

The Effects of Obesity Information on IIUM Students' Health Practices

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ABSTRACT

Most young adults nowadays are obese or are prone to becoming obese. As such, this study intends to explore students' health practices after they are exposed to obesity-related information through mass media, new media, and interpersonal relationships such as family members, friends/colleagues, medical health officers, and social groups. The specific objectives of this study are: (a) to determine the level of IIUM students' exposure to obesity, perceived susceptibility to obesity, perceived severity of obesity, perceived benefits from taking actions against obesity, and the perceived barrier to taking actions against obesity; (b) to determine the level of health practices among IIUM students; and (c) to determine the relationships of exposure to obesity, perceived susceptibility, perceived severity, perceived benefits, and perceived barriers resulting from obesity-related information with IIUM students' health practices. This study employed a quantitative research design and used an online survey method with a network sampling technique to collect data. A total of 213 respondents participated in this study. The results of the study show that students tend to practice a healthy lifestyle after being exposed to obesity-related information through traditional and social media and also through interpersonal relationships, thus helping them further to prevent obesity. They know the severe effects of obesity and also the benefits of not being obese by practicing a healthy lifestyle.

Keywords: *Health practices, interpersonal relationship, media exposure, obesity information, students*

INTRODUCTION

Obesity is a common health problem in modern living. It has become the most popular topic of discussion among people from every part of the world. This is because every country has obese citizens (World Population Review, 2020). Obesity has become a serious health problem worldwide, being ranked as the number one health issue in almost every country. According to the World Population Review (2020), approximately 2.1 billion people in the world suffer from obesity, and the number continues to rise. Moreover, more than three million people

die each year from obesity. Nauru, Australia, has the most obese community in the world with 61% of its population reporting a Body Mass Index (BMI) of more than 30. The least obese countries are Bangladesh, Ethiopia, Nepal, Madagascar, and Eritrea where the percentage of obese population in each country is less than 2%.

Obesity has become the main concern for health ministries, health organizations, and even non-profit organizations in many countries in the world, as evidenced by the wealth of obesity-related information in both mass media and new media. Voluminous obesity-related information can be found, especially on the Internet. This information encompasses the causes of obesity, symptoms of obesity, percentages of obese people, the disadvantages of being obese, and the prevention of obesity with ways on how to reduce obesity. For example, the Mayo Clinic in the United States of America (U.S.) has published an article in 2019 on the symptoms of obesity to provide information on how to determine whether one is obese or not.

Similarly in Malaysia, the people can obtain obesity-related information from, for example, *Majalah Sains* (2020) which has published a write-up on obesity with the title of "Kurang Tidur Punca Obesiti." This article associates obesity with sleep deficiency. Further, Malaysians can also obtain obesity-related information from MyHealth Portal by the Ministry of Health Malaysia (2015). This portal provides brief information on the causes, risks, treatments, and prevention of obesity.

As for the information on how to prevent and reduce obesity, many healthy lifestyle articles have been posted on the Internet by health ministries, health organizations, non-profit organizations, and even ordinary citizens. These articles are written not only on obesity-related information but also to cover other health problems. Apart from the articles posted by these bodies, researchers have also published journals or research articles on obesity, many of which are available online.

Numerous scholars from various fields have researched obesity to provide a broader view of this issue. Anasuri (2016) looked at how exposure to mass media contributes to overweight and obesity. For example, exposure to excessive advertisements on unhealthy foods might influence people to consume such foods, which might lead to obesity. In other words, people tend to get obese when they spend much of their time watching television, playing video games, or surfing the Internet. Moreover, interpersonal relationships with people such as family, friends, colleagues, and medical health officers play an important role in determining whether one has the tendency to prevent and reduce obesity.

This study focuses on university students in Malaysia because, undeniably, many of them are facing the problem of obesity. As reported by the World Health Organization (2019), 64% of the male and 65% of the female population of Malaysia are obese. These percentages mean that Malaysia has one of the highest rates of obesity among Asian countries.

This research is significant for several reasons. First and foremost, the findings of this study are expected to contribute to a greater body of knowledge on obesity in Malaysia, specifically on university students. Apart from that, even though there are some existing studies on this topic, these studies do not focus on higher learning institutions. Hence, this paper attempts to bridge this gap by looking into this area with a specific focus on IJUM students.

Further, the Health Belief Model (HBM) is the research theory used in this study. Since not many researchers in Malaysia have employed this theory in their research, this study tries to serve as a guide for researchers that want to employ HBM in their study. Moreover, this study is expected to contribute to the body of this theory.

For the past three decades, Malaysia has become the “fattest” country in Asia with most of the Malaysian adults being overweight or obese (Daily Express, 2018). The problem has never been solved despite the realization that it is one of the most serious health problems in the country. One of the factors that push Malaysia to the top spot for obesity is the high number of unhealthy food chain restaurants in the country, such as McDonald’s, KFC, Pizza Hut, and Texas Chicken. People tend to buy and eat these fast foods because they are cheap and accessible. On the other hand, healthy foods are expensive and difficult to obtain. Even though most Malaysian adults are obese, there might be some who are taking steps to avoid or reduce obesity. Not many studies have been done to determine whether or not Malaysians are taking precautionary steps to avoid becoming obese. Hence, this research tries to fill this gap by exploring the health practices of IIUM students after they have encountered obesity-related information through mass media, new media, or interpersonal relationships.

This study has three specific research objectives. The first research objective is to determine the level of IIUM students’ exposure to obesity, perceived susceptibility to obesity, perceived severity of obesity, perceived benefits from taking actions on obesity and perceived barriers to taking actions against obesity. The second research objective is to determine the level of health practices among IIUM students. The third research objective is to determine the relationships of exposure to obesity, perceived susceptibility, perceived severity, perceived benefits, and perceived barriers to obesity-related information with IIUM students’ health practices.

LITERATURE REVIEW

Health Communication

Every scholar defines and describes health communication differently because health communication is a very broad term. Therefore, different people tend to have different presuppositions of health communication (Oyama & Okpara, 2017, p. 3). For example, Sixsmith et al. (2014) defined health communication (as cited in Oyama & Okpara, 2017) as the study and use of communication strategies in informing and influencing public decisions and actions that can improve their health. It includes health promotion, health protection, as well as disease prevention and treatment, and it is crucial in achieving the overall objective and aim of public health.

Meanwhile, for Kreps (2015), health communication examines the intervention of humans and mediated communication through mass media and new media on healthcare delivery and health promotion. He thinks that there is a serious problem in communication that hinders the quality and promotion of healthcare. He also suggests that accurate health communication intervention, policies, and programs are crucial in improving the quality of healthcare practices. Moreover, there are various levels of health communication, which are intrapersonal, interpersonal, and mass communication. Overall, it can be said that health communication can be defined as the strategies in communication to inform and influence peoples’ decisions in order to improve their health.

One of the main purposes of health communication is to change the behavior of individuals on issues related to their health. This purpose ties in with the most common definition of health communication, which is intending to inform and influence public decisions and actions. In order to change ones’ decisions and actions through health communication, media play an important role in communicating health messages to the public. This statement is supported by a study by Sern and Zainuddin (2015), which looked at the effectiveness of the media in creating public awareness on HIV/AIDS in central Selangor,

Malaysia. The study found that 73.3% and 73.1% of the respondents preferred newspapers and television, respectively, as a source of information about HIV/AIDS. Thus, it can be inferred that the mass media in Malaysia did their job very well in disseminating HIV/AIDS awareness to the public.

