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Quality of life of users of long-term health care

Kvalitet života korisnika dugoročne zdravstvene njege

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ABSTRACT

Objective. Long-term care represents a series of health and social care services that are provided at home or in an institutional environment to people with reduced functional capacity (reduced physical and/or cognitive abilities) who need support in performing daily activities, and who depend on the help of others for a long time period. The goal of the research was to examine the quality of life of users with long-term health care, with a special focus on comparing the quality of life between people placed institutionally and outside of the institution.

Methods. The research was designed according to the principle of a cross-sectional study. In the research, a general questionnaire and a scale for assessing the quality of life Short Form 36 Health Survey (SF-36) were used. Among the statistical tests, the χ^2 square test was used. The usual value of $p < 0.05$ was taken as the level of statistical significance.

Results. Subjects who were institutionalized had statistically significantly lower values of domains and summary scores of quality of life compared to subjects whose health care took place outside of institutions, whereby the difference was observed in physical functioning ($p < 0.001$), social functioning ($p = 0.003$) and mental health summary score ($p = 0.015$).

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APSTRAKT

Cilj. Dugoročna njega predstavlja niz usluga zdravstvene i socijalne zaštite koje se pružaju u kući ili u institucionalnom okruženju osobama sa smanjenom funkcionalnom sposobnošću (smanjenje fizičkih i/ili kognitivnih sposobnosti) kojima je potrebna podrška u obavljanju svakodnevnih aktivnosti, a koje zavise od tuđe pomoći u dužem vremenskom periodu. Cilj istraživanja je bio ispitati kvalitet života korisnika dugoročne zdravstvene njege, sa posebnim osvrtom na upoređivanje kvaliteta života između korisnika smještenih institucionalno i van institucije.

Metode. Istraživanje je dizajnirano po principu studije presjeka. U istraživanju su korišćeni opšti upitnik i skala za procjenu kvaliteta života Short Form 36 Health Survey (SF-36). Od statističkih testova korišten je χ^2 kvadrat test. Kao nivo statističke značajnosti uzeta je uobičajena vrijednost $p < 0,05$.

Rezultati. Ispitanici koji su bili institucionalno smješteni imali su statistički značajno niže vrijednost domena i sumarnih skorova kvaliteta života u odnosu na ispitanike kod kojih se zdravstvena njega odvijala vaninstitucionalno, pri čemu je razlika uočena u fizičkom funkcionisanju ($p < 0,001$), socijalnom funkcionisanju ($p = 0,003$) i sumarnom skor mentalnog zdravlja ($p = 0,015$).

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Conclusion. Users of long-term health care placed in an institution had significantly worse physical functioning, a higher level of limitations due to physical problems, worse general health, a lower level of social functioning, as well as mental health.

Key words: delivery of health care; long-term care; quality of life.

INTRODUCTION

Long-term care is a series of health and social care services that are provided at home or in an institutional environment to people with reduced functional capacity (reduced physical and/or cognitive abilities) who need support in performing daily activities, and who depend on the help of others for a long time period^{1,2}.

Today, we distinguish several models of providing long-term care to patients. The basic elements of the long-term care system are the philosophy of the system in terms of who bears the responsibility (family or the state), the way the state organizes care (cash benefits, services, combination), financing of the care delivery system and the degree of generosity of state support. All these elements are complicated to take into account at the same time, so many authors resorted to the classification of long-term care based on only one or two criteria³. According to the classification most often used in practice, long-term care can be formal (institutional and non-institutional) and informal.

Although the profile of patients who need long-term health care is different and includes the young and the elderly of different genders and health conditions, most often long-term health care is required by the elderly. Aging is a physiological process during which biological, psychological and sociological changes occur, and according to certain theories, genetics play the most important role in the process of biological aging⁴. Defining age is not only a matter of chronological age and functional abilities, but also implies a relationship between the quality of one's life, the value system and the characteristics of the environment in which that person lives⁵.

The increase in the number of elderly people, especially those over 80 years old, brings great changes. Retirement, financial dependence, social exclusion, loss of loved ones and higher levels of disability resulting from chronic diseases, and the result is an increase in the need of the elderly for family support, as well as a strong increase in the demand for institutional health care, which provides care for these people and takes care of them 24 hours a day⁶.

In the last few decades, our society has undergone great and sudden changes in the forms and structure of the family. The family used to be traditional, patriarchal and rural, which has been replaced by the industrial family. This change led to

Zaključak. Korisnici dugoročne zdravstvene njege smješteni u instituciji imali su značajno lošije fizičko funkcionisanje, veći nivo ograničenja zbog fizičkih problema, lošije opšte zdravlje, niži nivo socijalnog funkcionisanja, kao i mentalnog zdravlja.

Ključne riječi: pružanje zdravstvene zaštite; dugotrajna njega; kvalitet života.

the emergence of a better quality of life for the younger generations, but at the same time it also brought numerous problems, especially in terms of attitudes towards the elderly population of society. The large rural families of the time provided adequate protection and care for their elderly members, however, modern families, with the simultaneous process of daily reduction, are increasingly facing difficulties in providing care and protection for the elderly. Precisely because of this, today we cannot expect families to be able to independently provide adequate care for the elderly, so the process of transferring this care for the elderly outside the family is increasingly present. Such care is increasingly provided by homes for the elderly and the infirm, where elderly people who are unable to take care of themselves or their families do not have adequate resources and conditions for providing care to an elderly person are accommodated. This is precisely why the institutional placement of elderly people, as the dominant form of care for the elderly, is often the only alternative^{6,7}.

Quality of life is a comprehensive overall satisfaction/dissatisfaction with one's life. The World Health Organization defines quality of life as an individual's perception of his own position in life from a cultural, social, physical and psychological aspect, in relation to the goals, standards and expectations that apply in these systems. Although the terms health status and well-being are often used as synonyms for quality of life in the literature, they are only individual aspects of a concept that is much more comprehensive⁸.

In addition to objective factors, the quality of life is also influenced by the subjective perception and assessment of physical, social, material and emotional well-being, personal development and purposeful activity. Research shows that patients who are beneficiaries of long-term health care have a worse quality of life, because their impaired state of health affects all segments of life⁸, and also, research shows that a poorer quality of life is a significant indicator of more frequent mortality and limitations in physical functioning⁹.

However, in addition to health problems that can affect the quality of life of institutionalized patients, the quality of life can be affected by a large number of external factors, primarily a change in the living environment (for example institutional placement), rigid daily routines and changes in social interaction patterns^{9,10}. However, due to the high frequency of chronic diseases that lead to physical and cognitive limitations at this age, the assessment of the quality of life of the elderly

population is usually reduced to the health-related quality of life and/or the quality of the health care provided.

The aim of the research was to compare the quality of life of users of long-term health care who were institutionalized and non-institutional.

SUBJECTS AND METHODS

The research was carried out according to the type of cross-sectional study in public institutions: PHI Community Health Center “Dr Isak Samokovlija” Goražde, and in PI “Home for old and infirm persons” in Goražde, in 2022. The sample consisted of users of these institutions. The study included 100 respondents of long-term health care users. The respondents were divided into two groups. The first group consisted of 50 respondents who are patients of the “Dr Isak Samokovlija” Goražde Health Center, and are users of long-term non-institutional home health care. The second group consisted of 50 respondents who are institutionalized and are beneficiaries of long-term health care at the “Home for Aged and Infirm Persons” in Goražde. Respondents of both sexes, aged over 65, participated in the research.

The respondents were selected using a random sampling method, based on their arrival at the Goražde Community health center or attendance at the Home for old and infirm persons on the day of the examination. The examination lasted from June to August 2022. Before starting the research, written consent was obtained from the competent directors of the institutions. Decision numbers: 208 and 04-30-9-807-1. Participation in the study was voluntary, and the survey was anonymous.

The data was collected by surveying. The survey questionnaire consisted of questions for collecting demographic data, socioeconomic data, as well as a standardized scale for assessing the quality of life Short Form 36 Health Survey (SF-36)^{11,12}. The general questionnaire included questions about gender, age, marital status, satisfaction with monthly financial income, life satisfaction and satisfaction with non-institutional or institutional long-term health care. The SF-36 health survey is the most commonly used general questionnaire for assessing the quality of life of patients. The questionnaire is intended for self-assessment of mental and physical health and social functioning. It has 36 questions, of which 35 questions are grouped into eight areas or domains: physical functioning (PF), limitations due to physical health problems (RP), bodily pain (BP), general health perceptions (GH), vitality (VT), social functioning (SF), limitations due to emotional problems (RE), general mental health (MH).

In this research, the data were processed using the SPSS statistical software package. Of the statistical tests, the χ^2 square test, a non-parametric test, was used. The data are presented in tabular form. As the level of statistical significance

of the difference, the usual p value was taken. Values less than 0.05 were considered statistically significant.

RESULTS

The study included 100 subjects aged 65 to 85, of whom 63 (63%) were women and 37 (37%) were men. Between the groups of respondents divided according to the place of accommodation where long-term health care took place, a statistically significant difference was observed in relation to the gender ($p=0.023$) and age ($p=0.003$) of the respondents, while no difference was observed in relation to marital status. There is a significantly higher number of male respondents who were institutionalized (74%) compared to non-institutionalized male respondents (52%). Also, there is a significantly higher number of elderly respondents (75 to 85 years old) who were institutionally housed (68%) compared to respondents of the same age group who were non-institutionally housed (38%) (Table 1).

Tabela 1. Distribution of patients by group according to place of accommodation where long-term health care took place in relation to gender, age and marital status

Age and marital status						
Socio-demographic characteristics	Institutional accommodation (n=50)		Non-institutional accommodation (n=50)		x2	p*
	Number	%	Number	%		
Gender						
Male	37	74	26	52	12,342	0,023
Females	13	26	24	48		
Age						
65-74 years	16	32	31	62	14,865	0,003
75-85 years	34	68	19	38		
Marital status						
Married	18	36	29	58	2,379	0,076
Single	3	6	3	6		
Widower/widow	29	58	18	36		

Table 2 shows the distribution of the quality of life (domains and summary scores) of all surveyed users of long-term health care according to the level of quality of life. 44% of respondents had poor physical functioning, 40% had good physical functioning, while 16% of respondents had excellent physical functioning. 47% of respondents had the lowest level of restrictions due to physical problems, 35% had a medium level of restrictions, while 18% of respondents had no restrictions due to physical problems. A high level of physical pain was experienced by 38% of respondents, a medium level by 44%, while a low level of physical pain was experienced by only 18% of respondents. 49% of users of long-term health care had a low level of general health, 37% of respondents had good general health, while 14% of respondents had excellent general health. Vitality was poor in 57% of respondents, good in 30%, while 13% of long-term health care users had excellent vitality. 38% of respondents had poor social functioning, 44% had good social functioning, while 18% of long-term health care users had excellent social functioning. 41% of respondents

were highly restricted due to emotional problems, 49% had a medium level of restriction, while only 10% of respondents had a low level of restriction due to emotional problems. 35% of respondents had a poor level of mental health, 60% had a medium level, while 10% of respondents had excellent mental health. The summary scores showed that the physical health summary score (PCS) was poor in 35% of respondents, good in 60%, while it was excellent in only 5% of respondents. The mental health summary score (MCS) was poor in 27% of respondents, good in 60%, and excellent in 13% of long-term health care users (Table 2).

Tabela 2. Presentation of the distribution of the level of quality of life of respondents of second-term health care

Domains and summary scores	Level of quality of life (SF-36)					
	Bad		Good		Excellent	
	Number	%	Number	%	Number	%
SF-36 questionnaire						
Physical functioning	44	44	40	40	16	16
Limitations due to physical problems	47	47	35	35	18	18
Body pain	38	38	44	44	18	18
General health	49	49	37	37	14	14
Vitality	57	57	30	30	13	13
Social functioning	38	38	44	44	18	18
Limitations due to emotional problems	41	41	49	49	10	10
Mental health	35	35	55	55	10	10
*PCS	35	35	60	60	5	5
**MCS	27	27	60	60	13	13

*PCS The physical health summary score;

**MCS The mental health summary score

It was observed that there is a statistically significant difference between the respondents in the average values of the domain and the summary scores of the quality of life in relation to the place of accommodation where the long-term health care took place. Respondents who were institutionalized had statistically significantly lower values of domains and summary scores of quality of life compared to respondents whose health care took place outside of institutions, where the difference was observed in physical functioning ($40.50 \pm 14.06\%$ vs $53.70 \pm 19.94\%$, $p < 0.001$), limitation due to physical problems ($41.24 \pm 15.56\%$ vs. $51.64 \pm 19.93\%$, $p = 0.005$), general health ($43.35 \pm 15.15\%$ vs. $50.41 \pm 19.62\%$, $p = 0.047$), social functioning ($43.10 \pm 16.10\%$ vs. $54.75 \pm 21.26\%$, $p = 0.003$), physical health summary score ($37.67 \pm 6.20\%$ vs. $50.39 \pm 10.74\%$, $p < 0.001$), and the mental health summary score ($44.87 \pm 11.82\%$ vs. $51.83 \pm 16.01\%$, $p = 0.015$). Table 5 shows the average values of all domains and summary quality of life scores for each group, as well as the average value of all respondents according to place of accommodation.

In the domains of physical pain, vitality, limitations due to emotional problems and mental health, no statistically significant difference was observed in the average values between the groups divided according to the accommodation where long-term health care took place (Table 3).

Tabela 3. Average values of domains and summary scores of the quality of life of respondents according to the place of accommodation where long-term health care took place

Domains and summary scores of the SF-36 questionnaire	Institutional accommodation (n=50)		Non-institutional accommodation (n=50)		In total (n=100)		p*
	AS	SD	AS	SD	AS	SD	
Physical functioning	40,5	14,06	53,7	19,94	47,1	18,4	<0,001
Limitations due to physical problems	41,24	15,56	51,64	19,93	46,44	18,54	0,005
Body pain	40,36	17,85	45,83	16,4	43,09	17,27	0,583
General health	43,35	15,15	50,41	19,62	46,88	17,79	0,047
Vitality	42,39	15,3	47,50	20,3	44,95	18,07	0,158
Social functioning	43,1	16,1	54,75	21,26	48,92	19,65	0,003
Limitations due to emotional problems	50,66	29,53	54,66	23,09	52,66	26,45	0,452
Mental health	47,72	15,24	48,14	14,77	47,93	14,93	0,889
*PCS	37,67	6,2	50,39	10,74	44,03	10,82	<0,001
**MCS	44,87	11,82	51,83	16,01	48,35	14,43	0,015

*PCS The physical health summary score;

**MCS The mental health summary score;

AS-average score; SD-standard deviation

No statistically significant difference was observed between the age groups of the respondents in the average values of any domain or summary score of the quality of life (Table 4).

Tabela 4. Average domain values and summary scores of the quality of life of long-term health care subjects according to age

Domains and summary scores of the SF-36 questionnaire	Age of the respondents				p*
	65 to 74 years (N=47)		75 to 85 years (N=53)		
	AS	SD	AS	SD	
Physical functioning	48,97	16,94	45,43	19,61	0,339
Limitations due to physical problems	49,44	19,73	43,77	17,16	0,127
Body pain	46,64	16,05	39,94	17,85	0,052
General health	45,40	16,03	48,19	19,28	0,438
Vitality	43,21	16,83	46,48	19,13	0,369
Social functioning	52,04	19,67	46,16	19,4	0,136
Limitations due to emotional problems	49,64	23,94	55,34	28,45	0,279
Mental health	47,27	16,09	48,5	13,95	0,683
*PCS	46,21	10,18	42,1	11,09	0,058
**MCS	47,57	11,87	49,04	16,45	0,615

*PCS The physical health summary score;

**MCS The mental health summary score;

AS-average score; SD-standard deviation

There is a statistically significant difference between the respondents in the average values of physical and social functioning in relation to satisfaction with monthly financial income. Respondents who were satisfied with their monthly financial income had statistically significantly higher values in the domains of physical functioning ($40.18 \pm 15.84\%$ vs $49.29 \pm 19.97\%$, $p = 0.038$) and social functioning ($42.13 \pm 19.38\%$ vs. $50.28 \pm 19.91\%$, $p = 0.021$), compared to respondents who were not satisfied with their monthly financial income. While the difference in the average values of other domains

and summary scores between the groups of long-term health care respondents divided according to satisfaction with financial income was not observed (Table 5).

