THE ASSOCIATION OF INTERNET ADDICTION WITH PHYSICAL ACTIVITY AND WEIGHT STATUS OF STUDENTS IN HEALTH CAMPUS, UNIVERSITI SAINS MALAYSIA

AIMAN ZAFRI BIN ZAINAL

UNIVERSITI SAINS MALAYSIA

2025

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by

AIMAN ZAFRI BIN ZAINAL

Dissertation submitted in partial fulfilment
of the requirements for the degree
of Bachelor of Health Science (Honours) (Dietetics)

June 2025

DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research and promotional purposes.

Aiman Zafri Bin Zainal

Date: 1 st July 2025

ACKNOWLEDGEMENT

Firstly, I would like to express my heartfelt to my supervisor, Dr Nur Nadia binti Mohamed, for her unwavering support and insightful guidance throughout the course of my final year project. Her encouragement, patience and problem-solving advice were instrumental during the more challenging phases of my research and writing process. I would also like to extend my sincere thanks to all the dedicated lectures at USM health campus who have generously share their expertise and knowledge. Their commitment to teaching and their constructive feedback played a significant role in enhancing my understanding and also helping me develop the skills for completing this final year project. I truly appreciate their professionalism and willingness to assist me whenever I encountered difficulties in my thesis writing. Furthermore, I would like to express my sincere gratitude to the school examiners for their dedicated evaluation of my work. Special thanks to Dr Ng Chong Guan for allowing me to use his Internet Addiction Test (IAT). My appreciation extends to all undergraduate students who participated in my study. I am deeply grateful to those around me who helped me accomplish my final year project. My friends, who shared their thoughts, ideas, and constant encouragement, were an incredible source of strength throughout this journey. A special appreciation goes to my teammate, Blup Blup, whose support, patience, and positive energy made every step of this process more manageable and meaningful. Thank you for the motivation, the laughter, and the countless moments that kept me going. I am truly grateful to have shared this experience with all of you.. Lastly, I am profoundly thankful to my family members for their unwavering support and encouragement throughout this journey, enabling me to focus and achieve my goals.

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THE ASSOCIATION OF INTERNET ADDICTION WITH PHYSICAL ACTIVITY AND WEIGHT STATUS OF STUDENTS IN HEALTH CAMPUS, UNIVERSITI SAINS MALAYSIA

ABSTRAK

Ketagihan Internet (IA) dicirikan oleh ketidakupayaan untuk mengawal penggunaan internet, membawa kepada akibat negatif dalam kehidupan seharian. Ketagihan internet telah mendapat perhatian kerana potensi kesannya terhadap kesihatan keseluruhan, terutamanya kaitannya dengan status berat badan dan isu berkaitan obesiti. Ketagihan internet juga memberi perkaitan dengan tahap aktiviti fizikal. Kajian ini mengkaji prevalens Ketagihan Internet dan perkaitannya dengan status berat badan dan aktiviti fizikal dalam kalangan pelajar di USM Kampus Kesihatan (USMKK). Kajian keratan rentas telah dijalankan, dengan 205 peserta melengkapkan soal selidik fizikal yang dilaporkan sendiri, termasuk Ujian Ketagihan Internet (IAT), Soal Selidik Aktiviti Fizikal Antarabangsa (IPAQ). Prevalens IA didapati 62.9%, dengan majoriti individu adalah perempuan (72.9%) dan Melayu (91.5%), dengan purata umur 22 tahun (SD=1.3). Purata BMI ialah 22.91kg/m^2 (SD=4.84), dan 59.5% dikategorikan sebagai mempunyai BMI normal. Ujian Fisher's Exact mendedahkan bahawa terdapat perkaitan yang signifikan antara status ketagihan internet dan kategori BMI (0.03). Tiada perkaitan yang signifikan antara status ketagihan internet dan aktiviti fizikal (0.254). Tambahan pula, tiada hubungan yang signifikan ditemui antara ketagihan internet dan pembolehubah demografi seperti jantina, etnik, kategori pendapatan isi rumah atau penerima biasiswa. Penemuan menunjukkan bahawa ciri-ciri demografi sahaja mungkin bukan peramal kuat ketagihan internet, menekankan keperluan untuk kajian tambahan ke dalam aspek psikologi dan tingkah laku. Kajian pada masa depan dengan sampel yang lebih besar dan

lebih variasi diperlukan untuk lebih memahami perkaitan antara pembolehubah dan implikasi yang lebih luas terhadap ketagihan internet.