In sum, it can be said that health communication is essential in today's world. Many diseases emerge from time to time nowadays, and hence, governments and health organizations must come up with health communication strategies that can help to spread awareness to the masses. At the same time, health communication should encourage the public to take action to protect them from contracting a disease, reduce the disease, or spread awareness to other people about the dangers of the disease.

Obesity

According to the World Health Organization (WHO) (2020), obesity refers to unusual or excessive fat accumulation that can damage one's health. Obesity can be classified as a chronic disease that can cause other serious diseases such as diabetes, hypertension, heart and kidney ailments, low back pain, joint problems, and several types of cancers. Obesity is mainly caused by excessive food intake, insufficient physical activity, and genetic susceptibility (Fatima, Beigh, & Hussain, 2018, p. 53). An adult can be classified as obese if his or her Body Mass Index (BMI) is more than or equal to 30. BMI is a commonly used measure of overweight and obesity. It is calculated and measured based on body weight (kg) divided by height squared (m^2) (Aktar, Qureshi, & Ferdous, 2017, p. 36).

Malaysia is one of the Asian countries that have a large percentage of obese people. Among the Southeast Asian countries, Malaysia occupies the number one spot in terms of the percentage of people suffering from obesity, with 15.6% of the Malaysian population being obese. This is followed by Brunei (14.1%), Thailand (10.0%), Indonesia (6.9%), the Philippines (6.4%), Singapore (6.1%), Myanmar (5.8%), Laos (5.3%), Cambodia (3.9%), and Vietnam (2.1%) (The Asean Post, 2019). Every country faces the problem of obesity, which is deadly and cannot be cured if people continue to consume an excessive amount of food. Moreover, the prevalence of obesity may increase year by year if people do not take adequate precautions to prevent obesity.

Obesity-Related Information

Vast information on obesity can be obtained both online and offline. Government agencies, health organizations, non-profit organizations, and the public post information on obesity are available on social media and websites. The types of obesity-related information available are world obesity statistics, symptoms of obesity, causes of obesity, treatment for obesity, ways to prevent obesity, and ways to reduced obesity. Besides, many scholars have researched obesity, producing numerous journal articles about obesity that can be obtained online.

According to Yvette Brazier (2018) as posted in Medical News Today, there are seven causes of obesity, including excessive consumption of foods that are high in calories such as fast foods, fried foods, fatty and processed foods, and foods containing hidden sugar. A lack of physical activity is also one of the main causes of obesity. In Malaysia, some news organizations post articles about obesity, such as the article written by Osman Lisut (2020) entitled "Puasa dua hari seminggu cegah obesiti" which was posted on the Berita Harian website. The article stated that people who practice two days of fasting in a week could avoid getting obese, leading them to a healthy lifestyle. Besides that, Sinar Harian also posted obesity-related information through an article entitled "Makan lebih nasi dapat cegah

obesity.” This article discussed a study done in Tokyo, Japan, by a professor from Doshisha Women’s College of Liberal Arts. The research found that the fiber and nutrients from rice can make people feel full for longer, which helps them to avoid excessive food consumption.

Health Belief Model (HBM)

In the 1950s, the Health Belief Model (HBM) was developed by social scientists at the U.S. Public Health Service (LaMorte, 2019). HBM is a tool used by scientists to predict health behaviors. The model says that a person is willing to change his or her behavior due to several factors, namely perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (Boskey, 2019). Perceived susceptibility occurs when people believe that they are susceptible to a particular disease; therefore, they will be motivated to act in healthy ways if they think they will get that particular disease.

Meanwhile, perceived severity is when people perceive a particular disease will affect them negatively. Hence, they will feel motivated to avoid contracting the disease. The other two factors are perceived benefits and perceived barriers. These two perceptions are focused on the benefits and barriers to actions taken to reduce negative health outcomes. For example, perceived benefits will occur in a persons’ mind when they think that they will get healthy if they try to practice a healthy lifestyle. However, if people tend to perceive that changing their health behavior or practices is time or money consuming, then they tend not to change their health behavior or practices (Boskey, 2019).

Conceptual Framework

Based on the literature review and health belief model, the following conceptual framework is visualized (Figure 1).

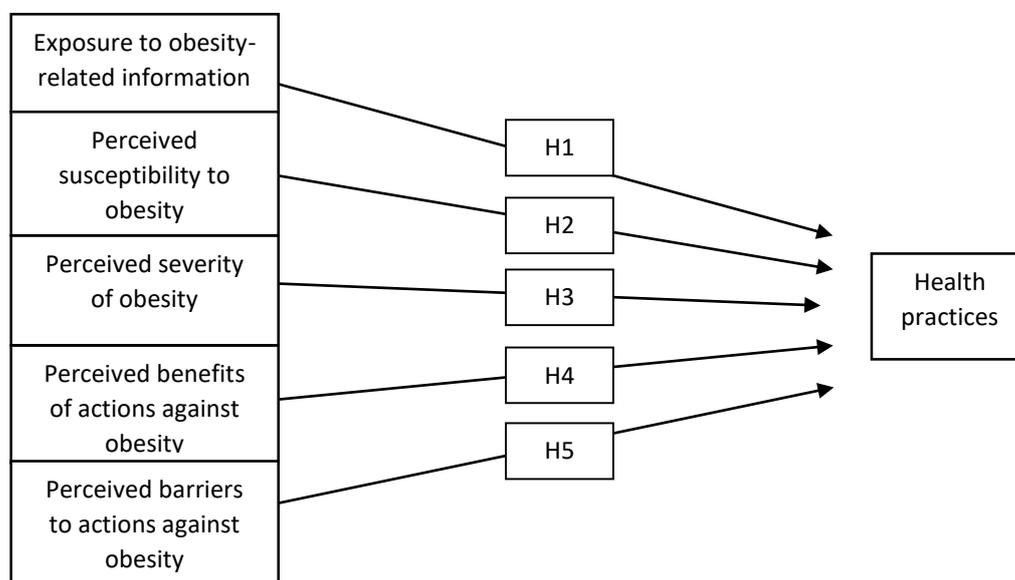


Figure 1: Conceptual framework for the effects of obesity-related information on health practices

Hypotheses

The following are the research hypotheses for this study:

- H1: There is a positive relationship between IIUM students' exposure to obesity-related information and their health practices;
- H2: There is a positive relationship between IIUM students' perceived susceptibility to obesity and their health practices;
- H3: There is a positive relationship between IIUM students' perceived severity of obesity and their health practices;
- H4: There is a positive relationship between IIUM students' perceived benefits of actions towards obesity and their health practices; and
- H5: There is a positive relationship between IIUM students' perceived barriers to actions against obesity and their health practices.

METHODOLOGY

Research Design

This study employed a quantitative research design using a survey method and an online questionnaire for data collection. The result of the quantitative research design can be generalized to the population. International Islamic University Malaysia (IIUM) was chosen as the locality of this study because the university has more than 30,000 students and most of the IIUM students are suitable for this study, as most of the obesity statistics come from teenagers and young adults. Besides, IIUM is a very strategic place for this study due to the presence of many restaurants and fast-food chains near the university. Therefore, it can be said that all of the students are prone to obesity. For data collection, a questionnaire was distributed to students who are thought to be suitable to participate in the study.

