



Awareness of patients suffering from selected chronic diseases of the importance of physical activity in treating their disorders

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Abstract

Introduction. This study aims to determine the level of awareness and meeting recommendations regarding their physical activity in the selected disease risk groups in eastern Slovakia. **Methods.** The study comprised 893 participating patients (353 males and 540 females). The basic condition to fulfil for participating in the research was the occurrence of one or more diagnoses out of three underlying chronic diseases that do not prevent PA. For data collection, we used a nonstandardized questionnaire which was part of the questionnaire battery explicitly designed for this research. This study presents a selection of questions focusing on patients awareness concerning PA. **Results.** Within all three groups of chronic diseases, the patients acknowledged that they obtained only general information on the importance of PA in the treatment of their conditions. The patients received information on physical activity in their neighbourhood predominantly from the media and further on from the family members and acquaintances or their doctors or medical staff. The difference between the particular disease groups in terms of the acquired information is minimal. Statistically significant relation between the doctors recommendations and minimum requirements for the treatment of disease was only found in the group of oncology patients. **Conclusion.** Regular physical activity represents essential advantages for the health of patients suffering from chronic diseases. With this in mind, the doctor, being a trustworthy person to the patient, should be able to inform the patients on the frequency, intensity and the most suitable PA concerning their diagnosis and severity of their medical condition.

Keywords: physical activity, awareness, cardiovascular diseases, oncological diseases, metabolic diseases

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INTRODUCTION

The beginning of the 21st century is characterised by sedentary lifestyle which results in an increasing number of chronic diseases. These are becoming increasingly common in the younger generation. An underappreciated primary cause of most chronic conditions is the lack of sufficient daily physical activity (“physical inactivity”) [1]. A number of evidence suggests that regular physical activity (PA) has extensive health benefits ranging from reducing the risk of chronic disease and some types of cancer to improving mental health, which ultimately affects a person's quality of life [2-4]. The findings from studies of physical fitness support those who undertake physical activity, with regard to an inverse relation with all-cause mortality [5]. According to the studies, active individuals have approximately 30% lower risk of dying compared with inactive individuals. Physical inactivity is a primary cause initiating 35 different pathological and clinical conditions. Many of the 35 conditions are subdivided into major categories, such as loss of functional capacities with chronological aging, metabolic syndrome, obesity, insulin resistance, prediabetes/type 2 diabetes, non-alcoholic liver disease, cardiovascular diseases, cognitive functions and diseases, bone and connective tissue disorders, cancer, reproductive diseases, and diseases of the digestive tract, pulmonary, and kidney [1]. According to Alkerwi et al. [6], physical activity is in linear correlation to health. All additional exercise is expected to improve health condition and bring considerable benefits owing to higher energy expenditure [7]. Although the effect of physical activity is well documented, our research aimed to find whether the information that patients obtain in the selected disease risk groups is sufficient, and whether doctors play a leading role in patients' awareness of appropriate physical activity. This study aims to determine the level of awareness and meeting recommendations regarding physical activity in selected disease risk groups in eastern Slovakia.

METHODS

We addressed 1,193 patients, 282 of whom declined to participate in the research. We also excluded a further 18 patients for not meeting one or more of the essential criteria listed below. The criteria for participating in this research were met by 893 patients - 353 males (38.6%) and 540 females (61.4%). The research was conducted from October 2018 to February 2019 at outpatient clinics in eastern Slovakia. The average age of respondents was 54.24 years. The largest group consisted of patients with metabolic diseases, especially diabetes and obesity (n=390), and patients with cardiovascular disease, especially hypertension and arrhythmia (n=361). The smallest group consisted of oncological patients (n=103). Other demographic indicators are presented in Table 1.

Patients were enrolled in the research at meeting the criteria below:

- over 20 years of age
- the occurrence of one or more diagnoses of three underlying diseases of affluence that do not prevent physical activity (cardiovascular disease, oncological disease, metabolic disease)
- willingness to give informed consent to participate in the research
- willingness to fill in questionnaires regarding physical activity and be provided information about physical activity for a given diagnosis.