THE ASSOCIATION OF INTERNET ADDICTION WITH PHYSICAL ACTIVITY AND WEIGHT STATUS OF STUDENTS IN HEALTH CAMPUS, UNIVERSITI SAINS MALAYSIA

ABSTRACT

Internet addiction (IA) is characterized by an inability to control internet use, leading to negative consequences in daily life. IA has garnered attention due to its potential impact on overall health, particularly its association with weight status and obesity-related issues. IA also give association with physical activity level. This study examines the prevalence of IA and its association with weight status and physical activity among students at the USM Health Campus (USMKK). A cross-sectional study was conducted, with 205 participants completing self-reported physical questionnaire, including Internet Addiction Test (IAT), International Physical Activity Questionnaire (IPAQ). The prevalence of internet addiction was discovered to be 62.9%, with the majority of individuals was female (72.9%) and Malay (91.5%), with a mean age of 22 years (SD=1.3). The mean BMI was 22.91 kg/m^2 (SD=4.84), and 59.5% were categorized as having a normal BMI. Fisher's Exact test revealed that there is significant association between internet addiction status and BMI categories (0.03). There is no significant association between IA status and Physical Activity (0.254). Furthermore, no significant relationships were discovered between internet addiction and demographic variables such as gender, ethnicity, category of household income, or scholarship receiver. The findings indicate that demographic characteristics alone may not be strong predictors of internet addiction, emphasizing the need for additional study into psychological and behavioural aspect. Future longitunidal studies with bigger, more diverse samples are needed to better

understand the connections between variables and broader implications on IA especially among university students.

CHAPTER 1

INTRODUCTION

1.1 Background of study

The internet has emerged as one of the most important advancements for academic, business, information-sharing, communication, and entertainment purposes by all age groups (Siew Mooi *et al.*, 2019). Malaysia, a high middle-income country, has a high internet access rate, with most college and university students using it frequently. According to a survey conducted by the Malaysian Communications and Multimedia Commission in the year 2016, the dominant internet users in Malaysia were individuals aged less than 25 years old (93%) (Daily Internet Usage in Malaysia by Age Group 2016 | Statista, 2016).

IA is characterized by an inability to control internet use, leading to negative consequences in daily life (Ezgi Genc & Edibe Pirincci *et al.*, 2023). Evidence showed that males were more likely to suffered from IA than females (Othman and Lee *et al.*, 2017).

Excessive internet usage can influence physical activity (Bull *et al*., 2020). Students who spend their time online may not be going to exercise regularly, which may result in sedentary lifestyle (Bull *et al.*, 2020). This will consequently associate with poor health outcomes, including a higher risk of overweight and obesity (Ng et al., 2014). Moreover, IA may also interfere with daily life activities, such as the sleep time and meal patterns of some individuals, thus it will lead to various effect on weight status (Ülkü Yıldız *et al.*, 2024).

1.2 Problem statement

IA is considered a growing concern that affects the physical and emotional health of university students tremendously (Arash Ziapour *et al.,* 2020). Even though the internet being an important medium for communication and education but too much and uncontrolled exposure may lead to negative impact include compulsive behaviors that interfere with daily functioning (Young *et al.,* 1998). This negative behavior is particularly concerning in the context of university students, who are a high-risk group for internet addiction due to their academic and social reliance on digital platforms (Kuss *et al.,* 2013).

IA can lower physical activities by encouraging sedentary behaviors (Ma *et al.,* 2022). When we spent time excessively online to play online games or social media use, often leads to less time for physical exercise. It can also lead to weight increase and poor cardiovascular health. Internet addiction can reduce the quantity and quality of sleep, decrease energy levels, and render one passive towards physical activities (Ercan *et al.,* 2021). However, there has been a scarcity of evidence about the relationship between internet addiction and physical activity among university students (Dang *et al.,* 2018).

