






ORIGINAL PAPER

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Physician Survey of Practices on Diet, Physical Activity and Weight Control: Questionnaire on Adult Care – validation of the Polish language version of the questionnaire

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ABSTRACT

Introduction. According to the World Health Organization, non-infectious chronic diseases will become the leading cause of disability by 2020 and can be the most expensive health problem. Type 2 diabetes, hypertension, smoking, poor eating habits, insufficient physical activity and the resulting overweight and obesity are among the main modifiable factors of non-infectious chronic diseases. The results of epidemiological studies indicate that the prevalence of these factors in the Polish population is constantly growing, which is associated with the dissemination of unfavorable eating habits and sedentary lifestyle. Their combating and preventive and educational activities of patients in the scope of modifiable lifestyle behaviors related to lifestyle should be implemented primarily through primary care physicians.

Aim. To validate the Polish language version of Physician Survey of Practices on Diet, Physical Activity and Weight Control: Questionnaire on Adult Care.

Material and methods. A Polish version of the questionnaire “Physician Survey of Practices on Diet, Physical Activity and Weight Control: Questionnaire on Adult Care” was created. Validation was carried out on a group of 30 primary care physicians.

Results. Very good results in terms of internal coherence of the questionnaire were obtained - the Alpha-Crombach coefficient was 0.82. The level of reproducibility was established with an ICC factor, which was 0.81.

Conclusions. The tested Polish version of the questionnaire can be used to conduct research among primary care physicians in Poland.

Keywords. diet, physical activity, weight control

Introduction

Prevention of non-infectious diseases including such as diabetes, hypertension or obesity and their complications is a serious challenge for the health care system of

developing countries in which 85% of premature deaths are recorded.¹ The main reason for the increase in the incidence of these diseases are lifestyle changes, reduced physical activity and changing habits. Nutrition based

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on high consumption of high-calorie products and a diet deficient in valuable nutrients. According to the World Health Organization (WHO, report, in 2014 39% of adults worldwide (over 18 years of age) were overweight (38% of men and 40% of women), whereas between 1980 and 2014 the worldwide prevalence of obesity increased almost twice, ie over half a billion adults were classified as obese. In 2013, about 42 million children under the age of 5 (6.3%) were overweight. The upward trend in this phenomenon is worrying as the overweight in the group of children increased from around 5% in 2000 to 6% in 2010 and 6.3% in 2013. Currently, it is estimated that the problem of overweight and obesity affects over 340 million children worldwide.^{2,3} It has been shown that excessive consumption of high-calorie products containing high levels of saturated fats, trans fatty acids, simple sugars and the supply of large amounts of salt as an independent factor or in combination with insufficient physical activity can significantly contribute to the development of obesity and diabetes and other non-infectious chronic diseases.⁴ Elevated BMI (Body Mass Index) is the main risk factor for non-communicable diseases, such as: cardiovascular diseases (mainly heart disease and stroke), which was the leading cause of death in 2012, diabetes, musculoskeletal disorders (particularly degenerative disease) arthritis); some cancers (including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney and colon). The risk of non-communicable diseases increases with increasing BMI. Overweight and childhood obesity is associated with a greater chance of premature death, disability and obesity in adulthood. In addition to increased risk in the future, obese children experience difficulty in breathing, increased risk of fractures, hypertension, early markers of cardiovascular disease, insulin resistance and psychological effects.⁵ The prevalence of overweight and obesity among adults over 50% of the population is not less than 21 countries from 34 OECD countries.⁶ The World Health Organization recognized obesity as the most frequent metabolic disease and the global epidemic of the 21st century. Excessive body weight is the fifth most common risk factor for deaths in the world. Nearly 2.8 million adults die each year as a result of overweight or obesity, yet the prevalence of obesity is high and increasing. Obesity is a chronic disease and in the majority of cases resulting from abnormal health behaviors related to lifestyle, positive energy balance, poor diet and sedentary lifestyle.^{7,8} Results of the Central Statistical Health Surveys of WOBASZ II in Poland in 2013-2014 that every fourth inhabitant of Poland is obese, and over the last decade obesity in the general population has increased, especially among men. Abdominal obesity was observed in every third man and almost every second woman. Obesity was found in 24.4% of men and in 25% of women,

