Assessing University Students’ Risk Factors for Type-2 Diabetes

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Abstract—The purpose of this study is to examine the risk factors that might lead to Diabetes Type-2 and to identify the level of understanding about Diabetes Type-2. This study involved students of Social Work in year one, year two, year three and year four at Universiti Sultan Zainal Abidin (UniSZA). In this study, the researcher used descriptive methods, which only focuses on frequency and percentages. The results showed that risk factors of Diabetes Type-2 which includes ethnic factor, obesity factor, physical activities factor, hypertension factor, cholesterol factor, bodyshape factor, and family history factor were at anormal level among respondents. Next, the findings showed that the level of understanding among respondents was at a low level. This is because the respondents still do know exactly what Diabetes Type-2 is and what kind of risk factors that might lead to Diabetes Type-2, furthermore respondents are living unhealthy lifestyle that made them at risk of getting Diabetes Type-2.

Keyword — Risk Factor, the Level of Understanding, Diabetes Type-2, Social Work Students, Descriptive Methods.

I. INTRODUCTIONS

Diabetes is the most obvious health problem [1]. In the year 2010, a total of 26 million (8.3%) US citizens have been affected by diabetes, 10.9 million are older people above 65 years old and about 1.9 million are new cases involving people over 20 years old [2]. Data from SEARCH study have shown that adolescent of aged 10-19 years getting Diabetes Type-2 [3]. In Malaysia, Diabetes Type-2 is a public health issue that is very disturbing and closely related to the rise in micro and macro complications and premature death [4]. World Health Organization states that 422 million people (8.5%) of the world population that are over 18 years old was suffering from Diabetes Type-2 disease [5] and results show that majority of them are women [6]. The increase Diabetes Type-2 cases has least negative effects, however, this can be reduced through prevention strategies [7].

Obesity and lack of physical activities are major contributor to the increasing rate of Diabetes Type-2 [8]. According to Gary-Webb et al. [9] stated that Diabetes Type-2 has contributed 90-95% of total diabetes cases and it is due to several risk factors which are family history factor, behavioural factor, and environmental factor. These risk factors can be overcome by reducing the obesity problems, good diet and performing physical activities regularly [10-11]. Generally, risk factors such as obesity problems, lack of physical activities, family history, gender, and socio-economic status are always caused of Diabetes Type-2 among adolescents [12-14]. Finally, this study was conducted to identify the risk factors of Diabetes Type-2 and to identify the level of understanding about Diabetes Type-2 among respondents.

II. LITERATURE REVIEWS

"Non-Insulin Dependent Diabetes Mellitus" (NIDDM) or Diabetes Type-2 estimated that 366 million people had Diabetes Type-2 in 2011 and by 2030 this would increase to 552 million[15]. Diabetes Type-2 develops when the body becomes immune to insulin or when the pancreas stops producing enough insulin [16]. Diabetes Type-2 is common among people with overweight and obesity problems [17-18] and lack of physical displacement [19-20]. Most of these Diabetes Type-2 diseases are more common in adult however, they are increasingly growing among adolescents [21].

There are several risk factors contributed occurrence of Diabetes Type-2 includes age [22-23], obesity [24-25], lack of physical activities [26-27], hypertension [28], cholesterol [29-30], body shape [31], and family history [32-33]. For Diabetes Type-2, symptoms spread slowly for several years and it is hard to aware of its presence, most people diagnosed with Diabetes Type-2 did not show symptoms continually, there are some who do not even realize that they have the disease until some health problems occur that are associated with diabetes [34].

Obesity is a major risk factor that leads to Diabetes Type-2 [35-36]. For individuals didless physical activities, they are exposed to high risk of Diabetes Type-2 [37]. Prevention can be done in various ways such as reducing obesity problems to better level. This is because moderate weight loss leads to less risk of cardiovascular disease [38].

Next, a healthier lifestyle. This is attained by a balance dietary practice or management. Diet management is one of the fundamentals of diabetes care [39]. Then, performing physical activities. According to Colberg et al. [40] there are some suggestions on physical activities that are suitable for combating Diabetes Type-2. 150 min of physical activity is recommended once a week and exercises should be done routinely[41].