Understanding these relationships is important for identifying at-risk individuals and create targeted interventions to address both internet addiction and its negative impact to health. Without the efforts, students in health-related fields may struggle to meet the expectations of their roles as future healthcare professionals, potentially compromising the promotion of public health. Therefore, this study aims to fill this gap by investigating the association between internet addiction, physical activity, and weight status among students in the Health Campus of USM.

1.3 Study rationale

The finding of this study will add to the literature regarding the prevalence of internet addiction among university students. The information related to internet addiction among university students will attract stakeholders' attention and provide latest information to the policymakers. Besides that, the findings of this study will help and encourage health practitioners and researchers to plan intervention programs related to internet addiction at the national levels. In addition, the information related to the association between internet addiction and physical activity and the risk of overweight and obesity can assist in planning strategies to increase physical activity level of university students and reduce the risk of being overweight or obesity.

1.4 Research question

1. What is the prevalence of internet addiction among university students?
2. Is there any association between internet addiction and physical activity levels of university students?
3. Is there any association between internet addiction and weight status of university students?

1.5 Research objective

1.5.1 General objectives

To determine the association between internet addiction with physical activity and weight status of university students

1.5.2 Specific Objectives

1. To determine the prevalence of internet addiction among university students
2. To determine the association between internet addiction and weight status of university students
3. To determine the association between internet addiction with physical activity levels of university students

1.6 Research hypothesis

1.6.1 Hypothesis I:

Null Hypothesis (H_0): There is no association between internet addiction and weight status of students in Health Campus, USM

Alternative Hypothesis (H_a): There is an association between internet addiction and weight status among students in Health Campus, USM

1.6.2 Hypothesis II:

Null Hypothesis (H_0): There is no association between internet addiction and physical activity levels of students in Health Campus, USM

Alternative Hypothesis (H_a): There is an association between internet addiction and weight status of students in Health Campus, USM

CHAPTER 2

LITERATURE REVIEW

2.1 Internet addiction

2.1.1 Definition of internet addiction

The literature defines Internet addiction as "a broad term that may describe excessive or compulsive use of the computer to access the Internet, generally accompanied by impairment in multiple domains of functioning (Young *et al.,* 1998). Internet addiction are also defined as a use of the internet that generates psychological, academic, social, or occupational difficulties in a person's life (Soriano-Molina et al., 2025). Previous study from Academia Open stated that internet addiction is a irrespective of the type of activity performed once logged on, psychological reliance on the Internet exists (Academia Open *et al*., 2024). The previous study among university students in Malaysia defines an internet addiction using malay version of Internet Addiction Test (IAT) as a compulsive behavior marked by restlessness without access, late night of internet usage and interference with mental health (Zakaria *et al*., 2023). The literature shows that although different authors define Internet addiction in slightly different ways, they all describe it as a pattern of excessive or uncontrolled online use that leads to problems in a person's daily life. Whether it is psychological dependence, academic disruption, or difficulties in social and emotional functioning, the main idea is that Internet use becomes harmful when it begins to interfere with important responsibilities or well-being.

2.1.2 Assessment of internet addiction

There are several assessment of internet addiction for example, Internet Addiction Test (IAT) by Dr. Kimberly Young who is a licensed psychologist and an internationally known expert on Internet addiction. The IAT was developed by her to measure the presence and severity of internet and technology among adults (Young *et al.,* 2017). Previous study on medical students in Malaysia use IAT in malay version that has been validated by Dr Chong Guang Ng (Guan *et al*., 2012). The validated Malay version makes the IAT more suitable and meaningful for use among Malaysian IPT students, as it reflects the local language and cultural context. Because the test is simple to administer, easy for students to understand, and widely used in many studies involving university populations, the IAT continues to be the most practical and reliable tool for assessing internet addiction among students in Malaysian higher education settings. In addition to the IAT, several other assessment tools have been used among IPT students both locally and internationally. The Chen Internet Addiction Scale (CIAS) is another commonly used tool that evaluates symptoms of compulsive Internet use, tolerance, withdrawal, and interpersonal or health-related problems. It has been widely applied among university students in Asian countries due to its strong psychometric properties (Chen *et al.,* 2003). The Problematic Internet Use Questionnaire (PIUQ) is also frequently used in higher education settings. This 18-item tool measures three main components: obsession, neglect, and control disorder, and has been validated in multiple cultural contexts including among university students (Demetrovics *et al.,* 2008).