Population and Sampling Technique

IIUM students at the Gombak campus are the target population for this study because the main focus of the study is about the effect of the exposure to obesity-related information on students' health practices, specifically IIUM students. A total of 212 respondents were obtained through non-probability sampling. There are several types of sampling techniques under non-probability sampling procedures, such as convenience sampling and snowball sampling. For this research, convenience sampling was used because it was hard to find respondents or participants using probability sampling during the COVID-19 pandemic. Therefore, the researchers needed to search for respondents through social media by sending a personal message to them one by one.

Research Instrument and Measurement

The questionnaire used for data collection in this study was divided into seven sections. All items for every section were a self-structured question, and the development of the items was based on the independent and dependent variables of the study. There is no adaptation or adoption of instruments from other researchers or scholars in developing the present research instrument. Section 1 was on the personal information and demographics of the respondents. Section 2 consisted of questions that asked the respondents how often they were exposed to information about obesity through mass media, new media, and interpersonal relationships (12 items). Section 3 covered the respondents' perceived susceptibility to obesity (12 items). Section 4 was on the respondents' perceived severity of

obesity (20 items), Section 5 focused on the perceived benefits from taking actions against obesity (15 items), Section 6 covered the perceived barriers to actions against obesity (10 items), and Section 7 was on health practices (15 items). Sections 2, 3, 4, 5, and 6 are the independent variables, whereas section 7 is the dependent variable of the study.

This study measured the questions on a 5-point Likert scale for sections 2, 3, 4, 5, 6, and 7 with two different types of scale. The Likert-like scale used for section 2 consisted of 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always. Meanwhile sections 3, 4, 5, 6, and 7 had a Likert scale where 1 = strongly disagree, 2 = disagree, 3 = slightly agree, 4 = agree, and 5 = strongly agree. Each variable was computed to form an overall mean score with a minimum of 1 and a maximum of 5. Therefore, to calculate the overall percentage of an item, the mean for each item was multiplied by 20, which is equivalent to 100% based on a 5-point scale.

Validity and Reliability

An instrument needs to be validated for it to be reliable. This means that a measurement needs to have validity if researchers decide to study any type of variable. If the instrument is valid, then the research is considered credible and believable. Therefore, the questionnaire of this study was given to an expert in measurement to ascertain the face validity of the variables. The expert agreed that the items are valid, measuring what they are purported to measure.

A pilot study (N = 30) was conducted to measure the reliability of the instrument. An internal reliability test was conducted using Cronbach's alpha. The data collected from the pilot study revealed that all items from the six variables are reliable, as they exceeded the minimum Cronbach's alpha value of 0.70 to indicate the reliability of the variables (Table 1).

Table 1: Reliability test for selected variables

| Section | Variable | No. of Items | Cronbach's alpha | |
|---------|--|--------------|----------------------|------------------------|
| | | | Pilot Study (N = 30) | Actual Study (N = 212) |
| 2 | Exposure to obesity-related information | 12 | .830 | .841 |
| 3 | Perceived susceptibility to obesity | 12 | .954 | .964 |
| 4 | Perceived severity of obesity | 20 | .957 | .962 |
| 5 | Perceived benefits from taking actions against obesity | 15 | .960 | .950 |
| 6 | Perceived barriers to taking actions against obesity | 10 | .877 | .851 |
| 7 | Students' health practices | 15 | .973 | .960 |

All six variables for the pilot study are reliable. They are exposure to obesity-related information ($\alpha = .830$), perceived susceptibility to obesity ($\alpha = .954$), perceived severity of obesity ($\alpha = .957$), perceived benefits from taking actions against obesity ($\alpha = .960$), perceived barriers to actions against obesity ($\alpha = .877$), and students' health practices ($\alpha = .973$). The reliability scores indicated strong internal reliability consistency, which means that the items measured the specific variables well. Thus, no changes were made to the questionnaire.

For the actual study, the six variables were also found to be reliable. They are exposure to obesity-related information ($\alpha = .841$), perceived susceptibility to obesity ($\alpha = .964$), perceived severity of obesity ($\alpha = .962$), perceived benefits from taking actions against obesity ($\alpha = .950$), perceived barriers to actions against obesity ($\alpha = .851$), and students' health practices ($\alpha = .960$). The items for each variable are maintained because they were used for creating the respective variable mean used for the correlation analysis to test the hypotheses of the study. Furthermore, there are 10 and more items developed per variable; and they are able to attain the respective variable value of almost equal to scale (interval and ratio measurement) available in the SPSS program as required by Pearson's correlation assumption.

Data Collection

Data collection for the pilot study was conducted on Wednesday, May 27, 2020, until Saturday, May 30, 2020, and this study succeeded in obtaining 30 respondents. The online survey questionnaire was distributed using Google form as the campus was closed due to the COVID-19 pandemic. The questionnaire was distributed through WhatsApp groups and Telegram groups consisting of IIUM students. Also, personal messages were sent to the students as one of the ways of collecting data.

The data collection for the actual study was done after the pilot study had been completed. The questionnaire was distributed through WhatsApp groups, Telegram groups, and personal messages from Sunday, May 31, 2020, until Monday, June 22, 2020. A total of 212 responses were successfully collected for the research.

Data Analysis

Collected data were analyzed using Statistical Package for the Social Sciences (SPSS) Version 23. Both descriptive and inferential statistics were used. For the descriptive analysis, frequencies, percentages, means, and standard deviations were used, while for the inferential statistics, t-tests and bivariate correlation were employed. Specifically, the bivariate correlation was used to test for hypotheses H1, H2, H3, H4, and H5, while a one-sample t-test was used to determine the levels of the independent variables and dependent variable, that is, students' health practices. The test value for the item using a 5-point scale is at 3 because is towards the middle and in order to indicate its positivity, the value must exceed 3 in order to be significantly positive.

RESULTS AND DISCUSSION

Demographic Statistics of Respondents

A total of 212 respondents participated in the study. Table 2 presents the findings on the demographic characteristics of the respondents. More than three-quarters of the respondents (69.8%) were female and the rest were male (30.2%). As for their age, 66.5% of the respondents fell within the category of 21–25 years old, 19.8% were below 20 years old, and the remaining respondents (13.7%) were 26 years old and older. In terms of their education level, about two-fifths of the respondents (40.6%) were pursuing their bachelor's degree, and the same number of respondents was doing their foundation (29.7%) and postgraduate program (29.7%). The majority of the respondents (87.3%) were Malaysian students and the remainders (12.7%) were international students. The students were mainly from Kulliyah of Islamic Revealed Knowledge and Human Sciences [KIRKHS] (40.6%),

followed by Kulliyah of Economics and Management Sciences [KENMS] (13.2%), Kulliyah of Education [KOED] (12.3%), Kulliyah of Engineering [KOE] (11.3%), Kulliyah of Architecture and Environmental Design [KAED] (9.0%), and Ahmad Ibrahim Kulliyah of Laws [AIKOL] (7.5%). Most of the respondents (43.4%) were in the first year of their studies, followed by second-year (24.5%), third-year (15.6%), and final-year students (6.5%). In terms of Body Mass Index (BMI), more than half of the respondents (54.7%) were normal and 11.8% were underweight. However, 20.8% of them were overweight and the rest (12.7%) were considered obese.

