KNOWLEDGE, ATTITUDE AND BEHAVIOR OF ADOLESCENTS TOWARDS DIABETES MELLITUS

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Abstract

The prevalence of Diabetes mellitus (DM) patients is steadily increasing year by year. Indonesia was the fifth highest number of diabetes patients in the world, right after China, India, United States of America, and Brazil. Today, adolescents' life style tends to be less healthy as they prefer consuming fast foods and lack of exercise, which is feared to be the cause of Diabetes mellitus type 2. This research aimed to understand the knowledge, attitude, and behavior of adolescents towards Diabetes Mellitus. The subjects for this research were 81 students of a private university, aged 19 to 21 years old. The author used questionnaires for collecting the data. Further, the data were analyzed descriptively by employing percentage acquired from the data. The research results showed that some subjects (70,9%) had low knowledge of Diabetes Mellitus, 84% claimed that they maintained healthy behavior by consuming healthy diets in order to prevent getting infected with Diabetes mellitus, and 65% stated that they would try to seek for medical treatment if they were infected. However, the data also found that 77% of the total subjects tended to consume unhealthy diets and 52% of them rarely exercised. The acquired result showed that the subjects had not practiced healthy life style, especially in preventing Diabetes mellitus.

Keywords: knowledge, attitude, behavior, Diabetes Mellitus

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INTRODUCTION

The prevalence of Diabetes mellitus patients is steadily increasing year by year. WHO predicts that the total number of diabetes (diabetics) in the world will keep increasing along with the increasing number of population in the world and in Indonesia. The data from WHO stated that in 2004, the number of diabetics in Indonesia reached 8,426,000 patients and it was predicted that it will increase to 21,257,000 in Indonesia alone. Based on the data from International Diabetes Federation (IDF) in 2014, Indonesia was the fifth highest number of

diabetes patients in the world, right after China, India, United States of America, and Brazil.

Diabetes Mellitus (DM) is a disease marked by the increasing level of sugar in blood and the excretion of glucose content from urine. Diabetes mellitus is chronic hyperglycemic condition accompanied with various metabolic defects due to hormonal disruption, which engenders several chronic complications on eyes, kidneys, and blood vessel, accompanied with lesion on basement membrane found in examination by using electron microscope [2].

There are three types of diabetes mellitus. The first one is diabetes mellitus type 1. This disease is hyperglycemic disease caused by the absence of absolute insulin. This disease is also commonly called as insulin-dependent diabetes mellitus. Patients with this type of diabetes will need to acquire replacement insulin. Diabetes mellitus type 1 is commonly found in people with thin body and they are less than 30 years old. The second type is Diabetes mellitus type 2. Type 2 is hyperglycemic disease occurred due to sensitivity towards insulin. It is possible that the insulin level may be slightly low or in normal range. Diabetes mellitus type 2 usually inflicted people who are older than 30 years old. The last one is Diabetes gestational. This type of diabetes usually inflicts pregnant women who have never been exposed to diabetes. Approximately 50% of those with this disease will recover to non-diabetic after pregnancy period is over. The risk of contracting diabetes type 3 is higher in the future [6].

The cause of diabetes mellitus could vary. On diabetes type 1, pancreas could not produce enough insulin for body and as the result, lack of insulin could cause glucose remains in blood and could not be used as energy. There are some reasons why pancreas could not produce enough insulin on patients with diabetes type 1; they are: (1) heredity or genetic. If one or both parents have diabetes, a person will have higher risk of contracting diabetes; (2) Autoimmunity, which is a condition where a person has allergic reaction towards his or her own part of body tissue or type of vessel—in this case, inside pancreas. The body will lose its ability to produce insulin because the body's immune system destroys any cells producing insulin; (3) Virus or chemical substance that damages cells island (groups of cells) in the pancreas where insulin is produced. As more cells islands get damaged, a person will have higher risk of contracting diabetes.

