time in nature can help relieve stress and anxiety, improve your mood, and boost feelings of happiness and wellbeing/*Dengan meluangkan masa di alam semula jadi dapat membantu melegakan stres dan kegelisahan, meningkatkan mood dan perasaan kegembiraan dan kesejahteraan*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

25. Jogging, hiking, walking and vacation are examples of the activities that most related with nature that believes will release stress/*Berjogging, mendaki, berjalan dan bercuti adalah contoh aktiviti-aktiviti yang paling berkait rapat dengan alam semula jadi yang dipercayai akan melegakan stres*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

26. Stress can be defined as any type of change that causes physical, emotional or psychological strain/*Stres boleh didefinisikan sebagai apa-apa jenis perubahan yang menyebabkan tekanan fizikal, emosi atau psikologi*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

27. Stress is the feeling of being overwhelmed or unable to cope with mental or emotional pressure/*Stres adalah perasaan terbeban atau tidak dapat mengatasi tekanan mental atau emosi*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

28. Stress consist of two types which are acute stress and chronic stress/*Stress terdapat dua jenis iaitu stres akut dan stres kronik*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

29. Stress can be categorized into eustress and distress/*Stres boleh dikategorikan kepada eustres dan distres*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

30. In your opinion, will your level of stress reduce after involving with the activities that related with nature/*Pada pendapat anda, adakah tahap stres akan berkurang selepas terlibat dengan aktiviti yang berkaitan dengan alam semula jadi?*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

31. Stress can lead to non-communicable diseases/*Stres boleh menyebabkan penyakit tidak berjangkit*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

32. Non-communicable diseases are also known as chronic diseases/*Penyakit tidak berjangkit juga dikenali sebagai penyakit kronik*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

33. Cardiovascular disease, chronic respiratory disease, diabetes and cancer are the non-communicable diseases due to stress/*Penyakit jantung, penyakit respiratoikronik, diabetes dan kanser apakah penyakit tidak berjangkit yang disebabkan oleh stres*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

34. In your opinion, involving with the activities that related with nature will reduce the risk to develop non-communicable diseases/*Pada pendapat anda, melibatkan diri dengan aktiviti yang berkait dengan alam semula jadi akan mengurangkan risiko penyakit tidak berjangkit?*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

35. Do you believe that academic demands, financial issue, environment, relationship and parental pressure are some of the factors that may contribute to stress/*Adakah anda percaya bahawa tuntutan akademik, isu kewangan, persekitaran, perhubungan dan tekanan ibu bapa adalah antara faktor yang meyumbang kepada stres*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

36. Headaches, fatigue, insomnia, upset stomach, worry, phobias, binge eating, dry mouth and shaking are some of the symptoms believe happens due to stress/*Sakit kepala, letih, insomnia, sakit perut, risau, fobia, makan malam berlebihan, mulut kering dan menggigil adalah antara simptom dipercayai berlaku disebabkan oleh stres*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

37. In your opinion, have you ever experiencing any of this symptoms/*Pada pendapat anda, pernahkah anda mengalami simptom simptom tersebut?*

	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

38. Do you believe that symptoms you are experiencing due to stress/*Adakah anda percaya bahawa simptom yang anda alami adalah disebabkan oleh stres?*

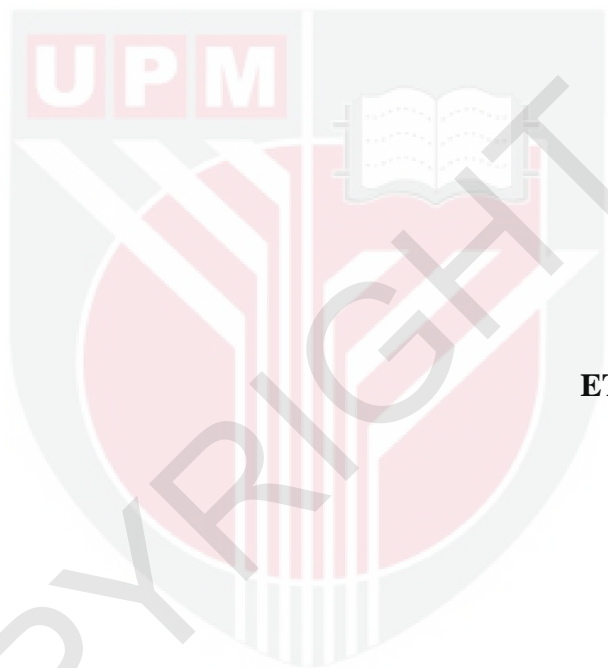
	Yes/ <i>Ya</i>
	No/ <i>Tidak</i>
	Not sure/ <i>Tidak pasti</i>

SECTION D: SUGGESTION
BAHAGIAN D: CADANGAN

Please provide your suggestion or comment for this study/*Sila sertakan cadangan atau komen untuk kajian ini*



THANK YOU/TERIMA KASIH



APPENDIX 4

ETHICAL APPROVAL