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Is there a need for social information campaign in area of diabetes?

Paula Jankowska[1], Ewa Rudnicka-Drożak[1]

1. Chair and Department of Family Medicine, Medical University of Lublin

ABSTRACT

Introduction
Diabetes affect constantly wider group of people around world. Multicenter observational studies performed in Poland predicted diabetes prevalence as 6.7-9.8% and in Lublin region as 4,3% of total population. Diabetes is a diseases to some extent preventable, as constantly arising data confirm that lifestyle has even decisive influence on diabetes development. Thus, knowledge about diabetes and awareness of its risk factors and complications is very important. Individuals who are conscious about modifiable variables increasing the risk of developing diabetes may start to improve their everyday behaviors.

Objective
The aim of this study was to examine knowledge and awareness of diabetes among Lublin inhabitants.

Material and methods

There was 92 people included in the study. They were Lublin inhabitants. The analysis was based on questionnaire constructed by the authors. Data was analyzed using descriptive statistics and presented as percentages. The obtained results were also statistically analyzed using the STATISTICA 13 program. The significance of intergroup differences was verified with Pearson chi-square test.

Results
Analysis of participants answers revealed relatively good level of knowledge on diabetes risk factors and complications. Awareness of treatment strategies, diet of suffering patients and opinions on diabetes severity were also evaluated.
Conclusions

Participants of the study showed relatively satisfactory level of knowledge on diabetes mellitus. They were aware of many disease risk factors, but smoking and advanced age were rarely considered to raise the probability of diabetes development. Furthermore, they had adequate level of knowledge on diabetes complications, except for ischaemic heart disease. According to results of the study, there is a need for convincing social information campaign to raise constantly an awareness of diabetic risk factors and its consequences.
Keywords: Diabetes Mellitus, Awareness

INTRODUCTION

Diabetes affect constantly wider group of people around world. International Diabetes Federation estimated there were 2.235.800 total cases of diabetes in Poland in 2017. The predicted prevalence of diabetes in Polish adults was 7,6% [1]. There is also some data available on prevalence of diabetes in Poland in the years 2010–2014. Authors has estimated number of patients suffering from diabetes using two methods. First one included assessment of the number of people reported to the National Health Fund as having diabetes according to the ICD-10 codes and second involved evaluation of total patients who have bought hypoglycaemic agents and glucose test strips given on prescription. According to the described calculations, the average prevalence of diabetes in Poland in analyzed period of time approached 4.47% (the first method) or 5.88% (the second method) [2]. Further, multicenter observational studies performed in Poland predicted diabetes prevalence as 6.8% (WOBASZ I study, 2003-2005) [3], 6.7% (NATPOL 2011 study, 2011) [4] and even 9.8% (WOBASZ II study, 2014) [5]. Presented data suggest growth in number of affected individuals, being in line with results of Walicka et al. study depicting increase of diabetes prevalence in Poland in the consecutive years. The same project assessed occurrence of diabetes in Lublin region as 4,3% of total population, placing this province in the middle of the national rate [2].

Diabetes is a diseases to some extent preventable, as constantly arising data confirm that lifestyle has even decisive influence on diabetes development. Some epidemiological studies have depicted obesity as the most important risk factor for type 2 diabetes [6]. Further, low physical activity [7] and sedentary lifestyle [8] are considered as substantial diabetes risk factors. Diet, including use of alcohol and smoking, is also consequential risk factor. Studies have proven high glycaemic index diet with low content of fiber and a high-fat diet with relatively high proportion of saturated fats may affect insulin resistance and elevate risk of diabetes development [9].

Thus, knowledge about diabetes and awareness of its risk factors and complications is very important. Individuals who are conscious about modifiable variables increasing the risk of developing diabetes may start to improve their everyday behaviors.

OBJECTIVE

The aim of this study was to examine knowledge and awareness of diabetes among Lublin inhabitants.