Meanwhile, diabetes type 2 occurred when insulin produced by pancreas is not enough to tie sugar in blood due to unhealthy diet or life style. The causes of diabetes type 2 are (1) heredity, if parents of biological siblings contract similar disease; (2) unhealthy diet and life style; (3) high level of cholesterol; (4) lack of exercise; (5) obesity or overweight. Finally, diabetes mellitus gestational relates to the increasing need of energy, estrogen level, and the increasing level of growth hormone during pregnancy. Growth hormone and estrogen trigger the excretion of insulin that could cause excessive insulin secretion similar to diabetes type 2, which will eventually result in the decrease of cell responsiveness [3, 8].

The signs and symptoms of diabetes mellitus could be classified into three; they are: initial symptom, advanced symptom, and chronic symptom [3]. The initial symptoms of diabetes mellitus include polyuria (excessive production of urine), polydipsia (excessive water intake), and polyphagia (excessive food intake). The advanced symptoms of diabetes mellitus include decreasing body weight, blurry sight, to be easily fatigue, itch in genital, and wounds are difficult to heal. Chronic symptoms of diabetes mellitus include impotence/erection dysfunction and tingling sensation in the feet, kidney damage, gangrene (bad infection in the feet until it starts to decompose), blindness, stroke attack, coronary heart attack, and sudden death.

Diabetes mellitus is considered as chronic disease and there is no medicine for this.

Some efforts that could be done to prevent the worsening of this disease are by conducting self-management and proper disease management. In administering of diabetes mellitus, some treatments should be followed to stabilize the patient's physical condition and lessen the risk of disease complication such as by exercising, insulin therapy, feet care, and control of food intake/diet [7].

In order to prevent the spread of diabetes mellitus, it is important to conduct early prevention. Early prevention could be done by targeting adolescents because today adolescents' life style tend to be unhealthy such as by the tendency of consuming fast foods, fatty and unhealthy foods, and lack of exercise, which is feared to be the main cause of diabetes mellitus type 2. Today adolescents tend to use their spare time to hang out while playing gadget, to gather and chat while eating in some franchise foods or other hang out places.

Unhealthy behavior that could cause the contraction of diabetes mellitus highly relates to other aspects such as knowledge and attitude towards the disease. Lack of knowledge on diabetes mellitus in adolescent groups could be one of reasons of inappropriate life style and their attitude towards it.

Knowledge is a person's comprehension towards a situation or a thing. Knowledge is acquired through experience and learning. It is acquired through mental processes consisting of perception process, communication, and reasoning. Knowledge is classified into three groups, which are personal, procedural, and prepositional knowledge. Personal knowledge is comprehension attained through experience. Procedural knowledge is comprehension of how to do something. Prepositional knowledge is comprehension obtained through common knowledge that is usually considered as truth (science).

A person's knowledge of medicine is considered as important and most beneficial; however, knowledge (comprehension) of medicine does not always make him or her perform advantageous behavior for his or her health [5]. For example, a person knows the dangers and causes of diabetes mellitus, but he or she still consumes foods or drinks containing lots of sugar, which could cause diabetes.

Attitude is the tendency or predisposition that is learned to respond to something related to certain objects. Non verbal behavior is commonly used to calculate attitude. There are three basic assumptions of attitude, which are (a) learned attitude, (b) attitude as predisposed action, and (c) are consistent towards certain objects. [4].

There are some factors influencing behavior such as attitude, genetic, social norms, and creativity. On the other hand, practices or behaviors are actions or manners done by an individual that could be observed and concrete acts aimed to respond a stimulus [5].

In order to get clearer picture of adolescents' behavior towards diabetes mellitus, the researchers conducted a study by using survey technique towards Knowledge, Attitude, and Practice (KAP). Knowledge, Attitude, and Practice (KAP) is a survey technique that is commonly used to investigate human's behavior towards a certain topic [9]. KAP study could identify (a) what do the subjects know about the topic (knowledge); (b) how do the subjects feel about the topic (attitude); and (c) what do the subjects do about the topics (practice) [9].

KAP survey technique has three main purposes; they are to describe the dynamics of concept of KAP, to identify problems and intervention plan, and to serve as evaluating tool. KAP survey technique is commonly used for psycho-education in medicine because it could be

used to calculate the efficiency of health education program that aimed to change a person's healthy behavior [9]. Therefore, KAP technique could be used as an assessment tool in medicine especially for diabetes mellitus disease. Furthermore, this research was designed to understand the adolescents' knowledge, attitude, and practice towards diabetes mellitus.