Table 2: Demographic characteristics of the respondents

| Demographic Characteristic | Category | Frequency | Percentage |
|----------------------------|---------------|------------|--------------|
| Gender | Male | 64 | 30.2 |
| | Female | 148 | 69.8 |
| | Total | 212 | 100.0 |
| Age (years old) | Less than 20 | 42 | 19.8 |
| | 21–25 | 141 | 66.5 |
| | 26 and above | 29 | 13.7 |
| | Total | 212 | 100.0 |
| Level of education | Foundation | 63 | 29.7 |
| | Undergraduate | 86 | 40.6 |
| | Postgraduate | 63 | 29.7 |
| | Total | 212 | 100.0 |
| Nationality | Malaysian | 185 | 87.3 |
| | International | 27 | 12.7 |
| | Total | 212 | 100.0 |
| Kulliyah | KIRKHS | 86 | 40.6 |
| | KENMS | 28 | 13.2 |
| | KOED | 26 | 12.3 |
| | KOE | 24 | 11.3 |
| | KAED | 19 | 9.0 |
| | AIKOL | 16 | 7.5 |
| | KICT | 13 | 6.1 |
| | Total | 212 | 100.0 |
| Year of study | First | 92 | 43.4 |
| | Second | 52 | 24.5 |
| | Third | 33 | 15.6 |
| | Fourth | 35 | 16.5 |
| | Total | 212 | 100.0 |
| BMI Range | Underweight | 25 | 11.8 |
| | Normal | 116 | 54.7 |
| | Overweight | 44 | 20.8 |
| | Obese | 27 | 12.7 |
| | Total | 212 | 100.0 |

More than three-quarters of the respondents (69.8%) were female and the rest were male (30.2%). As for their age, 66.5% of the respondents fell within the category of 21–25 years old, 19.8% were below 20 years old, and the remaining respondents (13.7%) were 26 years old and older. In terms of their education level, about two-fifths of the respondents (40.6%) were pursuing their bachelor's degree, and the same number of respondents was doing their foundation (29.7%) and postgraduate program (29.7%). The majority of the respondents (87.3%) were Malaysian students and the remainders (12.7%) were international students. The students were mainly from Kulliyah of Islamic Revealed Knowledge and Human Sciences [KIRKHS] (40.6%), followed by Kulliyah of Economics and Management Sciences

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Overall, it can be concluded that the students who participated in the study were female adolescent Malaysians who were pursuing their bachelor's degree and they were mainly from KIRKHS. Only one-third of them belonged to the risky group of being overweight and obese.

Exposure to Obesity-Related Information

Table 3 presents a one-sample t-test for the respondents' exposure to obesity-related information. Overall, slightly more than half of the number of the respondents (59.7%) reported that they were exposed to obesity-related information with $t = -0.235$ ($p = .815$) and a mean value of 2.986 ($SD = 0.877$). They were exposed to obesity-related information through newspapers (58.7%), magazines (58.0%), social groups (55.4%), radio (51.9%), and medical health officers (44.6%).

Table 3: One-sample t-test for exposure to obesity-related information

| No. | Exposure to Obesity-related Information (N = 212) | Mean | SD | Percentage (%) | t** | p |
|-----|---|--------------|--------------|----------------|---------------|-------------|
| 1 | To what extent are you exposed to obesity-related information through Instagram? | 3.637 | 1.121 | 72.7 | 8.273 | .000 |
| 2 | To what extent are you exposed to obesity-related information through websites? | 3.580 | 1.109 | 71.6 | 7.615 | .000 |
| 3 | To what extent are you exposed to obesity-related information through Facebook? | 3.363 | 1.260 | 67.3 | 4.197 | .000 |
| 4 | To what extent do you communicate about obesity with your family members? | 3.311 | 1.138 | 66.2 | 3.982 | .000 |
| 5 | To what extent are you exposed to obesity-related information through Twitter? | 3.288 | 1.334 | 65.8 | 3.141 | .002 |
| 6 | To what extent are you exposed to obesity-related information through the television? | 3.203 | 1.040 | 64.1 | 2.839 | .005 |
| 7 | To what extent do you communicate about obesity with your friends/colleagues? | 3.184 | 1.168 | 63.7 | 2.293 | .023 |
| 8 | To what extent are you exposed to obesity-related information through newspapers? | 2.934 | 1.095 | 58.7 | -0.878 | .381 |
| 9 | To what extent are you exposed to obesity-related information through magazines? | 2.901 | 1.198 | 58.0 | -1.204 | .230 |
| 10 | To what extent do you communicate about obesity with your social groups? | 2.769 | 1.172 | 55.4 | -2.872 | .004 |
| 11 | To what extent are you exposed to obesity-related information through the radio? | 2.594 | 1.104 | 51.9 | -5.351 | .000 |
| 12 | To what extent do you communicate about obesity with your medical health officer? | 2.231 | 1.188 | 44.6 | -9.425 | .000 |
| | Overall Mean on Exposure to Obesity-Related Information | 2.986 | 0.877 | 59.7 | -0.235 | .815 |

*5-point Likert scale where 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = always.

**Test value is 3

Instead, the respondents were mainly exposed to obesity-related information through mediums such as Instagram (72.7%), websites (71.6%), Facebook (67.3%), family members (66.2%), Twitter (65.8%), television (64.1%), and friends/colleagues (63.7%). Hence, the findings indicate that the students had a low level of exposure to obesity-related information.

Perceived Susceptibility to Obesity

The results of a one-sample t-test for the respondents' perceived susceptibility to obesity are presented in Table 4.

Table 4: One-sample t-test for perceived susceptibility to obesity

| No. | Perceived Susceptibility towards Obesity (N = 212) | Mean | SD | Percentage (%) | t** | p |
|-----|--|--------------|--------------|----------------|---------------|-------------|
| 1 | I think I am susceptible to being obese after being exposed to obesity-related information through Instagram. | 2.958 | 1.315 | 59.2 | -0.470 | .639 |
| 2 | I think I am susceptible to being obese after being exposed to obesity-related information through my family members. | 2.929 | 1.306 | 58.6 | -0.789 | .431 |
| 3 | I think I am susceptible to being obese after being exposed to obesity-related information through my friends/colleagues. | 2.844 | 1.310 | 56.9 | -1.731 | .085 |
| 4 | I think I am susceptible to being obese after being exposed to obesity-related information through websites. | 2.825 | 1.322 | 56.5 | -1.923 | .056 |
| 5 | I think I am susceptible to being obese after being exposed to obesity-related information through Facebook. | 2.788 | 1.327 | 55.8 | -2.329 | .021 |
| 6 | I think I am susceptible to being obese after being exposed to obesity-related information through Twitter. | 2.769 | 1.352 | 55.4 | -2.489 | .014 |
| 7 | I think I am susceptible to being obese after being exposed to obesity-related information through medical health officer. | 2.717 | 1.333 | 54.3 | -3.091 | .002 |
| 8 | I think I am susceptible to being obese after being exposed to obesity-related information through my social groups. | 2.708 | 1.299 | 54.2 | -3.279 | .001 |
| 9 | I think I am susceptible to being obese after being exposed to obesity-related information through the television. | 2.708 | 1.254 | 54.2 | -3.395 | .001 |
| 10 | I think I am susceptible to being obese after being exposed to obesity-related information through the radio. | 2.467 | 1.218 | 49.3 | -6.374 | .000 |
| 11 | I think I am susceptible to being obese after being exposed to obesity-related information through magazines. | 2.448 | 1.165 | 49.0 | -6.897 | .000 |
| 12 | I think I am susceptible to being obese after being exposed to obesity-related information through newspapers. | 2.425 | 1.164 | 48.5 | -7.200 | .000 |
| | Overall Mean of Perceived Susceptibility towards Obesity | 2.708 | 1.184 | 54.2 | -3.596 | .000 |

*5-point Likert scale where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *agree*, and 5 = *strongly agree*.

