

LIFESTYLE, PHYSICAL ACTIVITY AND NUTRITIONAL HABITS IN A GROUP OF SPECIALISTS IN DIABETES

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Abstract

Lifestyle consists of the way a person lives, the behaviour and the actions of daily life. Lifestyle habits have an important influence on physical and mental health. In the last decades, unhealthy lifestyle behaviour has an increasing prevalence worldwide. Embracing healthy lifestyle such as controlled nutritional plan, a higher level of physical activity, adequate quantity and quality of sleep and healthy ways to reduce stress and anxiety is highly associated with the risk reduction for disease development, better mental state, better physical performance and improvement of the general quality of life. The aim of the study is to evaluate the physicians' physical activity and nutritional habits and their compliance with a healthy lifestyle by completing a short questionnaire. The study group contained 169 diabetologists as participants. 11.24% of the questionnaires were incompletely filled and were excluded from the study. Although being physically active, most of the physicians still believe that their physical activity is insufficient. Most physicians declare having healthy lifestyle habits. They consume all of the food groups, with higher consumption of healthier products such as lean meat, fish, fruits and vegetables.

Rezumat

Stilul de viață constă în modul în care trăiește o persoană, comportamentul și acțiunile vieții de zi cu zi. Obiceiurile stilului de viață au o influență importantă asupra sănătății fizice și mentale. În ultimele decenii, comportamentul nesănătos al stilului de viață a avut o prevalență tot mai mare la nivel mondial. Adoptarea unui stil de viață sănătos, cum ar fi planul nutrițional controlat, un nivel mai ridicat de activitate fizică, cantitatea și calitatea adecvată a somnului și modalitățile sănătoase de reducere a stresului și anxietății este foarte asociată cu reducerea riscului de dezvoltare a bolilor, o stare mentală mai bună, performanțe fizice mai bune și îmbunătățirea calității generale a vieții. Scopul studiului a fost de a evalua activitatea fizică și obiceiurile nutriționale ale medicilor și respectarea unui stil de viață sănătos prin completarea unui scurt chestionar. Grupul de studiu a inclus 169 de diabetologi ca participanți. 11,24% dintre chestionare au fost completate incomplet și au fost excluse din studiu. Deși sunt activi fizic, majoritatea medicilor încă mai cred că activitatea lor fizică este insuficientă. Majoritatea medicilor declară că au obiceiuri de viață sănătoase. Ei consumă toate grupele de alimente, cu un consum mai mare de produse mai sănătoase, cum ar fi carnea slabă, peștele, fructele și legumele.

Keywords: lifestyle habits, nutrition habits, physical activity, diabetologists

Introduction

Lifestyle consists of the way a person lives, the behaviour and the actions of daily life. An unhealthy lifestyle can affect the well-being of all people, regardless of age, gender, ethnicity and socioeconomic status by exacerbation of pre-existing conditions such as obesity, diabetes mellitus, metabolic syndrome, abnormal lipid profile, atherosclerosis, etc. Furthermore, it can even lead to premature death. In addition to health problems, an unhealthy lifestyle can lead to a

lower quality of life due to poor physical performance and an unfavourable state of health [1-5].

Nutrition is the fundamental determinant of health and development, good nutrition is associated with better health status, safer pregnancy and childbirth, stronger immune system and reduced risk of non-contagious diseases (such as DM and CV disease) [6]. The cardiovascular, musculoskeletal, immune and other systems of the human body need a continuous supply of nutrients for cell growth and metabolism.

The human body does not synthesize a sufficient amount of nutrients, so it is a dietary requirement. Malnutrition of these essential nutrients will lead to organ dysfunction, nitrogen misbalance, growth impairment in children etc. [7].

A stable caloric balance is important for good health, the caloric intake should be equal to the energy spend in order to maintain a normal, healthy weight. Increased caloric consumption will lead to overweight and obesity that is highly associated with unfavourable health outcomes and early death, due to increased incidence of hypertension, diabetes, cardiovascular disease (CVD), cancer and other diseases [8-12]. The caloric balance should be maintained by limited caloric intake, as well as physical activity. Calculation of the daily caloric intake is based on energy expenditure, age, gender, weight and activity level [13,14].

