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MULTI-DISEASE VERSUS QUALITY OF LIFE OF PEOPLE AGED OVER 65 BEING TREATED IN PRIMARY HEALTH CARE

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Abstract

Introduction: Senior age, after the age of 65, is a period when changes occur due to the continual process of aging, often co-existing with all sorts of health problems, pathological processes, diseases, and psychosocial disorders that get worse with age. However, extending the life of these patients is associated not only with better treatment effects, but also with the use of multiple medications, which can lead to adverse effects. The multiple medications that multi-disease patients receive can significantly reduce their quality of life. The aim of this study was to identify the relationship between multi-disease and life quality of senior patients being treated in primary health care.

Materials and methods: The study involved 301 people including 204 females and 97 males. The average age of the patients was 75.14 ± 8.31 . A diagnostic survey method using the Polish version of the WHOQOL-BREF (World Health Organization Quality of Life Instrument) questionnaire for the study of subjective quality of life was used in the study. The questionnaire included a datasheet and covered areas such as body weight and height, occurrence of diseases, and adherence to doctor's orders.

Results: The respondents had been undergoing treatment for approx. three diseases for approx. 14 years. These were usually cardiovascular diseases (78.1%), skeletal and joint diseases (47.3%), and metabolic and endocrine diseases (43.8%). The highest level of life quality was found in the *environment* domain, average in the social relationships domain and the *psychological* domain, and lowest in the physical health domain.

Conclusions: Increasing age, disease duration, and the number of co-existing disorders are associated with lower quality of life among patients, especially in the *physical health* domain. This data should be used to assess the needs of medical and nursing care carried out by doctors and nurses at the Primary Health Care level.

Key words: quality of life, multi-disease, senior age, Primary Health Care

Introduction

Senior age, after the age of 65, is a period when changes occur due to the continuing process of aging, often co-existing with all sorts of health problems, pathological processes in the form of diseases, and psychosocial disorders that get worse with age. However, extending the lives of these patients is not only associated with the effects of better treatment, but also the use of multiple medications, which can lead to adverse effects. Multi-disease and multiple medications can significantly worsen the life quality of these people [1,2]. Quality of human life is a subjective value and largely depends on the patient's system of values, preferences, mental state, personality traits, etc. One quality of life definition (quoted from Gill and Feinstein) states that this is the way a person feels and reacts to their health condition and other non-medical aspects of life. This concept includes not only factors related to health (physical, functional, emotional and intellectual well-being), but also those such as work, family, friends and other aspects of life. Quality of life includes 11 dimensions: security, the ability to earn a living (functional competence), comfort, dignity, autonomy, privacy, meaningful activity, social relations, pleasure, individualism, and spiritual well-being [3]. One way to evaluate quality of life is a questionnaire survey that gives a quantitative result. Questionnaires for testing the quality of life can be divided into general, specific and mixed. General Questionnaires (generic scales) rate in the most general outline the relationship between the state of health of a patient and family relationships, emotional state, and professional activity. They can be used for both patients and healthy respondents. An example of such a questionnaire is the general WHOQO-Bref questionnaire [4].

The aim of this study was to identify the relationship between the occurrence of multi-disease and the quality of life of senior patients being treated in Primary Health Care.

Materials and methods

The study involved 301 people including 204 (67.4%) females and 97 males (32.6%). Patients aged 65+ who use the advice of a family doctor in Primary Health Care and filled in the questionnaire took part in the study. The average age of the patients was 75.14 ± 8.31 (min 49, max 92); 184 patients (61.1%) came from cities and 117 from rural areas (38.9%). The most common were primary school graduates (32.9%) and high school graduates (29.9%), while the smallest group of respondents were university graduates (15.0%). The majority of respondents were pensioners (86.4%) or received invalidity benefits (9.0%). Every second subject was married, approx. 40.0% were widows or widowers, more than two-thirds (77.1%) lived in a family, and 22.3% did not live in families. Only 3.0% of patients stated that they felt healthy and did not have any chronic diseases, the others stated that they were ill.