2.1.3 Prevalence of internet addiction

The prevalence of Internet addiction different greatly among various populations and geographical locations around the world. A worldwide meta-analysis indicated that the overall population's pooled prevalence of IA was 14.22%, with greater prevalences for particular subtypes like gaming addiction (6.04%), social media addiction (17.42%), and smartphone addiction (26.99%) (Cheng *et al.,* 2021). The frequency was much higher among university students worldwide, at 41.8%, most likely as a result of increased screen usage and stress related to school (Jahan *et al.,* 2019). In malaysia, the prevalence of IA is also concerning. According from previous study on 2017, National Health and Morbidity Survey (NHMS) revealed that 29.0% of Malaysian adolescent were classified as having internet addiction (Public Health *et al*., 2017). A separate study in Kedah found that 26.9% of adolescent met the criteria to classified as having internet addiction while 14.1% were at the risk (Zulkefli *et al.,* 2024). There are also study conducted among university student in Malaysia, the prevalence is about 32.2% from Universiti Teknologi MARA (Ahmad *et al.,* 2022) to 36.9% from medical student in separate study (Ching *et al.,* 2017).

2.2 Physical activity

2.2.1 Definition of physical activity

Physical activity defined as any bodily movement that produces by the skeletal muscle and require energy expenditure (Dasso *et al.*, 2018). Separate study defined physical activity as people move, acting and performing within culturally within specific spaces and contexts, influenced by unique array of interest, emotions, ideas, and realationship (Piggin *et al.*, 2020). Additionally, physical activity can be mentioned as an occupational-health frameworks emphasize quantitative dimensions (frequency, intensity, duration) and contextual modalities, spanning a continuum from light incidental movements to vigorous activities (Thivel *et al.*, 2018).

2.2.2 Assessment of physical activity

Physical activity is typically evaluated through self-report questionnaire and the objective measurement tools, with each providing benefits in different research and clinical settings. The International Physical Activity Questionnaire (IPAQ) is commonly utilized and validated self-report tool across various population. IPAQ will record the frequency and length of walking, moderate and vigorous activity during the last seven days and has demostrated moderate validity and strong reliability in comparison to accelorometers (Craig *et al.*, 2003).

2.2.3 Prevalence of physical activity

The study from National Health and Morbidity Survey 2019 revealed that the prevalence of physical activity among adult aged 18 years and above in Malaysia was 24.6%, and there are some improvement compared to 35.7% in 2011 (Alias *et al.*, 2019). However, separate study has shown that there are subgroup have higher inactivity level. 45.6% of healthcare workers in Perak were physically inactive (Saad *et al.,* 2020). According to the World Health Organization (WHO), 31.3% of an adult in this world did not meet recommended physical activity level in 2022, an increase compared to 2000 (Guthold *et al.,* 2019). The findings highlight the challenges to promoting sufficient physical activity across age and work background, both Malaysia and worldwide.

2.3 Weight status

BMI, a widely used measure of body fat based on weight and height, serves as a crucial indicator of health status and risk factors for various conditions, including obesity. Exploration of BMI and obesity prevalence among students is critical to understanding weight-related issues in this demographic. A study highlighted the general prevalence of overweight and obesity among Malaysian university students is higher than in some other countries, such as China, Colombia and Iran, pointing to the critical need for understanding the factors influencing weight status in this population (Radzi et al., 2019). Weight gain during college years is likely during the transition into university life, which is a critical period when young adults' behaviours including dietary habits are conducive to change as they gain independence in making food choices (Deshpande, et al., 2009). Obesity, or having a high BMI, has become one of the most severe threats to public health, particularly among university students. According to the World Health Organization (WHO), the worldwide obesity rate has almost tripled since 1975. In Malaysia, the obesity rate is the highest in East and Southeast Asia (World Health Organization (WHO), 2010). Malaysia's recent rapid development has changed people's lifestyles, which could be a factor in the rise in overweight and obesity. The 2019 National Health and Morbidity Survey by National Institutes of Health (NIH) stated that 30.4% of Malaysian adults were overweight, 19.7% were obese, and 50.1% were overweight overall (NIH, 2019). According to a survey conducted by university students across 22 low- and middle-income countries, 22% of college students were overweight or obese (24.7% of men and 19.3% of women) (Peltzer et al., 2014). It is demonstrated that obesity 9 is a widespread problem among college students worldwide, including in Malaysia. States that among Malaysian university students, the prevalence of overweight and obesity was 21.7% and 16.8%, respectively (Radzi et al., 2019).