The National College Health Risk Behaviour Survey conducted a study in 1999. The result showed that 35% of college students have an obesity problem [42]. Obesity rates have grown rapidly among the same college students aged
between 18 and 29 [43]. A study from the National Institute of Health shows that every year after their first year, students gained weight [44]. This gain of weight has contributed to the risk of Diabetes Type-2 among college students.

Based on the study from Reyes-Velazquez and Hoffman, [45] showed the level of understanding and knowledge among college students about Diabetes Type-2 disease. The results showed that the level of understanding and knowledge of students are low, students mostly describe Diabetes Type-2 is a disease associated with sugars in the body and are hereditary. They also provide false information about how the disease is diagnosed. Some of them are unable to determine what is considered a healthy lifestyle that prevents Diabetes Type-2. Meanwhile, in terms of knowledge about the prevention of Diabetes Type-2, most students said prevention can be done through good nutrition practices but they cannot identify the types of foods that are suitable for preventing the disease and what kind of physical activities can be done to prevent Diabetes Type-2.

III. METHODS OF RESEARCH

3.1 Research Instrument
In this study, students of Social Work in Universiti Sultan Zainal Abidin (UniSZA) had been assessed by using a questionnaire. The questionnaire was adapted from past research and edited to fit in present study [46]. The researcher had used 25 items in the form. This questionnaire divided by two which is section A and section B. In section A the questions were accompanied with multiple choice answers while for section B, the researcher used “Likert Scale” method to obtain answers from the respondents. For the Likert Scale, respondents only need to state their choices based on the instructions. The Likert Scale was expressed in one until five scale which is Strongly Agree, Agree, Disagree or Strongly Disagree [47].

After the data was obtained, the researcher analyzed the data by using the descriptive methods. The researcher used descriptive methods which only focuses on frequency and percentage. Frequency and percentages were reported into the studies by describing the highest and lowest percentages associated with Diabetes Type-2’s risk factors and the understanding of respondents on Diabetes Type-2.

3.2 Data Collection
In this study, the researcher used a questionnaire as a method in collecting data. The researcher distributed the questionnaires to the social work students of semester 1, 2, 3 and 4 at UniSZA. Before the questionnaire was distributed to the respondents, the researcher handed over the questionnaire to the supervisor to be reviewed. After questionnaires was corrected, researcher start to distribute the questionnaires that conducted for one month starting from July 17th, 2018 to August 17th, 2018. The average number of respondent for one day was 10 people and the total number of respondents is 306 people.

IV. RESULTS

After a month the data were obtain. The results were analyzed by using descriptive methods. The researcher used descriptive methods which only focuses on frequency and percentage. Frequency and percentage were reported by describing the highest and lowest percentages. Below is an explanation on the level of understanding of Diabetes Type-2 among respondents.

Awareness about Diabetes Type-2

Table 1 shows the level of understanding among respondents about Diabetes Type-2. A total of 72.5% of respondents agreed that their current lifestyle might lead to Diabetes Type-2 in the future. 77.1% of respondents agreed that the current lifestyle would not make them develop Diabetes Type-2.

Based on Table 1, 79.7% stated that they eat what they like. Furthermore, a total of 48.7% stated that they prefer sweet foods. Percentage of answering carbonated drink was 31.0% and, lastly, eating late night or supper has a percentage of 50.7%. Type-2 in the future. Next, 65.0% believed that family history is able to increase the risk of getting Diabetes Type-2. A total of 88.9% of respondents agreed, that if they were diagnosed with Diabetes Type-2 they are able to prevent the effect of the disease.

Then, results showed that 50.0% agreed that Diabetes Type-2 is a disease that is easy to treat. While 87.6% agreed that Diabetes Type-2 might cause serious complications. A total of 84.0% of respondents stated they are able to avoid Diabetes Type-2 in their lives. Additionally, 80.1% of respondents also stated that they always looked after the diet and tried to avoid taking foods with high sugars and fats.