**Test value is 3

Overall, the respondents (54.2%) believed that they are not susceptible to obesity after being exposed to obesity-related information with a mean of 2.708 (SD = 1.184; $t = -3.596$ ($\rho = .000$). Specifically, the respondents did not think that they are susceptible to being obese after being exposed to obesity-related information through Instagram (59.2%), family members (58.6%), friends/colleagues (56.9%), websites (56.5%), Facebook (55.8%), Twitter (55.4%), medical health officer (54.3%), social groups (54.2%), television (54.2%), radio (49.3%), magazines (49.0%), and newspapers (48.5%). Regardless of the type of medium used, the students thought that their perceived susceptibility to obesity was not affected.

Perceived Severity of Obesity

The one-sample t-test results for the respondents' perceived severity of obesity are presented in Table 5. On average, seven in ten respondents (72.3%) thought that obesity is a very dangerous disease after being exposed to obesity-related information ($t = 9.085$; $\rho = .000$) with a mean value of 3.613 (SD = 0.983). The item with the highest mean is "I think obesity is a very dangerous disease after being exposed to obesity-related information through Instagram" ($M = 4.038$, $SD = 0.953$) while the item with the lowest mean is for "I think obesity will affect me after being exposed to obesity-related information through magazines" ($M = 3.132$, $SD = 1.318$; $t = 1.460$, $p = .146$). The respondents also thought that obesity is a very dangerous disease after being exposed to obesity-related information through television (78.1%), websites (77.7%), Twitter (77.4%), Facebook (75.7%), newspapers (73.0%), radio (70.3%), magazines (70.2%), family members (70.8%), friends/colleagues (70.6%), and Instagram (70.1%). At the same time, they thought that they would have the tendency to get affected by obesity after being exposed to obesity-related information through Twitter (68.8%), websites (68.0%), medical health officers (67.7%), television (66.8%), Facebook (66.7%), and social groups (66.4%).

Table 5: One-sample t-test for perceived severity of obesity

| No. | Perceived Severity of Obesity (<i>N</i> = 212) | Mean | SD | Percentage (%) | <i>t</i> ** | <i>p</i> |
|-----|--|-------|-------|----------------|-------------|----------|
| 1 | I think obesity is a very dangerous disease after being exposed to obesity-related information through Instagram. | 4.038 | 0.953 | 80.8 | 15.852 | .000 |
| 2 | I think obesity is a very dangerous disease after being exposed to obesity-related information through the television. | 3.906 | 1.031 | 78.1 | 12.795 | .000 |
| 3 | I think obesity is a very dangerous disease after being exposed to obesity-related information through websites. | 3.887 | 1.078 | 77.7 | 11.976 | .000 |
| 4 | I think obesity is a very dangerous disease after being exposed to obesity-related information through Twitter. | 3.868 | 1.144 | 77.4 | 11.043 | .000 |
| 5 | I think obesity is a very dangerous disease after being exposed to obesity-related information through Facebook. | 3.783 | 1.131 | 75.7 | 10.078 | .000 |
| 6 | I think obesity is a very dangerous disease after being exposed to obesity-related information through the newspaper. | 3.651 | 1.098 | 73.0 | 8.636 | .000 |
| 7 | I think obesity will affect me after being exposed to obesity-related information through my family members. | 3.538 | 1.289 | 70.8 | 6.073 | .000 |

| | | | | | | |
|----|---|--------------|--------------|-------------|--------------|-------------|
| 8 | I think obesity will affect me after being exposed to obesity-related information through my friends/colleagues. | 3.528 | 1.252 | 70.6 | 6.143 | .000 |
| 9 | I think obesity is a very dangerous disease after being exposed to obesity-related information through the radio. | 3.514 | 1.146 | 70.3 | 6.534 | .000 |
| 10 | I think obesity is a very dangerous disease after being exposed to obesity-related information through magazines. | 3.509 | 1.170 | 70.2 | 6.338 | .000 |
| 11 | I think obesity will affect me after being exposed to obesity-related information through Instagram. | 3.505 | 1.293 | 70.1 | 5.682 | .000 |
| 12 | I think obesity will affect me after being exposed to obesity-related information through Twitter. | 3.439 | 1.314 | 68.8 | 4.862 | .000 |
| 13 | I think obesity will affect me after being exposed to obesity-related information through websites. | 3.401 | 1.304 | 68.0 | 4.476 | .000 |
| 14 | I think obesity will affect me after being exposed to obesity-related information through a medical health officer. | 3.387 | 1.364 | 67.7 | 4.130 | .000 |
| 15 | I think obesity will affect me after being exposed to obesity-related information through the television. | 3.340 | 1.313 | 66.8 | 3.767 | .000 |
| 16 | I think obesity will affect me after being exposed to obesity-related information through Facebook. | 3.335 | 1.305 | 66.7 | 3.737 | .000 |
| 17 | I think obesity will affect me after being exposed to obesity-related information through my social groups. | 3.321 | 1.307 | 66.4 | 3.575 | .000 |
| 18 | I think obesity will affect me after being exposed to obesity-related information through the newspaper. | 3.175 | 1.293 | 63.5 | 1.966 | .051 |
| 19 | I think obesity will affect me after being exposed to obesity-related information through the radio. | 3.156 | 1.310 | 63.1 | 1.731 | .085 |
| 20 | I think obesity will affect me after being exposed to obesity-related information through magazines. | 3.132 | 1.318 | 62.6 | 1.460 | .146 |
| | Overall Mean of Perceived Severity towards Obesity | 3.613 | 0.983 | 72.3 | 9.085 | .000 |

*5-point Likert scale where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *agree*, and 5 = *strongly agree*.

**Test value is 3

However, lower percentages of the respondents thought that they would be affected by obesity after being exposed to obesity-related information through newspapers (63.5%), radio (63.1%), and magazines (62.6%). This finding means that after being exposed to obesity-related information, the respondents tended to think that obesity is a very dangerous disease rather than obesity will affect them. Thus, it can be concluded that IIUM students are aware of the dangers of obesity to them. The results show that IIUM students have a positive level of perceived severity of obesity.

Perceived Benefits from Taking Actions against Obesity

A one-sample *t*-test was performed to assess the respondents' perceived benefits from taking actions against obesity. The results in Table 6 indicate that the respondents' views on the benefits from taking actions against obesity are significantly positive (79.2%), with an overall mean value of 3.960 (*SD* = 0.832) and *t* = 16.807 (*p* = .000). The respondents believed that they will get many benefits from taking actions against obesity. This is supported by the results where the majority of the respondents reported that they get to know more about obesity after being exposed to obesity-related information (80.9%), and they thought that obesity will lead them to stay healthy after being exposed to obesity-related information through the new media, namely Facebook, Instagram, Twitter and websites (80.3%). The rest of the items are positively evaluated, with the mean values ranging from 3.660 to 3.995.