Tabela 5. Average domain values and summary scores of the quality of life of long-term health care respondents according to satisfaction with monthly financial income

Domains and summary scores of the SF-36 questionnaire	Satisfaction with monthly financial income				p*	
	Satisfied (N=43)		Dissatisfied (N=57)			
	AS	SD	AS	SD		
Physical functioning	40,18	15,84	49,29	19,97	0,038	
Limitations due to physical problems	46,2	17,6	46,61	19,37	0,915	
Body pain	44,29	17,93	42,19	16,86	0,55	
General health	46,05	17,19	47,51	18,36	0,686	
Vitality	43,3	17,52	46,19	18,53	0,431	
Social functioning	42,13	19,38	50,28	19,91	0,021	
Limitations due to emotional problems	50,38	23,42	54,38	28,61	0,457	
Mental health	47,93	14,71	47,92	15,23	1	
*PCS	43,65	10,59	44,32	11,06	0,764	
**MCS	46,71	13,09	49,59	15,36	0,326	

*PCS The physical health summary score;

**MCS The mental health summary score;

AS-average score; SD-standard deviation

Subjects with a chronic disease had significantly lower values of the domain of physical functioning (39.27 ± 19.34) compared to subjects without chronic diseases (49.21 ± 15.87) ($p=0.029$). Between the groups of subjects divided according to the presence of chronic diseases, no statistically significant difference was observed in the average values of the remaining domains or summary scores of the quality of life (Table 6).

Tabela 6. Average domain values and summary scores of the quality of life of long-term health care respondents according to the presence of chronic diseases

Domains and summary scores of the SF-36 questionnaire	Presence of chronic diseases				p*
	Yes (N=72)		No (N=28)		
	AS	SD	AS	SD	
Physical functioning	39,27	19,34	49,21	15,87	0,029
Limitations due to physical problems	42,05	17,62	50,01	20,63	0,233
Body pain	41,63	17,44	46,83	16,55	0,178
General health	48,18	18,09	43,55	16,87	0,245
Vitality	45,95	18,6	42,37	16,65	0,377
Social functioning	49,77	19,54	46,75	20,13	0,492
Limitations due to emotional problems	52,31	27,87	53,56	22,84	0,832
Mental health	48,02	14,37	47,67	16,57	0,917
*PCS	43,08	10,98	46,47	10,17	0,161
**MCS	49,05	15,31	46,56	11,93	0,441

*PCS The physical health summary score;

**MCS The mental health summary score;

AS-average score; SD-standard deviation

DISCUSSION

The study was conducted on a sample of 100 long-term care users. Of the total number of respondents, the majority (63%) were male, while the remaining 37% of respondents were female. The average age of the respondents was 75 years. Of the total number of long-term health care respondents, 47% were married, 6% were single, while the remaining 47% were widowed. There is a significantly higher number of male respondents who were institutionalized (74%) compared to non-institutionalized male respondents (52%). Also, there is a significantly higher number of elderly respondents (75 to 85 years old) who were institutionalized (68%) compared to respondents of the same age group who were non-institutionalized (38%).

In order for treatment and long-term health care to be more effective, it is necessary to be familiar with the physical, psychological and social status of the persons to whom care is provided. The reason for this is that the impairment of any of these three components of the quality of life prevents the adequate provision of health care, especially if it is to be permanent. People with an impaired psychological component of the quality of life are not able to accept the disease, are less motivated to seek treatment or do not understand how necessary the application of health care is, while people with an impaired physical component due to the underlying illness do not have an adequate ability to function physically, have limitations due to physical problems, and their general health is impaired, which contributes to the emergence of psychological symptoms¹⁰. This represents a vicious circle in which one type of symptom leads to the emergence of others or the worsening of existing ones, so it is very important that nurses/technicians recognize and assess the quality of life of health care users in time so that they can approach the patient in an adequate way.

Also, it is very important to assess the quality of life of users of long-term health care in the institution and outside the institution, and the main reason is that nurses/technicians would know what condition to expect when working in institutions and during home visits to patients who are provided with long-term health care, so that when providing care, they know which domains of quality of life can be impaired, that is exactly why our research was done. In this way, health care would be more precise, adequate and comprehensive and it would not only focus on the patient's health problem, but also on a holistic approach to the patient. Although research has shown that the quality of life in the elderly (over 65 years old) is significantly worse compared to the younger population of adults, due to the biological process of aging of the organism^{10,13,14}, so far only a small number of studies have been conducted that examined the quality of life in the elderly populations of people who are users of long-term health care.

We found that the quality of life of all respondents is at a rather low level. The percentage of respondents who rated their physical and mental quality of life as excellent ranged

from 13% to 18%, and the remaining respondents rated their quality of life as bad or good. Research by Lim et al.¹⁵ conducted on a sample of 1,958 elderly people over 60 years of age in Sao Paulo, Brazil, showed that the average value of vitality in this sample was 64.4%, mental health 69.9% and general health 70.1%, while the highest scores were observed in limitations due to emotional problems (86.1%), social functioning (85.9%) and physical functioning (81.2%)¹⁵. Research on our sample showed that the values of these domains of quality of life were much lower, so the average value of vitality of our respondents was 44.95%, mental health 47.93%, general health 46.88%, physical functioning 47.10%, limitations due to emotional problems 52.66% and social functioning 48.92%. Although our results show lower values compared to the study by Lim et al.¹⁵, the reason for this is that their sample is from the general population, while our subjects had diseases for which they were exposed to long-term health care, so it can be expected that their quality of life will be lower compared to the general population.

In the study by Čanković et al.¹⁶ conducted in Serbia on a random sample of 200 people aged over 60 living in the Gerontological Center in Novi Sad, which is methodologically more similar to our study, the quality of life was assessed from the aspect of physical, psychological and social status. To assess the quality of life, the WHO questionnaire on the quality of life - short version (The World Health Organization Quality of Life BREF questionnaire, WHOQOL-BREF) was used. The authors determined that 137 (68.8%) respondents have a chronic disease, and that physical health was significantly worse in people with chronic diseases compared to people without chronic diseases (61.8% vs. 76.4%, $p = 0.001$), mental health also (62.2% vs. 71.5%, $p = 0.002$), while no difference was observed in social functioning¹⁶.

In our research, we showed that 72% of the respondents had a chronic disease, and that this group of users of long-term health care had a significantly lower level of physical functioning compared to the group of respondents without chronic diseases, while we did not observe a difference in the domains and summary score of mental health. However, our respondents who received long-term health care institutionally had significantly more chronic diseases (82%) compared to respondents who received long-term health care outside the institution (62%) ($p = 0.026$). Čanković et al.¹⁶ did not find that older age significantly affects the change in the physical or mental component of quality of life, which agrees with our results, in which we did not observe that the older age group had significantly lower values of domains and summary score of quality of life. In addition to chronic diseases, which we determined affect the physical functioning of our respondents, we also determined that satisfaction with monthly financial income has a significant impact on the quality of life of users of long-term health care. Our results showed that respondents who were satisfied with their monthly financial income (43%) had a significantly higher average value of the domains of physical functioning ($p = 0.038$) and social functioning ($p = 0.021$), com-

pared to respondents who were not satisfied with their monthly financial income. While the difference in average values of other domains and summary scores between groups of long-term health care users divided according to satisfaction with financial income was not observed. Our results are confirmed by the study of Egeljić-Mihajlović et al.¹⁰ who, in their research conducted in the Republic of Srpska on a sample of 159 elderly respondents, showed that a poorer financial status significantly affects the quality of life of the elderly, as well as a poorer educational status, whereby respondents with a higher education had a significantly better health, social and financial status compared to older people with a lower level of education¹⁰.

Research in Croatia shows that around 60% of elderly people who are housed in nursing homes are satisfied with their lives, while 12.8% are dissatisfied. The authors state that the level of life satisfaction among elderly people who live outside institutions is significantly better. Also, about 30% of institutionalized elderly people assessed their satisfaction with life as mediocre, and the variables of satisfaction with participation in activities at home, the variety of contents offered and satisfaction with the frequency of social events had the lowest value¹³. A study of aging conducted in Ghana concluded that older people are very concerned about self-care, mobility and normal activities of daily living¹⁷. The study suggests that there should be a public health policy that addresses the satisfaction and quality of life of the elderly.

Although there is a lot of data in the literature about the quality of life of elderly people, they should be separated from our research, because our population of respondents, although older, is not healthy and our sample is not from the general population, but from the population of people who have health problems and program is long-term health care.

In conclusion, we can state that users of long-term health care placed in an institution had significantly worse physical functioning, a higher level of limitations due to physical problems, worse general health, a lower level of social functioning and mental health, as well as a greater presence of chronic diseases.

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Stavovi logopeda prema upotrebi augmentativne i alternativne komunikacije

Attitudes of speech therapists towards the use of augmentative and alternative communication

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APSTRAKT

Cilj. Cilj rada je bio usmeren ka ispitivanju stavova logopeda prema upotrebi augmentativne i alternativne komunikacije, kao i ispitivanje stavova koji se odnose na njenu primenu u praksi.

Metode. Uzorak se sastojao od 56 ispitanika. Istraživanje je bilo sprovedeno pomoću onlajn upitnika. Prvi deo upitnika odnosi se na sociodemografske podatke, drugi deo sadrži niz pitanja koja su grupisana u pet podgrupa: korisnost i prednosti AAK, kompetencije stručnjaka, načini primene, timski rad i ograničenja; treći deo obuhvata tvrdnje koje se tiču primene u praksi.

Rezultati. Stavovi logopeda prema upotrebi augmentativne i alternativne komunikacije su u većoj meri pozitivni. Više od polovine ispitanika izrazilo je slaganje ili delimično slaganje sa tvrdnjom da je upotreba AAK korisna. Pokazalo se da logopedi koji imaju iskustva sa AAK koriste istu u višenamenske svrhe, sa akcentom na izražavanje potreba, razvoj jezičkih kompetencija i podsticanja ostvarivanja socijalnih kontakata.

Zaključak. Ispitivani stavovi pokazuju tendenciju ka prihvatanju i pozitivnom mišljenju o upotrebi augmentativne i alternativne komunikacije kao jednom od vidova podrške prilikom rada sa osobama koje imaju govorno jezičke poteškoće. Postoji potreba za edukacijom i informisanjem u ovom domenu.

Ključne reči: uređaji za samopomoć; logopedija; komunikacija.

ABSTRACT

Objective. The goal of the research was to examine the attitudes of speech therapists towards the use of Augmentative and Alternative Communication (AAC), as well as to examine attitudes related to its application in practice.

Methods. The sample consisted of 56 respondents. The research was conducted using an online questionnaire. The first part of the questionnaire refers to sociodemographic data, the second part contains a series of questions grouped into five subgroups: usefulness and advantages of AAC, competences of experts, ways of application, teamwork and limitations; the third part concerns its application in practice.

Results. Attitudes of speech therapists towards the use of AAC are mostly positive. More than half of the respondents expressed agreement or partial agreement with the statement that the use of AAC is beneficial. It has been shown that speech therapists who have experience with AAC use it with multipurpose application, with an emphasis on expressing needs, developing language competences and encouraging social contacts.

Conclusion. The examined attitudes show a tendency towards acceptance and a positive opinion about the use of augmentative and alternative communication as one of the types of support when working with people who have speech-language difficulties. There is a need for education and information in this domain.

Key words: self-help devices; speech therapy; communication.

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UVOD

Komunikacija je jedan od najznačajnijih ljudskih resursa¹. Postoje ljudi kojima je proces proizvodnje govornih glasova i reči otežan ili u potpunosti onemogućen². Osobe koje imaju poteškoće u domenu komunikacije susreću se sa tim kao preprekom pri izvršavanju svakodnevnih zadataka³. Važnost komunikacije u životu čoveka odavno je prepoznata i iz tog razloga se, kada je ona otežana ili onemogućena, razmatraju načini kako da se kroz neki vid pomoći ili koristeći se alternativnim putevima, ona omogući⁴.

Sredinom prošlog veka pojavili su se začeci jedne danas čvrsto utemeljene discipline, augmentativne i alternativne komunikacije (u daljem tekstu: AAK), koja podrazumeva upotrebu komunikacije koja se oslanja na puteve komuniciranja koji nisu direktno verbalno izrečeni od strane pojedinca, već njegovim telom pokazani ili, pomoću neke opreme, sintetizovani.³ Podrazumeva upotrebu potpomognutih (mehanički i elektronski uređaji i sredstva koja su izvan ljudskog tela) i nepotpomognutih (simboli koji se realizuju upotrebom ljudskog tela, kakvi su, na primer, gest i znakovni jezik) simbola. Korisnici AAK su osobe sa stanjima poput cerebralne paralize, intelektualne ometenosti, oštećenja sluha, poremećajem iz spektra autizma, afazijom, apraksijom i dizatrijom.⁵ Korisnost ove oblasti primećena je u domenima edukacije, radnog angažovanja, slobodnog vremena, brige o sebi, funkcionisanja u okruženju i sl.³ Logopedi, prema stečenom znanju i kasnije iskustvu, kvalifikovani su za rukovođenje procesom odabira i primene uređaja i sredstava.⁶

Pored logopeda mogu biti i preporučljivo je da su uključeni i: psiholog, defektolog, lekar opšte prakse i drugi stručnjaci iz srodnih disciplina. Stalni i najvažniji članovi tima jesu i sam (budući) korisnik usluga koje nudi AAK i njegova porodica (primarno roditelji/staratelji).⁷ Uz neophodnost upoznavanja korisnika na svim nivoima, takođe je važno za stručnjake da budu informisani i o samim mogućnostima koje AAK kao široka oblast pruža, odnosno da budu upoznati sa postojećim i dostupnim sredstvima i uređajima, a veoma je bitno i poznavanje strategija i metoda koje su razvijene sa svrhom što bolje implementacije opreme AAK i prihvatanja od strane korisnika i njegove okoline.⁸

Američka asocijacija za govor, jezik i sluh objavila je članak u kom se pominje jedna od aktuelnih zabluda u polju primene AAK. Naime, postoji nestručno mišljenje o tome kako primena AAK kod dece koja još uvek nisu razvila verbalni jezik, ili jesu u manjoj meri nego što je očekivano shodno govornim normama kreiranim prema uzrastu, može zapravo da utiče negativno na pojavu govora. Aktuelno mišljenje stručnjaka to negira i, štaviše, smatraju da AAK doprinosi razvoju govora.⁹

Danas, kada je u svetu u punom jeku upotreba AAK i kada su skoro na svakodnevnom nivou dostupne neke nove informacije u vezi sa njenom primenom, možemo i da, kroz oči stručnjaka i naučnika, sagledamo status AAK na našim

predelima.

Cilj ovog istraživanja usmeren je ka ispitivanju stavova logopeda prema upotrebi augmentativne i alternativne komunikacije. Kroz razumevanje aktuelnih ubeđenja, pa prema njima, mogu biti napravljeni pomaci i/ili promene u savremenoj praksi. Elementi koje istraživanje obuhvata takođe omogućavaju i analizu prednosti i nedostataka koji karakterišu upotrebu augmentativne i alternativne komunikacije i koji pospešuju, odnosno umanjuju korisnost u radu.

ISPITANICI I METODE

Istraživanje je bilo deskriptivno i bilo je sprovedeno u periodu od novembra 2022. do januara 2023. godine, pomoću upitnika dostupnog u onlajn formi, na platformi Google Forms. Prvi uključujući kriterijum je podrazumevao to da je osoba (ispitanik) logoped, a drugi da se istim poslom bavi u periodu dužem od šest meseci. Upitnik je popunilo 56 ispitanika. Upitnik je bio specifično dizajniran za svrhu istraživanja i sastojao se iz 49 pitanja i stavova na koje su ispitanici mogli dati odgovor. Prvi deo upitnika obuhvata sociodemografske podatke o ispitanicima, drugi deo sadrži niz pitanja koja se tiču postojanja ličnog iskustva logopeda sa pojmom i opremom AAK, a treći tvrdnje sa kojima ispitanici izražavaju svoje (ne) slaganje, služeći se skalom rangiranja Likertovog tipa. Tvrdnje su grupisane u pet podgrupa: korisnost i prednosti AAK, kompetencija stručnjaka za upotrebu uređaja i sredstava AAK, načini i ciljevi primene AAK, timski rad i transdisciplinarnost i ograničenja koja se javljaju u praktičnoj primeni.

