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ADHERENCE TO TREATMENT REGIMENS IN PATIENTS WITH CARDIOVASCULAR DISEASES

PRZESTRZEGANIE ZALECEŃ LEKARSKICH PRZEZ PACJENTÓW Z CHOROBAMI UKŁADU KRĄŻENIA

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Wkład autorów:
A. Study design/planning
zaplanowanie badań
B. Data collection/entry
zebranie danych
C. Data analysis/statistics
dane – analiza i statystyki
D. Data interpretation
interpretacja danych
E. Preparation of manuscript
przygotowanie artykułu
F. Literature analysis/search
wyszukiwanie i analiza literatury
G. Funds collection
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Summary

Background. Adherence is an important parameter of any effective treatment. This study aimed to evaluate adherence/non-adherence in patients with cardiovascular diseases and to determine whether sociodemographic characteristics affected treatment adherence.
Material and methods. The study sample consisted of 878 patients with coronary heart disease. A non-standardized questionnaire was used to obtain the data. The data was statistically evaluated using SPSS.25.0.
Results. Adherence was demonstrated in 501 (57.4%) patients. A statistically significant relationship was confirmed between adherence to treatment and gender (p=0.000) and employment (p=0.001). Patients ≥58 years of age with basic education and who earn an average income have a higher adherence rate to treatment.
Conclusions. Knowledge of how a patient's sociodemographic characteristics affect adherence can help healthcare professionals to effectively educate patients and improve their quality of life.

Keywords: treatment adherence, cardiovascular diseases, patients

Streszczenie

Wprowadzenie. Przestrzeganie zaleceń lekarskich jest jednym z ważnych parametrów skutecznego leczenia. Celem pracy była ocena stosunku do zaleceń lekarskich (przestrzegający/nieprzestrzegający) u pacjentów z chorobami układu krążenia oraz ustalenie czy cechy socjodemograficzne wpływają na przestrzeganie zaleceń.
Materiał i metody. W badaniu uczestniczyło 878 pacjentów z chorobą niedokrwienną serca. Do zebrania danych wykorzystano niestandaryzowany kwestionariusz. Dane poddano analizie statystycznej w programie SPSS.25.0.
Wyniki. Przestrzeganie zaleceń lekarskich zaobserwowano u 501 (57,4%) pacjentów. Potwierdzono istotną statystycznie zależność między płcią (p=0,000) oraz zatrudnieniem (p=0,001) a przestrzeganiem zaleceń lekarskich. Pacjenci w wieku ≥58 lat, z wykształceniem podstawowym i średnimi dochodami finansowymi, wykazują częstsze przestrzeganie zaleceń lekarskich.
Wnioski. Wiedza na temat wpływu cech socjodemograficznych pacjentów na przestrzeganie zaleceń lekarskich może pomóc pracownikom służby zdrowia w prowadzeniu skutecznej edukacji pacjentów i poprawić jakość ich życia.

Słowa kluczowe: przestrzeganie zaleceń lekarskich, choroby układu krążenia, pacjenci

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Introduction

Cardiovascular disease is a major cause of morbidity and mortality and has been increasing in recent decades representing a significant problem in health systems around the world [1]. Adherence is an important factor in successfully managing chronic diseases. Adherence is defined by the World Health Organization as the extent to which a person's behavior such as taking medication, following a diet, or executing a certain lifestyle corresponds with the recommendations of their health care provider [2]. Cardiac medication adherence is important to avoid morbidity and premature mortality in patients with cardiovascular diseases [3]. Adherence to prescription medications is necessary for one to receive the full benefits of the medication, but it is a complex and dynamic process. This is particularly challenging for patients with cardiovascular diseases who are predominantly discharged from hospitals on long-term polypharmacy [4]. Medication non-adherence occurs repeatedly in clinical practice [5] and the level of treatment adherence is still low according to ESC recommendations [6]. Adherence can be affected by various factors such as lack of patient knowledge, lack of belief in the need for medication, fear of drug side effects, insufficient care coordination, high medication costs, or forgetting to take medication [7-10]. A systemic review by Leslie et al. [11], found that adherence was associated with disease factors, therapeutic factors, health care factors, patient attitude, and social status. The consequences of non-adherence are higher treatment costs, increased rehospitalization risk [12], and decreased quality of life.

