Adherence to medication regimens among patients with type 2 diabetes

Starczewska M., Budna B., Rybicka A., Stanisławska M., Grochans E.

Department of Nursing, Pomeranian Medical University in Szczecin

INTRODUCTION

Type 2 diabetes is one of the most common chronic diseases, and the one that has an effect on all aspects of human functioning. It afflicts over 194 million people worldwide. Type 2 diabetes requires proper treatment, whose purpose is to delay the development of diabetic complications, and to improve the quality of patients' lives. Patient adherence to therapeutic regimens refers to many aspects of the healing process, including taking medication as prescribed, controlling glucose levels, motor activity, and modification of eating habits. Patient cooperation and patient involvement in the healing process, which are significant contributions to the end result of therapy, remain a big challenge for healthcare professionals.

OBJECTIVE OF THE STUDY:

The aim of this study was to assess adherence to medication regimens among patients with type 2 diabetes with regard to sociodemographic and medical data.

MATERIAL AND METHODS:

This survey-based study involved 200 respondents above 40 years of age with type 2 diabetes. The patients were hospitalized in the hospital in Chodzież, Eugenia and Janusz Zeyland Wielkopolskie Center of Pulmonology and Thoracic Surgery. Each patient was informed about the subject and purpose of the study, and assured that completion of the questionnaires is voluntary, and anonymous and gave their written consent for participation.
The research was conducted in accordance with the Declaration of Helsinki after receiving a positive opinion of the Bioethical Commission of Pomeranian Medical University in Szczecin. The research instruments were a self-developed questionnaire, and the *Adherence to Refills and Medications Scale (ARMS).*

RESULTS

The study involved 200 type 2 diabetic patients—100 women and 100 men—in the 41–92 age bracket. Most of the respondents of the study (64%) were married. 72.5% of the surveyed were retired, and only 2.5% were unemployed. 66.5% lived in cities. The most numerous (42.5%) were respondents with vocational education, and the least numerous (8.5%) those with tertiary education.

The mean duration of the disease was 8 ± 6.72 years, and fluctuated between 1 and 40 years; typically the disease lasted from 3 to 10 years. A vast majority of those surveyed (67.5%) took oral antidiabetic agents. The respondents using insulin for diabetes treatment constituted 18%, and those taking oral drugs and insulin—14.5%. 48.5% of the respondents were patients of the diabetes outpatient clinic, others were treated by primary care physicians. 94.5% of the patients of the diabetes outpatient clinic had been informed by the physicians about the necessity of sticking to diet. The surveyed adhered to the diet regimen to varying degrees—only 14% followed the instructions scrupulously, 67.5% rather stuck to them, 14% followed only some instructions, and 4% did not adhere to them at all. To manage their diabetes, the patients monitored their blood glucose levels, inspected their feet, and controlled their body weight and blood pressure. The largest group of respondents (97%) measured their levels of glycemia, 75.5% assessed their blood pressure. Few respondents (only 37%) controlled their weight, and 24.5% inspected their feet. 67.5% of the respondents were moderately physically active, only 2% played sports intensively, and 30.5% were not physically active due to their health status.

The scores on the ARMS ranged from 12 to 43 points, which means that some patients followed all doctors' instructions scrupulously. The best possible minimum score was achieved by 13 respondents. No one obtained the maximum score suggesting absolute non-adherence to therapeutic regimens. The mean score on the ARMS was **17.09 ± 4.67**.

Variables		ARMS [scores]				
		n (%)	M ± SD	Me	Q_1-Q_3	p
Sex	Woman	100 (50)	16.48 ± 4.12	15	13-18	p > 0.05
	Man	100 (50)	17.69 ± 5.12	16.5	13.75-21	
Place of residence	City	133 (66.5)	16.83 ± 4.73	15	13-19	p > 0.05
	Rural areas	67 (33.5)	17.6 ± 4.56	16	14-22	
Marital status	Single	11 (5.5)	22 ± 9.4	20	15-24.5	p > 0.05
	Married / cohabiting	134 (64)	16.93 ± 4.24	15	13-20	
	Widowed	55 (27.5)	16.49 ± 3.8	15	14-18	
Education	Primary	30 (15)	16.73 ± 4.63	14.5	13-21.25	p > 0.05
	Vocational	85 (42.5)	16.89 ± 4.41	15	13-19	
	Secondary	68 (34)	17.4 ± 5.4	16	13.75-21	
	Tertiary	17 (8.5)	17.41 ± 2.69	18	15-20	
Employment	Employed	26 (13)	18.73 ± 7.15	16	14-22	p > 0.05
	Retired	145 (72.5)	16.79 ± 4.15	15	13-20	
	Pensioner	24 (12)	17.25 ± 4.01	17	14-19	
Type of therapy	Insulin	36 (18)	16.83 ± 4.01	15.5	13.75-19.25	p > 0.05
	Oral antidiabetic agents	135 (67.5)	17.26 ± 4.96	15	13.5-20	
	Insulin and antidiabetic agents	29 (14.5)	16.59 ± 4.09	15	13-19	

Analysis did not demonstrate statistically significant differences in the influence of sociodemographic factors (sex, place of residence, marital status, education, employment, education, and type of therapy) on the patients' adherence to therapeutic regimens according to the ARMS ($p > 0.05$). Logistic regression demonstrated that the duration of the disease (OR 0.885; 95% CI: 0.761-1.028) and type of therapy did not significantly contribute to the odds of obtaining exactly 12 points on the ARMS ($p > 0.05$).

CONCLUSION:

- Adherence to therapeutic regimens among the type 2 diabetic patients was satisfactory and did not depend on sociodemographic and medical factors.

REFERENCE:

- Humańska MA, Felsmann M, Sopalska J. Sprawność funkcjonalna osób w podeszłym wieku chorujących na cukrzycę – doniesienia wstępne. Gerontol Pol. 2016;24:98-101.
- Kalinowski P, Bojakowska U, Kowalska ME. Ocena wiedzy pacjentów o powikłaniach cukrzycy. Med Ogól i Nauki o Zdr. 2012;18(4):302-307.
- García-Pérez LE, Alvarez M, Dilla T et al. Adherence to therapies in patients with type 2 diabetes. Diabetes Ther. 2013;4:175-194.
- Lomper K, Chabowski M, Chudiak A et al. Psychometric evaluation of the Polish verision of the Adherence to Refills and Medications Scale (ARMS) in adults with hypertension. Patient Prefer Adherence. 2018;12:2661-2670.

CONTACT:

Małgorzata Starczewska
Department of Nursing,
Faculty of Health Sciences,
Pomeranian Medical University in Szczecin,
48 Żołnierska St., 71 – 210 Szczecin, Poland
Tel. +48 91 48-00-910
E-mail: malgorzata.starczewska@pum.edu.pl