Unos i analiza podataka bili su sprovedeni koristeći programski paket SPSS. Za statističku obradu podataka korišćeni su elementi frekvencija i procenata koji direktno ukazuju na zastupljenost određene kategorije ili odgovora. Komisija za etičnost ispitivanja, Medicinskog fakulteta u Novom Sadu, odobrila je sprovedenje naučno-istraživačkog rada.

REZULTATI

Upitnik su, u najvećem procentu (94,6%) popunjavali ispitanici ženskog pola, ponajviše iz vaspitno-obrazovnog delokruga rada. Najveći broj njih je imalo manje od godinu dana radnog iskustva sa sredstvima AAK.

U tabeli 1 predstavljene su sociodemografske karakteristike celokupnog uzorka, uključujući starost, stepen obrazovanja, godine radnog iskustva, godine radnog iskustva sa AAK, kao i tip ustanove u kojoj su zaposleni.

Tabela 1. Socio-demografske karakteristike uzorka

Deskripcija uzorka	Ukupni uzorak
Starost	
Manje od 30 godina	16 (28,6%)
30-40 godina	21 (37,5%)
40-50 godina	14 (25%)
Više od 50 godina	5 (8,9%)
Završen stepen obrazovanja	
Osnovne akademske studije	14 (25%)
Master/magistar	34 (60,7%)
Specijalističke studije	2 (3,6%)
Doktorske studije	6 (10,7%)
Godine radnog iskustva	
1-5 godina	19 (33,9%)
6-10 godina	13 (23,2%)
11-15 godina	7 (12,5%)
16-20 godina	5 (8,9%)
Više od 20 godina	12 (21,4%)
Godine radnog iskustva sa sredstvima AAK	
Manje od godinu dana	24 (42,9%)
2-3 godine	14 (25%)
4-5 godina	5 (8,9%)
Više od 5 godina	13 (23,2%)
Tip ustanove u kojoj ste zaposleni	
Ustanove iz sistema socijalne zaštite	4 (7,1%)
Ustanove vaspitno-obrazovnog tipa	23 (41,1%)
Zdravstvene ustanove	13 (23,2%)
Privatan sektor i nevladine organizacije	16 (28,6%)

Pregledom tabele 2 uočava se da je najveći procenat stručnjaka (50%), označio da upotrebu AAK smatra korisnom, dok se svega 1,8% stručnjaka ne slaže sa tom tvrdnjom.

Tabela 2. Pokazatelj odgovora koji se odnose na korisnost upotrebe AAK

Smatram da je upotreba AAK korisna:	Frekvencija	Procenat
Ne slažem se	1	1,8%
Delimično se ne slažem	1	1,8%
Ne mogu da definišem	8	14,3%
Delimično se slažem	18	32,1%
Slažem se	28	50%
Ukupno	56	100%

Pregledom tabele 3 uočava se da je najveći procenat stručnjaka (35,7%), označio da ne može da definiše nivo edukovanosti za korišćenje AAK. Od ukupnog broja stručnjaka, svega 8,9% navodi da smatra da je dovoljno edukovano za korišćenje AAK.

Tabela 3. Edukovanost stručnjaka za korišćenje AAK

Dovoljno sam edukovan za korišćenje AAK:	Frekvencija	Procenat
Ne slažem se	11	19,6%
Delimično se ne slažem	11	19,6%
Ne mogu da definišem	20	35,7%
Delimično se slažem	9	16,1%
Slažem se	5	8,9%
Ukupno	56	100%

Pregledom tabele 4 uočava se da je najveći procenat stručnjaka (32,1%), označio da ne može da definiše nivo informisanosti o uređajima i sredstvima dostupnim na tržištu. Od ukupnog broja stručnjaka, svega 8,9% navodi da smatra da je dovoljno informisano o dostupnosti uređaja i sredstava AAK na tržištu.

Tabela 4. Informisanost stručnjaka o dostupnosti uređaja i sredstava AAK na tržištu

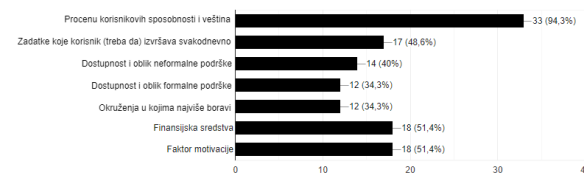
Dovoljno sam informisan o uređajima i sredstvima koji su dostupni na tržištu:	Frekvencija	Procenat
Ne slažem se	6	10,7%
Delimično se ne slažem	16	28,6%
Ne mogu da definišem	18	32,1%
Delimično se slažem	11	19,6%
Slažem se	5	8,9%
Ukupno	56	100%

Pregledom podataka iz tabele broj 5 uočava se da je najveći procenat stručnjaka (75%), označio da AAK koristi sa ciljem podsticanja izražavanja potreba kod deteta. Potom, jednak procenat stručnjaka (61,1%) navodi da AAK koristi sa ciljem razvoja detetovih jezičkih kompetencija i podsticanja ostvarivanja socijalnih kontakata.

Tabela 5. Cilj korišćenja AAK od strane stručnjaka

AAK koristim sa ciljem	Frekvencija	Procenat
Pozdravljanja	12	33,3%
Izražavanja potreba	27	75%
Odgovaranja na pitanja	18	50%
Imenovanje akcija	20	55,6%
Izražavanje emocija	19	52,8%
Opisivanje događaja	15	41,7%
Pričanje priča	16	44,4%
Razvoj jezičkih kompetencija	22	61,1%
Sticanje akademskih veština	11	30,6%
Ostvarivanje socijalnih kontakata	22	61,1%
Drugo	6	16,7%

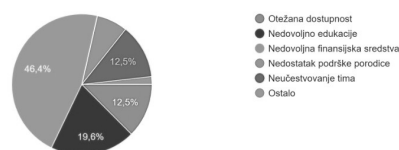
Kada biram uređaj/sredstvo augmentativne i alternativne komunikacije uzimam u obzir:

**Slika 1.** Faktori koji utiču na odabir sredstava/uređaja AAK

Pregledom slike 1 uočava se da najveći procenat stručnjaka (94%), kao važne faktore pri odabiru sredstva/uređaja AAK navodi procenu korisnikovih sposobnosti. Sa druge strane, najmanji i podjednak procenat stručnjaka (34,3%) pri odabiru u obzir uzima dostupnost i oblik neformalne podrške (stavove i podršku porodice i prijatelja) i okruženje u kojima korisnik najviše boravi.

Sa svrhom ispitivanja barijera koje utiču na primenu AAK od strane stručnjaka izvršena je analiza podataka, prikazana na slici 2.

Iz kog razloga se u praksi suočavate sa najviše prepreka?
56 odgovora

**Slika 2.** Barijere koje utiču na primenu sredstava/uređaja AAK od strane stručnjaka

Uočava se da najveći procenat stručnjaka (46,4%), kao barijere koje utiču na primenu sredstva/uređaja AAK navodi manjak finansijskih sredstava. Sa druge strane, najmanji procenat stručnjaka (7,11%) navodi nedostatak podrške porodice kao barijeru za primenu sredstava/uređaja AAK.

DISKUSIJA

Uzimajući u obzir sveukupne podatke dobijene istraživanjem, moguće je razumeti u kojoj meri je primena AAK prisutna u praksi logopeda i šta je to što utiče na frekvenciji ili manje frekventan nivo upotrebe iste. Rezultati su jednim delom pokazali visok stepen indiferentnosti prema pojedinim oblastima u kojima se, u svetu, pokazalo da AAK pronalazi svoj praktični doprinos. U istraživanju koje se bavilo analizom efekata primene AAK, navodi se kako ista ima pozitivan uticaj na usvajanje jezika i proširivanje rečnika, ostvarivanje funkcionalne komunikacije i modifikacije neželjenih, uz oblikovanje željenih oblika ponašanja.¹⁰ Ipak, iste treba promatrati uz oprez, uzimajući u obzir ograničenja koja su postojala, kao i samu opsežnost studije.

Istraživanjem se pokazalo da najveći broj stručnjaka upotrebu AAK smatra korisnom. Korisnost se sagledava u svetlu toga koliko zapravo može doprineti unapređenju nekog razvojnog domena ili održavanju nekog trenutnog stanja. Jedno istraživanje rađeno u prošloj deceniji utvrdilo je činjenicu da AAK intervencije imaju pozitivan uticaj na smanjenje nekih neželjenih oblika ponašanja, poput ispoljavanja autoagresije ili manifestacija „tantruma”.¹¹ Meta-analiza koja se bavila pregledom studija slučaja na američkom govornom području, rezultatima pokazuje da je napredovanje u razvoju kod pojedinaca sa poremećajem iz spektra autizma koji su bili uključeni u AAK intervencije, impozantno.¹²

Istraživanje je takođe nastojalo da ispita nivo edukovanosti, odnosno informisanosti logopeda o upotrebi AAK. U istraživanju koje je rađeno na Tajvanu navodi se da logopedi koji više vremena provode edukujući se o primeni AAK, informišu se i imaju više iskustva u praksi, imaju i viši stepen uverenosti u lične kompetencije. Ipak, rezultati dobijeni u tajvanskoj studiji ne mogu se posmatrati paralelno sa onim dobijenim u našoj, iz razloga koji je ranije naveden-najveći broj ispitanika ima vrlo malo (sagledavajući iz vremenske perspektive) iskustva sa upotrebom AAK.¹³ U jednom istraživanju koje je rađeno u Crnoj Gori, pokazano je da među stručnjacima u oblasti specijalne edukacije, pre svega logopedima i defektolozima, ali i psiholozima i pedagozima, nivo znanja kojim raspolažu i koje koriste u svakodnevnoj praksi nije jednak kada se sagledaju svi mogući pristupi i metode rada. Naime, oni se razlikuju u stepenu znanja o primeni konkretne metode, indikacijama koje uparuju primenu sa istom, kao i nekim faktorima koji se ponašaju kao kontraindikatori za primenu određene strategije ili metode. Svaki stručnjak poseduje nedefinisan, ali ekspresivan nivo komfora sa rukovođenjem određenim načinom rada i shodno tome bira onaj koji, ili one koji mu najviše odgovaraju

i sa čijom primenom ne sumnja u svoje kvalitete.¹⁴ Ti rezultati se slažu sa rezultatima dobijenim u našem istraživanju, u kojima se takođe ističe jedan neizdiferenciran nivo samosvesti o edukovanosti u oblasti AAK.

Kao najzastupljeniji načini, odnosno svrhe primene AAK istakli su se: izražavanje potreba, razvoj jezičkih kompetencija i ostvarivanje socijalnih kontakata. Augmentativna i alternativna komunikacija nije sredstvo predodređeno da služi jednom zadatku i samo jednoj svrsi. U idealnim uslovima, odabrano sredstvo ili uređaj biće korisni i korišćeni u različitim zadacima i različitim okruženjima koje osoba izvršava i u kojim boravi tokom dana.¹⁵ Prednost AAK jeste što, osim za izražavanje potreba i misli, može biti korišćena i kao podrška pri razumevanju tuđih iskaza, naročito onda kada su u pitanju neke složene ili duge rečenice. Tada, na primer, rečenica može biti rastavljena na njene delove (reči) i prikazana, u očuvanom redosledu, u vidu slika, to jest simbola.¹⁶ Implementacija AAK u život korisnika, ukoliko mu je omogućila da poveća količinu socijalnih interakcija koje ostvaruje na dnevnom nivou, predstavlja uspešno izvršenu intervenciju. Razvoj socijalnih kompetencija ne staje kada se neko sredstvo ili uređaj nabavi, već nakon toga sledi i vreme posvećeno njegovom prilagođavanju tako da se maksimizuju sve njegove opcije, što naravno teče različitim tokom kod različitih korisnika.¹⁷

Rezultati dobijeni u istraživanju koje se bavilo ispitivanjem efekata upotrebe AAK na razvoj jezičkih kompetencija komplementarni su sa onim dobijenim u ovom istraživanju, u kojima većina stručnjaka navodi da je razvoj jezičkih kompetencija jedan od ciljeva upotrebe AAK. Njihovo istraživanje fokusiralo se na populaciju dece sa kompleksnim komunikacionim potrebama, a rezultati su pokazali da je napredak prisutan kako u ekspresivnom, tako i u receptivnom jezičkom domenu. S obzirom na to da je pozitivan efekat na razvoj jezičkih kompetencija naučno dokazan, sasvim je razumljivo da je to i jedna od najčešćih svrha upotrebe.³

Više od polovine ispitanika u studiji rađenoj u Filadelfiji (SAD) složilo se sa tvrdnjom da upotreba AAK doprinosi učestalijim socijalnim reakcijama, odnosno povećanju socijalnih kontakata. Sa tim se slažu rezultati dobijeni u našoj studiji, u kojima je ostvarivanje socijalnih kontakata navedeno kao jedan od najučestalijih vidova upotrebe AAK.¹⁸

Jedna trećina ispitanika potvrdila je da koristi AAK i zarad sticanja akademskih veština. Upotreba AAK u svrhu edukacije je pogodna, pre svega zbog toga što učeniku (korisniku) pruža mogućnost multimodalne demonstracije gradiva, odnosno pružanje znanja kroz podsticanje više čula, prilagođenim temom.¹⁶

Intervencija koja se bazira na pristupu sa direktnim oslanjanjem na modalitete AAK ima različite puteve kretanja, u zavisnosti od željenog ishoda. Neophodno je, pri izboru konkretnog uređaja ili sredstva, da se nakon posvećene procene, odabere sredstvo koje najbolje služi svrsi komunikacije,

što je na individualnoj osnovi.¹⁹ Potrebno je, pre svega, prikupiti informacije o okruženjima u kojim (budući) korisnik AAK boravi, sa kim, koji su zadaci koji mu se javljaju svakodnevno, koji je njegov lični motiv za korišćenje AAK, kakav vid AAK (potpomognuta ili nepotpomognuta) bi mu prijaao i omogućio mu da na najlakši mogući način, koji je takođe i funkcionalno i ekonomski pristupačan, izvršava komunikativnu funkciju.²⁰

Najveći broj ispitanika obeležio je istinitom tvrdnju da prilikom odabira sredstva uzimaju u obzir sposobnosti kojima korisnik raspolaže. Jedno istraživanje koje je rađeno u Sjedinjenim Američkim Državama, u kom se nastojalo utvrditi koja su osnovna područja koja logopedi promatraju, a koja mogu imati značajan uticaj na sam ishod i prihvatanje AAK od strane korisnika, takođe je istaklo da se oni primarno usmeravaju na korisnikove sposobnosti, odnosno, kako je u istraživanju sadržano, razvoj jezika, socijalnih kompetencija, motoričkih sposobnosti i drugih.²¹

Nešto manje od polovine ispitanika u našem istraživanju (40%) iskazalo je da prilikom odabira sredstva ili uređaja AAK uzima u obzir dostupnost i oblik formalne podrške. Komunikativna okruženja kao što su školsko, kliničko, radno, društveno i porodično razlikuju se jedno od drugog u pogledu komunikativnih partnera, sadržaja koji se prenose i nivou angažovanja, koji se od pojedinca zahteva. Zato je neophodno da tim koji učestvuje u odabiru i implementaciji AAK ima razvijen odnos u kom dele sve važne informacije, kako bi se adekvatno sagledale potrebe korisnika u svakom od postojećih domena.²² Intervencija AAK zahteva uključenje većeg broja stručnjaka, od kojih se, kroz zajedničko delovanje i kontinuiranu saradnju, očekuje da pokažu rezultate koji su objektivno najpogodniji za određenog korisnika (uz, naravno lično zadovoljstvo samog korisnika).²³

U istraživanju koje se bavilo opsežnim pregledom literature na američkom govornom području izvodi se kao zaključak da se najbolja praksa ogleda, odnosno najpribližnije željeni ishodi dostižu, ukoliko je prisutna saradnja tima.²⁴ Zato je neophodno imati u vidu nivo pristupačnosti i saradnje sa različitim nivoima formalne podrške. Međutim, neučestvovanje tima u dovoljnoj meri se kasnije pokazalo kao ograničavajući faktor, za koji su ispitanici pokazali da predstavlja smetnju u procesu implementacije AAK.

