

KNOWLEDGE AND PRACTICE OF DIET AMONG OUTPATIENTS WITH TYPE 2 DIABETES AT LANG SON GENERAL HOSPITAL IN 2020

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ABSTRACT

Objectives: To describe the knowledge and practice on diet of outpatients with type 2 diabetes at Lang Son General Hospital in 2020; To determine some factors related to knowledge and practice on diet of outpatients with type 2 diabetes at Lang Son General Hospital. **Method:** The cross-sectional descriptive study was conducted to collect data using self-determination questionnaires from 340 outpatients with type 2 diabetes at Lang Son General Hospital from March to August in 2020 . **Results:** 76.2% of patients had correct knowledge on diet; 30.6% of patients had correctly answering about the number of meals / day of a diabetic patient from

4 to 6 meals. 57.9% of patients achieved dietary practice; patients eating more than 3 meals per day and using animal fat for food were accounted 19.1% and 49.1%.

Conclusion: Knowledge and practice on diet of outpatients with type 2 diabetes at Lang Son General Hospital was limited; age, accommodation and education level are related to the knowledge on diet of type 2 diabetic patients ($p<0,05$). Research results showed that it is necessary to enhance health education to improve knowledge and practice on diet for patients.

Keywords: Patients with type 2 diabetes; knowledge on the diet; practice on diet.

1. INTRODUCTION

Diabetes is now recognized as the “pandemic” of the 21st century. Every year, the world has to spend thousands of billions dollars in direct costs for treatment and prevention of complications, but still unable to fill the dire losses and consequences of diabetes. According to International Diabetes Federation (IDF) in 2019, there are about 463 million people in the world with aged from 20 to 79 facing with diabetes. Patients with type 2 diabetes accounts for about 90%. By 2030, worldwide there are

about 578 million people living with this disease, and this number could rise to 700 million by 2045. However, 50.1% of people do not know they had diabetes, about 374 million people have impaired glucose tolerance, which is a high risk group for developing the disease [1].

In Viet Nam, in 2002, 2.7% of the population were suffering from diabetes, but by 2012 this rate had increased by 5.7% of the population. Thus, after 10 years, the prevalence of diabetes in our country increased by 211.1% [2]. According to IDF, in 2019, Viet Nam had about 3.78 million people (6% of the population) living with diabetes, predicting that by 2045, it may reach 6.4 million people (7.1% of the population) have this disease [1].

The prevalence of diabetes tends to

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increase worldwide; especially, type 2 diabetes. The increase of type 2 diabetes is related to some risk factors such as increased obesity rate, unhealthy diet, sluggish movement. Studies showed that patients who do not comply with the diet is increasing. Failure to comply with the diet will have consequences such as decreased blood sugar control, leading to serious complications such as eye, kidney, nervous, foot the cost of medical services has also increased; This not only affects directly to the patients but also becomes a burden for families and society [1].

In 2019, Lang Son General Hospital examined and managed 5204 outpatients with diabetes; including 3619 patients with type 2 diabetes. This is the hospital with the highest number of patients with diabetes in Lang Son province. There are many researches on diabetes but most of them focus on diagnosis, treatment of complications, management and treatment of diseases. There are few studies on adherence to the diet of outpatients with type 2 diabetes. Therefore, the research was conducted on the topic: "Knowledge and practice on diet of outpatients with type 2 diabetes at Lang Son General Hospital in 2020" with 2 objectives:

1. To describe the knowledge and practice on diet of outpatients with type 2 diabetes at Lang Son General Hospital in 2020.
2. To determine some factors related to knowledge and practice on diet of outpatients with type 2 diabetes at Lang Son General Hospital in 2020

2. RESEARCH METHOD

2.1. Research subjects

The patient was diagnosed with type 2 diabetes

2.1.1. Inclusion criteria

- Patients were 18 years old and above.
- Patients were diagnosed with type 2 diabetes who were at outpatient department in Lang Son General Hospital from March to August 2020.
- The patient can read and understand Vietnamese and respond to the interview.
- Patients had no history of psychosis or psychiatric disorders.

2.1.2. Exclusion criteria

- The patient did not agree to participate in the study.
- Patients had severe disease progress must go to inpatient treatment.

2.2. Setting and research period

- Research period: The study was conducted from January 2020 to November 2020.
- Period of data collection: From March to August 2020.

- Research setting: Outpatient department - Lang Son General Hospital.