overweight in 43.2% of men and 30.5% of women. Also worrying is the fact that since 2005, the weight distribution according to the BMI category has been shifted to higher values and the incidence of obesity in men has increased, while the percentage of adults with normal waist circumference significantly decreased in both sexes.^{10,11} Lipid metabolism disorders are the most widespread and least-controlled risk factor of cardiovascular disease in Poland. Type 2 diabetes, hypertension, smoking, poor eating habits, inadequate physical activity and the resulting overweight and obesity are among the main modifiable risk factors for atherosclerosis and its complications such as ischemic heart disease, stroke and peripheral arterial disease. The results of epidemiological studies indicate that the prevalence of these factors in the Polish population is constantly growing, which is associated with the dissemination of unfavorable eating habits and sedentary lifestyle.^{12,13} Their control is one of the main challenges in public health, so it is so important to take activities of population prevention. Primary care physicians are especially responsible for patients at high risk, because the patient first reports to the patient indicating a health problem. The fight against overweight and obesity and the factors predisposing to it should be part of a broader strategy aimed at reducing the total cardiovascular risk and, consequently, reducing mortality, morbidity and disability resulting from cardiovascular diseases. Lipid metabolism disorders are the most widespread factor of cardiovascular risk, and the prevalence of dyslipidemia in Poland is estimated at 60-70% of people in the population over 18 years of age.¹⁴ Based on the results of the NATPOL study carried out in 2011, it was found that in Poland hypertriglyceridemia occurs in 30% of patients, more often in men than women (38% vs. 23%).¹⁵ In 2 years, WOBASZ II hypercholesterolemia was diagnosed in 70.3% of men and 64.3% of women over the age of 20, which constituted 67.1% of the total population studied. It was also found that as many as 60.6% of those tested with hypercholesterolemia were not aware of this fact, and only 6% were effectively treated and reached the reference lipid level.¹⁶ Assuming that in the model practice, the primary care physician cares for a population of approx. 2,500 patients, of which adults account for more than 75% and taking into account the prevalence of dyslipidemia in Poland estimated at 60-70% of people in the population over 18 years, it can be assumed that every doctor is under the care of about 1100-1300 people with lipid disorders, including up to 10 patients with familial hypercholesterolemia.¹⁷ The most common cause of deaths of people over 65 are cardiovascular diseases. The main risk factors for cardiovascular disease include abdominal obesity (BMI over 30 and waist circumference over 80 cm in women and 94 cm in men). These values are often underestimated by patients who have no