Nešto manji broj ispitanika (34,4%) potvrdio je da sagledava i dostupnost i oblike neformalne podrške, kao i okruženja u kojima ispitanik boravi. Saradnja stručnjaka sa porodicom i okruženjem korisnika kreće se u oba pravca. Porodica treba da obezbedi dovoljan broj informacija o kvalitetima i izgledu socijalne sredine u kojoj pojedinac živi i funkcioniše, a stručnjaci treba da pruže podršku porodici. Sistematski pregled devetnaest studija koje su se bavile ispitivanjem najučestalijih faktora koje treba uzimati u obzir kada se razmišlja u pravcu primene AAK, kao jedan od tri glavna motiva koja se pronalaze u većini studija, navodi integraciju AAK u svakodnevnicu (koju čini porodica i prijatelji (neformalna podrška), ali i samo socijalno

okruženje (škola, društvena zajednica)).²²

Primarni izvor ograničenja predstavljaju, kako je i bilo očekivano, nedovoljna finansijska sredstva, nedovoljno praktičnih znanja i otežana dostupnost sredstava AT i AAK. Istraživanje u kom je učestvovalo oko 400 logopeda, a koje se bavilo tematikom barijera koje ne dozvoljavaju nesputanu upotrebu AAK, na drugom mestu navodi ekonomski faktor kao jedan od potencijalno problematičnih.²⁵ To se slaže sa rezultatima dobijenim u našem istraživanju. Dobijeni rezultati se takođe slažu sa onim koji su ustanovljeni u istraživanju koje se bavilo proučavanjem barijera koje sprečavaju, ograničavaju i/ili usporavaju implementaciju AAK. U tom istraživanju su se, pored drugih, nedovoljnost praktičnih znanja i otežana dostupnost izdvojili kao značajni faktori koji su smetnja u logopedskom radu.²⁶

Postoji nekoliko potencijalnih ograničenja istraživanja koje je rađeno. Istraživanje je rađeno na uzorku relativno male veličine. Takođe, istraživanje je bilo usmereno ka ispitivanju stavova logopeda iako su, u praksi, edukatori i rehabilitatori koji koriste AAK, takođe i defektolozi. Istraživanja koja bi obuhvatila ispitivanje stavova defektologa, ali i osoba koje su korisnici augmentativne i alternativne komunikacije, kao i članova njihove porodice, pružila bi detaljniji uvid u status AAK i time omogućila kreiranje smernica za dalju upotrebu. Predlaže se i kreiranje programa edukativnog tipa koji bi podigli svest o pozitivnim efektima upotrebe AAK i načinima i mogućnostima primene.

U zaključku, stavovi logopeda prema upotrebi augmentativne i alternativne komunikacije su u velikoj meri pozitivni, ali posve različiti. Najveći broj ispitanika u AAK pronalazi benefite koji mogu biti vrlo korisni u praksi, a koji takođe mogu biti korišćeni sa višestrukim ciljevima razvoja. Rezultati koji su dobijeni istraživanjem u manjem procentu kaskaju za svetskim, u kojima je primena AAK standardna praksa. Ipak, nivo prihvaćenosti AAK, svesnosti i znanja o istoj nalazi se u poprilično realnom odnosu i kod nas. Pomoću rezultata dobijenih u istraživanju stekla se mogućnost uviđanja aktuelnih ubeđenja i praktičnih stavova logopeda. Ovo nadalje pruža priliku za kreiranje smernica kojima bi se logopedska praksa sa akcentom na upotrebu AAK unapredila i ustalila, a čemu bi se prvenstveno pridodala preporuka za uključivanjem logopeda u više edukacionih programa. Informacije u vezi sa odabirom, tj. procesom procene, kvalitetima i samoj implementaciji uređaja i sredstava AAK, kroz primenu specifičnih predloženih metoda i tehnika, zasigurno da bi pomogle logopedima da povećaju dosadašnji nivo znanja o augmentativnoj i alternativnoj komunikaciji i time omoguće njenu prirodniju primenu u praksi.

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The influence of social networks on the development of addiction in adolescents

Uticaj socijalnih mreža na razvoj zavisnosti kod adolescenata

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ABSTRACT

With the development of civilization the rate of adoption of new technologies has been increased drastically, and the researches show that media are generally adopted faster than other forms of new technologies. In this sense, the Internet has become a global phenomenon in a short period of time. A significant place in the variety of interactive communications on the Internet is occupied by social networks. They become an inevitable way to communicate, make contact, follow events and connect with the environment. Social networks such as Tik Tok, Instagram, Snapchat, Facebook, Twitter, YouTube and many others have escalated into imperative usage, especially among young people. These are specific online communities, where users (especially young people) try to create their profiles in a creative and fun way, start communication, and some individuals also try to make money. In the last few years, the question of the real consequences of computer usage and the Internet usage especially by children, has become a new and very dynamic area of research. A large number of documents are being written about the consequences of using these innovations on the intellectual, emotional and social development of children, adolescents and adults. The work of a nurse as a member of a team in the prevention of addiction to the Internet and social networks is extremely important, especially in the field of counseling, which refers to a wide range of technically simpler psychological therapies, from giving advice,

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APSTRAKT

Brzina usvajanja novih tehnologija se drastično povećala sa razvitkom civilizacije, a istraživanja pokazuju i da se mediji generalno brže usvajaju nego ostali oblici novih tehnologija. U tom smislu internet je za kratko vreme postao globalni fenomen. Značajno mesto u miksu interaktivnih komunikacija na internetu zauzimaju društvene mreže. One postaju nezaobilazan način na koji se komunicira, ostvaruje kontakt, prate dešavanja i povezuje sa sredinom. Društvene mreže kao što su Tik Tok, Instagram, Snapchat, Facebook, Twitter, YouTube i mnoge druge danas su eskalirale u imperativ korišćenja, naročito kod mladih. U pitanju su specifične online zajednice, gde se korisnici (naročito mladi) trude da na kreativan i zabavan način kreiraju svoje profile, pokrenu komunikaciju, a pojedinci i da ostvare zaradu. U poslednjih nekoliko godina pitanje stvarnih posledica upotrebe kompjutera i korišćenja interneta od strane korisnika, a naročito dece, postalo je nova i vrlo dinamična oblast istraživanja. Sve više se piše o posledicama korišćenja ovih inovacija na intelektualni, emotivni i socijalni razvoj dece, adolescenata i odraslih. Rad medicinske sestre kao člana tima u prevenciji zavisnosti od interneta i društvenih mreža ima izuzetan značaj, naročito u oblasti savetovanja koje se odnosi na širok spektar tehnički jednostavnijih psiholoških terapija od davanja saveta, preko saosećajnog slušanja mladih koji se bore sa depresivnim poremećajima, do strukturisanih načina podsticanja mlade osobe na rešavanje problema. Cilj ovog rada je razmatranje uticaja socijalnih mreža

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through compassionate listening to young people struggling with depressive disorders, to structured ways encouraging young people to solve problems. The aim of this paper is to consider the influence of social networks on the development of depression in adolescents, as well as the importance of nurses as educators of young people in the prevention of depressive disorders. A descriptive method is used in the paper in order to consider the influence of social networks on the development of depression in adolescents, as well as the role and importance of the nurse in educating young people about the risks of inappropriate use of social networks.

Key words: social networking; adolescent; behavior; addictive; education; nurses.

INTRODUCTION

In the last few years, the question of the real consequences of computer usage and the Internet usage especially by children has become a new and very dynamic area of research. A lot of research and documents are being written about the consequences of using these innovations on the intellectual, emotional and social development of children, adolescents and adults.¹

The subject of this paper is the analysis of the influence of social networks on the development of depression in adolescents, as well as the importance of nurses as educators of young people in the prevention of depressive disorders. In this sense, the paper discusses the impact of using social networks on adolescents, especially the negative consequences of being in the virtual world. In addition, attention has been paid to the possibilities for young people who need help to cope with the negative effects of using the Internet and social networks through the health education work of nurse educators in counseling centers for young people at health centers. Counseling centers for young people at health centers have a multidisciplinary approach to work and include health education work with adolescents aged 10 to 19 years, individual counseling work with a specialist in pediatrics, gynecology, psychologist, nurse and other healthcare workers who are involved, if necessary, as well as examination and treatment of health disorders in young people of both sexes.^{2,3}

The work of a nurse as a member of a team in the prevention of addiction to the Internet and social networks is extremely important, especially in the field of counseling, which refers to a wide range of technically simpler psychological therapies. These therapies may start from giving advice, through compassionate listening to young people struggling with depressive disorders, to structured ways encouraging young people to solve problems.

INTERNET, SOCIAL NETWORKS AND VIRTUAL REALITY

The Internet got its present appearance in 1989 with the

na razvoj depresije kod adolescenata, kao i značaj medicinske sestre kao edukatora mladih u prevenciji depresivnih poremećaja. U radu je korišćen deskriptivni metod kako bi bio razmotren uticaj socijalnih mreža na razvoj depresije kod adolescenata, kao i uloga i značaj koju ima medicinska sestra u edukaciji mladih o rizicima neadekvatne upotrebe društvenih mreža od strane mladih.

Ključne reči: socijalna mreža; adolescent; ponašanje, zavisničko; obrazovanje; medicinske sestre.

help of Tim Berners-Lee who made the first proposal for the development of the World Wide Web, at the Institute for Particle Physics in Geneva. In 1991, the first browser appeared that enabled users to search the Internet pages, i.e. surfing. The Internet revolution, modernization and digitization of business have changed the everyday way of life of people. In this era of shared information, social networks have emerged which support online communities of like-minded people who use that space for various goals and outcomes, from purely altruistic to purely commercial.

Social networks have become an unavoidable part of everyday life. They are defined as social structures composed of people and virtual profiles of real people who present themselves to other network users, share their preferences, wishes, data and are based on mutual communication through communication tools and other types of messages.^{4,5}

Social networks are considered a specific product of the digital age and they made a revolution within the Internet. They changed the world, people's understanding of communication and the way of communication itself. There is a small number of Internet users who do not use or have no experience with any of the popular social networks.^{6,7} Each social network has its own characteristics, thanks to which it differs from other similar content and which attracts certain target groups of users. Different social networks provide their users with different possibilities of identity performance in the virtual space, so it is possible for the same person to behave and present himself differently on TikTok, Facebook, Twitter or Instagram, because on each of those media the individuals more or less adapt their personalities to the specific language of that social network.⁸

TikTok

TikTok is a platform for sharing video content of up to 60 seconds and aims to become the fastest growing social network in the world. The main user group of this social network is person between the ages of 16 and 24. The incredible statistics that follow TikTok show that in a relatively short time this application has become a hit all over the world. TikTok was intro-

duced in September 2016, and three years after its introduction, it is safe to say that its popularity has exploded, especially among young people.^{9,10}

Instagram

In the myriad of extremely popular free mobile applications, one of those that is extremely highly rated around the world is the Instagram application. Basically, Instagram is designed and functions as a social network whose main purpose is to share photos. The user's profile says a lot about the user himself. Thus, every user of the Instagram network is able to record an important or interesting moment at any time and in any place and share it in the form of a photo with friends, that is, with people who follow him on the Instagram, as well as to access the photos of other users.¹¹

Facebook

Facebook is a social network for exchanging countless number of contacts and photos. Facebook allows its users to establish their identity based on the information they provide about themselves. Facebook has grown into an impressive platform that offers users countless opportunities and breaks its own attendance records month after month. Facebook offers its users a whole spectrum of opportunities to easily get away from their real lives, which is especially pronounced among teenagers, for whom the virtual world of Facebook becomes an alternative to the real world. Failures in creating and maintaining direct face-to-face communication with people from the environment result in additional withdrawal into their virtual world, making the situation even more difficult.¹²

Twitter

Twitter is a social network and a type of service for sending short posts of up to 40 characters. It appeared in 2006 and is localized in English and Japanese language. Twitter enables the constitution of the user's identity in such a way that a registered user can follow a certain channel on a certain topic, establish his own channel and hope to gather followers.¹³ It is safe to say that Twitter is fundamentally adapted to mobile phones.

You Tube

You Tube is a website designed to serve as a place for displaying and sharing video material. You Tube is a modern system for creating online content that is largely based on the active participation of interested online users. You Tube has its stars, they are young people who run so-called blogs, i.e., video blogs, where they report daily on what they do, where they eat, what they buy and similar things.¹²

CREATING AN ADDICTION TO BEING IN VIRTUAL REALITY

It is assumed that about 5% of all people who use the In-

ternet develop addiction. It has been scientifically proven that the work of the brain cells of an Internet addict is similar to the work of the brain cells of drug addicts or alcoholics. It is interesting that some studies claim that this change in behavior physically changes the structure of the brain, especially the amount of gray and white matter in the areas of the front part of the brain, i.e. the part that controls memory and is in charge of attention, planning and setting life priorities. As a result, we have difficulties in determining priorities in our lives and the Internet takes precedence over real life obligations.¹⁴ The use of social networks can arouse various feelings, including sadness. This is precisely the reason for the appearance of the term "social network depression", which denotes depressive thoughts caused by the use of such sites.¹⁵ Experts recognize the connection between depression and Internet usage but discovering the exact cause of depression is problematic. It is still unclear whether the use of websites alone causes depression or whether people with depressed thoughts are more inclined to use Internet content more often. Internet addiction is a set of addictive behaviors that are realized by using the internet as a technical support. This group of addictions includes excessive use of social networks, internet gambling, addiction to video games, etc. Like gambling addiction, the Internet addiction belongs to the group of non-chemical addictions. The most severe form of addiction is when a person who is addicted to computers does not go to school, college, or work.

Data from UK and US survey in 2017 show the following: 34% of people check Facebook for 10 minutes, 80% of smartphone users say they check their phones as soon as they wake up in the morning, 79% of people aged 18-44 have a smartphone with them all the time - except when they sleep.¹¹

It is a generally accepted fact that the Internet addiction is only a subgroup of ubiquitous technological addiction. The trouble is that an addict of digital reality is surrounded by digital technology all the time. The Internet has prevailed in all areas of society and we do a lot of things online. It is difficult to precisely determine the exact cause of digital addiction. In February 2018, the American magazine *Psychology Today* published an article in which it is claimed that surfing the Internet in the human body releases dopamine (a neurotransmitter that sends signals to the brain for feelings of pleasure, motivation, and emotions in general). How time passes, the brain looks for more and more desired activities in order to stimulate that pleasant neurotransmitter response which necessarily leads to addiction. Dopamine regulates our impulse in search of pleasure. Some of the common psychological treatments for internet addiction disorder include individual or group therapy, and some of the more effective ones are dialectical behavioral therapy, cognitive behavioral therapy, equine therapy, art and recreation. Guiding young people through counseling work aims to develop and improve the personal potential of a young person to achieve life goals. Improving problem-solving skills and awareness of one's thinking, developing communication skills, represents an effective method of personal development both in the domain of private and business life, the way in

which we deal with conflict situations, criticism, praise, anger and in many ways, they affect our life and business success. The goals of the workshops organized in the counseling center for young people are prevention, promotion and improvement of the health of adolescents, as well as the creation of a health culture and raising the quality of knowledge on topics that are important for the young population.¹⁶

Youth support programs are implemented through various activities, from watching interesting video content together, working on the computer, to psychological counseling with experts at the youth counseling center. The programs are designed in a way that young people feel safe and know at any time that they can get support, advice and understanding.