The Polish version of the WHOQOL-BREF (World Health Organization Quality of Life) questionnaire for the study of subjective quality of life was used in the study. This questionnaire included a datasheet and covered such issues as body weight and height, occurrence of diseases, and adherence to doctor's orders.

The WHOQOL-BREF questionnaire measures not only satisfaction with overall quality of life and health condition, but also subjectively assesses four domains: *physical health*, *psychological*, *social relations*, and *environment*. The structure of the scale is as follows: a) the domain of physical pain and discomfort, including dependence on drugs and treatment, energy for life, mobility, sleep, ability to conduct normal daily life, ability to work; b) the *psychological* domain, including the joy of life, the meaning of life, a sense of meaning and purpose in life, the ability to pay attention, negative feelings; c) the *social relationships* domain, including personal relationships, sex life, social support; d) the *environment* domain including a sense of security, physical environment, the setting, adequate money to meet needs, access to information, free time, housing situation. The domain ratings were presented on a scale of 0–100 (the higher rate, the better quality of life) [6].

The analysis of the quantitative and qualitative research material was carried out using a PC computer with SPSS version 20.0 statistical package and Microsoft Excel. The following statistical methods were used: statistical description (arithmetic mean, median and standard deviation – SD), and Pearson's chi-square test of independence (rp). The level of statistical significance in the study was set at p lower than 0.05.

Results

The average body mass index (BMI) of the surveyed patients was 27.28 ± 4.33 kg/m (Tab. 1), 47.1% of females and 21.8% of males were overweight or obese (Tab. 2).

The respondents had been treated for approx. three diseases (average 2.91 ± 1.47 ; minimum 0.00; maximum 7.00) for approx. 13.5 years (Tab. 1). Coexistence of more diseases was observed among females, $p = 0.033$ (Tab. 3, Fig. 1) and referred significantly more often to widows, $p = 0.021$ (Tab. 4, Fig. 2). These were usually cardiovascular diseases 78.1%, skeletal and joint disorders – 47.3%, metabolic and endocrine diseases 43.8%, neurological disorders 21.3%, and other chronic diseases 34.0%. The highest level of life quality was found in the *environment* domain (mean 61.90 ± 14.66 , median 63.00), average in the *social relationships* domain (mean 57.59 ± 17.73 ; median 56.00) and the *psychological* domain (mean 56.72 ± 17.09 , median 56.00), and the lowest in the *physical health* domain (mean 45.18 ± 18.27 ; median 44.00). Widowhood was a predictor negatively affecting the quality of life among males in the physical health domain ($p = 0.024$) and psychological domain ($p = 0.001$) and both among males and females in the domain of social relationships ($p = 0.000$; $p = 0.016$). Such dependency did not occur in the environment domain.

Multi-disease (mean 2.91 ± 1.47 , min 0.00, max 7.00) occurred slightly more frequently among females (25.6%) compared to males (8.3%). This factor proved to be a significant negative predictor of lower quality of life in every area of life for both females (except for the *social relationship* domain, $p = 0.114$; the physical health domain $p = 0.000$; the *psychological* domain $p = 0.003$; the *environment* domain $p = 0.000$), and males (the *physical health* domain $p = 0.009$; the *psychological* domain $p = 0.027$; the *social relationship* domain $p = 0.049$; the *environment* domain $p = 0.005$) (Fig. 3, 4, 5, 6).

Table 1. Descriptive statistics of characteristics of the study group (N=301)

	Mean	Median	Standard deviation	Range	Minimum	Maximum
BMI- Body Mass Index	27.28	27.10	4.33	25.44	17.01	42.45
Multi-disease	2.91	3.00	1.47	7.00	0.00	7.00
Disease duration	13.50	11.00	7.94	50.00	0.00	50.00
Physical health	45.18	44.00	18.27	88.00	6.00	94.00
Psychological domain	56.72	56.00	17.09	94.00	0.00	94.00
Social relationships	57.59	56.00	17.73	94.00	6.00	100.00
Environment	61.90	63.00	14.66	87.00	13.00	100.00