MATERIAL AND METHODS

There was 92 people included in the study. They were Lublin inhabitants. The analysis was based on questionnaire constructed by the authors. The surveys were obtained from people attending church services in one of Lublin parishes. Women constituted 63,04%of whole study group, man – 36,96%. The age structure of the respondents was as follows: 4,35% - 10-20 years old, 32,61% - 20-30 years old, 13,04% - 30-40 years old, 21,74% - 40-50 years old, 17,39% - 50-60 years old, 6,52% - 60-70 years old, 4,35% - 70-80 years old. Data was analyzed using descriptive statistics and presented as percentages. The obtained results were

also statistically analyzed using the STATISTICA 13 program. The significance of intergroup differences was verified with Pearson chi-square test.

RESULTS

The respondents of the study had mostly secondary education (47,83, n=44). The others graduated from university (45,65%, n=42) or had a vocational education (6,52%, n=6). Analysis of the examined population revealed that 6,52% of respondents (n=6) suffered from diabetes. All cases were diagnosed as type 2 diabetes. Near one third of respondents declared they were more acquainted with the disease as they had a relative who developed diabetes. The first part of questionnaire provided information on the subjects' opinions on the risk factors for the development of diabetes. All of respondents believed it is not possible to become infected with diabetes. The vast majority thought diabetes was not caused by pathogens (bacteria or viruses). More than two thirds of people surveyed emphasized opinion that presence of too much simple sugars in the diet can cause diabetes. Further, the majority of respondents answered positively to the question about the possibility of a genetic burden of disease (84,78%). Among factors frequently assessed as increasing the risk of developing diabetes were found: obesity, low physical activity, gestational diabetes, a high-fat diet. On the other hand, such factors as smoking, age and sex were rarely chosen. Detailed data on this question is shown in Table 1.

Risk factors for diabetes	%
Smoking	**32,61%**
Obesity	**97,82%**
A high-fat diet	**41,30%**
Genetic factors	**84,78%**
Sedentary lifestyle	**39,13%**
Hypertension	**39,13%**
Diseases of the cardiovascular system	**8,70%**
Gestational diabetes	**50,00%**
Low physical activity	**65,22%**
Female sex	**4,35%**
Male sex	**2,17%**
Younger age	**0,00%**
Older age	**34,78%**

Table 1. Diabetes risk factors according to the respondents.

Then, respondents were asked about behaviors allowed for patients with diabetes and treatment strategies. 69,57% of study participants claimed patients are not permitted to eat sweets at all. Eating fruits without any limitations is considered by 82,61% as harmful to diabetics. 71,74% of them thought experiencing stressful situations may adversely affect the degree of glycemic control. Opinions about the possibility of diabetes regression due to a significant reduction in body weight were compensated, with 54,35% being enthusiastic with this idea and 45,65% skeptic. More than three quarters of respondents were aware that insulin therapy is not the only possible therapeutic approach, but oral drugs and subcutaneous injections incretin drugs are available.

Study participants were also asked to assess the severity of diabetes according to 1-5 points scale. Nobody chose answers ‘1’ or ‘2’. 23,91% evaluated diabetes gravity as ‘3’, 41,30% as ‘4’ and 34,78% as ‘5’.

While asked about diabetes complication, respondents most frequently listed: acidosis and coma-76,09%, neuropathy-65,22%, chronic kidney disease-60,87%, blindness-58,70% and

diabetic foot-56,52%. The same time, some severe or decreasing-quality-of-life complications such: osteoporosis-4,35%, erection problems-8,70%, neuropathic ache-10,87% and coronary artery disease-13,04%, according to respondents were poorly associated with diabetes. Awareness of diabetes complications is shown in Table 2.