2.4 Internet addiction and physical activity

Over-engagement in Internet-related activities may be associated with problems affecting students' academic performance and social, mental and physical health due to decreased face-to-face communication skills (Kuss & Griffiths *et al.*, 2017). As we all already know, physical activity is really important to a healthy lifestyle because it can protect against a variety of chronic diseases, such as type 2 diabetes, obesity, and cardiovascular disease. However, it shown that internet addiction reduces university students' levels of physical activity due to addiction to internet. Numerous researchers indicate that exercise time takes the role of prolonged internet use (Edelmann *et al.*, 2022). On the contrary, university students with higher internet addiction levels showed decreased physical activity, as seen by increased time spent sitting or lying down (Alvarado *et al.,* 2021). This replacement of internet use for physical activity is quite concerning because sedentary behavior has emerged as one of the primary causes of obesity and metabolic illnesses. Not only for university student, as individuals spend more time engaged in online activities, this will lead to sedentary lifestyle which will contribute someone to reduced their physical activity and exercise engagement.

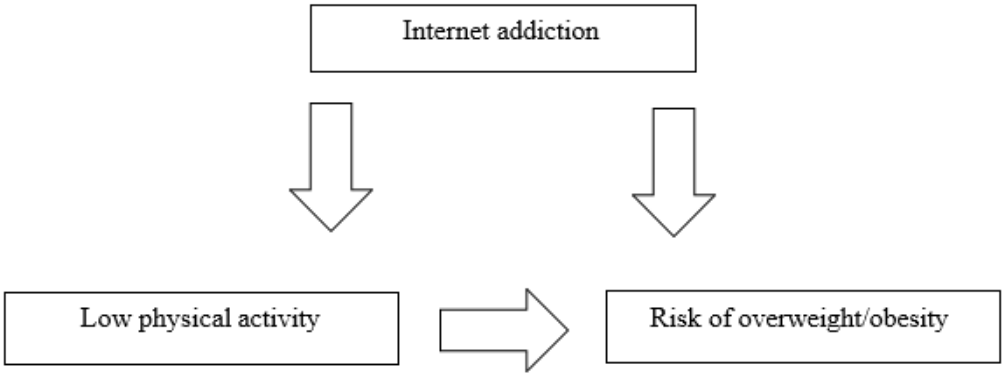
There are multiple cross-sectional studies stated that there are no correlation between IA and physical activity. The study from Uyaroglu et al. (2021), conducted with Turkish healthcare workers and the result revealed that 46.4% of the respondents were at risk of IA, whereas 62.1% were not physically active. The research showed there are no association between IA and physical activity. Additionally, a 2022 cross-national study from Liu et al. (2022) that included students from 3 country which is Malaysia, China and Taiwan investigated smartphone and social media dependcy, nomophobia and physical

activity level. The result showed there are strong correlation was noted in certain area but there risk no association between physical activity and smartphone addiction was identified in the Malaysia respondent group. This study showed that the intensity of the link between IA and physical activity could be differ based on cultural and contextual elements. Overall, the study suggest a clear trend which greater amount of physical activity are typically linked to reduced risk and intensity of IA. The findings from previous study indicate that physical activity might be a beneficial behavioral approach to reduce the risk of IA, particularly among younger individuals.