Table 2. The value of BMI among the male and female population

			BMI categories			General
			Correct value	Over-weight	Obesity	
Sex	Female	Quantity	72	84	48	204
		% of total number	23.9%	27.9%	15.9%	67.8%
	Male	Quantity	36	46	15	97
		% of total number	12.0%	15.3%	4.9%	32.2%
General	Quantity	108	130	63	301	
	% of total number	35.9%	43.1%	21.0%	100.0%	

Chi-square tests: 4.55 (df = 1), p = 0.36

Table 3. Multi-disease (≤ 3 diseases and ≥ 4 diseases) among males and females

			Multidisease (Divided)		General
			$\leq 3,00$	4,00+	
Sex	Female	Quantity	126	77	203
		% of total number	41.9%	25.6%	67.4%
	Male	Quantity	73	25	98
		% of total number	24.3%	8.3%	32.6%
General	Quantity	199	102	301	
	% of total number	66.1%	33.9%	100.0%	

Chi-square tests: 4.55 (df = 1), p = 0.033

Table 4. Multi-disease (≤ 3 diseases and ≥ 4 diseases) and family situation of respondents

			Multidisease (Divided)		General
			$\leq 3,00$	$4,00+$	
Family situation	Married	Quantity	107	41	148
		% of total number	38.9%	14.9%	53.8%
	Widow/widower	Quantity	75	52	127
		% of total number	27.3%	18.9%	46.2%
General		Quantity	182	93	275
		% of total number	66.2%	33.8%	100.0%

Chi-square tests: 5.35 (df = 1), $p = 0.021$

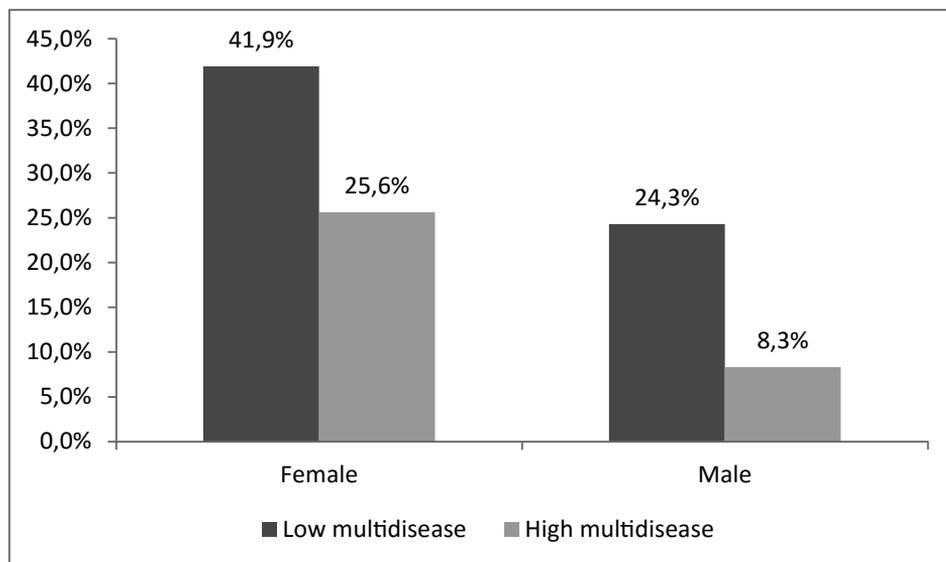


Figure 1. Multi-disease (≤ 3 diseases and ≥ 4 diseases) among males and females. Chi-square tests: 4.55 (df = 1), $p = 0.033$.