2.3. Research design

Cross-sectional descriptive study

2.4. Sample size and sampling method

- Sample size:

Apply the sample size formula for descriptive study

$$n = Z^2 \left(1 - \frac{\alpha}{2}\right) \frac{pq}{d^2}$$

n: Sample size required

p = 0.67: Percentage of patients with correct knowledge (According to research by Nguyen Trong Nhan in 2019) [2].

$$q = 1 - p = 1 - 0.67 = 0.33$$

d: Permissible error, choose d = 0.05

α : Significance level, choose $\alpha = 0.05$

then $Z_{(1 - \frac{\alpha}{2})} = 1.96$

$$\Rightarrow n = 1.96^2 \times \frac{0.67 \times 0.33}{0.05^2} = 340$$

- Sampling method: Using convenient sampling method

During the period from March to August 2020, there were 340 patients who met the criteria and agreed to participate in the study.

2.5. Data collection

All data were collected by directly interview.

Patients meet the criteria were selected and explained about the study, ethical issues, data collection procedures and invited them to participate in the research. Patients were interviewed while patients were finished examination and testing and awaiting the test result

2.6. Research instruments and evaluation criteria

The research instruments which were used in this study were based on the "Guidelines for diagnosis and treatment of type 2 diabetes" of the Minister of Health in 2017 [3].

The questionnaire consists of 40 questions and is divided into 3 parts:

- Part A: General information of the patient including 15 questions

- Part B: Knowledge on diet of patients with type 2 diabetes including 10 questions

- Part C: Practice on diet of patients with

type 2 diabetes including 15 questions

One correct answer got 1 point, Incorrect answer or do not know/practice got 0 point

Patients had correct knowledge on diet: When they got scores $\geq 70\%$ of the total score (equivalent to 7 points or more).

Patients had correct practice on diet: When they got scores $\geq 70\%$ of the total score (equivalent to 10 points or more).

2.7. Data analysis

After collecting, the data was checked and cleaned. The data were synthesized by using SPSS 18.0 software

Descriptive statistical including mean, percentage, standard deviation were used to describe the general information, knowledge and practice on diet. The OR ratio test and 95% confidence interval was used to determine factors related to knowledge and practice on diet of patients with type 2 diabetics.

3. RESULTS

3.1. General characteristics of research subjects

The average age of subjects was 67.0 ± 10.3 years; 82.9% of patients lived in urban areas; 51.2% of patients were men. The majority of the subjects were retire (52.6%); 30.3% of patients had family member facing with diabetes.

32.6% of patients had no complications. Among patients had complications, hypertension complication is the most common complication, accounting for 63.2%.

3.2. Knowledge and practice on diet of the subjects

Table 1. Knowledge on diet of the subjects (n = 340)

Contents	Correct answer	
	Number	%
The right diet helps to stabilize blood sugar and lipids	282	82.9
Use green vegetables with meals	340	100
Do not eat a lot of sweet fruits	261	76.8
Do not eat foods from animal viscera	254	74.7
Use animal fats	187	55.0
Limited carbonated soft drinks	288	84.7
Limited drinking sugar and cane juice	293	86.2
Limited drinking alcohol	279	82.1
Limited fruit juices	153	45.0
Do not skip breakfast	340	100
Prepare food in the form of boiling, cooked	248	72.9
Choose foods that raise blood sugar quickly	178	52.4
Number of meals / day from 4 to 6 meals	104	30.6

The results of Table 1 showed that Patients had the correct answers differences between contents: use animal fatsf (55.0%), limited fruit juices (45.0%), choose foods that raise blood sugar quickly (52.4%), number of meals / day from 4 to 6 meals (30.6%)

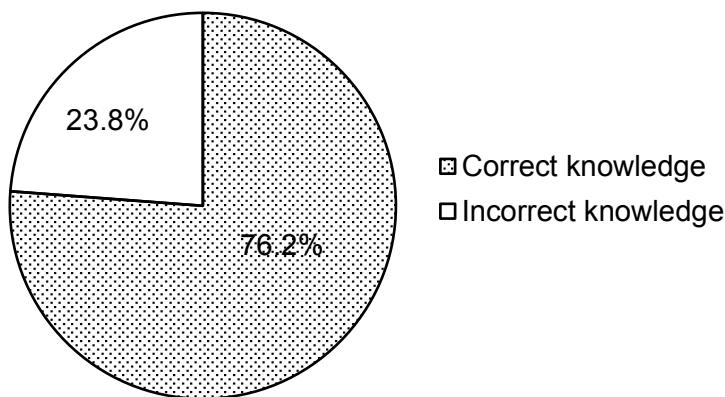


Figure 1. Classify knowledge on diet of patients with type 2 diabetes (n = 340)

The results of figure 1 showed that 76.2% of patients with type 2 diabetes have correct knowledge on diet.