As with all addictions, the first step in solving the problem of digital addiction is acceptance and motivation for treatment, and then seeking professional help. If it is determined that the addiction has not taken off too much, individual therapy (self-help and self-education) is suggested. Most experts are of the opinion that complete abstinence from the computer is not an effective method of withdrawal. In some cases, drugs are prescribed for anxiety and depression.

Prevention must include the entire youth population. The nurse is a very important member of the team, who contributes to better prevention and treatment with her knowledge, abilities and skills. In addition to education, a nurse should also go through various educational workshops, seminars, with an emphasis in the field of psychotherapy and counseling.

The nurse is educated for many tasks in the care of depressed patients, such as taking anamnesis, physical examination, health education of patients and their families. In addition to the individual approach, the nurse performs prevention in the wider community as well. The key to successful prevention is achieving communication therapy through building trust. Prevention must include the entire youth population. Preventive measures implemented by the nurse: continuous education of both urban and rural youth during schooling; continuous education of family, teachers, and professors about the harmful effects of social networks; working with young people to improve communication with the environment; prevention must be well organized and up-to-date.¹⁷

Physical activity is a good way to fight against all forms of addiction, because it raises the level of serotonin and reduces the desire for bad habits related to addiction.

Stimulating young people towards healthy lifestyles is achieved through various strategies, projects, promotions and participation of young people in various activities as well as raising their awareness.¹⁸

CONCLUSION

Concrete face-to-face relationships between people are decreasing, while at the same time the number of interactions in virtual reality is increasing. Using the Internet and its services such as social networks also carry certain dangers, especially for young people. The solution for the prevention of numerous health-negative symptoms of inadequate use of the Internet in children and young people is to teach them to follow certain rules. They should be provided with knowledge about the correct ways to use computers and their enormous creative possibilities, as well as the possible consequences of not following the rules for adequate computer usage. Quality of life and prevention of risk factors are one of the most important prerequisites for human health. A well-managed preventive action also implies better communication among young people, family members, schools, counseling centers as well as health institutions in order to define or treat individual users who show the importance of abuse or addiction.

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Biosimilars approved for psoriasis treatment in Europe

Biosimilarari za liječenje psorijaze odobreni u Evropi

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ABSTRACT

In recent decades, biologics have emerged as pivotal components in the therapeutic armamentarium, revolutionizing the management of various diseases, including chronic inflammatory skin disorder, the psoriasis. Biosimilars, biological formulations designed to closely mimic but not replicate existing reference biologic drugs, have heralded a seismic shift in healthcare delivery, promising equitable access to innovative therapies while fostering competition in the pharmaceutical market. The advent of biosimilars has democratized access to effective treatments, alleviating the financial burden on healthcare systems and patients alike, particularly pertinent for conditions like psoriasis, notorious for their exorbitant treatment costs. However, despite their widespread adoption and significant promise, significant challenges remain, requiring ongoing research to comprehensively examine their clinical efficacy, safety profiles, and long-term outcomes. This review aims to present all the biosimilars approved so far in Europe. Biosimilars represent a transformative force in modern healthcare, but their optimal integration requires careful monitoring, robust pharmacovigilance mechanisms, and ongoing research initiatives to ensure patient safety, build trust among healthcare providers, and maximize treatment efficacy for individuals struggling with psoriasis and other chronic diseases.

Key words: biological products; biosimilar pharmaceuticals; psoriasis.

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APSTRAKT

Poslednjih decenija, biološke terapije su se pojavile kao ključne komponente u terapijskom armamentarijumu, donoseći revolucionarne napretke u upravljanju različitim bolestima, uključujući hronični inflamatorni poremećaj kože, psorijazu. Biosimilarari dizajnirani da blisko oponašaju, ali ne i repliciraju postojeće referentne biološke lekove, najavili su seizmičku promenu u pružanju zdravstvene zaštite, obećavajući jednak pristup inovativnim terapijama, uz podsticanje konkurencije na farmaceutskom tržištu. Pojava biosimilara je demokratizovala pristup efikasnim tretmanima, ublažavajući finansijski teret, kako za zdravstvene sisteme tako i za pacijente, posebno za stanja kao što je psorijaza, ozloglašena po prevelikim troškovima lečenja. Međutim, uprkos njihovom širokom usvajanju i značajnim obećanjima, i dalje postoje značajni izazovi, koji zahtevaju stalna istraživanja kako bi se sveobuhvatno ispitala njihova klinička efikasnost, bezbednosni profili i dugoročni rezultati. Ovaj pregled ima cilj da prikaže sve do sada odobrene biosimilare u Evropi, sa posebnim osvrtom na etičke principe primene biosimilara. Biosimilarari predstavljaju transformativnu silu u savremenoj zdravstvenoj zaštiti, ali njihova optimalna integracija zahteva pažljiv nadzor, robusne mehanizme farmakovigilance i stalne istraživačke inicijative kako bi se osigurala bezbednost pacijenata, stvorilo poverenje među pružaocima zdravstvenih usluga i maksimizirala efikasnost lečenja kod pojedinaca, koji se bore sa psorijazom i drugim hroničnim bolestima.

Ključne reči: biološki proizvodi; biosimilarari; psorijaza.

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INTRODUCTION

The emergence of biological drugs and their use in the treatment of psoriasis has led to revolutionary treatment outcomes but also to a financial burden on both health systems and the patient himself. However, as biological drugs have lost their exclusivity, biosimilars have started to play a significant role in the market. Biosimilars are biological medicines with a high degree of similarity in terms of quality, efficacy and safety to an already approved reference medicine¹.

The biosimilar approval process begins with drug development, continues to the preclinical phase, and moves on to clinical testing. Approval of biosimulants requires fewer clinical trials, thus reducing development costs. The requirements that are set in the development of this drug include comparative analyses that should answer whether the pharmacodynamic, pharmacokinetic, efficacy and immunogenicity of the product are similar to the reference biological drugs. The design used in the studies is the principle of equivalence, which should show that the differences between the groups of patients treated they are not clinically significant².

The regulatory body in charge of marketing authorization for biosimilars in Europe is the European Medicines Agency (EMA), whose counterpart in the U.S. is the Food and Drug Administration (FDA). There are currently 17 biosimilars approved by the EMA for the treatment of psoriasis. Such a small number of biosimilars is explained by the fact that companies face intellectual property challenges when creating biosimilars, as well as the fact that patent protection for many biological drugs expired only a few years ago³.

The goal of the introduction of biosimilars is actually to enhance the availability of effective and safe treatments, and evidence from clinical practice demonstrates that biosimilars are effective and secure for all approved indications as well as reference biological medicines. The data also indicate that switching from reference drugs to biosimilars gives good therapeutic outcomes, as well as in the case of vice versa. However, it is emphasized that the interchange should be carried out with a comprehensive consideration of both the patient's condition and the characteristics of the drug⁴.

This research aimed to systematically present biosimilar medicines approved by the EMA that are used in the treatment of psoriasis.

METHODS

For this review paper, a systematic search of electronic databases PubMed, NCBI and SCIndex was performed using a series of keywords. The combination of keywords included "psoriasis", "biosimilar", "efficacy", "safety", and "EMA". Data was also collected from the official FDA and EMA websites to ensure comprehensiveness and accuracy of information. Ad-

ditional articles were found through an ad hoc search and review of references in already identified papers. The selection of articles for inclusion was based on their relevance. This search method enabled the collection of relevant data and information necessary for the analysis of the review topic.

RESULTS

Adalimumab (Humira®) is a fully human monoclonal antibody approved by the FDA in 2008 for moderate to severe psoriasis treatment. EMA je trenutno odobrila dest biosimilara koji će biti predstavljeni u nastavku. FDA approved biosimilar for adalimumab is Abrilada, Amjevita, Cyltezo, Hadlima, Hullo, Hyrimoz, Idacio, Yuflyma and Yusimry^{5,6}.

ABP 501 (Amgevita®) is the first approved biosimilar of Adalimumab for psoriasis treatment in Europe in 2017, while it was approved in the US a year earlier^{5,6}. It showed its comparability with the reference biological drug in a multicenter study, so the PASI (Psoriasis Area and Severity Index) score decreased by 80.9% after the initial phase of treatment, while with ref-ADA it decreased by 83.1%, which is considered satisfactory⁷. Effectiveness and safety were confirmed in patients switching from a biological drug to a biosimilar, and no significant differences were found between originator-naïve patients and those undergoing a non-medical switch⁸.

PF-06410293 (Amsparity®) is a biosimilar of Adalimumab that was approved by the EMA in 2020 and was approved by the FDA a year earlier under the name Abrilada^{5,6}. Studies show approximately equality of pharmacokinetic and pharmacodynamic properties between PF-06410293 and ref-ADA. In addition to proven efficacy, it was established that switching from Originator to PF-06410293 does not lead to a different therapeutic outcome and that biosimilar is an adequate replacement for Adalimumab⁹.

GP2017 (Hefiya®) is a biosimilar approved in 2018 in the EU and USA. In the USA, GP2017 is produced under the name Hyrimoz, and in the EU, under the name Halimatoz and Hefiya^{5,6}. A study investigating the effects of switching from GP2017 to ref-ADA showed that after 51 weeks, the PASI75 score was achieved in 66.8% for the biosimilar group and 65% for the ref-ADA. In the study, multiple switching was performed, but this did not affect the final effects of the treatment¹⁰.

AVT02 (Hukyndra®/Libmyris®) is another Adalimumab biosimilar. Clinical similarity assessments study showed that the safety profile is comparable to ref-ADA, as well as that there was an improvement in the clinical picture, i.e. a reduction in the PASI score of 89.2% in patients who were treated with the biosimilar, while the percentage of PASI score reduction in ref-ADA was 86.2%¹¹. Similar data were obtained in a double-blind, randomized study where, after the initial phase of treatment, the percentage of PASI score reduction in the AVT02

group was 91.6%, and in the reference drug group 89.6%¹².

FKB327 (Hulio®) has a highly similar structure and biological activity to Adalimumab and was approved for use by the EMA in 2018 (GaBI EU). Pharmacodynamic, pharmacokinetic, efficacy and immunogenicity was shown to be comparable to ref-ADA¹³.

MSB11022 (Idacio®) was approved for use in 2019 by the EMA. A double-blind clinical study comparing the effects of treatment with MSB11022 versus ref-ADA showed high levels of similarity, so after the initial phase of treatment, the PASI75 score in the MSB11022 group was achieved by 89.6% of patients, and in the ref-ADA group by 91.5%. Also, this research showed that no clinically significant differences in immunogenicity and safety exist¹⁴.

SB5 (Imraldi®) is a biosimilar of adalimumab used to treat psoriasis in adults and children over four years of age. It was approved by the EMA in 2017, and numerous studies have shown that pharmacokinetic, pharmacodynamic characteristics and immunogenicity are comparable to the original drug^{15,16}.

CT-P17 (Yuflyma®) is a biosimilar of adalimumab that the EMA approved for psoriasis treatment in 2021, while it was approved by the FDA in 2023^{5,6}. This drug's pharmacokinetics safety and immunogenicity proved to be equivalent to the reference originator¹⁷.

Etanercept (Enbrel®) is a dimeric soluble fusion protein whose role is to prevent the interaction of TNFα with pro-inflammatory cytokines. Enbrel was approved for psoriasis treatment by the EMA in 1999, while the FDA approved Enbrel five years later¹⁸. When it comes to Etanercept biosimilars approved by the EMA, they are Benepali, Erelezi, and Nepexto, while Erelezi and Eticovo are currently approved in the USA by the FDA¹⁹.

SB4 (Benepali®) presents a biosimilar for Etanercept, which was approved by the EMA in January 2016 and the FDA in April 2019 under a different name-Eticovo. In preclinical studies, SB4 showed equivalent results as its originator, with even less unwanted immunogenicity potential²⁰. Comparable pharmacokinetic and pharmacodynamic properties with ref-ETN have been proven, and SB4 represents a favourable option for the treatment of psoriasis²¹. Also, real-world evidence from an extensive study in Denmark shows that switching from originator to SB4 leads to similar outcomes after three months. The authors also suggest that in the long term, differences between SB4 and ref-ETN outcomes depend more on patient profile and non-specific drug effects than on the type of applied therapies²².

GP2015 (Erelzi®) is also a biosimilar of Etanercept, approved by the EMA in June 2017, while it was approved by the FDA a little earlier in August 2016. It is indicated for the treatment of adults with plaque psoriasis who have not had an

adequate therapeutic response to previous systemic therapy, as well as for the treatment of children over six years of age with more severe forms of psoriasis²³. Research confirms that there are no differences in the effectiveness of therapy when switching from Etanercept originator to GP2015, as well as that there were no clinically significant differences observed in safety or immunogenicity²⁴.

YLB113 (Nepexto®) is the latest biosimilar of Etanercept, which was approved in the EU in 2020. Indications for use of YLB113 are the same as for GP2015. There are currently no available real-life studies that examine the use of this biosimilar for the treatment of psoriasis, most research is focused on its use in the treatment of Rheumatoid Arthritis. However, those studies showed comparable efficacy and safety profiles with ref-ETN^{25,26}.

Infliximab (Remicade®) is a chimeric IgGκ monoclonal antibody, and the mechanism of action is reflected in the neutralization of the biological activity of TNFα. Remicade received initial marketing approval by EMA in August 1999, just a year after FDA approval. Nowadays, in Europe for use is approved four biosimilars of Infliximab, and four biosimilars have been approved in the US, namely Avsola, Ixifi, Renflexis and Inflectra^{27,28}.

SB2 (Flixabi®) is a biosimilar to infliximab, which has been used since May 2016 for several immune-mediated diseases, including psoriasis. Switching from ref-IFX to SB2 did not show a reduced response to therapy, nor did it cause any side effects not previously reported with ref-IFX²⁹. Additionally, a study focusing on safety and efficacy in Post-Marketing Surveillance demonstrated that the treatment success rate was 94.6% for IFX-naïve patients and 82.4% for patients previously receiving Infliximab³⁰. Contrary to this, a case of exacerbation of psoriasis was reported after six years in a patient with Crohn's disease when switching to SB2. After returning to the original drug, more precisely CT-P13, the lesions significantly receded in a short period³¹. Those data emphasize the need for more extensive and long-term research for biosimilars to reach their full potential.

CT-P13 (Remsima®, Inflectra®) is a biosimilar of Infliximab, which gained its initial approval for treating psoriasis from the EMA back in September 2013. Consequently, this represents a pioneering instance where the European Union has extended such an endorsement to a biosimilar monoclonal antibody³³. A study conducted in Norway across 24 healthcare centers showed that switching from the originator Infliximab to the biosimilar CT-P13 did not result in inferior outcomes. The drugs exhibited a similar profile in terms of efficacy and adverse effects³³. This finding is consistent with another study from Brazil³⁴ that followed patients for one year, as well as from Japan³⁵, where CT-P13 proved to be excellent as first-line therapy, even in patients who had failed other biologics.

PF-06438179/GP1111 (Zessly®) is another biosimilar of in-

fliximab used in the treatment of severe to moderate psoriasis as a systemic agent and in cases where previous therapies have failed. It was approved for use by the EMA in May 2018. The demonstrated pharmacokinetic and pharmacodynamic similarity between PF-06438179/GP1111 and ref-IFX justifies the scientific validity of using PF-06438179/GP1111 in all clinical indications of ref-IFX³⁶.

Ustekinumab (Stelara®) is an IL-12/IL-23 inhibitor used in the psoriasis treatment. It is a fully human monoclonal antibody that specifically binds to the p40 subunit of IL-12 and IL-23 and inhibits their binding to receptors, reducing their activity and thus alleviating the inflammatory response³⁷. Stelara was approved by the EMA and FDA in 2009, and since then has proven its efficacy and favourable safety profile in numerous studies^{38,39}. In the US, the only biosimilar for ref-UST was registered in October 2023 under the name Wezlana6, while in the EU, the first biosimilar received its initial approval by EMA in 2024⁵.

AVT04 (Uspruvo®) was authorized by the EMA in January 2024 as a biosimilar of Ustekinumab. It is the newest and currently the only biosimilar of ref-UST approved for psoriasis treatment in the EU. Uspruvo has demonstrated its effectiveness, with the PASI score being reduced by approximately 87% after the initial phase of treatment, similar to the results observed in the Stelara group⁴⁰. Therefore, since the AVT04 has just been approved, more studies are needed to evaluate its safety and efficacy in post-marketing surveillance.