This study aimed to evaluate adherent/non-adherent behavior in patients with cardiovascular disease and to evaluate whether sociodemographic characteristics affect patient adherence to treatment.

Material and methods

The study consisted of 878 patients with coronary heart disease (CHD). Inclusion criteria included patients with a confirmed medical diagnosis of coronary heart disease, patients undergoing selective coronary angiography, and patients after coronary angiography or angioplasty. Patients with severe cerebrovascular disease, severe dementia, and severe psychiatric illness were excluded from the study.

A non-standardized questionnaire was used for data collection. The first part of the questionnaire focused on socio-demographic data (gender, age, education, employment, and financial status). These eight questions were used to assess adherent behavior to the prescribed treatment regimen: 1. Taking prescribed medication; 2. Adherence to the recommended diet; 3. Doctor's visits due to disease during the last year; 4. Doctor's visits to prescribe medicines during the last year; 5. Adherence to the recommended medication time; 6. Adherence to the amount of the prescribed drug; 7. Change of used drugs due to high price; 8. Interest in symptoms which prescribed drugs should remove.

A histogram was generated based on the frequency of correct responses and the mean of correct responses (M=5.55; SD±1.34) with a minimum value of 1 and a maximum value of 8. The research sample was divided into two groups — patients with adherent and patients with non-adherent behavior. Adherent behavior was defined as ≥6 correct answers and non-adherent behavior as <6 correct answers. A normality test was used to verify the data set, which demonstrated a normal distribution and a relevant distribution of the selection. A value of 0.201 (p=0.000) was obtained using the Kolmogorov-Smirnov test, and the Shapiro-Wilk test generated a value of 0.936 (p=0.000).

The research was carried out in a specialized medical facility at the East Slovak Institute of Cardiovascular Diseases, a.s. Košice (VÚSCH, a.s.). The study protocol was approved by the Ethics Committee of the Faculty of Medicine at Pavol Jozef Šafárik University in Košice (approval no. 115/2011), and all patients gave written informed consent before participating in the study.

Statistical analyses were performed using the SPSS software version 25.0 for Windows (SPSS Inc, Chicago, Illinois). The Kolmogorov-Smirnov test and Shapiro-Wilkovov test were used to verify the normal distribution of continuous variables. Results were analyzed using descriptive statistical methods, Pearson's correlation coefficient chi-square test (r), and Fisher's test (F). Statistical significance was defined as a p-value of <0.05.

Results

The study involved 878 patients with coronary heart disease. The mean age of patients in the study was 57.81 years (SD±7.58 years) with a median value of 58.00. The research sample was divided into two groups by age, patients <58 and ≥58 based on the histogram. The age range of the research sample was 24 to 75 years. The group consisted of 60% men (n=527) and 40% women (n=351). Most patients reported primary education 40.9% (n=359), and secondary education 36.4% (n=320). The lowest proportion was represented by patients with

a degree from a university, 22.7% (n=199). In terms of social variables, our research focused on financial income and employment. Financial income was divided according to the subsistence minimum. It was found that the subsistence minimum included 14.4% (n=127) of respondents; 1.5-2 times the subsistence minimum included 52.4% (n=460) of respondents, and 2.5 times the subsistence minimum included 33.2% (n=291) of respondents. Five hundred thirty-one (60.5%) participants were employed, while 347 (39.5%) were unemployed which included those receiving an old-age pension, disability pension, or were a student. Adherent behavior was seen in 501 (57.4%) patients whereas non-adherent behavior occurred in 377 (42.6%) patients. The relationships between individual variables and the patient's adherence to treatment are presented in Table 1.