Table 6: One-sample *t*-test for respondents' perceived benefits from taking actions against obesity

| No. | Perceived Benefits from Taking Actions against Obesity (<i>N</i> = 212) | Mean | <i>SD</i> | Percentage (%) | <i>t</i> ** | <i>p</i> |
|-----|---|-------|-----------|----------------|-------------|----------|
| 1 | I get to know more about obesity after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 4.047 | 0.907 | 80.9 | 16.813 | .000 |
| 2 | I think obesity will lead me to stay healthy after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 4.014 | 0.941 | 80.3 | 15.687 | .000 |
| 3 | I think obesity will lead me to stay healthy after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.995 | 0.926 | 79.9 | 15.647 | .000 |
| 4 | I think obesity will lead me to eat more healthy food after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 3.986 | 0.936 | 79.7 | 15.331 | .000 |
| 5 | I get to know more about obesity after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazine. | 3.925 | 1.000 | 78.5 | 13.468 | .000 |
| 6 | I think obesity will lead me to exercise regularly after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 3.920 | 0.918 | 78.4 | 14.596 | .000 |
| 7 | I get to know more about obesity after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.920 | 0.902 | 78.4 | 14.849 | .000 |
| 8 | I think obesity will lead me to eat more healthy food after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.910 | 0.967 | 78.2 | 13.708 | .000 |
| 9 | I think obesity will lead me to stay healthy after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazine. | 3.887 | 0.927 | 77.7 | 13.930 | .000 |

| | | | | | | |
|----|--|--------------|--------------|-------------|---------------|-------------|
| 10 | I think obesity will lead me to exercise regularly after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.882 | 0.959 | 77.6 | 13.392 | .000 |
| 11 | I think obesity will lead me to join outdoor activities (e.g., fun run, Zumba) after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 3.816 | 1.025 | 76.3 | 11.588 | .000 |
| 12 | I think obesity will lead me to join outdoor activities (e.g., fun run, Zumba) after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.792 | 1.014 | 75.8 | 11.381 | .000 |
| 13 | I think obesity will lead me to eat more healthy food after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazine. | 3.792 | 0.976 | 75.8 | 11.826 | .000 |
| 14 | I think obesity will lead me to exercise regularly after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazine. | 3.788 | 1.001 | 75.8 | 11.457 | .000 |
| 15 | I think obesity will lead me to join outdoor activities (e.g., fun run, Zumba) after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazine. | 3.660 | 1.061 | 73.2 | 9.062 | .000 |
| | Overall Mean of Perceived Benefits from Taking Actions against Obesity | 3.960 | 0.832 | 79.2 | 16.807 | .000 |

*5-point Likert scale where 1 = strongly disagree, 2 = disagree, 3 = slightly agree, 4 = agree, and 5 = strongly agree.

**Test value is 3

The respondents, as a whole, perceived benefits from all the mediums, namely, social media, mass media, and interpersonal relations for various issues regarding obesity such as leading them to know more about obesity, to eat more healthy food, to exercise regularly, to join outdoor activities, and to stay healthy. This means that all the mediums concertedly provide beneficial and useful information about containing obesity.

Perceived Barriers to Actions against Obesity

Based on Table 7, the one-sample t-test indicates that overall, more than half of the number of respondents (56.5%) believed that they tend to encounter problems while taking actions against obesity, whereby the t value of -2.541 ($p = .012$) is negative yet significant and the mean value is 2.826 ($SD = 1.000$). Specifically, the respondents thought that it is a hassle for them to get healthy food on campus to prevent obesity (68.8%) and that there is no dietician in the campus health clinic to assist them with obesity-related issues (66.3%). However, they were rather neutral in their perceptions regarding other barriers to actions against obesity in terms of: the campus provides a conducive environment to assist them in fighting obesity (62.5%), students are busy with assignments (61.1%), the campus has fun outdoor activities for students to participate in reducing obesity (60.0%), the students find it hard to prevent obesity because of other commitments (59.2%), and they do not have social support in college to stay healthy (58.3%). On the other hand, only 53.9% of the respondents thought that being obese is common in their society, it is normal to be obese now in their society (42.8%), and it

is alright to be obese (38.1%). Therefore, the results imply that the perceived barriers are not an issue for the students. Hence, students should not see preventing obesity as a difficult task to achieve.

Table 7: One-sample t-test for perceived barriers to actions against obesity

| No. | Perceived Barriers to Actions against Obesity (N = 212) | Mean | SD | Percentage (%) | t** | p |
|-----|---|--------------|--------------|----------------|---------------|-------------|
| 1 | I think it is too much of a hassle to get healthy food on campus to prevent obesity. | 3.439 | 1.201 | 68.8 | 5.320 | .000 |
| 2 | I think we don't have a dietician in our campus health clinic to assist us on obesity-related issues. | 3.316 | 1.246 | 66.3 | 3.692 | .000 |
| 3 | I think the campus doesn't provide a conducive environment to assist us in fighting obesity. | 3.127 | 1.276 | 62.5 | 1.453 | .148 |
| 4 | I think I am too busy with college assignments to take action to prevent obesity. | 3.057 | 1.207 | 61.1 | 0.683 | .495 |
| 5 | I think there are just not enough fun outdoor activities around campus to participate in to reduce obesity. | 3.000 | 1.254 | 60.0 | 0.000 | 1.000 |
| 6 | I think it is hard for me to prevent obesity because of other commitments. | 2.958 | 1.209 | 59.2 | -0.511 | .610 |
| 7 | I think I don't have social support in college to stay healthy. | 2.915 | 1.259 | 58.3 | -0.982 | .327 |
| 8 | I think being obese is common in our society. | 2.693 | 1.308 | 53.9 | -3.413 | .001 |
| 9 | I think it is normal to be obese now in our society. | 2.142 | 1.280 | 42.8 | -9.765 | .000 |
| 10 | I think it is alright to be obese. | 1.906 | 1.169 | 38.1 | -13.636 | .000 |
| | Overall Mean of Perceived Barriers to Actions against Obesity | 2.826 | 1.000 | 56.5 | -2.541 | .012 |

*5-point Likert scale where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *agree*, and 5 = *strongly agree*.

**Test value is 3

Health Practices

Table 8 shows the results for the one-sample t-test on students' health practices after being exposed to obesity-related information. On average, seven in ten respondents (73.0%) had a high level of health practices ($t = 10.589$; $p = .000$), with a mean value of 3.649 ($SD = 0.870$). All mediums were able to influence the respondents to follow the health practices to avoid obesity. Specifically, the respondents reported that after being exposed to obesity related-information through the new media, they believed in staying healthy (74.7%), ate more healthy food (73.9%), always monitored their weight so that they know they are on track and will not get obese (73.6%), exercised regularly (73.4%), and joined outdoor activities (70.6%). For interpersonal relationships, the respondents reported that interpersonal relationships influenced them to stay healthy (74.2%), eat more healthy food (73.9%), always monitor their weight (73.8%), exercise regularly (72.4%), and join outdoor activities (72.0%). The mass media also influenced them to stay healthy (72.2%), eat more healthy food (72.0%), always monitor their weight so that they know they are on track and will not get obese (70.7%),

exercise regularly (69.5%), and join outdoor activities (68.3%). The results indicate that all mediums influenced the respondents' health practices against obesity.