Table 1. Biosimilars approved in Europe

Originator	Biosimilar	Manufacturer	Authorized	Conducted studies
Humira® (Adalimumab)	Amgevita	Amgen	Mar 2017	Papp et al. 2017 ⁷ ; Giunta et al. 2021 ⁸ .
	Amsparity	Pfizer	Feb 2020	Derzi et al. 2020 ⁴¹ ;
	Hefiya	Sandoz	Jul 2018	Blauvelt et al. 2018 ⁴⁰ ;
	Hukyndra Libmyris	Alvotect- Stada Artnimetel	Nov 2021	Wynne et al. 2022 ¹¹ Feldman et al. 2021 ¹² .
	Hulio	Mylan- Fujifilm Kyowa Krin Biologics	Sep 2018	Genovese et al. 2019 ⁴² .
	Idacio	Fresenius Kabi	Apr 2019	Hercogova et al. 2020 ¹⁴ .
	Imraldi	Samsung Bioepis	Aug 2017	Prignano et al. 2021 ¹⁵ ; Barker et al. 2020 ¹⁶ .
Enbrel® (Etanercept)	Yuflyma	Celltrion Healtica	Feb 2021	Haranaka et al. 2023 ¹⁷ ;
	Benepali	Samsung Bioepis	Jan 2016	Cho et al. 2016 ²⁰ ; Glintborg et al. 2019 ²² .
	Erelzi	Sandoz	Jun 2017	Piaserico et al. 2021 ²⁴ .
Remicade® (Infliximab)	Nepexto	Mylan	May 2020	Yamanaka et al. 2020 ²⁵ ; Yamanaka et al. 2023 ²⁶ .
	Flixabi	Samsung Bioepis	May 2016	Kim et al. 2023 ³⁰ ; Paganini et al. 2020 ³¹ .
	Inflectra Remsima	Hospira Celltrion	Sep 2013	Goll et al. 2019 ³³ ; Kurizky et al. 2019 ³⁴ .
	Zessly	Sandoz	May 2018	McClellan et al. 2019 ³⁶ .
Stelara® (Ustekinumab)	Uspruvo	Stada Artnimetel	Jan 2024	Feldman et al. 2023 ⁴⁰ ;

Several biosimilars, all derivatives of adalimumab, initially received approval for clinical use but subsequently faced withdrawal. These include:

- Cyltezo, which received initial approval in November 2017 but had its approval revoked in January 2019.
- Halimatoz, approved in July 2018, encountered withdrawal of approval in January 2021.
- Kromeya, initially approved in April 2019, underwent withdrawal of approval in December 2019.
- Solymbic, approved in March 2017, experienced withdrawal of approval in March 2019.

The reasons for the withdrawal approvals may vary and could encompass concerns related to efficacy, safety, manufacturing, or regulatory compliance⁵.

DISCUSSION

Biosimilars in Europe have promising potential to improve access and cost-effectiveness of psoriasis treatment, but their integration into health systems does not seem timely. In research of Sciberras and colleagues point out that in Europe of 332 biological drugs, only 17 have biosimilars (55 biosimilars are currently approved because one biologic drug has several biosimilars). They point out that the small number of permits is caused by complex development procedures, but also due to the protection of intellectual property of biological drugs, which enables monopoly status for the originators. They propose to revise the rules of intellectual property through knowledge exchanges, simplification of regulatory frameworks, increased transparency on development costs, as well as a reduced period of intellectual property protection³. The authors point out that the weak application of biosimilars is often influenced by untimely approval by the regulatory health authorities of a certain country, unclearly defined protocols on switching to biosimilars, as well as regulatory frameworks that do not emphasize switching to biosimilars. They also point out that at the national level initiatives for the approval of biosimilars have not been expressed, although there is an ample need for biosimilars⁴³.

A study comparing the prices of biosimilars in Europe and the US showed that the prices were higher in the US. However, the authors point out that a smaller number of biosimilars were approved in the US in the period from 2011 to 2020, which can be linked to the later establishment of regulatory framework in the US (2009) compared to Europe (2003)⁴⁴. For example, in the UK, savings of £38.8 million were achieved in two years with the introduction of biosimilars infliximab and etanercept⁴⁵. Prediction models estimate that using the biosimilar etanercept would save €90 million over five years for the National Health Service in Italy⁴⁶. Data from Denmark show that only with the use of adalimumab biosimilars, the fi-

nancial expenses in the three months fell from 28 million Danish kroner to 6.5 million, which represents a saving of 77.45%. In the example of the SB4 biosimilar, the cost of treatment was €5540 per patient per year compared to the expenditure for ref-ETN, which was €7306⁴⁷. For MSB11022 in 16 weeks, the price per subject was €500 compared to €1831, which would be the expenditure for the originator. For the biosimilar ABP501, €968 was allocated for the same time, compared to the price for the originator, which was €1949⁴⁸.

Switching to biosimilars is primarily non-medical switching because this type of switching is most often carried out due to the lowering of treatment costs and greater availability of treatment⁴⁹. Numerous studies investigating the transition from reference originators to biosimilars have confirmed that these two groups are comparable in terms of efficacy and safety and that they do not lead to significantly different clinical outcomes^{11,12,14,18}. Contrary to this evidence, some studies have shown that switching to biosimilars can lead to a worsening of the condition, and the necessity of conducting studies with larger samples is suggested⁵⁰. Some authors also point out that the possible presence of a placebo effect in patients who switched to biosimilars led to worse treatment outcomes⁴⁹.

When it comes to the perception of patients regarding biosimilars, it is definite that patients are afraid that the biosimilar will not be effective or safe enough, which the authors explain by the fact that patients are not sufficiently informed about biosimilars by doctors⁵¹. Thus, in an extensive study conducted in Denmark, patients on biological therapy expressed their reluctance to switch to biosimilars at some point due to fear of exacerbation of symptoms, as well as possible side effects, while patients who were treated with biosimilars from the very beginning of therapy had a slightly more positive attitude about biosimilars. In addition to this, both groups of respondents expressed the view that they are not sufficiently familiar with the mechanisms of action of biosimilars⁵³. Although Denmark is one of the examples of countries where the use of biosimilars is widespread and where continuous efforts have been made to accept and acquaint both medical professionals and patients with biosimilars, there is still mistrust that can be overcome through intensive information programs.

As biosimilars do not need to be tested for all indications for which the reference drug is used to receive approval, there is currently insufficient research dealing with switching from reference biological drugs to biosimilars in psoriasis treatment. More expansive use of biosimilars can significantly affect the economic sustainability of health systems and enable greater access to adequate therapies in low-income countries as well. From the above, it can be concluded that such real-world research is necessary to shed light on as many unknowns as possible and increase the trust of both doctors and patients in biosimilars.

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Palijativno zbrinjavanje obolelih od Parkinsonove bolesti

Palliative care of patients with Parkinson's disease

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APSTRAKT

Parkinsonova bolest je neurodegenerativna bolest progresivnog toka od koje najčešće obolevaju osobe starije životne dobi. Bolest karakteriše širok dijapazon simptoma, motornih (tremor, bradikinezija, posturalna nestabilnost i rigiditet) i nemotornih (neurološki i psihijatrijski poremećaji, problemi sa spavanjem, poremećaji autonomnog nervnog sistema i dr.), koji napredovanjem bolesti dovode do značajnog invaliditeta, zavisnosti u obavljanju svakodnevnih aktivnosti te narušenog kvaliteta života. S obzirom da ne postoji terapija koja bi mogla izlečiti, usporiti ili zaustaviti dalji razvoj bolesti, u tretman obolelih je neophodno uključiti palijativno zbrinjavanje i multidisciplinarni tim. Palijativan pristup uključuje prepoznavanje palijativnih potreba obolelih u svim fazama bolesti, saosećanje sa dijagnozom i prognozom, tretman motornih i nemotornih simptoma, kao i socijalnih, emocionalnih i duhovnih aspekata, očuvanje autonomije, planiranje nege unapred i pružanje podrške porodici. Kontrola simptoma u Parkinsonovoj bolesti se sprovodi farmakološkim tretmanom, primenom komplementarnih nefarmakoloških metoda i alternativnom terapijom (muzika, ples, tai chi, terapija masažom, primena akupunkture, homeopatija). Takođe, dubokom moždanom stimulacijom se mogu tretirati određeni simptomi. Lečenje se razlikuje u odnosu na fazu bolesti. Zbog prirodnog toka bolesti

ABSTRACT

Parkinson's disease is a progressive neurodegenerative disease that most often affects elderly people. The disease is characterized by a wide range of symptoms, motor (tremor, bradykinesia, postural instability and rigidity) and non-motor (neurological and psychiatric disorders, sleep problems, disorders of the autonomic nervous system, etc.), which as the disease progresses lead to significant disability, dependence in performing daily activities and impaired quality of life. Given that there is no therapy that could cure, slow down or stop the further development of the disease, it is necessary to include palliative care and a multidisciplinary team in the treatment of patients. A palliative approach includes recognition of the palliative needs of patients at all stages of the disease, compassion for diagnosis and prognosis, treatment of motor and non-motor symptoms, as well as social, emotional and spiritual aspects, preservation of autonomy, advance care planning and family support. Control of symptoms in Parkinson's disease is carried out by pharmacological treatment, application of complementary non-pharmacological methods and alternative therapy (music, dance, tai chi, massage therapy, application of acupuncture, homeopathy). Also, deep brain stimulation can treat certain symptoms. Treatment varies according to the stage of the disease. Due to the natural course of the disease, individual needs may vary between

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individualne potrebe mogu varirati između pacijenata te iz tog razloga odabir članova multidisciplinarnog tima treba da se bazira na potrebama svakog pojedinca. Palijativnim zbrinjavanjem uz holistički pristup i uključivanjem multidisciplinarnog tima većina simptoma se može kontrolisati. Na ovaj način se može dati podrška negovateljima, što značajno doprinosi boljem kvalitetu života kako obolelih tako i njihovih porodica odnosno negovatelja.

Ključne reči: palijativno zbrinjavanje; Parkinsonova bolest; kvalitet života.

UVOD

Parkinsonova bolest je neurodegenerativna i neizlečiva bolest sa tendencijom porasta.^{1,2} Progresijom bolesti simptomi postaju izraženi, refraktorni na lečenje te dovode obolelog do fizičkih i kognitivnih ograničenja, pojave halucinacija, otežane komunikacije, invaliditeta, socijalne izolacije i zavisnosti od drugih osoba.^{3,4} Tokom progresije bolesti, kod obolelih se javljaju psihofizičke, duhovne i socijalne potrebe.⁵ Zbog prirodnog toka bolesti, potrebno je uključivanje palijativnog zbrinjavanja koje podrazumeva specijalizovanu i holističku medicinsku negu, koju pruža multidisciplinarni tim sa ciljem poboljšanja kvaliteta života obolelih i njihovih negovatelja.^{4,6} Ovaj vid zbrinjavanja treba da se temelji na očuvanju autonomije, potrebama obolelih, planiranju nege unapred i pružanju podrške negovateljima.⁶ Dosadašnja istraživanja pokazuju mnoge benefite od uključivanja palijativnog pristupa u tretman ovih pacijenata.^{1,4,7}

PARKINSONOVA BOLEST

Parkinsonova bolest je hronična, progresivna i neurodegenerativna bolest. Nastaje usled odumiranja nervnih ćelija koje proizvode dopamin.² Po učestalosti je drugo najčešće neurodegenerativno oboljenje.⁶ Javlja se u starijoj životnoj dobi, najčešće oko 60. godine života, mada se u manjem procentu može javiti i mnogo ranije.⁸ Od ove bolesti češće oboljevaju muškarci u odnosu na žene, i to 1,4:1,0.⁹ Procenjuje se da je preko 8,5 miliona ljudi u svetu obolelo od Parkinsonove bolesti.¹⁰ S obzirom na globalno starenje populacije, očekuje se udvostručenje broja obolelih u naredne dve decenije.² Etiologija bolesti je nepoznata, ali se pretpostavlja da na njen razvoj utiče interakcija genetskih i ekoloških faktora.^{2,10} Parkinsonovu bolest karakteriše širok dijapazon simptoma, motornih (tremor, bradikinezija, posturalna nestabilnost i rigiditet) i nemotornih (neurološki i psihijatrijski poremećaji, problemi sa spavanjem, poremećaji autonomnog nervnog sistema i dr.).⁶ Pojedini nemotorni simptomi (delimičan ili potpun gubitak čula mirisa, depresija, konstipacija, poremećaj REM faze spavanja) mogu biti prediktori ove bolesti s obzirom da se ispoljavaju više od jedne decenije pre motornih simptoma.^{11,12} Takođe, mikrografija se često sreće kod obolelih.¹³ Kako bolest napreduje, simptomi se pogoršavaju, postaju kompleksniji,

patients, and for this reason the selection of members of the multidisciplinary team should be based on the needs of each individual. With palliative care with a holistic approach and the involvement of a multidisciplinary team, most symptoms can be controlled. In this way, support can be given to caregivers, which significantly contributes to a better quality of life for both patients and their families, i.e. caregivers.

Key words: palliative care; Parkinson's disease; quality of life.

otporni na lečenje dovodeći do kognitivnog oštećenja i sve većeg invaliditeta pacijenata te postaju zavisni od drugih u sprovođenju svakodnevnih aktivnosti.^{6,7,10}

Postoje brojni modaliteti lečenja,^{9,12,14} ali se bolest ne može izlečiti niti usporiti njen dalji razvoj. Intervencije koje se sprovode baziraju se na upravljanje simptomima.⁷ Zbog kontraindikacija i neželjenih dejstava lekova, medikamentozna terapija je limitirana.¹⁵ Jedan od lekova koji se primenjuje više od 60 godina u lečenju Parkinsonove bolesti je levodopa, koja se i dalje smatra zlatnim standardom.¹² Međutim, nakon par godina od primene levodope, dolazi do smanjene efikasnosti leka i povećanja neželjenih dejstava u vidu halucinacija i diskinezija.¹⁴

Progresijom bolesti dolazi sve više do manifestovanja različitih fizičkih i psihičkih simptoma uz smanjenu efikasnost lekova, te gubitka autonomije i funkcionalne zavisnosti što iziskuje primenu palijativnog zbrinjavanja u cilju smanjenja tereta simptoma i očuvanja kvaliteta života obolelih.¹⁵

PALIJATIVAN PRISTUP U PARKINSONOVOJ BOLESTI

Pravovremeni pristup palijativnom zbrinjavanju obolelih od Parkinsonove bolesti doprinosi poboljšanju kvaliteta života obolelim i njihovim porodicama.^{5,6} Palijativan pristup obuhvata identifikovanje potreba obolelih iz svih domena palijativnog zbrinjavanja tokom svih faza bolesti, tretmana simptoma, empatiju, kao i definisanje ciljeva koji se odnose na unapred isplanirano zbrinjavanje.⁵ S obzirom da zbog prirodnog toka bolesti individualne potrebe mogu varirati između pacijenata, neophodno ih je uskladiti sa njihovim prioritetima.⁶ Napredovanjem bolesti potreba za ovakvim vidom zdravstvene zaštite se povećava.⁷

Neophodno je spomenuti neuropalijativno zbrinjavanje koje se u nekim zemljama primenjuje, a pružaju ga neurolozi koji su prošli edukaciju iz palijativne medicine.⁴ Neuropalijativno zbrinjavanje predstavlja novu supspecijalizaciju u okviru neurologije i palijativnog zbrinjavanja koje ima fokus na specifične potrebe pacijenata sa neurološkim oboljenjima i njihovih porodica.¹⁶ Telemedicina je takođe važna za povećanje

pristupa neurološkoj i palijativnoj nezi u oblastima sa nedovoljno resursa.⁴

U početnim fazama bolesti, većina obolelih se nalazi u svom domu dok o njima brinu uži članovi porodice ili angažuju profesionalne negovatelje.¹⁷ Kako bolest napreduje povećava se potreba za institucionalnim zbrinjavanjem, najčešće smeštajem u domove za stara lica.^{3,6} Demencija i halucinacije su među najvećim prediktorima za takav smeštaj.¹⁸ Benefiti institucionalnog zbrinjavanja su olakšavanje simptoma, sprečavanje komplikacija, zadržavanje dostojanstva obolelog i smanjenje stresa kod negovatelja.¹⁷