METHODS

The subjects for this research were 81 students of X private university. There were 34 boys and 47 girls from the age group of 19 to 21 years old. The research used purposive non random sampling in selecting the samples. In order to acquire the data, the researchers made the questionnaire by including some questions consisting of the dimension of Knowledge, Attitude, and Practice. Furthermore, to analyze the data, the study used descriptive statistics method by employing percentage.

RESULTS AND DISCUSSION

Based on the research result on knowledge aspect, it could be found that out of four questions given, all subjects (100%) answered question number 1 correctly, 13% answered question number 2 accurately, 71% answered correctly on question number 3, and 42% answered question number 4 accurately. Furthermore, the following table presented the percentage of right answer on questions number 1 to 4 given by the subjects in order to analyze their knowledge aspect.

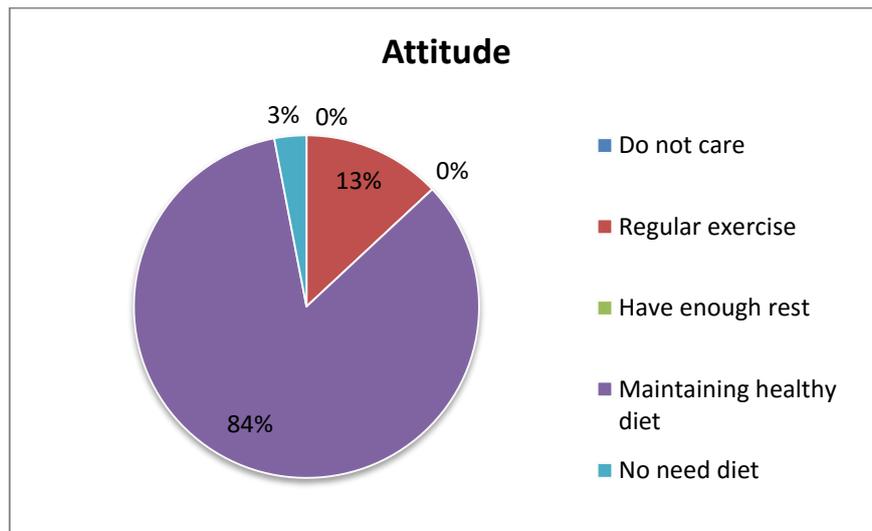**Table 1.** Distribution of right answer in Knowledge Aspect

Total of right answer	Percentage
1	12.9 %
2	58 %
3	22.6 %
4	6.5 %

The above table showed that the subjects had low knowledge regarding diabetes mellitus. This could be seen from the fact that there was only 6.5% subjects who entirely understood the disease; however, most of them (70.9%) tended to have lack of knowledge regarding this disease, because only 58% answered two questions accurately and 12.9% answered one question correctly. Furthermore, 18% of the subjects answered "I do not know," which indicated that the subjects had no knowledge regarding the information or topic.