The aim of the study was to evaluate the aspect of lifestyle and nutrition habits among diabetologists. The considered objectives relate to the assessment of the subjects' physical activity level, dietary habits and adherence to a healthy lifestyle.

The starting hypothesis is that medical physicians have a healthy physical activity level and adhere to healthy nutritional habits and a diet plan.

Materials and Methods

The survey method was used, the data was collected during the Romanian National Diabetes Conference by anonymized short questionnaires regarding the physical activity and nutritional habits.

The study group consisted of 169 specialists in diabetes. 11.24% of the questionnaires were incompletely filled, therefore only 150 of the questionnaires were included in the analysis.

Gender distribution was 86% females and 14% males, age between 24 - 68 years with an average of 37.5 years. Among the participants, 6% were underweight (BMI < 18), 66.01% were normal weight (BMI 18 - 24.9), 22.66% were overweight (BMI 25 - 29.9), 4% were obese grade I (BMI 30 - 34.9) and 1.33% were obese grade II (BMI 35 - 39.9).

Assessing the CV risk factors, we found that 11.33% of the participants were diagnosed with dyslipidaemia, 6% were diagnosed with hypertension and 17.33% were smokers.

Standardized questionnaires, including the international physical activity questionnaire, short food frequency questionnaire, and dietary quality questionnaire were used. The questionnaires were designed to evaluate the subject's physical activity level and the dietary plan, and the self-assessment on the subject's lifestyle [15-20]. The questionnaire used in this study was composed of three parts: A - Questions about personal data including medical specialty, main workplace, age, weight, height and personal medical history; B - Questions related to physical activity,

using the international physical activity questionnaire, which included means of transportation, physical activity performance, sedentary behaviour and self-assessment of physical activity level; C - Questions related to nutrition, composed of a short food frequency questionnaire and dietary quality questionnaire. The subjects were asked about their consumption of different types of food products *per week* as well as self-assessment regarding their nutritional habits and nutritional knowledge.

The questionnaire was answered anonymously and the estimated time for answering the questionnaire was 7 minutes.

All data collected was inputted in an Excel Database. Physical activity habits were evaluated according to the physical activity level and intensity (moderate, vigorous and walking). Nutritional habits were evaluated according to the type of food and its frequency of consumption.

Results and Discussion

Data collected was integrated in the database, the statistical analysis was performed, and the following results were obtained.

Physical activity

Physical activity analysis started by looking into the means of transportation used by our physicians and we observed that cycling is rarely used, 84.66% never cycle, only 3 persons use bicycles daily and another 9 use bicycles between 2 and 5 times *per week*. Car is used daily by 35.33% of responders, 11.33% of them use a car 6 days *per week*, 30.66% of them 5 days *per week*, 18% of them are using a car between 1 and 4 days *per week* and only 4.66% do not use a car. Walking is the most frequent mean of transportation with 48.66% of persons who walk every day, meanwhile 10 persons do not walk at all on their way to work (Figure 1).

When asking the participants, the amount of their moderate physical activity (minutes *per week*), 55.33% of them consider that they are highly active (> 300 minutes *per week*), 16.66% are active (150 - 300 minutes *per week*), 16.66% not performing sufficient physical activity (< 150 minutes *per week*) and 11.33% are inactive (Figure 2).

Most of the participants do not consider themselves to be sufficiently active regarding a vigorous physical activity. The majority, 48%, is inactive and 31.33% are insufficiently active. Only 12% are active and 8.66% highly active (Figure 3).

Analysing separately workdays, weekends and holidays, our respondents consider that they are more sedentary during workdays, 61.33% of them spending more than 4 hours in sedentary behaviour during workdays and 64% spending less than 4 hours in sedentary behaviour during days-off (Figure 4).