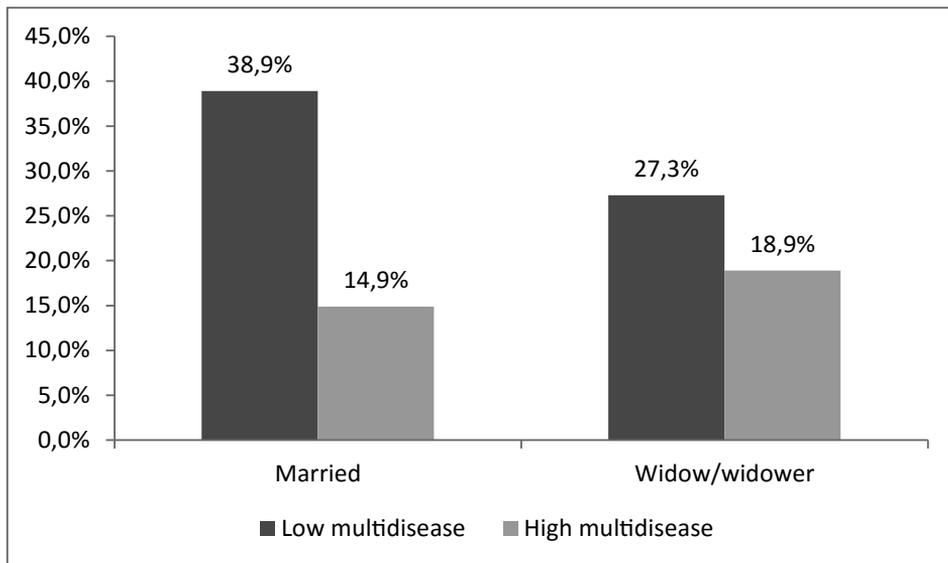


Figure 2. Multi-disease (≤ 3 diseases and ≥ 4 diseases) in the female group vs. family situation. Ch-square tests: 5.35 (df = 1), p = 0.021.

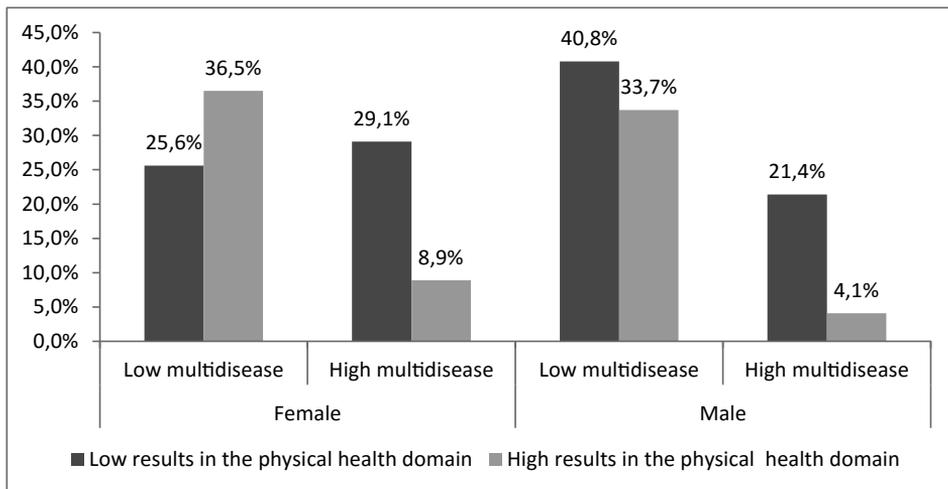


Figure 3. Multi-disease (≤ 3 diseases and ≥ 4 diseases) vs. quality of life in the *physical health* domain in terms of sex. Female: Pearson's Chi-square 24.10 (df = 1), p = 0.000 male: Pearson's Chi-square 6.759 (df = 1), p = 0.009).