knowledge about the impact of these factors on their health, hence the role of the general practitioner in raising awareness and educating their patients.¹⁸ The current public health problem is also the sarcopenic obesity, characterized by an increase in the amount of adipose tissue while losing muscle mass, which is more and more common in the population of older people around the world, which results from the progressive aging of the population and the prevalence of overweight and obesity, as well as in lifestyle over the last few decades. The pathogenesis of sarcopenic obesity is multifactorial. There is a relationship between aging, sedentary lifestyle and unhealthy eating habits, insulin resistance, inflammation and oxidative stress, resulting in a quantitative and qualitative decrease in muscle mass and increased fat mass.¹⁹⁻²³ Sarcopenic obesity in people older people are associated with metabolic complications and inappropriate health behaviors and pose a major public health challenge in people over 65 years of age.²⁴ Another major health problem faced by primary care physicians are cancers, whose incidence increases with age. It is estimated that approximately 60% of people diagnosed with cancer are over 65 years old and diagnosis is made almost 2.5 times more common in adults over 65 years of age compared to people aged 45-64. In most European countries, the incidence of cancer increased from 1-3% in the 1990s to 4-5% in 2010. This increase is largely due to earlier detection and more effective treatment. The prevalence of people who have won the fight against cancer in Europe is estimated at an average of 2% and only 1% in Poland.²⁵⁻²⁷ In 2005, chronic diseases were the cause of 35 million deaths, half of which affected patients under 70 years of age. Currently, 41 million people die every year due to non-communicable chronic diseases, which corresponds to 71% of all deaths in the world. There are 7.2 million deaths each year (including exposure to passive smoking) and a significant increase is expected in the coming years, an estimated 4.1 million deaths per year are affected by excess salt / sodium in food, while 1, 6 million deaths per year are attributed to inadequate physical activity.²⁸ Cardiovascular diseases are the leading cause of death (17.9 million annually), followed by cancers (9.0 million), respiratory diseases (3.9 million) and diabetes (1.6 million). These four groups of diseases account for over 80% of all premature deaths due to non-infectious chronic diseases. Lack of physical activity, unhealthy diet, high body weight, smoking and risky drinking increase the risk of death from non-communicable chronic diseases.²⁹ It is estimated that there are chronic diseases in 133 million people worldwide, and this number is expected to increase by 1% annually by 2030, resulting in a population of 177 million chronically ill. According to WHO data, 75% of the general population has at least one chronic disease, and almost half of people with chronic condi-

tions suffer from at least two diseases that require constant contact with healthcare. Visits of patients with chronic diseases constitute 80% of consultations as part of primary care. On average, 15% of these patients have three or more chronic conditions, and 30% of hospitalizations are a consequence of exacerbation of the clinical condition in this group of patients. According to the World Health Organization, non-infectious chronic diseases will become the leading cause of disability by 2020 and can be the most expensive health problem.³⁰⁻³³

The incidence of type 2 diabetes is also a growing problem worldwide. Diabetes was directly responsible for 1.5 million deaths in 2012, and its incidence in 2014 in the world population was 9% .3 It is estimated that around 415 million adults have diabetes and, according to recent forecasts, this number will increase to 642 million by 2040.³⁴ The high costs of treatment and the reduced professional activity associated with diabetes is a serious problem and economic burden for the sick, their families and for the entire health care system. In 2010, about 12% of total health care expenses in the world were the costs of treating diabetes and its complications.³⁵ There is scientific evidence that people at high risk of diabetes (eg with impaired glucose tolerance) can be prevented from significantly reduce its effects by maintaining a healthy lifestyle, maintaining a healthy weight, using the right diet and physical activity.^{36,37} Basic health care is the first place, and often the only contact of the patient with the health care system. The role of the family doctor in the health care system is crucial in the context of the increase in the number of chronically ill people. The family doctor should focus his thinking not only on the sick, but also on healthy members of the population to prevent them from falling ill. His task should also be to systematically carry out promotional and screening activities in order to prevent the development and minimization of the effects of chronic non-communicable diseases. The role of the primary care doctor is to educate the public, based on promoting a healthy lifestyle, that is, encouraging physical activity, maintaining a healthy body weight, following a healthy diet and avoiding stimulants including cigarettes and alcoholic beverages. The doctor should influence his patients in order to maintain and improve their health.³⁸⁻⁴⁰ The most difficult challenge for the current health care system is to prevent preventive and prophylactic activities from being only of a share nature (such as prevention programs or, for example, the WOBASZ project), only to be gradually incorporated into existing social systems. This would allow to provide appropriate conditions for systematic, lasting action to improve the health of the Polish population. Currently, there are no tools in the Polish language that would allow to assess the frequency of advice on diet, physical activity and weight control provided by primary care practitioners

and which would allow the doctor to determine the frequency of the assessment of these factors in adult patients (both those with chronic or at risk patients as well as healthy patients).