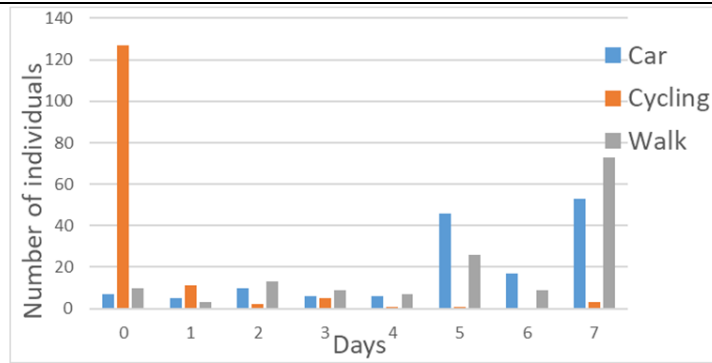


Figure 1.
Means of transportation represented by times used *per week*

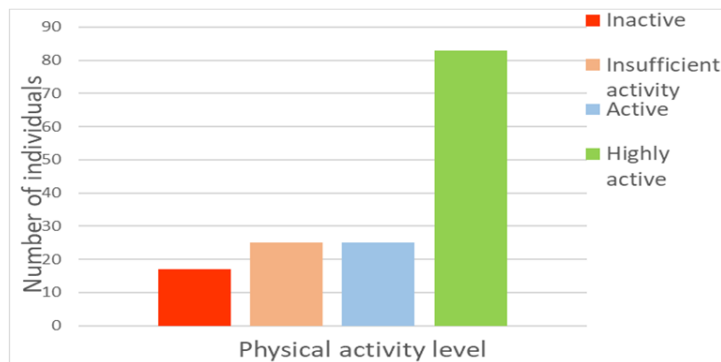


Figure 2.
Reported moderate physical activity performance

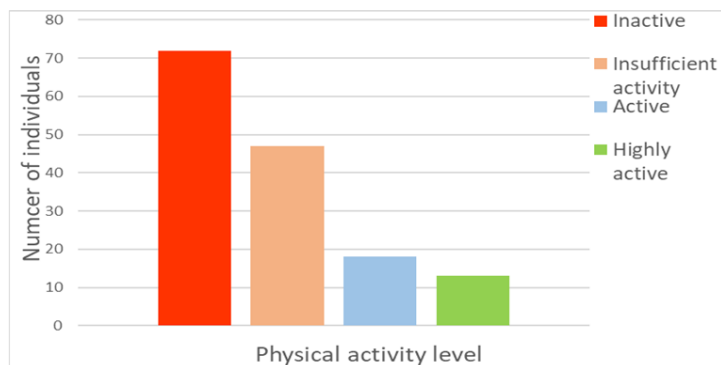


Figure 3.
Reported vigorous physical activity performance

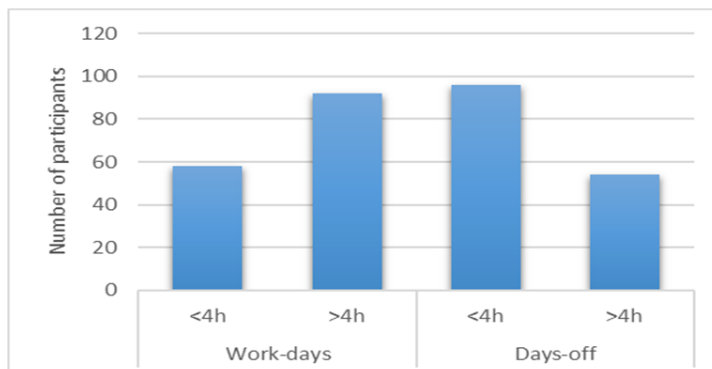


Figure 4.
Comparison of sedentary behaviour between working days and weekends/holidays

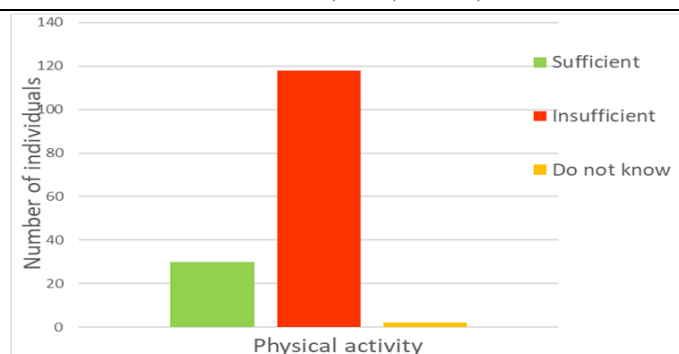


Figure 5.