Table 1. Patient adherence to treatment in relation to selected variables

Variables	Non-adherence N (%)	Adherence N (%)	p-value
gender male female	253 (28.8) 121 (13.8)	277 (31.2) 230 (26.2)	0.000***
age younger <58y older ≥58y	191 (21.8) 187 (21.3)	225 (25.6) 275 (31.3)	0.105 n.s.
education elementary secondary university	144 (16.4) 158 (18.0) 82 (9.3)	215 (24.5) 162 (18.5) 117 (13.3)	0.143 n.s.
financial income subsistence minimum average income above-average income	58 (6.6) 203 (23.1) 124 (14.1)	69 (7.9) 257 (29.3) 167 (19.0)	0.789 n.s.
employment employed unemployed	258 (29.4) 131 (14.9)	273 (31.1) 216 (24.6)	0.001**

A statistically significant relationship between gender, employment, and treatment adherence was confirmed in our research study. In the context of adhering to a treatment regimen, men showed higher adherence to treatment compared to women. Employed patients also were found to have a more responsible approach to treatment compared to non-employed patients. According to our findings, treatment adherence was not significantly affected by age, education, or income. Based on the relative number with respect to age, we can state that patients ≥58 years are more adherent (n=275; 31.3%) compared to patients younger than 58 years (n=225; 25.6%). Education also does not have a significant impact on adherence to a treatment regimen. In relation to financial situation, patients with an average income appear to be the most responsible in taking care of their health.

Discussion

Adherence is a problem that exists across the spectrum of both primary and secondary prevention of chronic diseases and represents a serious problem in patients with coronary heart disease [13]. Overall, 57.4% of patients in our cohort were adherent, which we do not consider sufficient. However, this is better than reported by Zyryanov et al. [14], where non-adherence in coronary outpatients exceeded 50%. Inconsistent results in relation to gender and adherence have been described in the literature. In our research, men (p=0.000) behaved more adherently than women, which agrees with some authors [15,16]. On the other hand, Viana et al. [17] found a lower drug adherence in men than in women with cardiovascular disease and heart failure. Assawasuwannakit et al. [18] point out that older age is associated with poorer adherence to treatment, which was not confirmed in our group of patients. However, this fact is to some extent expected due to the cognitive changes during the aging period [19], as elderly patients have a reduced ability to understand, respect, and follow the recommendations of healthcare professionals. In our research, based on relative numbers, more adherent behavior was demonstrated by elderly patients (≥58), which as stated by Slabá et al. [19] may be related to social and family background, a higher level of physician empathy, and a mutual atmosphere of trust. Kardas et al. [20] highlights the effect of education levels and healthcare literacy in connection with treatment adherence and found worse adherence in patients with lower education. Similar findings were presented by Szlenk-Czyczerska [21] where higher levels of

health behavior in all categories related to adherence to the treatment regimen were found in people with higher or secondary education. In regards to financial income, it is clear from our results that low-income patients are less adherent. Lee et al. [22] states that treatment adherence is employment-related, which is in line with our findings that working patients are more adherent than those who are not employed.

Domestic and foreign results confirm the need to monitor and address treatment adherence issues. From the perspective of patients, healthcare professionals, and healthcare systems, there are potentially many approaches that could help improve adherence. We agree with the authors' opinions [23-28] that one of the most effective and important ways is providing consistent patient education. Other alternatives are to use motivational interviewing [29] or a mobile phone application [5]. Achieving optimal patient treatment adherence requires an individual approach and multidisciplinary cooperation. Improving adherence is likely to benefit the patient more than introducing additional therapies.

Conclusions

It is necessary to take into account the risk factors associated with adherence in the management of cardiovascular diseases. Previous studies addressing treatment adherence have varying quality and considerable heterogeneity. Although some systematic reviews have considered several factors, many primary studies look at risk factors in isolation without considering their possible relationships. The results of our study show that the success of the treatment regimen can be significantly influenced by gender and employment. Based on relative abundance, we found that patients aged ≥58 years with basic education and average financial income have higher adherence to treatment. A patient's socio-demographic characteristics can alert the physician and nurse to the possible risk of non-adherence and can direct effective communication and education from the beginning of treatment.

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