Questionnaire Physician Survey of Practices on Diet, Physical Activity and Weight Control: Questionnaire on Adult Care

The translation, development and validation of the Polish language version of the questionnaire assessing the frequency of advice provided by the primary care doctor concerning the correct diet, physical activity and weight control as well as the frequency of assessment of these factors in the patients he treated were made. For this purpose, the Physician Survey of Practices on Diet, Physical Activity & Weight Control Questionnaire was used: The National Cancer Institute in collaboration with the Office of Behavioral and Social Sciences Research, the National Institute of Child Health and Human Development, the National Institute of Diabetes and Digestive and Kidney Diseases, and the Centers for Disease Control and Prevention. It is a sample of Family Medicine Physicians, General Internists, Obstetrician / Gynecologists, and Pediatricians. The questionnaire is freely available and can be downloaded from the National Cancer Institute website.

The questionnaire of the questionnaire is intended for doctors treating adults and consists of four sections:

Section A: Characteristics of the population of treated patients.

Section B: Barriers in the process of evaluation, control and patient management.

Section C: Health status / health behaviors.

Section D: General information

Section A includes the characteristics of treated patients, contains questions about the frequency and method of assessment of the patient in terms of diet, level of physical activity and body weight, as well as questions about the frequency of advice to patients on changing eating habits, physical activity or weight loss. The questionnaire includes questions regarding the inclusion of their patients in the professional doctor and outside their physical activity, the nature of the questions with which this assessment is carried out, as well as the range of questions assessing the diet and frequency of the doctor's measurements in their patients, including such as body weight measured on the scales, waist size, height, BMI. Questions also concern the frequency of commissioning diagnostic tests (blood glucose level) in overweight and obese patients. The last question in this section concerns the coexistence of the assessment of diet, physical activity and body weight with the treatment of patients suffering from diseases such as asthma, type II diabetes, cancer, eating disorders, hypercholesterolemia, overweight and obesity, hyperten-

sion, coronary heart disease, arthritis, apnea drowsiness and family history of neoplastic diseases, heart disease or diabetes.

In section B of the questionnaire there are questions about barriers in the process of evaluation, control and management of the patient, they concern improvements for doctors, which could help to reduce the health problems of patients dependent on diet, physical activity and body weight. This section also includes questions about the doctor's position regarding the promotion of a healthy lifestyle, being the authority of their patients in this area, possessing the appropriate skills needed to effectively advise their patients about healthy eating, physical activity, maintaining a healthy body weight or her reduction. Section C contains questions about the health behavior and health of the doctor, its height and weight, eating habits, the frequency of consumption of specific groups of food products, the intensity and type of physical activity. The questions also concern smoking, exposure to passive tobacco smoke, propagation of anti-smoking prophylaxis among their patients, ordination of nicotine replacement therapy or pharmacological treatment in patients addicted to nicotine, as well as the role of the doctor in the process of persuading patients to quit smoking. This part of the survey also includes questions about the type, quantity and frequency of consuming alcoholic beverages. Section D contains questions about the year of birth, sex, and the main place of medical practice, the number of patient visits during the standard working week.

Material and methods

The English version of the questionnaire was translated into Polish by two independent translators, in accordance with international recommendations. During the translation process, all the lexical difficulties resulting from the cultural differences of the two countries were identified and resolved so that the words and phrases used would adequately reflect their meaning. The two Polish versions of the text created in this way were compared with each other in terms of existing differences. Then a common version was created on their basis. A bilingual medical expert got acquainted with the initial versions of translations and evaluated them. All translation sentences were discussed until the opinion was compliant. As a result of these operations, a version that meets the condition of semantic compatibility with each answer was created. Validation of the questionnaire was done using the guidelines for the translation and validation of questionnaires contained in the document describing the process of translation and adaptation of WHO instruments.⁴¹ In the next stage, the scale was re-translated, ie translated into the original language by a translator whose native language is English, but who lives in Poland and is fluent and speaks Polish fluently. The next step was to meet the criterion