MULTIDISCIPLINARNI TIM

Da bi palijativno zbrinjavanje bilo efikasno neophodno je uključiti multidisciplinarni tim, porodicu/negovatelje i upotrebiti raspoložive resurse zajednice.¹⁹ Multidisciplinarni pristup treba da obuhvati primenu klasične, komplementarne i alternativne medicine i holističku negu.¹⁷ Zbog prirodnog toka bolesti individualne potrebe mogu varirati između pacijenata,³ te iz tog razloga odabir članova multidisciplinarnog tima treba da se bazira na potrebama svakog pojedinca. Članovi multidisciplinarnog tima mogu da budu neurolozi, lekari specijalisti iz različitih oblasti medicine, lekari opšte prakse, medicinske sestre, fizioterapeuti, psiholozi, dijetetičari, logopedi, radni i okupacioni terapeuti, socijalni radnici, farmaceuti, duhovnici i drugi.^{20,21} Osim lekara, neizostavna i važna karika u lancu multidisciplinarnog tima su medicinske sestre. One obavljaju poslove iz domena zdravstvene nege^{7,20} i pružaju podršku obolelim i njihovim negovateljima.^{20,22} Fizikalnom terapijom, koja uključuje trening snage, trening hoda i ravnoteže i hidroterapiju¹⁰ može se pojačati funkcionalna sposobnost.²⁰ Poseban vid fizikalne terapije je animoterapija u kojoj se primenjuju obučene životinje u cilju lečenja pacijenata. Terapiju pomoću životinja ne mogu koristiti svi pacijenti oboleli od Parkinsonove bolesti.²³ Važnu funkciju u timu imaju logopedi koji se bave pacijentima sa otežanom komunikacijom, problemima sa govorom, poteškoćama prilikom gutanja i sledstvenim curenjem pljuvačke.¹⁹⁻²¹ Za procenu nutritivnog statusa i prevazilaženje problema sa ishranom zaduženi su dijetetičari. Kako bi pacijenti i njihove porodice što lakše prihvatile dijagnozu i suočili se sa teškom bolešću u tretman se uključuju psiholozi. Okupacioni i radni terapeuti sprovode različite aktivnosti sa obolelim u cilju poboljšanja stanja pacijenta, njihovog samozbrinjavanja, produktivnosti i rekreacije odnosno slobodnih aktivnosti. Bolest može da dovede do narušavanja porodičnih odnosa, kao i finansijskih poteškoća. U prevazilaženju ovih problema pomoć pružaju socijalni radnici.^{20,21} Iako istraživanja pokazuju da multidisciplinarni pristup poboljšava funkcionisanje i kvalitet života obolelih,^{6,7} ovakav pristup u nekim zemljama nije na adekvatnom nivou zbog nedostatka stručnjaka za palijativno zbrinjavanje i ograničenih resursa.⁷

Osim zdravstvenih profesionalaca, osobe koje najviše provode vremena sa obolelim su negovatelji koji, takođe, tre-

ba da budu uključeni u timski rad. Negovatelj je osoba koja pruža konstantnu negu i pomoć, najčešće članu porodice koji je zbrinut u svom domu i kome je potrebna pomoć zbog narušenog zdravlja.⁶ Negovatelji obolelih od Parkinsonove bolesti se suočavaju sa velikim izazovima, naročito u uznapredovalim stadijumima bolesti kada dolazi do povećanja fizičkih i psihosocijalnih potreba, kao i kognitivnih promena.^{1,6}

PALIJATIVANO ZBRINJAVANJE MOTORNIH I NEMOTORNIH ZNAKOVA I SIMPTOMA PARKINSONOVE BOLESTI

Parkinsonova bolest prolazi kroz nekoliko faza³ te se lečenje razlikuje u odnosu na fazu bolesti.^{17,24} U prvoj fazi bolesti koja traje oko godinu i po dana, uključuje se medikamentozna terapija i rehabilitacioni tretman.^{3,21} Zbog ublaženih simptoma često se naziva „medeni mesec“.^{6,17} Sledeća faza se naziva faza održavanja, i traje oko šest godina. U ovoj fazi oboleli i dalje samostalno funkcionišu.^{3,21} Ukoliko dođe do ispoljavanja motornih komplikacija,¹⁷ po potrebi se uključuje multidisciplinarni tim.³ Naredna faza je mnogo kompleksnija, sa naglašenim simptomima, raznim komplikacijama i invaliditetom većeg stepena. Ova faza traje oko pet godina.^{3,21} Na kraju putanje je palijativna faza¹⁷ sa prosečnim trajanjem oko dve godine. Dolazi do smanjenja efikasnosti terapije i pojave komorbiditeta. Prioritet je ublažavanje simptoma i prevencija komplikacija.^{3,21}

Tretman motornih manifestacija bolesti

Jedan od kardinalnih znakova Parkinsonove bolesti je bradikinezija koja se može ispoljiti akinezijom i hipokinezijom.^{12,13,21} Kod obolelih se javljaju i diskinezije.¹⁷ Sledeći znak je rigiditet koji označava povećanje mišićnog tonusa, koga oboleli prijavljuju kao ukočenost. Otpor mišića na pasivne pokrete može biti stalan i naziva se „otpor olovne cevi“^{13,21} ili naizmeničan, gde dolazi do pojačanja i smanjenja otpora što se naziva fenomen „zupčanika“.²⁵

Tokom napredovanja bolesti dolazi do učestalije pojave posturalne nestabilnosti,¹² koja je posledica oštećenja posturalnih refleksa koji održavaju ravnotežu i uspravan položaj tela.^{11,12,21} Zbog poteškoća u održavanju ravnoteže i pogrbljenog stava tela kod ovih pacijenata su učestali padovi.¹¹

Kada je reč o poremećaju hoda, on je na uskoj osnovi, uspor i nesiguran, a karakterišu ga sitni koraci. Ponekad koraci mogu da budu brzi i sitni što se naziva festinacija tj. nevoljno ubrzanje hoda. Dok oboleli hoda, vidno je smanjen zamah ruku.^{11,21}

Za lečenje rigiditeta, bradikinezije i održavanje hoda koriste se farmakološka terapija koja vremenom prouzrokuje komplikacije.^{17,25} Osim farmakološke terapije, dubokom moždanom stimulacijom se mogu tretirati određeni motorni simptomi kod pojedinih pacijenata. Fizikalna terapija može

doprinjeti poboljšanju brzine hoda, dužine koraka, ravnoteže, posture tela i mobilnosti. Fizikalna rehabilitacija se zasniva na odabranim fizičkim aktivnostima koji mogu da se kombinuju sa različitim ritmičkim zvukovima.^{21,25} Trening na traci za trčanje, tango ples i Tai Chi poboljšavaju ravnotežu, hod i pokretljivost.^{20,21} Na fenomen „zaleđivanja“ hoda, koji najviše onesposobljava pacijente, medikamentozna terapija nema dovoljno dejstvo. U tretman se uključuje fizikalna terapija, slušanje ritmične i marširajuće muzike. Na osnovu iskustava pacijenata, dobro se pokazala i primena marširajućeg hoda.^{12,21} Neophodno je spomenuti padove koji su česti, i koji dovode do povreda, preloma, invaliditeta i gubitka nezavisnosti. U cilju njihove prevencije je potrebno sprovesti stalni nadzor, proceniti bezbednost u kućnim uslovima ili na drugim mestima gde borave oboleli te primeniti sisteme upozorenja o padu.⁵

Tremor u mirovanju je najočiglednija manifestacija bolesti koja se javlja među prvim znakovima.¹² Najčešće je prisutan na gornjim ekstremitetima, posebno šakama, ali može zahvatiti i druge delove tela.^{12,25} Karakteristični pokreti koji nastaju nevoljnim drhtanjem, palca i prstiju se u literaturi nazivaju „valjanje pilula“. Određene situacije kao što su uzbuđenje, anksioznost i stres ga mogu pojačati. S druge strane, tokom spavanja nije prisutan. Drhtanje dovodi do neprijatnosti te većina obolelih iskazuje potrebu za lečenjem. Dejstvo farmakološkog tretmana je različito. Od opcija lečenja može da bude duboka moždana stimulacija.^{21,25}

Česta komplikacija bolesti je disfagija. Poteškoće sa gutanjem se mogu uočiti kada pacijent pije tečnost usled čega dolazi do gušenja.^{17,21} Određena medikamentozna terapija može poboljšati akt gutanja. Pojava ovih problema može dovesti do nehranjenosti, dehidracije, pothranjenosti, ali i respiratornih komplikacija^{21,25} koje nastaju usled aspiracije.²⁴ U tretman disfagije treba što ranije uključiti logopeda^{19,24} koji vrši procenu oštećenja i na osnovu toga predlaže strategije za sprovođenje adekvatne ishrane i hidracije uz minimiziranje rizika od aspiracije.¹⁹ Kako bi se ublažio problem, preporučuje se hranjenje rukama, promena konzistencije hrane, upotrebu pravilne tehnike za gutanje, odvajanje vremena i sporije jedenje/hranjenje. Ako ishrana i hidratacija postanu nebezbedne, ako dolazi do gubitka telesne mase i pogoršanja opšteg stanja, mogu se primeniti alternativne metode hranjenja kao što je primena perkutane endoskopske gastrostome (PEG).^{17,19,21}

Kada nastanu ozbiljne poteškoće prilikom uzimanja obroka, treba razmotriti enteralnu ishranu. Na ovaj način se ne sprečava aspiracija i ne produžava preživljavanje.⁵ Zbog otežanog gutanja pljuvačke, oboleli se suočavaju sa sialorejom.²⁵ Postoji nekoliko opcija rešavanja ovog problema a to su: učestalije gutanje, smanjenje salivacije medikamentima,^{20,21} primena atropina na jezik ili botulinskog toksina u pljuvačnu žlezdu i upotreba određenih transdermalnih flastera.^{21,24}

Od poremećaja govora javlja se dizartrija koja otežava komunikaciju.²⁰ Oboleli najteže podnose hipofoniju.²⁴ Probleme sa govorom rešavaju logopedi,²⁰ koji traže efikasne metode za

poboljšanje komunikacije. Logopedi vrše procenu komunikacijskih snaga obolelih, i u skladu sa tim sprovode terapiju, obučavaju članove porodice i negovatelje, razvijaju komunikacijske strategije, primenjuju asistivnu tehnologiju odnosno augmentativnu i alternativnu komunikaciju (engl. Augmentative and alternative communication resources (AAC)).¹⁹ Terapija glasa „Lee Silverman voice treatment“ se primenjuje za poboljšanje kvaliteta i intenziteta glasa, a tretman „Pitch limiting voice treatment“ da bi se ograničila visina glasa.^{20,21}

Za ublažavanje motornih simptoma koriste se lekovi, koji dužom primenom mogu dovesti do manifestovanja ili pogoršanja najčešće nemotornih simptoma. U zavisnosti od potreba pacijenata primenjuju se komplementarne nefarmakološke metode. Primena ostalih vidova terapije uključuje akupunkturu, homeopatiju, terapiju masažom,^{20,21} muzikoterapiju, ples i tai chi.^{9,21}

Tretman nemotornih manifestacija bolesti

Razvoj Parkinsonove bolesti ima definisan klinički tok. Prodromalnu fazu karakteriše ispoljavanje nemotornih simptoma kao što su: umor, poremećaj mirisa, somnolencija i konstipacija. U Parkinsonovoj bolesti krucijalni su nemotorni simptomi,^{21,22} koji doprinose lošijem kvalitetu života^{4,7} U kliničkoj praksi se ne pridaje dovoljni značaj kao kada su u pitanju motorni simptomi.²² Istraživanja pokazuju da negovateljima nemotorni i psihološki simptomi predstavljaju veće opterećenje u odnosu na fizičke simptome i stepen invaliditeta.⁶

Od neuropsihijatrijskih poremećaja pacijenti se suočavaju sa anksioznošću, apatijom, depresijom, halucinacijama, promenama raspoloženja, kognitivnim poremećajima i demencijom.¹² Prevalencija apatije se kreće od 17%²⁶ do 50%,²⁷ a anksioznosti od 25–40%.^{26,28} Kognitivna disfunkcija²⁶ i težina depresije mogu biti pokazatelj lošeg kvaliteta života^{17,26} U zavisnosti od kriterijuma koji su se primenjivali u istraživanjima, rezultati pokazuju veliki raspon u učestalosti depresije od 2,7% do preko 90%.^{21,27} Kod ovih pacijenata depresiju karakteriše umor, nezainteresovanost, neraspoloženje, razdražljivost i tuga.^{21,66} Mogu da se jave i druge tegobe vezane za koncentraciju, spavanje, apetit, gubitak telesne težine, kao i osećanje krivice.²⁷ Mnogi faktori utiču da depresija ostane neprepoznata. Poricanje depresije i odsustvo simptoma npr. krivice, tuge, osećaj sramote, koji se javljaju kod osoba koje boluju od depresije, a nemaju Parkinsonovu bolest, mogu pomoći u dijagnostikovanju depresije. Zdravstveni radnici koji su uključeni u tretman obolelih treba da prepoznaju simptome koji mogu da ukažu na depresiju, i da pruže podršku obolelim, a isto tako, pacijenti ako su depresivni da ih obaveste. U lečenju depresije osim lekova antidepresiva primenjuje se i psihoterapija.^{21,26} Tokom trajanja bolesti, posebno u kasnoj fazi javlja se psihoza. Razvoju psihoze doprinosi demencija i primena pojedinih lekova antiparkinsonika.¹⁷ Manifestuje se halucinacijama, najčešće vizuelnim i deluzijama. Napredovanjem bolesti halucinacije postaju sve učestalije,^{21,27} a njihovom

smanjenju doprinosi smanjenje upotrebe lekova za Parkinson-ovu bolest.²⁴ Uzroci psihoze mogu biti dehidracija, disbalans elektrolita, urinarnе infekcije, konstipacija i pneumonija, koje je neophodno dijagnostikovati i lečiti pre nego što se uključe antipsihotici.¹⁷

Problemi sa pamćenjem mogu ukazati na blago kognitivno oštećenje koje vremenom progredira.²⁶ U ranim fazama bolesti, blagi kognitivni poremećaj nema uticaj na svakodnevno funkcionisanje,²⁷ dok ga u kasnim fazama remeti.²⁴

Veliki značaj ima pojava demencije sa prevalencijom od 28% do 41%.²⁷ Postoji opravdan strah kod obolelih i njihovih bližnjih od pojave demencije.²⁸ Progresijom bolesti, ispoljavanje demencije i psihoze postaje sve intenzivnije te je i njihovo lečenje sve složenije. U lečenju demencije primenjuju se lekovi za Alchajmerovu bolest.^{17,21}

Pacijenti oboleli od Parkinsonove bolesti se suočavaju sa različitim tegobama kao što su ortostatska hipotenzija, konstipacija, disfunkcija mokraćne bešike, seksualna disfunkcija, i drugo.⁹ Prevalencija disfunkcije mokraćne bešike kreće se do 50%.²⁸ Manifestuje se povećanom frekvencijom, urgencijom, nokturijom, inkontinencijom i ređe retencijom koji nastaju usled povećanje aktivnosti mišića detrusora.^{17,21,28} Kod disfunkcije mokraćne bešike neophodno je isključiti druge probleme urinarnog trakta koji se ispoljavaju na ovaj način. Nakon uzete detaljne anamneze o urinarnim poteškoćama, identifikovati simptome koji narušavaju kvalitet života te dati smernice pacijentu.¹⁷ Modaliteti lečenja u zavisnosti od problema mogu da budu promena stila života, sprovođenje Kegelovih vežbi, primena lekova,^{21,26} injekcije botulinskog toksina,²⁸ uretralnu kateterizaciju i hirurške intervencije.^{17,28} Seksualna disfunkcija se javlja kod oba pola,²⁸ međutim, oboleli je retko prijavljuju. Na uzroke nastanka seksualne disfunkcije utiču mnogi faktori u koje mogu da se uvrste gubitak dopamina i medikamenti primenjeni za lečenje Parkinsonove bolesti. Pre primene lekova za tretman ovog poremećaja neophodno je otvoreno razgovarati sa pacijentom i njegovim partnerom.^{21,29}