Table 8: One-sample t-test for health practices

| No. | Health Practices (N = 212) | Mean | SD | Percentage (%) | t** | p |
|-----|--|-------|-------|----------------|--------|------|
| 1 | I stay healthy after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 3.736 | 0.942 | 74.7 | 11.375 | .000 |
| 2 | I stay healthy after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.708 | 0.949 | 74.2 | 10.860 | .000 |
| 3 | I eat more healthy food after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.693 | 0.962 | 73.9 | 10.500 | .000 |
| 4 | I eat more healthy food after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 3.693 | 0.916 | 73.9 | 11.021 | .000 |
| 5 | I always monitor my weight so that I know I am on track and will not get obese after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.689 | 1.006 | 73.8 | 9.970 | .000 |
| 6 | I always monitor my weight so that I know I am on track and will not get obese after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 3.679 | 0.984 | 73.6 | 10.054 | .000 |
| 7 | I exercise regularly after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 3.670 | 0.946 | 73.4 | 10.308 | .000 |
| 8 | I exercise regularly after being exposed to obesity-related information through interpersonal relationships: family members, friends/colleagues, medical health officers, and social groups. | 3.618 | 1.012 | 72.4 | 8.891 | .000 |
| 9 | I stay healthy after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazines. | 3.608 | 0.994 | 72.2 | 8.913 | .000 |
| 10 | I eat more healthy food after being exposed to obesity-related information through mass media: television, radio, newspaper, and magazines. | 3.599 | 0.956 | 72.0 | 9.122 | .000 |
| 11 | I join outdoor activities (e.g., fun run, Zumba) after being exposed to obesity-related information through interpersonal relationships: my family members, friends/colleagues, medical health officer, and social groups. | 3.561 | 1.035 | 71.2 | 7.894 | .000 |
| 12 | I join outdoor activities (e.g., fun run, Zumba) after being exposed to obesity-related information through the new media: Facebook, Instagram, Twitter, and websites. | 3.538 | 1.041 | 70.8 | 7.521 | .000 |
| 13 | I always monitor my weight so that I know I am on track and will not get obese after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazines. | 3.533 | 1.081 | 70.7 | 7.176 | .000 |

| | | | | | | |
|---|--|--------------|--------------|-------------|---------------|-------------|
| 14 | I exercise regularly after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazines. | 3.476 | 1.014 | 69.5 | 6.842 | .000 |
| 15 | I join outdoor activities (e.g., fun run, Zumba) after being exposed to obesity-related information through the mass media: television, radio, newspaper, and magazines. | 3.415 | 1.113 | 68.3 | 5.429 | .000 |
| Overall Mean of Health Practices | | 3.649 | 0.870 | 73.0 | 10.859 | .000 |

*5-point Likert scale where 1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly agree*, 4 = *agree*, and 5 = *strongly agree*.

**Test value is 3

Hypothesis Testing

Correlation Analysis

Table 9 shows the bivariate correlation between students' health practices and exposure to obesity-related information, perceived susceptibility to obesity, perceived severity of obesity, perceived benefits from taking actions against obesity, and perceived barriers to actions against obesity. Health practices had a weak relationship with the students' exposure to obesity-related information ($r = .332$, $p = .000$) and perceived susceptibility to obesity ($r = .147$, $p = .000$) but a moderate positive relationship with perceived severity of obesity ($r = .456$, $p = .000$) and perceived benefits from taking actions against obesity ($r = .587$, $p = .000$). Therefore, H1, H2, H3, and H4 are supported but H5 is not supported by the findings of the study. Other relationships are also significant, except for between perceived susceptibility to obesity and perceived benefits from taking actions against obesity.

Table 9: Bivariate correlations between all the variables

| Variable (N = 212) | Health Practices | Exposure to Obesity | Perceived Susceptibility | Perceived Severity | Perceived Benefits | Perceived Barriers |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------|
| Health Practices | 1 | | | | | |
| Exposure to Obesity-Related Information | $r = .332$, $\rho = .000$ | 1 | | | | |
| Perceived Susceptibility to Obesity | $r = .147$, $\rho = .032$ | $r = .469$, $\rho = .000$ | 1 | | | |
| Perceived Severity of Obesity | $r = .456$, $\rho = .000$ | $r = .439$, $\rho = .000$ | $r = .320$, $\rho = .000$ | 1 | | |
| Perceived Benefits from Taking Actions against Obesity | $r = .587$, $\rho = .000$ | $r = .225$, $\rho = .001$ | $r = .072$, $\rho = .295$ | $r = .517$, $\rho = .000$ | 1 | |
| Perceived Barriers to Actions against Obesity | $r = .031$, $\rho = .650$ | $r = .270$, $\rho = .000$ | $r = .381$, $\rho = .000$ | $r = .131$, $\rho = .057$ | $r = -.023$, $\rho = .742$ | 1 |

Discussion

This study explored the effects of obesity-related information on IIUM students' health practices. A total of 212 students from seven different kulliyah in International Islamic University Malaysia (IIUM), Gombak, participated in this study.

The respondents had a low level of exposure to obesity-related information, perceived susceptibility to obesity, and perceived barriers to taking actions against obesity. However, they had a high level of perceived severity of obesity as well as perceived benefits from taking actions against obesity and practicing a healthy lifestyle after being exposed to obesity-related information. At the same time, there was a positive relationship between health

practices and exposure to obesity-related information, perceived susceptibility to obesity, perceived severity of obesity, and perceived benefits from taking actions against obesity. Hence, four out of five hypotheses are supported. This indicates that the findings of the study are in line with the Health Belief Model (HBM) where students tend to change their health practices after being exposed to external stimuli such as social media, traditional media, and interpersonal relationships.

IMPLICATIONS OF THE STUDY

This study aimed to explore the health practices of IIUM students after they have encountered obesity-related information through mass media, new media, or interpersonal relationships. Hence, the study has been done through a quantitative research method whereby questionnaires were given to the respondents to answer. A total of 212 respondents were obtained and analyzed in order to get results to answer the research objectives and to test the hypotheses of the study.

Accordingly, the present study's first contribution is that it yields data on the actual health practices of IIUM students after they have encountered obesity-related information either through mass media, new media, or interpersonal relationships. The findings of the study are significant because the results showed how the IIUM students perceived susceptibility, severity of obesity, perceived benefits from taking actions, and barriers to action against obesity after being exposed to obesity-related information. Several implications will have on the students, university, parents, ministries, and researchers from the derived data.

As for the students, the findings might give additional information and knowledge to them about university students' perception of obesity after being exposed to obesity-related information. This is where other students who think that they are obese or overweight will find out more information on the implications of being obese or overweight and thus, they tend to cultivate or practice a healthy lifestyle in their daily lives. Next is the university. The results of the study, specifically on perceived barriers to action against obesity, allow the university management to hire an experienced dietician in the campus health clinic. This will give benefits for students with obesity or overweight problem that needs help regarding obesity-related issues. The dietician can also monitor the food at the campus canteen, whereby the dietician will check on every food to know whether the food comply with the health standards. Moreover, university management can also open a few stalls that sell healthy food that is cheap and easy to consume.

This study will also have implications for the student parents. Parents will start to realize that they also need to make sure that their children practice a healthy lifestyle to prevent them from getting sick. This is where they might cook a portion of healthy food for their children consumption and to remind them that they need to exercise three times a week in order to stay healthy. Then is the ministries. Specifically, the Ministry of Health Malaysia (MOH) and the Malaysian Communications and Multimedia Commission (MCMC) will collaborate to organize attractive health awareness campaigns that focus more on obesity and food consumption in young adults. Besides, MOH can arrange a road tour to universities or campus to spread the awareness about the danger of obesity. Regarding the findings of exposure to obesity-related information, MCMC plays a crucial role in broadcasting and disseminating information and awareness on the threat of obesity.