The self-assessment of the subjects regarding their physical activity

On a general evaluation, only 20% of the participants consider their physical activity is sufficient, while 78.66% consider their physical activity as insufficient (Figure 5).

Nutritional habits

When assessing what participants consume as source of carbohydrates and the frequency of consumption, the most frequent response is 1 to 2 times *per week* and it consists of pasta (73.33% of participants) followed by potatoes (68% of participants) and rice (67.33% of participants) (Figure 6).

The frequency of food products that are rich in sugar was found low in the majority of participants with healthy habits such as no consumption of sweet drinks

in 40% of them, 28.66% reported no consumption of snacks and 34.66% consume ice cream only once *per month*. Still, there is 25.33% of participants that consume sweets 2 - 3 times *per week* (Figure 7).

When asked about slowly absorbed carbohydrates such as whole bread, beans and cereals, the majority of our respondents consume whole bread daily (30% of them) and beans once monthly (39.33% of them). Looking into breakfast, we have a 20% that never eat high fibre breakfast, 18% rarely like once a month and 16% once a week. About 21.33% eat a high fiber breakfast 2 or 3 times a week and 12.66% almost daily (Figure 8).

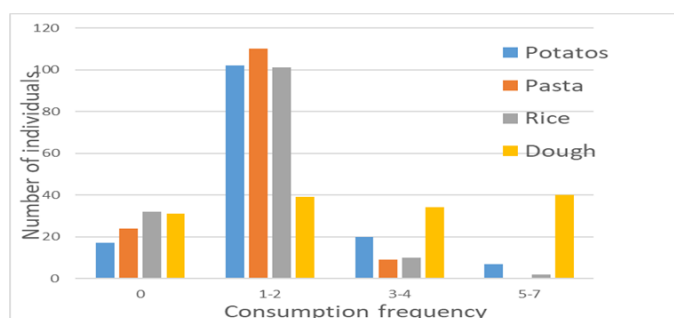


Figure 6.

The frequency of carbohydrates consumption *per week*, from different food products

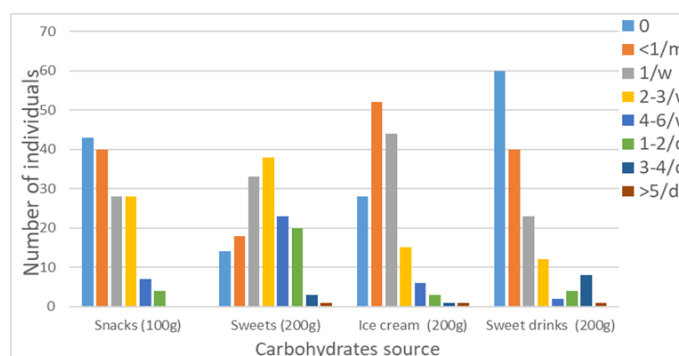


Figure 7.

The amount of carbohydrates consumption *per week*, from food products with high sugar composition

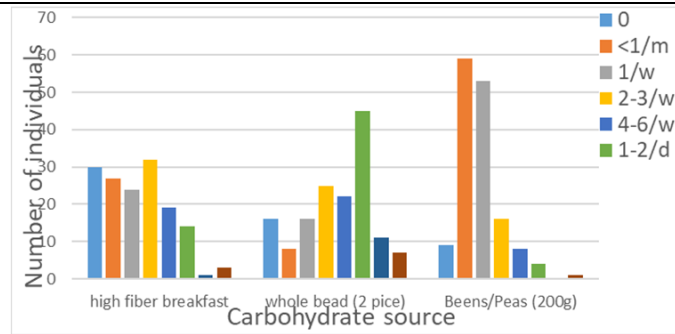


Figure 8.