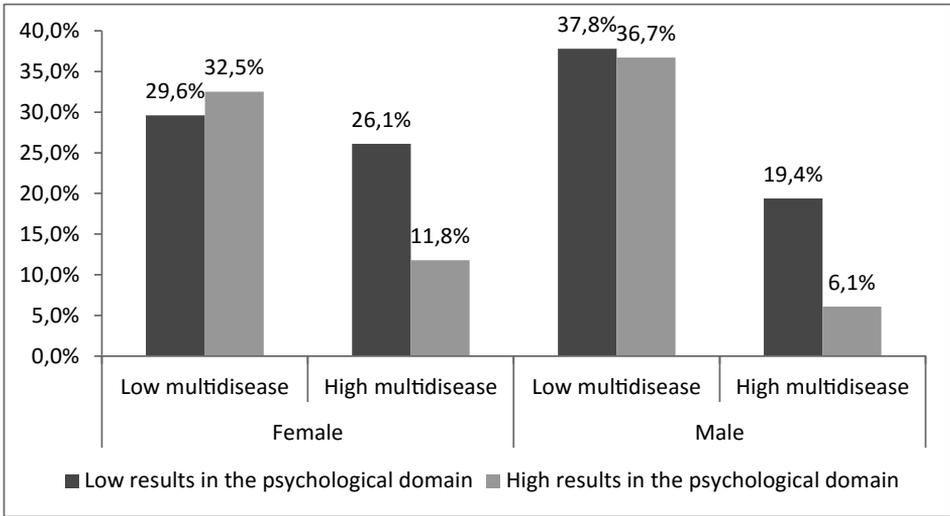


Figure 4. Multi-disease (≤ 3 diseases and ≥ 4 diseases) vs. quality of life in the *psychological* domain in terms of sex. Female: Pearson’s Chi-square 8.74 (df = 1), $p = 0.033$ Male: Pearson’s Chi-square 4.87 (df = 1), $p = 0.049$.

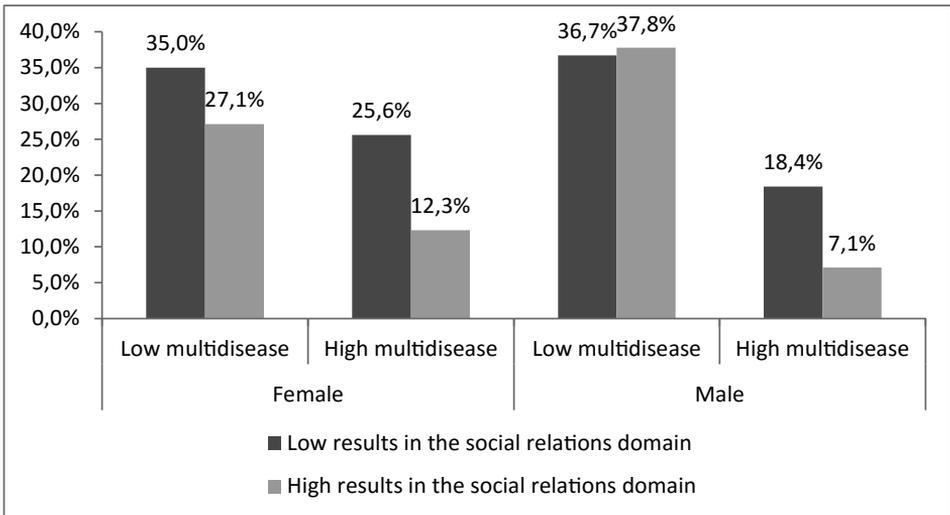


Figure 5. Multi-disease (≤ 3 diseases and ≥ 4 diseases) vs. quality of life in the *social relationships* domain in terms of sex. Female: Pearson’s Chi-square 2.5 (df = 1), $p = 0.114$ Male: Pearson’s Chi-square 3.87 (df = 1), $p = 0.049$.