Table 2. Practice of using green vegetables, number of meals and using fats and oils for cooking of the subjects (n = 340)

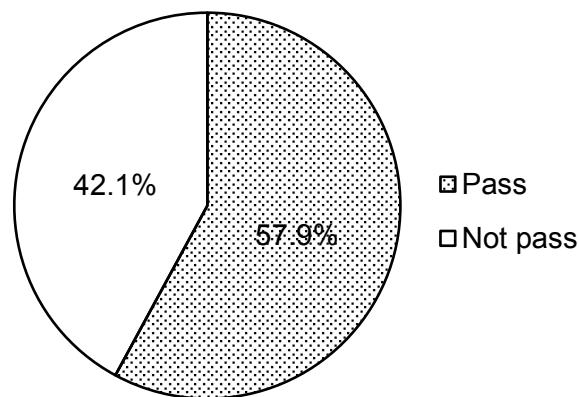
Contents	Patients' answers	
	Number	%
Use green vegetables in daily meals		
Every day	324	95.2
2-3 times / week	8	2.4
More than 3 times / week	8	2.4
Number of meals / day		
3 meals / day	275	80.9
More than 3 meals / day	65	19.1
Selection and use of oils and fats for cooking		
Oil / margarine	268	78.8
Animal fats	167	49.1
Combine 2 types of oil and fats	127	37.3

The results of Table 2 showed that only 19.1% of patients ate more than 3 meals / day; 49.1% of patients use Combine 2 types of oil and fats for cooking.

Table 3. Practice of eating ripen fruits and drinking alcohol per day of the subjects (n = 340)

Contents	Patients' answers	
	Number	Number
Ripen fruit is often eaten		
Dragon fruit, guava	193	56.8
Jackfruit	8	2.4
Bananas	91	26.8
Durian	7	2.0
Mango	41	12.0
The amount of alcohol and beer drinking per day (men: from 3 cups/day, women: 2 cups/day or more; 340 ml of beer or 140 ml of wine / week or more)		
Yes	43	12.6
No or less than the above amount	297	87.4

The table 3 showed that the majority of ripen fruits which patients usually eat were dragon fruit, guava (56.8%). 12.6% of patients drunk alcohol/beer as recommended by the Ministry of Health.

**Figure 2. Classify practice on diet of patients with type 2 diabetes (n = 340)**

57.9% of patients had achieved practice on the diet of diabetic patients.

3.3. Factors related with knowledge and practice on diet of patients with type 2 diabetics

Table 4. Relationship between general characteristics of the subjects with knowledge on diet (n = 340)

Contents	Knowledge on diet						p	
	Correct		Incorrect		OR (95% CI)			
	n	%	n	%				
Age group								
Under 60 years old	79	85.9	13	14.1	2.3 (1.2 – 4.4)	p = 0.016		
From 60 years old and up	180	72.6	68	27.4				
Gender								
Female	133	80.1	33	19.9	1.53 (0.92 – 2.54)	p = 0.124		
male	126	72.4	48	27.6				
Accommodation								
Urban	225	79.8	57	20.2	2.79 (1.5 – 5.07)	p = 0.001		
Rural	35	55.6	28	44.4				
Education level								
High school and above	181	81.2	42	18.8	2.16 (1.3 – 3.6)	p = 0.004		
Secondary school and below	78	66.7	39	33.3				
Occupation								
Officer	170	79.4	44	20.6	1.6 (0.97 – 2.67)	p = 0.088		
Other	89	70.6	37	29.4				

The results of this table showed that there were relationships between age group, accommodation and education level and knowledge on diet of patients. Compared with the age group under 60 years old, the correct knowledge rate was 2.3 times higher among those over 60 years old; Patients lived in urban areas had the correct knowledge was 2.79

times higher than rural areas; Patients with education from High school and above had the correct knowledge was 2.16 times higher than Secondary school and below ($p < 0.05$)

Table 5. Relationship between knowledge and practice on diet (n = 340)

Knowledge	Practice				OR (95% CI)	p		
	Pass		Not pass					
	n	%	n	%				
Correct	171	66.0	88	34.0	4.11 (2.41 – 7.0)	$p < 0.001$		
Incorrect	26	32.1	55	67.9				

The results of the table 5 showed that patients with correct knowledge had pass practice 4.11 times higher than patients with incorrect knowledge ($p < 0.05$).