The amount of carbohydrates consumption *per week*, from food products with high fiber composition and low glycaemic index

In the comparison between high fibre and low fibre bread, 31.33% are consuming only low fibre bread (20% white bread and 11.33% white bread with seeds), 36.66% are consuming only high fibre bread (17.33% rye bread and 19.33% dark bread) and 26% are consuming both types of bread.

Vegetable consumption frequency was found to be high among the participants. Only one physician reported no consumption of raw vegetables, two of them do not consume boiled vegetables and three do not consume vegetables in food.

Most of the participants, 37.33%, are consuming 1 or 2 fruits on a daily base and the second majority, 22.66%, consume fruits on most days of the week (3 -

4 fruits *per week*), while only 1 participant, does not consume fruits (Figure 9).

The majority of the participants consume proteins from animal products on a daily basis, but the product varies so at the end most of the answers were in the range of once or twice *per week* for each of the following products: 63.33% consume eggs, 63.33% consume fish, 44.66% consume chicken meat, 56% consume pork and 38.66% consume beef (Figure 10). Participants who consume protein from meat, consume lean meat in a higher frequency than fat meat. 42% consume lean meat and 36.66% consume fat meat 2 - 3 times *per week* and 16.66% consume lean meat while 10% consume fat meat 4 - 6 times *per week* (Figure 11).

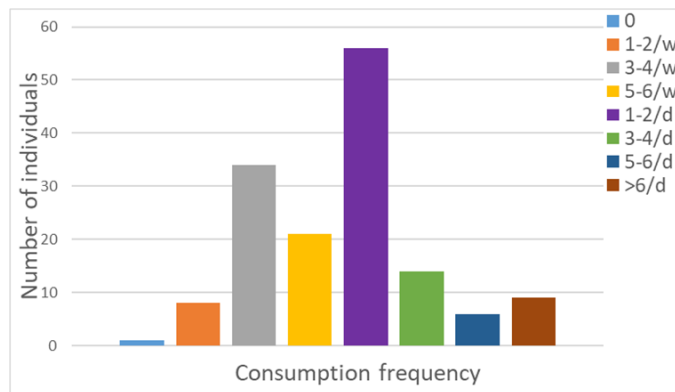


Figure 9.

The frequency of fruits consumption

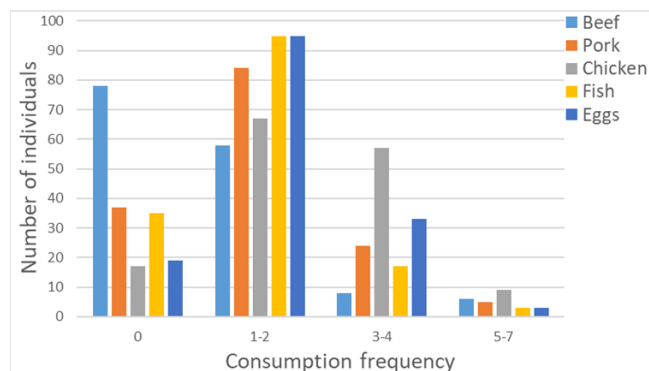


Figure 10.

The consumption frequency of proteins from animal products *per week*

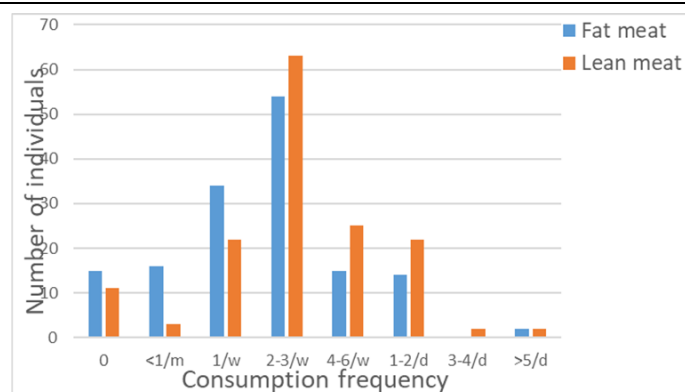


Figure 11.

The protein consumption from meat (200g portion)

The majority of the people asked, eat fish weekly but we still have an important number of 21.1% that never eat any kind of fish. There is no difference in preferences if we ask about the way the fish is processed.