2.5 Internet addiction and weight status

The relationship between internet addiction and weight status is complex. Sedentary behaviors, related to internet addiction, provoke weight gain because of a decline in physical activity and improper nutrition, such as more frequent nibbling during prolonged sessions online or while video chatting with friends (Aghasi *et al.,* 2020). Malaysian university students are no exception (Cheong *et al.,* 2010). With the higher level of internet addiction, body mass index is higher, and the chances of obesity are greater. Lifestyle factors such as irregular meal patterns, stress-induced eating, and sleep disruption often play an intermediary role in the latter association (Ogden *et al.,* 2003). These behaviors are also increased in conditions of stress and anxiety, which are very common in individuals with internet addiction. Stress-induced overeating, particularly of comfort foods high in sugar and fat, is a documented pathway to weight gain (Sahin & Lok *et al.,* 2018). From the previous study on the adolescents, the researcher found that overweight individuals had a 24.5% prevalance of IA compared to 10% of the respondents that are normal (Hamid Reza Tabatabaee *et al.,* 2018). In separate study, a Turkish cross-sectional study found a positive association between obesity and IA among university students. The respondents who were overweight and obese showed greater average scores on the compulsive internet use scale (Ülkü Yıldız *et al.,* 2024). In addition, a study conducted in 2025 that are involving by 610 of medical students indicated that being overweight or obese was directly associated with higher levels of IA, which subsquently mediated heightened symptoms of depression, anxiety and stress. This highlighting that mental health aspect to the relationship between weight status and internet usage (Zhuang *et al.,* 2025)

CONCEPTUAL FRAMEWORK



The conceptual framework for this study shows the relationship between IA, low physical activity, and the risk of overweight or obesity among students. IA, as the central variable, is hypothesized to contribute to decreased physical activity levels. Prolonged sedentary behaviors associated with excessive internet use reduce time allocated for exercise or other physical activities (Ji *et al.,* 2024). This reduction in physical activity, in turn, increases the risk of overweight and obesity (Kosola *et al.*, 2024).

CHAPTER 3

METHODOLOGY

3.1 Research design

This study will employ a cross-sectional study design

3.2 Study area

This study will be conducted in Health Campus of Universiti Sains Malaysia. There are three different schools in the Health Campus of Universiti Sains Malaysia. They are School of Health Sciences, School of Medical Sciences, and School of Dental Sciences. The data collection of this study will be conducted in three schools in Health Campus.

3.3 Study population

Reference population:

University students in Malaysia

Target population:

Students in Health Campus USM

Source population:

Students in School of Health Sciences, School of Medical Sciences, and School of Dental Sciences in Health Campus USM

Sampling frame:

The list of students in three schools in Health Campus USM

3.4 Selection criteria

Inclusion Criteria

- Participants aged 18 years and above.

- Currently enrolled as student in Health Campus USM.

- Malaysian

Exclusion Criteria

Students with chronic diseases or have physical disabilities

3.5 Sampling method

The sampling method for this study will involve a convenience sampling. This sampling technique will be used to recruit participants due to the practical considerations of time, accessibility, and resources

3.6 Sample size estimation

Objective 1

$$n = [(Z/\Delta)^2 \, p(1-p)$$

n = estimated sample size

Z = standard value at 95% confidence interval = 1.96

Δ = margin error set at 5% = 0.05

p = estimated proportion of internet addiction among university students is 0.33 (Zakaria *et al.,* 2023)

Table 3.1: Sample size estimation (Objective 1)

Objective	**Anticipated Population Proportion Minimal Sample Size**	**Anticipated Population Proportion Minimal Sample Size**
1.	Percentage of internet addiction among university students in Malaysia	n= $[(1.96/0.05)^2 \, 0.33(1-0.33)]$ n= **339 respondent**

3.7 Research tools

The questionnaire which will be used in this study will be divided into 5 sections.

3.7.1 Section 1: Socio-demographic questionnaire

The first section of the questionnaire consists of socio-demographic profiles of the participants such as age, gender, ethnicity, marital status, household income, and education level.

3.7.2 Information about internet usage

In this section, the participants will be asked whether they have used internet over the past 24 hours, the types of devices they used, as well as the purpose and frequency of internet usage. They also will be asked how many hours they spent on using internet and when they frequently use internet. This information will help identify not only how often students are online but also the reasons behind their internet use, providing a more complete picture of their overall online behaviour.