A person's knowledge of medicine is considered as important and most beneficial. Lack of knowledge can be one of the determining factors of unhealthy behavior (practice) and can cause a certain disease especially diabetes mellitus [5].
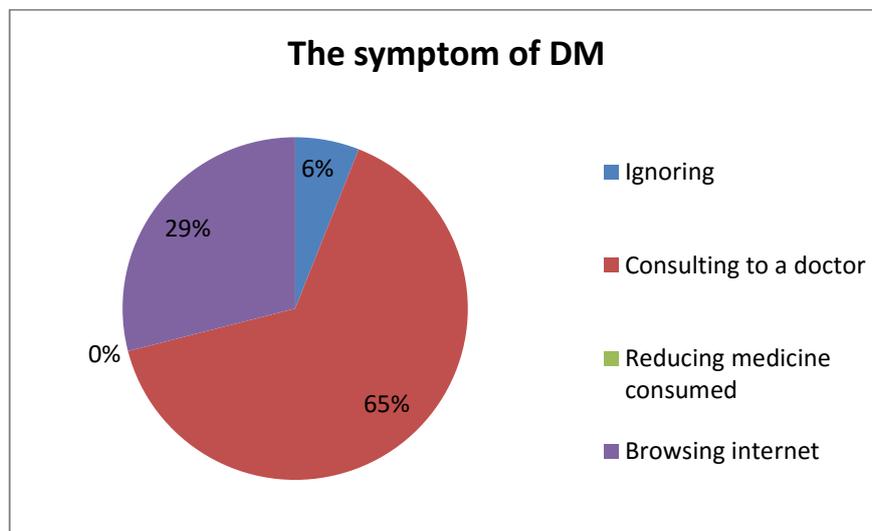
Regarding attitude aspect, it was known that 84% of the subjects had the tendency to maintain their diet so that they did not develop diabetes mellitus. It was also found that 13% subjects exercised regularly, and 3% opted to ignore their health because they felt that they were healthy. The spread could be seen through Figure 1.
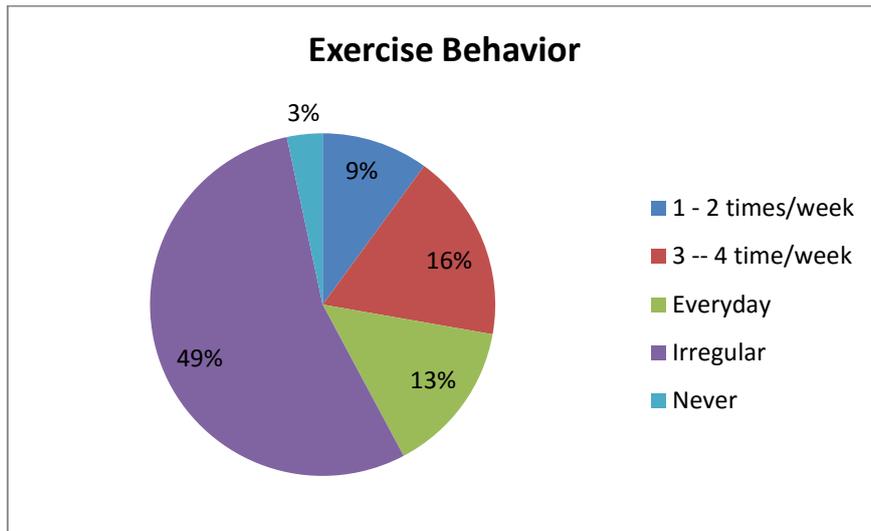
Figure 1: Attitude towards DM

In responding towards the symptoms of diabetes mellitus, 65% of the subjects had the tendency to consult a doctor if they suffered from one of diabetes mellitus symptoms, while 29% of the subjects preferred to look up for more information from the internet. Only 6% of them chose to ignore the symptoms because they thought the symptoms were normal. The data spread was presented in Figure 2.

Figure 2: Respond towards the symptoms of DM

It was found that the subjects had the tendency to have good attitude for healthy life style. This could be seen from the subjects' answers who wanted to maintain their diet and regularly exercised so that they could avoid contracting diabetes mellitus. Furthermore, the subjects would consult a doctor if they suffered from one of diabetes mellitus symptoms and tried to find more information regarding the disease from the internet. This showed that the subjects cared for their health. Their concern and attitude was expected to direct the subjects' behavior towards healthy life style; therefore, they could avoid contracting diabetes mellitus, because attitude was one of determining variables for behavior [1].