Table 1. Basic demographic indicators of respondents involved in the survey (n=893).

education	[%]	occupation	[%]	occupation	[%]	residence	[%]	age	[%]
elementary	3.20	permanent	43.10	sedentary	37.10	urban	65.70	21-30	10.60
vocational	11.20	occasional	3.70	physically demanding	15.40	rural	34.30	31-40	7.20
HS graduate	52.70	unemployed	5.40	none	47.50			41-50	17.40
university	32.90	student	5.70					51-60	16.90
		retired	42.10					61-70	28.90
								71-80	16.20
								81-90	1.80

For data collection, we used a non-standardized questionnaire that was part of the questionnaire battery explicitly designed for this research. This questionnaire compiled parts of similarly-focused questionnaires. For the purposes of this questionnaire, we selected questions regarding patients' awareness of the performance of physical activity:

- Have you ever been informed by your doctor or nursing staff about the importance of physical activity in preventing and treating your health problem?
- Are you aware of the minimum requirements for regular physical activity for at-risk patients?
- Where do you get information about physical and sports activities in your neighbourhood?

Most questions were closed-ended, but with the option for respondents to elaborate on a certain response and was of a factual nature.

RESULTS

Regular physical activity is a crucial component of improving the health condition of people suffering from chronic diseases. Individuals with medium risk of chronic disease should be encouraged by their doctors to perform regular physical activity. Within all three groups of chronic diseases, almost half of questionnaire respondents stated that they obtained only general information about the importance of physical activity in the treatment of their conditions (cardiovascular disease - CVD, oncological disease - OD, metabolic disease - MD) (Table 2). Most such patients were in the metabolic disorders group, while nearly one third of that group had detailed information provided by their doctors. On the other hand, nearly one-fifth of all respondents had either no information on physical activity or insufficient information. In the oncological disease group, almost one-third of patients did not have any information on physical activity, or it was insufficient. While differences could be found between the surveyed risk groups in relation to information from doctors regarding the importance of physical activity, such differences were statistically insignificant. Statistically significant relationship in particular responses were recorded only in the oncological patient group ($\chi^2=22.705$; $p < 0.05$).

Minimum requirements for the performance of physical activity have been developed for people suffering from chronic disease, as well as for healthy people. We were aiming to uncover whether the patients participating in the survey had information about such requirements (Table 3). Although we found differences depending on the particular disease group, such differences were again insignificant. Almost half of the patients participating in the survey had sufficient information on the minimum requirements for the performance of PA, with oncological patients having the most comprehensive information. However, nearly one-fifth of addressed patients had relevant information, which they consider insufficient. Most patients, who did not consider this information important, were in the metabolic disease group. About one-third of respondents did not have relevant information, predominantly cardiology patients (almost 37%). Four percent of respondents expressed a lack of interest in the minimum requirements for physical activity. A statistically significant relationship in patients' awareness was recorded only in the oncological patient group ($\chi^2=26.30$; $p < 0.01$).

Table 2. Information from the doctor on the importance of physical activity.

Diseases		Yes, detailed [%]	Yes, general [%]	Have not thought about it [%]	Rather no than yes [%]	Absolutely not [%]	Other [%]
CVD	n=361	26.6	46.9	5.7	13.4	6.9	0.6
OD	n=103	26.5	40.2	1.0	21.6	9.8	1.0
MD	n=390	28.5	49.9	6.9	9.9	3.7	1.4
Total	n=893	27.4	47.3	5.6	12.9	5.8	1.0

CVD – cardiovascular disease; OD - oncological disease; MD – metabolic disease

Table 3. Patients' awareness of the minimum requirements for regular physical activity.

Diseases		Yes [%]	Yes, but I do not find it important [%]	Do not have any, but I am interested [%]	No information [%]	Not interested [%]
CVD	n=361	44.6	14.5	12.6	24.0	4.3
OD	n=103	65.6	10.8	14.7	6.9	2.0
MD	n=390	46.8	23.2	13.6	11.5	4.9
Total	n=893	48.2	17.8	13.3	16.3	4.4

CVD - cardiovascular disease; OD - oncological disease; MD - metabolic disease

Table 4. Source of information about the possibility of physical activity in the patient's neighbourhood.

Disease		Media [%]	Family, acquaintances [%]	Doctor, nursing staff [%]	PE professional [%]	Not interested [%]	Others [%]
CVD	n=361	47	41.3	21.8	5.4	6.6	0
OD	n=103	61.8	16.7	24.5	9.8	2.0	8.8
MD	n=390	44.8	21.0	32.9	8.5	10.5	0.3
Total	n=893	47.9	29.2	27.0	7.3	7.7	1.2
		p <0.05	p <0.01	p <0.05	x	p <0.01	p <0.01

CVD - cardiovascular disease; OD - oncological disease; MD - metabolic disease

The most significant differences between patients in the three monitored chronic disease groups were recorded with regard to obtaining information on physical activities in their neighbourhood (Table 4). Except for those patients receiving information from the physical education professionals, where we found only small statistical differences between patients from different disease groups (5.4% - 9.8%), the differences were statistically significant in the case of all other information sources. The patients received the vast majority of information from the media, and other favoured sources such as family and acquaintances, or doctors and nursing staff. Almost 8% of respondents expressed a lack of interest in any physical activity.