Lastly, the findings of the study can also have implications for other researchers. Future researchers in Malaysia who want to explore and examine student health practices

from other universities or schools might use this study as a reference because this study employed the Health Belief Model (HBM) in predicting the health practices of IIUM students. In order for them to use this model as their theoretical framework, this study will be beneficial for them to understand more about this model and how to utilize it in their research.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The most challenging part of the study is in collecting data due to the implementation of the MCO to curb the spread of COVID-19 and most of the local students in IIUM had returned to their home town where the Internet connection is not reliable in some remote villages in the country. This has resulted in a low level of cooperation from the students. Similar studies should be conducted at other educational institutions, as Health Today (2020, September) found that one in every three school children is overweight and obese while one in every two adults is bound to be overweight and obese.

Further, the Ministry of Health Malaysia (MOH) with the Malaysian Communications and Multimedia Commission (MCMC) can organize awareness campaigns on health literacy to prevent the occurrence of obesity from a young age. Knowledge and awareness of the dangers of obesity should be broadcasted and disseminated through various media and interpersonal relationships to cultivate the spirit of practicing a healthy lifestyle among Malaysians. In addition, the MCMC needs to control unhealthy advertising on mass media and new media. The MCMC should also encourage the MOH to put more health-related advertisements and public service announcements so that people will be aware of obesity and its effects.

CONCLUSION

Everyone knows that obesity is one of the dangerous diseases in the world. Some people tend to ignore the fact, while some do not. Obesity is not just about the accumulation of fat in a person's body. However, it is more than that when it tends to correlate with high blood pressure, high glucose level, and high cholesterol, leading to chronic diseases of hypertension, diabetes, heart disease, and cancer. As for this study, it can be deduced that IIUM students are practicing a healthy lifestyle after being exposed to obesity-related information through social media, traditional media, and interpersonal relationships. In other words, students in Malaysia practice a healthy lifestyle in combating obesity. This is where they realized that if there are no precautionary steps taken in preventing obesity, it will cause a significant problem for them. This would lead them to serious health issues; thus, they tend to practice a healthy lifestyle to prevent chronic diseases that are caused by obesity. Therefore, this study managed to give results on the effects of obesity-related information through media and interpersonal relationships on IIUM students' health practices.

REFERENCES

- Aktar, N., Qureshi, N. K., & Ferdous, H. S. (2017). Obesity: A review of pathogenesis and management strategies in adult. *Delta Medical College Journal*, 5(1), 35-48. <https://doi.org/10.3329/dmcj.v5i1.31436>
- Anasuri, S. (2016). Mass media making its impact on overweight and obesity: A developmental overview. *IOSR Journal of Humanities and Social Science*, 21(4), 29-39. <https://doi.org/10.9790/0837-2104062939>
- Asmee, S. A. (2015, July 10). *Obesiti di kalangan dewasa*. Retrieved from <http://www.myhealth.gov.my/obesiti-di-kalangan-dewasa/>

- Ayub, S. H., Manickam, Y., Hamzah, M. R., Suanda, J., & Mohd Yusoff H. A. (2017). Health related campaigns in social media and its practical aspects for youths in Malaysia. *SHS Web of Conferences*, 33, 1-6. <https://doi.org/10.1051/shsconf/20173300061>
- Bahari, S. (2020, January 10). *Kurang tidur punca obesiti*. Retrieved from <https://www.majalabsains.com/kurang-tidur-punca-obesiti/>
- Boskey, E. (2019, January 14). *Health belief model*. Retrieved from <https://www.verywellmind.com/health-belief-model-3132721>
- Brazier, Y. (2018, November 2). *What is obesity and what causes it?* Retrieved from <https://www.medicalnewstoday.com/articles/323551>
- Cherry, K. (2019, December 1). *How social learning theory works*. Retrieved from <https://www.verywellmind.com/social-learning-theory-2795074>
- Devault, G. (2019, October 21). *Advantages and disadvantages of quantitative research*. Retrieved from <https://www.thebalancesmb.com/quantitative-research-advantages-and-disadvantages-2296728>
- Fatima, T., Beigh, M., & Hussain, S. Z. (2018). Obesity: Causes, consequences and management. *International Journal of Medical and Health Research*, 4(4), 53-58.
- LaMorte, W. W. (2019, September 9). *The health belief model*. Retrieved from <http://sphweb.bumc.bu.edu/otlt/MPHModules/SB/BehavioralChangeTheories/BehavioralChangeTheories2.html>
- Lisut, O. (2020, January 11). *Puasa dua hari seminggu cegah obesiti*. Retrieved from <https://www.bharian.com.my/wanita/sihat/2020/01/645751/puasa-dua-hari-seminggu-cegah-obesiti>
- Mayo Clinic. (2019, August 24). *Symptoms of obesity*. Retrieved from <https://www.mayoclinic.org/diseases-conditions/obesity/symptoms-causes/syc-20375742>
- Naveena, N. (2015). Importance of mass media in communicating health messages: An analysis. *IOSR Journal of Humanities and Social Sciences*, 20(2), 36-41. <https://doi.org/10.9790/083720253641>
- Oyama, O. A., & Okpara, N. (2017). Health communication: The responsibility of the media in Nigeria. *Specialty Journal of Medical Research and Health Science*, 2(3), 1-10.
- Sern, T. J., & Zainuddin, H. (2015). Public awareness of HIV/AIDS: How media play a role? *The Southeast Asian Journal of Tropical Medicine and Public Health*, 46(4), 669-679.
- Sinar Harian. (2019, May 2). *Makan lebih nasi dapat cegah obesiti*. Retrieved from <https://www.sinarharian.com.my/article/26235/GLOBAL/Makan-lebih-nasi-dapat-cegah-obesiti>
- Stanford Health Care. (2019, October 23). *What causes obesity?* Retrieved from <https://stanfordhealthcare.org/medical-conditions/healthy-living/obesity/causes.html>
- Szabó, K., & Pikó, B. (2019). Likelihood of healthy eating among adolescents based on the health belief model. *Developments in Health Sciences*, 2(4), 1-6. <https://doi.org/10.1556/2066.2.2019.004>
- The ASEAN Post Team. (2019, July 31). *Obesity on the rise in ASEAN*. Retrieved from <https://theaseanpost.com/article/obesity-rise-asean>
- Vazini, H., & Barati, M. (2015). The health belief model and self-care behaviors among type 2 diabetic patients. *Iranian Journal of Diabetes and Obesity*, 6(3), 107-113.
- World Health Organization. (2019, April 8). *Malaysia and WHO call for more investment in primary health care the 21st century*. Retrieved from

-
- <https://www.who.int/malaysia/news/detail/08-04-2019malaysia-and-who-call-for-more-investment-in-primary-health-care-the-21st-century> Malaysia has become 'fattest' country in Asia in 30 years. (2018, October 23). Retrieved from <http://www.dailyexpress.com.my/news.cfm?NewsID=128188>
- World Health Organization. (2020, March 3). *Obesity and overweight*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
- World Population Review. (2020, February 18). *Most obese countries population*. Retrieved from <http://worldpopulationreview.com/countries/most-obese-countries/>
- Xue, F. (2013). Exposure to media coverage of obesity and Mississippi residents' health behavior. *The International Journal of Communication and Health, 1*, 9-15.