The majority of the participants do not consume processed food, 64% do not consume pizza/burger, 52% do not consume sausage/salami/ham and 26.66% do not consume prepared food.

If we consider fat consumption, we have 36% of participants that do not consume fat and from those who do, 61.33% consume fat in the form of butter.

When asked about changes in their lifestyle, the majority of respondents (71.66%) state that they are making efforts to maintain a healthy lifestyle and 15.8% consider that they already have a healthy lifestyle that needs no change.

Lifestyle habits and general wellbeing of physicians might influence general population's health status, and there is an association between the physician's lifestyle and the doctor-patient interaction. Physicians that have healthier lifestyle habits are more likely to educate about a healthy lifestyle and provide counselling regarding lifestyle modification [21, 22]. The study's participant group predominantly consisted of female diabetologists, reflecting the gender distribution in this specialty in Romania.

In our study, 66.01% of the total number of participants had a normal BMI. This result is favourable since it has been found that physicians who are in the range of normal weight, were more motivated to discuss with the patient about losing weight by embracing healthier lifestyle habits, while overweight and obese physicians were more confident to prescribe pharmacologic therapy to lose weight [23-25].

According to the Center for Disease Control and Prevention (CDC), it is recommended to perform 150 minutes or more of a moderate-to-vigorous level of physical activity *per week* [26-28]. 16.66% reached 150 minutes of moderate physical activity and 55.33% were highly active and reached more than 300 minutes *per week*, which is a total of 72 percent who perform

sufficient physical activity. In addition to performing sufficient physical activity, only 36 percent reported having sedentary behaviour less than 4 hours *per day* during the days off, but a high percentage of 61.33 percent was having sedentary behaviour during work-days. Another reported study reported more physical activity during work shifts than non-shift workers but with the same total daily activity. [29]

Although most of the participants perform sufficient physical activity, 78.66 percent reported that they consider themselves to be insufficiently physically active. This belief may impair the physician's motivation to counsel a patient about physical activity. We believe that a more extensive study should be performed in order to evaluate the reason. Another reported study of Hungarian doctors revealed the same opinion of doctors that they perform insufficient physical activity [30].

In the study, nutritional habits are evaluated according to the food pyramid guideline. It is found that the study participants are adherent to this guideline by the consumption of all food groups with the highest frequency consumption of carbohydrates; followed by fruits and vegetable consumption, with 56.66% consume fruits on a daily basis and 99.3% consume vegetables on a daily basis and moderate consumption of proteins from an animal source, which consisted mostly of fish and lean meat and lower consumption of fat meat. The fat consumption is the lowest when 61.33% consume butter, a healthier fat source compared to margarine and lard which are consumed by 0% of the participants. Furthermore, the processed meat consumption frequency is minimal, as well as the consumption of products with high sugar composition. The physical activity levels of physicians are adequately maintained by engaging in over 150 minutes of moderate exercise weekly, supplemented by daily walking for transportation purposes and a decrease in sedentary activities during weekends and holidays. Nonetheless, a significant number of physicians continue to exhibit unhealthy practices, including frequent car use on most days and elevated levels of sedentary

behaviour during workdays, which are, regrettably, often unavoidable.

When evaluating the nutritional habits of the physicians, we noticed that the dietary composition for most of them is relatively healthy. The physicians consume all the food groups of the food pyramid with higher consumption of healthier products such as lean meat, fish, fruits and vegetables. Furthermore, the consumption of products that contain high sugar composition (e.g., snacks, sweetened beverages) and processed food, is at a minimal level.

Despite most physicians adhering to healthy lifestyle practices, we assert that, given the crucial role physicians play in public health, it is essential for all physicians to adopt and maintain healthy lifestyle habits.

Conclusions

This study concludes that despite high levels of physical activity and adherence to healthy dietary habits, many diabetologists feel their lifestyle is still not optimal. This perception may affect their motivation and ability to counsel patients on lifestyle modifications. The study highlights the importance of physician wellbeing and its impact on patient care and public health.

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Conflict of interest

The authors declare no conflict of interest.

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