4. DISCUSSION

4.1. General characteristics of subjects

The average age of subjects was 67.0 ± 10.3 years. Our result is higher than study of Pham Lan Anh with the average age of 59.5 ± 2.5 years [4]. In this study, almost of patients lived in urban areas (82.9%). This finding is higher than study of Nguyen Trong Nhan (57.1%) [2]. Difference settings of studies can be the reason for these.

30.3% of patients had family member facing with diabetes. Our finding is similar to study of Doan Thi Hong Thuy (37.0%) [5]. Family factors are one of the risk factors for diabetes. Therefore, the individual lifestyle of the patient greatly affects the prevalence of diabetes.

4.2. Knowledge and practice on diet of the subjects.

The results of Table 1 showed that 82.9% of patients had correct knowledge on diet to help stabilize blood sugar and lipids; 100% of patients had correct knowledge about using green vegetables in meals. Our findings are similar to Vu Thi Tuyet Mai with 100% of patients know how to use green vegetables in meals [6].

74.7% of patients had correct answer about "do not eat foods from animal viscera", "should not use animal fat" (55.0%). However, 45.0% of patients had incorrect

answer about "using animal fat in cooking". It has been explained that the diabetic patients think they only had a disorder of sugar metabolism in the body, not related to lipids or blood fats. Thus, study subjects have not paid enough attention to diet, while diet is an important part of the treatment strategy to control blood sugar, as well as prevent complications of the disease. In our study, only 30.6% of patients had the correct answer about "the number of meals/day of diabetic patients from 4 to 6 meals". This result is similar to study of Nguyen Trong Nhan (33.7%) [2].

The results of figure 1 showed that 76.2% of patients had correct knowledge on diet of diabetic patients. This result is higher than the research of Ha Thi Huyen in 2016 (59.4%) [7]. The difference may be due to the period that the study was conducted. In recent years, the promotion and education of diabetes on health has been promoted and diversified in various forms of communication. Therefore, the percentage of patients with correct knowledge on diet also increases.

Only 19.1% of patients ate more than 3 meals/day; 95.2% of patients ate vegetables every day. Our research results are similar to study of Vu Thi Tuyet Mai with the rate of patients eating vegetables every day, accounting for 97.7%, the number of patients eating the correct number of

meals per day is 15.3% [6]. Healthcare workers should enhance counseling and health education for patients to improve effectiveness treatment.

Only 12.6% of patients drank alcohol/beer as recommended by the Ministry of Health. The result is lower than study of Nguyen The Hung (19.2%) [8]. This can be explained by the average age of the patient is 66 years old, the patient also accompanied by some other diseases or complications of diabetes, so that the majority of patients do not use alcohol or beer.

Through the figure 2, the percentage of patients who achieved practice on diet was 57.9%. This study result is similar to study of Doan Thi Hong Thuy (58.0%) [5].

4.3. Factors related with knowledge and practice on diet of patients with type 2 diabetics

The results of Table 4 showed that there were relationships between age group, accommodation and education level and knowledge on diet of patients. Compared with the age group under 60 years old, the correct knowledge rate was 2.3 times higher among those over 60 years old; Patients lived in urban areas had the correct knowledge was 2.79 times higher than rural areas; Patients with education from High school and above had the correct knowledge was 2.16 times higher than Secondary school and below ($p < 0.05$). Our research results are similar to study of Bui Thi Huong with the relationship between age and knowledge on diet. The age group under 60 years old had correct knowledge was 1.62 times higher than age group over 60 years old ($p < 0.05$) [9].

Knowledge is an important factor that positively affects on practice of the patients. Table 5 showed that patients with correct knowledge had pass practice 4.11 times higher than patients with incorrect knowledge ($p < 0.05$). When the patient

had a clear understanding of the diet for diabetics, they will have correct practice on diet [2].

5. CONCLUSION

- The percentage of patients with correct knowledge on diet for type 2 diabetes was 76.2%. 30.6% of patients had correct answer about the number of meals/day of a diabetic patient from 4 to 6 meals

- 57.9% of patients had achieved practice on the diet of diabetic patients; 19.1% of patients eat more than 3 meals / day; 49.1% of patients use animal fat for cooking.

- Age, accommodation, education level related to knowledge on diet of type 2 diabetes patients with $p < 0.05$

- There is a positive relationship between knowledge and practice on diet of type 2 diabetes patients with $p < 0.05$.

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