Complications of diabetes	%
Renal failure	**60,87%**
Blindness	**58,70%**
Cataract	**26,09%**
Glaucoma	**19,57%**
Strong neuropathic pain	**10,87%**
Pathological skin lesions	**43,48%**
Osteopenia and osteoporosis	**4,35%**
Blood pressure drops and fainting	**54,35%**
Hypertension	**52,17%**
Ischemic heart disease	**13,04%**
Loss of sensation in the peripheral parts of the limbs	**65,22%**
Infection, ulceration and necrosis of foot tissue	**56,52%**
Charcot's joint (degeneration of the foot joints)	**15,22%**
Erectile dysfunction	**8,70%**
Coma due to ketoacidosis	**76,09%**
Death due to ketoacidosis	**43,48%**

Table 2. Awareness of diabetes complications.

The most popular source of information about diabetes was Internet-60,87%, friends-50%, and doctor-45,65%. Other sources of knowledge are depicted in Table 3.

Sources of knowledge	%
Professional literature	**32,61%**
Magazines for women	**19,57%**
Television	**41,30%**
The Internet	**60,87%**
School	**10,87%**
Doctors	**45,65%**
Friends	**50,00%**
Family	**23,91%**
Other	**6,52%**

Table 3. Sources of knowledge about diabetes

DISCUSSION

In our own studies, the level of respondents' knowledge about diabetes seems to be satisfactory. However, no statistically significant differences were found ($p>0,05$) regarding knowledge of risk factors, complications or behaviors recommended for diabetics between a group of people having relatives suffering from diabetes and not. This is quite surprising fact. According to Janeczek et al., who conducted similar study among nursing students having a

person with diabetes in the family affects the level of knowledge significantly [10]. On the other hand, diabetes sufferers shown higher level of knowledge concerning everyday behaviors in diabetes (eating sweets, fruits), treatment (were significantly more aware of availability of oral drugs).
Participants of the study showed quite satisfactory level of knowledge concerning risk factors of diabetes mellitus. Surprisingly, less than one third of them assessed smoking and advanced age as variables affecting diabetes risk. However, it is well known that active and even passive smoking are associated with significantly increased risks of diabetes mellitus [11]. Moreover, diabetes is more frequently observed among elderly individuals. With age, various regulatory mechanisms of the body become exhausted. The pancreas beta cell reserve is reduced. Physical activity of the elderly is also often limited, resulting in the development of overweight or obesity and insulin resistance. All of these mechanisms result in a higher incidence of elderly people with diabetes. The study by Żebrowska et al. revealed that patients of primary healthcare services had higher awareness of such risk factors as smoking (82,9%), alcohol consumption (85,7%) and fat-rich diet (91,6%) [12].
The most known diabetes complications were **Coma due to ketoacidosis**, sensory neuropahty, renal failure, blindness and diabetic foot. Among the nursing students surveyed, the most well-known complications of diabetes are: retinopathy, nephropathy and diabetic foot syndrome [10]. In the Krystoń-Serafin study group of diabetic patients only 23% of patients were aware of diabetic foot syndrome as a late complication and many people (approx. 44%) would like to broaden knowledge about complications of diabetes, especially on hypoglycaemia and hyperglycaemia [13] Despite comparatively good knowledge about the possible complications of diabetes, respondents showed low awareness of the possibility of developing ischemic heart disease in the course of diabetes. Coronary artery disease is a leading cause of death among diabetic patients [14]. This cardiologic disease is more frequent in diabetes because of clustered risk factors like: obesity, hypertension, hypercholesterolemia. What is more, diabetes influence on long-term prognosis after myocardial infarction and overall mortality making results unfavorable [15]. In the group of diabetic patients symptoms of myocardial ischaemia may be nonspecific. Lack of typical coronary ailments and equivalents of myocardial ischemia (decreased effort tolerance, arrhythmias) or even clinically silent myocardial infarction are observed in about 20% of sufferers [16]. This produce a considerable danger of receiving medical help in too long time. Thus, awareness of coronary artery disease hazard is essential to prevent undesirable health outcomes.