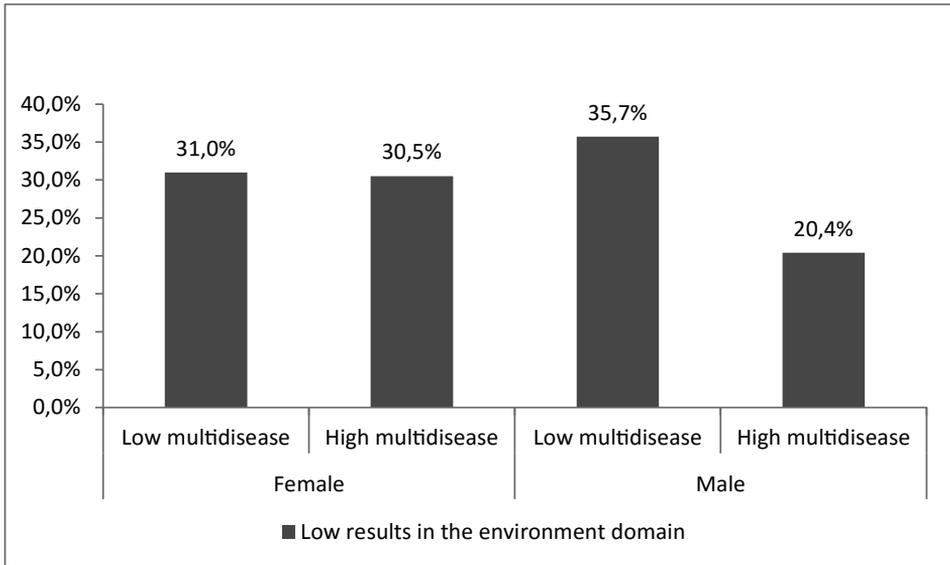


Figure 6. Multi-disease (≤ 3 diseases and ≥ 4 diseases) vs. quality of life in the *environment* domain in terms of sex. Female: Pearson's Chi-square 18.85 (df = 1), $p = 0.000$ Male: Pearson's Chi-square 7.7 (df = 1), $p = 0.005$.

Results

The largest group of Primary Healthcare (PHC) consumers are elderly patients aged 65 and older (65+). Most suffer from a variety of diseases caused by the aging process. One of the most typical features of geriatric patients is multi-disease (polypathology), i.e. the coexistence of several chronic diseases [7]. In the study group of PHC patients aged 65+, as many as seven chronic diseases (mean \pm 2.91) were observed simultaneously. The most common were cardiovascular diseases (78.1%), skeletal and joint disorders (47.3%), metabolic and endocrine diseases (43.8%), neurological disorders (21.3%), urologic diseases (15.4%), cancer (10.3%), kidney diseases (8.2%), and other chronic diseases (34.0%). In the dissertation by Wieczorowska-Tobis [7], cardiovascular diseases also occurred most frequently among the elderly. 60–70% of the elderly suffered from arterial hypertension, symptoms of ischemic heart disease were observed in about 30% and 20% suffered from diabetes or glucose intolerance (another 20%). Symptoms of chronic obstructive pulmonary disease and other chronic health problems such as constipation (20%) and urinary incontinence (20%) were observed in 25% of the elderly population. The results of the National Multicentre Health Survey WOBASZ II [8] also show a similar structure in terms of the incidence of cardiovascular diseases.

Risk of reduced efficiency, particularly functional efficiency, increases with the number of the diseases. It is especially high among people aged at least 80 due to significantly reduced organ function, which can result in high risk of multiple organ complications, loss of independence [7], and deterioration in life quality. The findings of the present study suggest that with the increasing age of respondents, the number of co-occurring chronic diseases and their duration ($p = 0$) also increases. The term 'quality of life' is associated with happiness, physical and mental well-being, life satisfaction, fulfilment of desires, and life expectations. Quality of life associated with the health status of elderly patients should be analysed in terms of the aging process and a deterioration in health over the lifetime of the individual [9,10]. The process of aging results in a deteriorating state of health, reduced fitness and mental efficiency [11], which affects the life quality of seniors in all areas of life. In the study group, the highest level of quality of life was found in the *environment* domain (mean 61.90 ± 14.66 , median 63.00), average in the domain of *social relationships* (mean 57.59 ± 17.73 ; median 56.00) and the *psychological* domain (mean 56.72 ± 17.09 , median 56.00), and was lowest in the *physical health* domain (mean 45.18 ± 18.27 , median 44.00). This can undoubtedly be attributed to the existence of the phenomenon of multi-disease and the age of the respondents.