Figure 3: Exercise Behavior

Based on the above figure, it could be observed that 49% subjects had irregular exercise, 9% of the subjects exercised once or twice a week, 16% subjects exercised three to four times a week, and 13% subjects had daily exercise. Only 3% of the subjects never exercised. Therefore, the total of 52% of the subjects did not do regular exercise, and 48% of them exercised quite often.
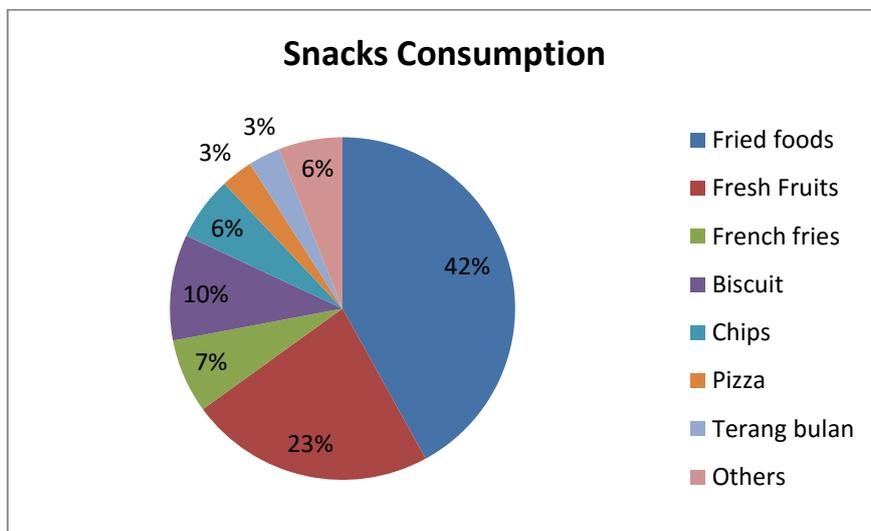
Figure 4: Snack Consumption

Figure 4 showed that 42% of the subjects consumed fried foods for their snacks. Only 23% subjects consumed fresh fruits. None of the subjects consumed nuts or lentils as snacks even though nuts are healthy snacks and they do not cause diabetes mellitus. Therefore, it was found that the total of 77% subjects had consumed unhealthy snacks.

Based on the conducted research, there was an incompatibility in attitude and practice on the observed subjects. The subjects had the tendency to have good attitude to maintain their health; however, their behavior (practice) showed contradiction with their attitude. As the subjects rarely exercised and they ate unhealthy snacks, it showed that they had not practiced healthy lifestyle especially in preventing diabetes mellitus. This was also supported by low level of knowledge regarding diabetes mellitus possessed by the subjects.

Therefore, in order to increase their knowledge regarding diabetes mellitus, some psycho-education programs could be conducted, for example by providing them with leaflets, posters, discussion, and other varieties of similar program.

CONCLUSION AND SUGGESTION

Based on the research result, it could be concluded that:

1. Level of knowledge of the subjects towards diabetes mellitus tended to be low.
2. Subjects had good attitude to lead a healthy life.
3. Subjects had bad behavior (practice) by consuming unhealthy snacks and lack of exercise.
4. Even though the subjects had good attitude, the subjects' behavior (practice) tended to be bad and this was probably due to their lack of knowledge towards diabetes mellitus.

Based on the conducted research, it was suggested:

1. To organize psycho-education program for the subjects such as in the form of leaflet, brochure, or poster.
2. For the next researches, it is suggested that the researcher add more items inside the questionnaire.

REFERENCES

[1] Baron, R. A. and Byrne, D. 2003. *Social Psychology*. 10th Edition. Allyn &Bacon: Pearson Education, Inc.

[2] Bilous. (2009). *Seri Kesehatan Bimbingan Dokter Pada Diabetes*. Jakarta: Dian Rakyat.

[3] Corwin, E. J. (2000). *Buku Saku Patofisiologi*. Jakarta: ECG

[4] Fishbein & Ajzen (1975), *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Reading*. MA: Addison-Wesley.

[5] Gomucio, S (2011) *The KAP Survey Model (Knowledge, Attitude & Practices) Data Collection-Quantitative Methods.*

[6] Habibie, R. F. (2010). *Hati-Hati dengan si Manis. Harmony Media Komunikasi High Desert*

[7] Orland, M. J. (1995). *Diabetes Mellitus. In: Woodley, M(Ed). Pedoman Pengobatan (Manual of Medical Therapiutic).* Yogjakarta: Yayasan Essensia Medica. Andi Offset.

[8] Utami, P. (2004). *Tanaman Obat Untuk Mengatasi Diabetes Mellitus*. 4th Edition. Jakarta : Agromedia Pustaka.

[9] Vandamme, E. (2009). *Concepts and Challenges in the use of Knowledge-Attitude-Practice Surveys*: Literature review