CONCLUSIONS

Participants of the study showed relatively satisfactory level of knowledge on diabetes mellitus. They were aware of many disease risk factors, but smoking and advanced age were considered to raise the probability of diabetes development by small proportion of respondents. Furthermore, they had adequate level of knowledge on diabetes complications (mostly acidosis and coma, neuropathy, chronic kidney disease, blindness-58,70% and diabetic foot) except for ischaemic heart disease, being a leading death cause among diabetic patients. The main source of knowledge was Internet. According to results of the study, there is a need for convincing social information campaign to raise constantly an awareness of diabetic risk factors and its consequences.

References:

1. https://www.idf.org/our-network/regions-members/europe/members/152-poland.html /accessed 20.07.2018/
2. Walicka M, Chlebus M, Brzozowska M, et al. Prevalence of diabetes in Poland in the years 2010–2014. Clinical Diabetology. 2016; 4(6): 232–237.

3. Polakowska M, Piotrowski W. Incidence of diabetes in the Polish population: results of the Multicenter Polish Population Health Status Study — WOBASZ. Pol Arch Med Wewn. 2011; 121(5): 156–163.

4. Rutkowski M, Bandosz P, Czupryniak L, et al. Prevalence of diabetes and impaired fasting glucose in Poland — the NATPOL 2011 Study. Diabet Med. 2014; 31(12): 1568–1571.

5. Drygas W, Bielecki W, Kozakiewicz K, Pająk A, Piotrowski W. Wieloośrodkowe Ogólnopolskie Badanie Stanu Zdrowia Ludności — WOBASZ. Epidemiologia i prewencja chorób układu krążenia. Medycyna Praktyczna, Kraków 2015.

6. Belkina AC, Denis GV. Obesity genes and insulin resistance. Curr Opin Endocrinol Diabetes Obes. 2010;17(5):472–477.

7. Zimmet P, Alberti KG, Shaw J. Global and societal implications of the diabetes epidemic. Nature. 2001;414(6865):782–787.

8. Hu FB, Manson JE, Stampfer MJ. et al. lifestyle, and the risk of type 2 diabetes mellitus in women. N Engl J Med. 2001;345(11):790–797.

9. Hu FB, van Dam RM, Liu S. Diet and risk of type II diabetes: the role of types of fat and carbohydrate. Diabetologia. 2001;44:805–817.

10. Janeczek I, Machaj M, Panczyk M, Sienkiewicz Z, Gotlib J Ocena poziomu wiedzy studentów pielęgniarstwa na temat cukrzycy typu II. Piel Pol. 2017;2(64):209–219.

11. Pan A, Wang Y, Talaei M, Hu FB, Wu T. Relation of active, passive, and quitting smoking with incident type 2 diabetes: a systematic review and meta-analysis. Lancet Diabetes Endocrinol. 2015;3(12):958–967.

12. Żebrowska M, Medak E, Pachuta M, Brodowicz-Król M. Assess the knowledge level of POZ patients on the diagnosis and treatment of type 2 diabetes. Journal of Education, Health and Sport. 2017;7(7):338-356.

13. Krystoń-Serafin M, Jankowiak B, Krajewska-Kułak E, Sierakowska M, Popławska E. Ocena wiedzy pacjentów na temat cukrzycy typu 2 jako niezbędny element terapii. Diabet. Prakt. 2005; 6: 7–14.

14. Berry C, Tardif JC, Bourassa MG. Coronary heart disease in patients with diabetes: part II: recent advances in coronary revascularization. J Am Coll Cardiol. 2007;49:643–656.

15. Donahoe SM, Stewart GC, McCabe CH, et al. Diabetes and mortality following acute coronary syndromes. JAMA. 2007;298:765–775.

16. Janand-Delenne B, Savin B, Habib G, Bory M, Vague P, Lassmann-Vague V. Silent myocardial ischemia in patients with diabetes. Diabetes Care 1999; 22: 1396–1400.