of functional equivalence of the questionnaire. An assessment was carried out to check whether the translated questionnaire can be used to evaluate the same purposes as the original version. The assessment of the scale of sensitivity and its resistance to the same disturbing factors that result from the cultural differences of the countries in which the questionnaire is used was also made. The principle of face questionnaire equivalence has been preserved, which consists in maintaining compliance in terms of graphics, the manner and amount of formulating questions and a cafeteria response to the questions and instructions on how to fill in the questionnaire. A high degree of facade equivalence with the original version of the scale has been achieved. While preparing the Polish version of the questionnaire, the same graphic form of the questionnaire as the one in the original version was used. Fidelity to the reconstruction has been preserved. In order to determine the accuracy and reliability of the scale, statistical methods such as the value of the Alpha-Cronbach coefficient were used. The psychometric equivalence of both questionnaires was also assessed. Research analyzes of elements similar to those in the original version were carried out. As a result of the activities carried out, a Polish version of the questionnaire was created, on the basis of which preliminary research was carried out.^{42,43}

Preliminary research was carried out on a group of 10 primary care physicians practicing in public healthcare facilities in the Podkarpackie Voivodeship. The time needed to complete the questionnaire was measured and then questions were asked about the clarity and comprehensibility of the content contained therein. All doubts and suggestions from the respondents were noted. On the basis of the information obtained, a report was prepared. Subsequently, the tool was validated in a group of 30 POZ doctors who were asked to fill in the questionnaires twice, observing a 10-day interval in the study. The obtained results were subjected to statistical analysis to assess the reliability of the questionnaires developed. The internal coherence of the scales was examined using the Alpha-Cronbach coefficient and by determining the correlation coefficients between the response of the individual questions and the total score of the scale. Test-retest reliability was determined based on a comparison of the results obtained during the same questionnaire twice being filled in 10 days with the same questionnaire and by determining the intraclass correlation coefficient (ICC). The obtained results were subjected to statistical analysis using the STATISTICA 10.0 program, statistical analysis was performed at the confidence level $\alpha = 0,05$.^{44,45}

Results

As a result of statistical analysis, the Alfa-Crombach coefficient was calculated, which was 0.82, which indicates very good internal coherence of the questionnaire.

On the basis of properly completed questionnaires, the questionnaire credibility was analyzed. A high correlation was found between the results obtained for each question and the total number of points. The level of repeatability was determined using the ICC factor, which was 0.81. There were no statistically significant differences between the total score and the score for individual questions after completing the questionnaire twice. Correlation coefficients between responses to individual questions obtained during the first and second survey fill were calculated, and a statistically significant and high correlation was found between the results obtained for each question during the two-time completion of the questionnaire.

Discussing the results

This questionnaire will be the first tool of this type in the Polish language that will help assess the frequency and help show the methodology of basic care provided by primary care physicians regarding proper diet, physical activity and weight control, and will show barriers that prevent or significantly hinder doctors for this assessment. In addition, the questionnaire has a part regarding the assessment of the health behavior of the respondent, that is the primary care doctor. Smith and coworkers used the Physician Survey of Practices on Diet, Physical Activity and Weight Control questionnaire with a national representative sample of primary health care ($n = 1211$) in the US to examine primary care physicians clinical practices regarding overweight and obesity. The response rate for the survey was 64.5%. Less than 50% of respondents reported that the doctor always provides them with detailed guidelines on diet, physical activity or weight control. The results of the conducted study indicated that the primary care doctor was more likely to advise his patients on the subject of physical activity than to observe the proper diet or weight control ($ps < 0.05$). Over 70% of physicians answered that they prescribed pharmacological treatment in the treatment of overweight, and 86% directed the patient to an operation related to obesity. In conclusion, the study concluded that the assessment and management of the patient's therapy by the primary care physician in terms of physical activity, diet and body weight is very low in relation to the size of the problem in the US.^{46,47}

Conclusions

Due to the high values of the Alfa-Cronbach coefficient and the intra-group ICC correlation coefficient, the Polish version of the Physician Survey of Practices on Diet, Physical Activity and Weight Control: Questionnaire on Adult Care can be considered reliable and thus it is possible to use it to conduct research among primary physicians healthcare in Poland.

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