<table>
<thead>
<tr>
<th>Item</th>
<th>Agree</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current lifestyle (eating habits and activity level) can develop Diabetes Type-2 in the future.</td>
<td>222</td>
<td>72.5</td>
</tr>
<tr>
<td>Current lifestyle (eating habits and activity level) can decrease the risk of developing Diabetes Type-2 in the future.</td>
<td>236</td>
<td>77.1</td>
</tr>
<tr>
<td>Family history increases the risk of Diabetes Type-2.</td>
<td>199</td>
<td>65.0</td>
</tr>
<tr>
<td>Diabetes Type-2, able to manage (treat) diabetes.</td>
<td>272</td>
<td>88.9</td>
</tr>
<tr>
<td>Diabetes Type-2 is a condition that is easy to treat.</td>
<td>153</td>
<td>50.0</td>
</tr>
<tr>
<td>Diabetes Type-2 can cause death.</td>
<td>177</td>
<td>17.8</td>
</tr>
<tr>
<td>Diabetes Type-2 can cause many serious complications.</td>
<td>268</td>
<td>87.6</td>
</tr>
<tr>
<td>Can avoid Diabetes Type-2 in life.</td>
<td>257</td>
<td>84.0</td>
</tr>
<tr>
<td>Always concern about food take and try avoid any food that is high in sugar and fat.</td>
<td>245</td>
<td>80.1</td>
</tr>
</tbody>
</table>
Prefer to consume favourite food. 244 79.7
Prefer to consume sweet food. 149 48.7
Prefer to drink carbonated drink. 95 31.0
Always eat late at night (supper). 155 50.7

V. DISCUSSION

Understanding about Diabetes Type-2

Table 1 shows a total of 72.5% of respondents agreed that their current lifestyle may cause Diabetes Type-2 in the future. This current lifestyle involves unhealthy diet and lack of physical activities. Results show that respondents have low level of understanding of a healthy lifestyle. According to the International Diabetes Federation, [48] the cause of the increasing case of Diabetes Type-2 is due to unhealthy lifestyle. According to Uusitupa et al. [49] these unhealthy lifestyles include lack of physical activity, smoking, drinking alcohol and having unhealthy diet.

Furthermore, respondents thought that Diabetes Type-2 is easy-to-treat and a percentage shows that 50.0% of them agreed. The percentage indicates that respondents have a low level of understanding. This level of understanding conveys to the confusion whether the disease can be treated or cannot can be treated. However, according to WHO the reduction in of Diabetes Type-2 can be done by countering the risk factors by controlling hypertension, tobacco reduction, reduction in alcohol use, balanced diet, healthy eating and maintaining a normal weight [50].

According to Tan and Magarey, [51] results showed that Malaysians with Diabetes Type-2 tend to consume a diet high in carbohydrates and fats. Results showed that 79.7% agreed that they eat what they liked. This is considered wrong because according to American Diabetes Association (ADA), high-calories diet from any sources including sugar will contribute to weight gain that might increase the risk of Diabetes Type-2 [52].

Then, 48.7% say that they prefer more sweet foods. According to Diabetes UK, excessive sugar intake in a variety of foods would cause obesity and obesity problems were contributed to the occurrence of Diabetes Type-2 [53]. Finally, eating late at night or supper. The results showed that respondents preferred to eat late at night and the percentage agreeing was 50.7%. Late night eating is bad for health and based on researches eating late at night can raises glucose and insulin levels, both of which contributes to Diabetes Type-2 [54]. Additionally, according to Danaei et al. [55] an unhealthy lifestyle and environmental factors are a major cause increasing of Diabetes Type-2.

VI. CONCLUSIONS

Based on the discussion, the researcher found that the awareness of risk factors that may be lead to Diabetes Type-2 among respondents are at a normal level. Researcher believe that the factors of Diabetes Type-2 are ethnic, obesity, lack of physical activities, hypertension, cholesterol, body shape, and family history. Meanwhile, in terms of understanding Diabetes Type-2, it can be seen that some of respondents have a good level of understanding compared to others respondents that have low levels of knowledge about Diabetes Type-2.

Overall, exposure to Diabetes Type-2 disease among students aged 18 years and above is necessary. This is because most of them have high potential for developing Diabetes Type-2 disease. The risk factor can be prevented by reduce obesity, a healthy diet and active in physical activities [56]. In the Diabetes Prevention Program (DPP), the main goal of individuals with risk of Diabetes Type-2 is to have a weight reduction at least 7% and practice more physical activities [57]. In the analysis of DPP post hoc studies, weight loss is the most important contributor to prevention [58].

Calorie reduction and increase in physical activities can helps to maintain weight loss [59]. Colleges and universities should be educated about healthy weight management practices [60]. Clinical trials show that individuals can slow down and prevent the onset of diabetes by practicing a healthy lifestyle [61].

VII. DECLARATION OF CONFLICTING INTERESTS

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