DISCUSSION

Individual behaviour as a key determinant of health, inherently including physical activity, can significantly decrease the occurrence of chronic diseases. Physical activity is also an integral part of the therapeutic treatment of most chronic diseases. In this respect, doctors and nursing staff play a dominant role. Those doctors, who are familiar with their patients' specific diagnosis, severity and everyday limitations, should emphasize regular physical activity. Many studies suggest that physical activity prescribed by the doctor can have a high impact on patient's behaviour [8]. Nearly half of the patients involved in our survey reported getting only partial information from their doctors, while detailed information was provided only to one-third of the patients. However, almost one-fifth of the patients stated not receiving any information from their doctors. Patients suffering from metabolic diseases were best informed, while oncology patients were poorly informed. While an increasing amount of literature supports the effectiveness of physical activity interventions delivered in the primary care setting, few studies have evaluated efforts to increase physician counselling on physical activity during routine practice [9]. Yet, counselling more than any other intervention is an effective strategy for PA promotion in primary care [10]. Based on the systematic review Gagliardi et al. [11] found that even single counselling sessions involving a discussion of patient motivation delivered by a clinician or counselling specialist may result in increased PA within 12 months, and that follow-up counselling may sustain increased PA beyond 12 months. Physicians with an interest in exercise and physical activity, according to Pojednic et al. [12], recognize the importance of recommending and counselling patients on exercise and physical activity. Physician counselling was associated with personal familiarity with physical activity. This outcome is supported by McKenna [13], who also

presents reasons why doctors rarely advise physical activity. A significant barrier in supporting patients' physical activity seems to be doctors' lack of time. This fact might have caused the adverse outcomes related to the patients' awareness of the importance of physical activity advised upon by doctors. The fact that oncology patients are least informed may be due to the overuse of out-patient clinics, as well as a lack of doctors and nursing staff. Large numbers of patients in waiting rooms often prevent doctors from engaging in preventive measures other than primary care. This issue concerns most specialized centres for chronic diseases in Slovakia.

The U.S. Department of Health and Human Services [14] provides detailed information on physical activity, not only for the healthy population, but also for adults with chronic diseases or people with disabilities. Essential guidelines confirm that adults with chronic diseases should be physically active regularly. All the guidelines also indicate that patients should consult a healthcare professional or a physical education specialist. Most patients involved in our survey know the minimum requirements, but almost one-fifth lack such information or even do not care about it. However, a physical education professional, according to our findings, informs patients the least about physical or sports activities in the patients' neighbourhood. It is also interesting that oncology patients are best informed about the minimum physical requirements, although such patients receive relevant information mainly from the media rather than from doctors.

Despite the fact that half of the patients in our research acknowledged being informed of minimum requirements for regular physical activity, during consultations and follow-up instructions we found that the reality is not as optimistic as presented in the results.

In fact, only few patients could name a suitable type of physical activity in relation to their disease or its correct weekly frequency. Information on appropriate intensity during exercise or physical activity was the least known variable to patients. Therefore, doctor's advice should be part of every treatment of the patient, whose medical condition allows physical activity. It should be borne in mind that any regular physical activity improves the quality of life of patients with chronic diseases.

CONCLUSION

Regular physical activity brings essential advantages for the health of patients suffering from chronic diseases. With this in mind, the doctor, whom the patient trusts and regularly visits, should be able to explain the advantages of properly performed physical activity. The doctor should also inform patients about the minimum requirements for physical activity in relation to frequency, intensity and suitability in terms of their diagnosis, severity of medical condition, and limitations. Doctors could be unburdened from this additional workload by cooperating with physical education professionals, who, based on consultations with patients (ascertaining diagnosis and related limitations, options of time and space, interest in physical activity) can draw up a suitable programme while taking into account FITT (frequency, intensity, time, type of activity). However, this approach demands closer cooperation between doctors and physical education professionals, as well as interest and support from the Ministry of Health, towns, municipalities, self-government, and ultimately, the state. Our main priority should be to reduce the number of people with chronic diseases by creating and offering programmes that promote healthy behaviour, improve health literacy and preventing diseases of affluence.

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ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The protocol was approved by the Human Research Ethics Committee of Pavol Jozef Šafárik University in Košice (approval No. PJSU-0825/17-1).

COMPETING INTERESTS

The authors declare that they have no competing interests.

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