3.7.3 Internet addiction questionnaire

In this study, Internet Addiction Test (IAT) will be used to assess IA among university students. This questionnaire was validated in Malay language by Chong Guan *et al* (2012) and was named as Malay Version Internet Addiction Test (MVIAT). The MVIAT has a good internal consistency (Cronbach's a=0.91, P< 0.001), parallel reliability (intra-class coefficient correlation= 0.88, P< 0.001) and validity (Pearson's

correlation=0.84, P< 0.00). This questionnaire also was used in the National Health Morbidity Survey (NHMS) 2019. The questionnaire consists of 20 questions. They are measured using a 5-point Likert scale (1=rarely; 2=occasionally; 3=frequently; 4=often and 5=always). Minimum total score for this questionnaire is 20 and maximum score is 100. Those who score less than 43 will be classified as normal while those who score 43 and above will be classified as having IA (SM;Hamidin *et al.,* 2017). This is because IAT includes questions that look at many parts of a person's daily life, such as sleep patterns, social interactions, academic responsibilities, and emotional well-being, it is able to show clearly how internet use might be affecting them. The questions help identify behaviours like spending more time online than planned, feeling uneasy when not connected, ignoring important tasks, or facing problems in relationships or studies. By covering these different aspects, the IAT offers a complete and meaningful picture of whether someone's internet use is becoming unhealthy or starting to interfere with their normal routine.

3.7.4 Physical activity questionnaire

Physical activity levels of university students will be assessed using International Physical Activity (IPAQ). The sensitivity and specificity of the questionnaire are 43% and 88%, respectively (Shamsuddin *et al.*, 2015). It consists of three short questions related to walking, moderate, and vigorous intensity activity for the past seven days. The activities performed by the participants should be ended at least 10 minutes per session. Physical activity level of each participant will be calculated according to Table 1. The result will be reported in metabolic equivalents (METs-minutes/week). Each activity reported by participants is then converted into MET values, which reflect the amount of energy used by the body during physical activity. By multiplying the MET value with the

minutes spent on the activity, the IPAQ can estimate total energy expenditure for the week. This makes it a useful tool for comparing physical activity levels across individuals and identifying whether students are meeting recommended activity guidelines. The IPAQ's simple format and ease of administration make it suitable for large-scale studies, including research involving university populations.

Table 3.2: Formula to calculate level of physical activity

Physical activity	**METs-minutes/week**
Walking	3.3 x walking minutes x walking days
Moderate-intensity activity	4.0 x moderate-intensity activity minutes x moderate-intensity days
Vigorous-intensity activity	8.0 x vigorous-intensity activity minutes x vigorous-intensity days
Total physical activity	Sum of walking + moderate-intensity + vigorous-intensity

(Source: IPAQ's scoring protocol, revised in November 2015)

Physical activity level of the participants will be classified as low, moderate, and high. Low physical activity defined as no activity or does not meet the criteria either high or moderate levels of physical activity. The moderate intensity physical activity refers to engagement in at least three days of vigorous-intensity activity for 20 minutes per day, or at least 5 days of moderate-intensity activity and/or walking for at least 30 minutes daily. In addition, the participants should record at least 600 MET-minute per week. High physical activity level refers to those who performed vigorous-intensity activity on at least three days of intense activity with 1500 MET-minute per week or at least seven days of any combination of walking, moderate-intensity, or vigorous- intensity activities with at least 3000 MET-minutes/week.

3.7.5 Anthropometry measurement

Participants' height and weight will be measured using electronic weighing scale and portable stadiometer. Their body mass index (BMI) will be calculated and categorized into underweight, normal weight, overweight, and obese.

3.8 Data collection

The data collection was initiated after obtaining approval from the Human Research Ethics Committee of USM. Participants received a brief overview of the study, and those who participated will provide written informed consent before the data collection process begins. Hard copy questionnaire was passed to participants. Potential participants were approached in vorious locations. For example, at the library, café, lecture halls and both residential colleges. Participants were invited to fill out the questionnaire at these locations. After completing the questionnaire, they were asked to undergo anthropometric measurement to assess their Body Mass Index (BMI).

3.9 Data analysis

The data analysis will be conducted using IBM SPSS software version 28.0 (IBM, 2019). Descriptive statistics will be performed to determine the prevalence of internet addiction among university. The prevalence of internet addiction will be reported in frequency and percentage. Pearson's Chi-Square test will be conducted to determine the association between internet addiction with physical activity and weight status of the university students.

3.10 Study flowchart