It was also observed that widowhood was a predictor negatively affecting the quality of life among males in the *physical health* domain ($p = 0,024$), *psychological* domain ($p = .001$) and among males and females in the domain of *social relationships* ($p = .000$; $p = .016$). Such a dependency did not occur in the environment domain. The research conducted by Fidecki et al also proved [10] that among females and males aged over 65 who had been provided long-term medical care, the lowest results were observed in the *physical health* domain (9.67F and 10.16M). Females displayed the highest rates in the domain of *social relationships* (mean 12.30) and the *environment* domain (12.25), and slightly lower in the *psychological* domain (10.77). Among males, the highest ratings were achieved in the *environment* domain (11.99), while the *social relations* domain (10.82) and *psychological* domain (10.60) gave rates at almost the same level. Among the widowed, the lowest rate was given in the *physical health* domain (9.63), while low ratings were also given in the *social relationships* domain (11.56) and the *psychological* domain (10.35). The *environment* domain received the highest score (12.10), as in the present study.

An important aspect of caring for the elderly is to support activities in order to maintain the multi-activity of these people, particularly social activity. Care for the elderly should not only focus on prolonging life, but primarily on quality of life, which includes every area of human activity [12]. Such care requires cooperation between a team of primary health care professionals (doctor, nurse, physiotherapist) providing comprehensive diagnostics, therapy and a wide range of prevention activities.

Conclusions

With increasing age, disease duration and the number of co-existing disorders also increase, resulting in medical complications. All these factors may considerably reduce the life quality of patients. Multi-disease was a statistically significant predictor of decrease in life satisfaction of the respondents in all areas of life (except for the domain of *social relationships* among females). This data should be used to assess needs when contracting services in the National Health Fund for medical and nursing care carried out by doctors and nurses at the primary health care level.

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Wielochorobowość a jakość życia osób po 65 roku życia leczących się w Podstawowej Opiece Zdrowotnej

Streszczenie

Wprowadzenie: Wiek senioralny, po 65 roku życia, to okres charakteryzujący się występowaniem zmian w wyniku postępującego procesu starzenia się, współistniejący często z różnego rodzaju problemami zdrowotnymi i procesami patologicznymi w postaci wielu chorób, a także zaburzeń psychospołecznych nasilających się wraz z wiekiem. Z drugiej strony wydłużenie życia w tej grupie pacjentów ma związek z poprawą skuteczności leczenia, ale i stosowaniem wielu leków jednocześnie, co może prowadzić do wystąpienia zdarzeń niepożądanych. Wielochorobowość i wielolekowość mogą pogorszać w znacznym stopniu jakość życia tych osób. Celem pracy było wskazanie zależności między występowaniem wielochorobowości a jakością życia pacjentów w wieku senioralnym, leczących się w POZ.

Materiał i metody: W badaniu wzięło udział 301 osób, w tym 204 kobiety i 97 mężczyzn. Średnia wieku wynosiła $75,14 \pm 8,31$. Zastosowano metodę sondażu diagnostycznego z wykorzystaniem kwestionariusza do badania jakości życia WHOQOL – BREF oraz kwestionariusza własnej konstrukcji, zawierał dane metryczkowe, wartości masy ciała i wzrostu, występowanie chorób.

Wyniki: Badani leczyli się z powodu średnio 3. chorób przez okres ok 14 lat. Były to najczęściej choroby: układu krążenia 78,1%, kostno-stawowe 47,3% oraz metaboliczne i endokrynologiczne 43,8%. Najwyższy poziom jakości życia stwierdzono w dziedzinie środowiskowej, średni w dziedzinach relacje społeczne i dziedzina psychologiczna, a najniższy w dziedzinie fizycznej.

Wnioski: Wraz z wiekiem wzrasta czas trwania choroby i ilość współwystępujących ze sobą jednostek chorobowych, a także obniża się jakość życia badanych szczególnie w dziedzinie fizycznej. Dane te należałoby wykorzystać w ocenie zapotrzebowania na usługi realizowane na poziomie podstawowej opieki zdrowotnej zarówno w odniesieniu do lekarzy jak i szczególnie zatrudnionych tu pielęgniarek

Słowa kluczowe: wiek senioralny, wielochorobowość, jakość życia, podstawowa opieka zdrowotna (POZ)