Od poremećaja gastrointestinalnog trakta dolazi do gastropareze, poteškoća u funkcionisanju tankog i debelog creva i konstipacije. Simptomi gastropareze su gubitak apetita, brz osećaj sitosti, nadimanje, mučnina, povraćanje i gubitak telesne mase.^{21,28} Konstipacija je veoma česta kod obolelih od Parkinsonove bolesti. Prema literaturnim podacima, kreće se od 24,6% do 63%. Napredovanjem bolesti postaje sve učestalija.^{21,29} Otežana pokretljivost, smanjena fizička aktivnost, nedovoljan unos tečnosti, promena stila života, određeni lekovi, neki su od uzroka koji dovode do konstipacije.^{21,30,31} Konstipacija utiče na psihičko i socijalno funkcionisanje što doprinosi lošijem kvalitetu života.³⁰ Pacijentima se predlaže unos dovoljne količine tečnosti, povećanje unosa hrane bogate vlaknima, razvijanje zdravih životnih navika, umerena fizička aktivnost koliko im zdravstveno stanje dozvoljava.^{7,31} Ako je pored ovih metode problem i dalje prisutan koristi se čaj od sene,³¹ emolijentni i osmotski laksativi.^{21,30} Supozitorije i klistir, se mogu

primeniti ali je preporuka da se izbegavaju.^{21,32}

Ortostatska hipotenzija se javlja kod 30% do 60% obolelih.^{28,33} Zbog ortostatske hipotenzije oboleli mogu da osećaju slabost, umor,¹⁷ vrtoglavicu, poremećaj vida,³³ probleme sa kognitivnim funkcijama, nestabilnost prilikom hoda.¹⁷ Tretman započinje nefarmakološkim metodama koje podrazumevaju unos više tečnosti i natrijuma, podizanje uzglavlja i nošenje medicinskih kompresivnih čarapa. Ako se nefarmakološkim tretmanom ne može postići poboljšanje, primenjuje se farmakološka terapija.^{17,21}

Poremećaji spavanja su česti u ovoj bolesti. Javljaju se u vidu insomnije, prekomerne dnevne pospanosti, fragmentacije spavanja, poremećaja ponašanja u REM fazi sna, sindroma nemirnih nogu i periodičnih pokreta nogu u toku spavanja.^{26,28} Motorna disfunkcija, psihološki, socijalni faktori i bol dovode do pojave nesanice.³⁴ Nesanica sa čestim noćnim buđenjem posledično dovodi do dnevne pospanosti^{12,17} koja je uočena kod polovine obolelih.²⁶ Tretman insomnije podrazumeva, osim primene lekova, higijenu spavanja, kognitivni trening i terapiju akupunkturom.^{7,21} U cilju održavanja cirkadijalnog ritma i poboljšanja kvaliteta sna pacijente treba savetovati da tokom dana budu izloženi jakom svetlu, a da noću budu u tamnom okruženju.^{21,34} Zbog karakteristika poremećaja ponašanja u REM fazi sna javljanje ovih manifestacija predstavlja jedan od razloga za smeštaj obolelih u domove za stara lica. Tretman se sprovodi farmakološkom terapijom i nefarmakološkim metodama. Treba spomenuti primenu zaštitnih mera koje se sprovode kako bi se obezbedilo sigurno okruženje u sobi za spavanje. Sigurno okruženje podrazumeva uklanjanje nameštaja sa oštrim ivicama, korišćenje zasebnog kreveta, postavljanje obloga na pod, itd.^{21,35}

Kod obolelih se mogu javiti različiti senzorni simptomi.²⁸ Olfaktorna disfunkcija, hipozmija ili anozmija, već je u vreme postavljanja dijagnoze prisutna u visokom procentu (do 90%).^{28,33} Istraživanja su pokazala da se javlja nekoliko godina pre ispoljavanja motornih simptoma. Prisustvo ovih simptoma kod ljudi bi moglo da ukaže na moguć razvoj Parkinsonove bolesti.^{21,28} Olfaktorna disfunkcija nije izlečiva.²⁶

Bol je uobičajen simptom Parkinsonove bolesti⁵ sa prevalencijom koja se kreće od 30% do 85%.^{26,29} Iako je prisutan u svim fazama bolesti, posebno je naglašen u završnoj fazi.^{17,21} U ovoj bolesti se mogu javiti bolovi različite vrste i etiologije.²⁹ Muskulo-skeletni bol se javlja kod polovine obolelih, osim njega mogu da se jave radikularni tj. neuropatski, centralni odnosno primarni te akatitski bol.^{21,28} Prisustvo bola negativno utiče na kvalitet života obolelih. Bol treba holistički proceniti, a tretman prilagoditi svakom pojedincu.^{21,29} Da bi lečenje bilo što uspešnije presudno je identifikovanje uzroka. Lečenje se sprovodi prema terapijskim protokolima za lečenje bola. Za tretiranje određenih bolnih stanja primenjuje se fizikalna terapija.¹⁷

Prema rezultatima mnogih istraživanja, umor je jedan

od najčešćih simptoma bolesti,²⁹ koga pacijenti prijavljuju kao malaksalost, iscrpljenost i gubitak energije.^{28,36} Pacijenti su ga okarakterisali kao onesposobljujući simptom koji im u značajnoj meri utiče na kvalitet života.^{28,29} Tretman umora je često zanemaren. Prilikom tretmana poželjno je znati poreklo umora.²⁹ Praksa pokazuje da ne daje zadovoljavajući terapijski odgovor.³⁶

SOCIJALNI, EMOCIONALNI I DUHOVNI ASPEKTI ZBRINJAVANJA

Palijativno zbrinjavanje osim psihofizičkih domena, obuhvataju socijalne, duhovne i emocionalne aspekte. Socijalna podrška je važna i ima značajan uticaj na očuvanje zdravlja i poboljšanje kvaliteta života. Kada nastanu teške životne situacije oboleli iziskuju veću socijalnu podršku.^{21,37} Potrebe za ovim vidom pomoći nastaju zbog gubitka autonomije, promene u porodičnim odnosima, zavisnosti od članova porodice, nastanka invaliditeta, lošije finansijske situacije usled nesposobnosti za rad i socijalne izolacije.^{3,5,21,38} Rezultati istraživanja pokazuju pozitivan uticaj na fizičke i psihološke aspekte kod obolelih koji su dobijali raznovrsne modele socijalne podrške.³⁷ Osim toga, pokazalo se da društvena aktivnost ima mnoge benefite, od kojih je i održavanje kognitivnih sposobnosti.

Što se tiče emocionalnih aspekata u Parkinsonovoj bolesti, prilikom saznanja dijagnoze kod obolelih se javljaju emocionalne reakcije, najčešće u vidu straha, tuge, krivice i besa. Obolelim i njihovim porodicama treba pružiti podršku i ohrabriti ih. Pronalaženje smisla je jedan od mehanizama za suočavanje sa teškim i neizlečivim bolestima.^{5,21}

Duhovni aspekt je najzanemarenija komponenta palijativnog zbrinjavanja iako je duhovnost integralni deo života mnogih ljudi.³⁹ Kada je reč o potrebama obolelih iz duhovnog domena one se mogu odnositi na religiozna pitanja, strahove za budućnost, pitanja o značenju bolesti, suočavanje sa pogoršanjem bolesti i strah od smrti.^{3,21} Religija i duhovnost imaju uticaj na obolele kada donose odluke tokom trajanja bolesti. Sveštenici i duhovni vodiči im mogu ponuditi duhovnu i emocionalnu podršku^{5,21} te ih je neophodno uključiti u tim za palijativno zbrinjavanje. Trenutno nema mnogo istraživanja na ovu temu, ali istraživanja koja su sprovedena pokazuju pozitivnu povezanost između duhovnosti i suočavanja sa bolešću. Oboleli iskazuju sreću, optimizam i nadu što je povezano sa boljim zdravstvenim ishodima. Istraživanja koja su uključila obolele od Parkinsonove bolesti pokazuju da se oboleli oslanjaju na veru da bi pronašli dublje značenje svoje bolesti, kao i da veliki procenat obolelih koristi molitvu kako bi se izborili sa bolešću.³⁹

PLANIRANJE NEGE UNAPRED

Jedna od komponenti palijativnog zbrinjavanja je plani-

ranje nege unapred (engl. Advance care planning (ACP)) koja omogućava pacijentima da izraze svoje želje i definišu ciljeve za medicinski tretman koji će se sprovoditi u budućnosti, i koji će biti u skladu sa njihovim ličnim vrednostima, stavovima i preferencijama. Dokumentuju se planovi medicinske nege i drugi relevantni podaci. Takođe, identifikuje se osoba, najčešće član porodice, koja će donositi odluke umesto pacijenta o medicinskom tretmanu kada zbog prirode bolesti on to ne bude mogao.^{4-7,40} Na ovaj način se tzv. surogat donosiocu odluke donosi spokoj i oslobađanje od stresa kada se od njega traži da donese važne odluke.^{4,6,40} Planiranje nege unapred je posebno važno kod obolelih od Parkinsonove bolesti s obzirom da napredovanjem bolesti dolazi do kognitivnih poteškoća, otežane komunikacije, motoričkih ograničenja i narušene sposobnosti za donošenje odluka.^{4,6,7} Pokazalo se da pacijenti žele samostalno da donose odluke u vezi njihovog zbrinjavanja u budućnosti kako bi zadržali osećaj autonomije.³⁸ Preporučuje se da planiranje nege unapred treba sprovesti u ranoj fazi bolesti.^{4,6} Takođe, zdravstveni radnici ukazuju na poteškoće prilikom identifikovanja potreba pacijenata u kasnim fazama te su saglasni da pravovremeni razgovori sa obolelim i rano planiranje medicinskog tretmana omogućava pružanje optimalnog palijativnog zbrinjavanja.⁴¹ Istraživanja pokazuju da se u praksi planiranje nege unapred ne sprovodi u dovoljnoj meri, iako je većini obolelih od Parkinsonove bolesti i njihovim negovateljima to prioritet.⁴

ZAKLJUČAK

Parkinsonova bolest je jedna od neuroloških bolesti koja zbog svojih karakteristika opravdava uključivanje palijativnog zbrinjavanja u tretman obolelih. Pravovremen palijativan pristup usmeren na rešavanje individualnih potreba obolelih doprinosi lakšem podnošenju simptoma, preveniranju komplikacija, očuvanju autonomije, dostojanstva i poboljšanju kvaliteta života. Budući pravci kretanja treba da uključuju razvoj instrumenata procene za upućivanje na specijalističko palijativno zbrinjavanje, sprovođenje istraživanja kako bi se identifikovale potrebe obolelih, odredilo najbolje vreme za integrisanje i definisale intervencije iz svih domena palijativnog zbrinjavanja kod pacijenata obolelih od Parkinsonove bolesti. Takođe, potrebno je uložiti dodatne napore kako bi se povećao pristup ovom vidu zbrinjavanja obolelim od Parkinsonove bolesti, ali drugih bolesti/stanja kojima je to neophodno.

NAPOMENA

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Uloga dojenja u očuvanju zdravlja majke i deteta

The role of breastfeeding in preserving the health of mother and child

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APSTRAKT

Dojenje je kamen temeljac za normalan rast i razvoj, pravilnu ishranu dece, ali i za zdravlje majki. Mnoge studije su pokazale da žene koje su dojile svoju decu ređe oboljeva-ju od karcinoma dojke i jajnika, kardiovaskularnih bolesti i dijabetesa tipa 2. Takođe, dojenje protektivno deluje na razvoj postporođajne depresije majke, dovodi do bržeg gubitka prekomerne telesne težine nakon porođaja, omogućava brže vraćanje materice u prvobitnu veličinu, smanjuje mogućnost postporođajnog krvarenja. Dojena deca su inteligentnija, ređe razvijaju autistični spektar, imaju manje sklonosti ka gojaznos-ti i ispoljavanju alergija, bolje razvijen imunitet. U trenutku pandemije Covid-19, težište zdravstvenih sistema svih ze-malja, stavljeno je na prevenciju i borbu protiv nove infektivne bolesti izazvane SARS CoV 2 virusom, dok je briga o porodici zapostavljena. Svetska zdravstvena organizacija preporučuje ekskluzivnu prirodnu ishranu u prvih 6 meseci života. Nakon ovog uzrasta preporučuje se dojenje u kombinaciji sa adekvat-nom nemlečnom ishranom do druge godine života, i kasnije. Prema podacima Svetske zdravstvene organizacije, u periodu od 2015. do 2021. godine, 48 % dece do uzrasta od 6 meseci je bilo na prirodnoj ishrani, što je 10 % više nego u prethod-noj dekadi i blizu postavljenog cilja od 50 % za 2025. godinu. Globalni cilj za 2030. godinu je dostići 70 %. Statistički podaci o proporciji dojene dece i praćenje stopa dojenja u Republici Srbiji još uvek ne mogu da se dobiju iz rutinske zdravstvene statistike, iako su preko potrebni. Za upoređivanje i praćenje kretanja stope dojenja, kao i za planiranje aktivnosti u vezi sa podsticanjem dojenja, najčešće se koriste podaci iz Istraživanja višestrukih pokazatelja položaja žena i dece u Republici Srbiji Multiple Indicator Cluster Survey (MISC). Prema poslednjim podacima MISC-a, kod 90,4 % dece u Srbiji je započeto sa

ABSTRACT

Breastfeeding is the cornerstone for normal growth and de-velopment, proper nutrition of children, but also for the health of mothers. Many studies have shown that women who breast-fed their children are less likely to suffer from breast and ovar-ian cancer, cardiovascular diseases and type 2 diabetes. Also, breastfeeding has a protective effect on the development of postpartum depression in the mother, leads to a faster loss of excess body weight after childbirth, and enables a faster recov-ery uterus to its original size, reduces the possibility of postpar-tum bleeding. Breastfed children are more intelligent, develop the autistic spectrum less often, have less tendency to obesity and exhibit allergies, better developed immunity. At the moment of the Covid-19 pandemic, the focus of the health systems of all countries was placed on prevention and the fight against the new infectious disease caused by the SARS CoV 2 virus, while family care was neglected. The World Health Organization recommends an exclusive natural diet in the first 6 months of life. After this age, breastfeeding in combination with an adequate non-dairy diet is recommended until the second year of life, and later. Ac-cording to data from the World Health Organization, in the period from 2015 to 2021, 48% of children up to the age of 6 months were on a natural diet, which is 10% more than in the previous decade and close to the set goal of 50% for 2025. . The global goal for 2030 is to reach 70%. Statistical data on the propor-tion of breastfed children and monitoring of breastfeeding rates in the Republic of Serbia still cannot be obtained from routine health statistics, although they are much needed. Data from the Multiple Indicator Cluster Survey (MISC) are most often used to compare and monitor trends in breastfeeding rates, as well as to plan activities related to breastfeeding promotion. According to the latest MISC data, 90.4% of children in Serbia have started

KORESPONDENCIJA / CORRESPONDENCE

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dojenjem, ali samo 12,8 % dece se isključivo doji do 6. meseca života.

Ključne reči: dojenje; javna zdravstvena praksa; COVID-19.

UVOD

Dojenje je kamen temeljac za pravilan rast i razvoj, pravilnu ishranu dece, ali i za zdravlje majki. Svetska zdravstvena organizacija preporučuje ekskluzivnu prirodnu ishranu u prvih 6 meseci života. Nakon ovog uzrasta preporučuje se dojenje u kombinaciji sa adekvatnom nemlečnom ishranom do druge godine života i kasnije.¹ Prema podacima Svetske zdravstvene organizacije, u periodu od 2015. do 2021. godine, 48 % dece do uzrasta od 6 meseci je bilo na prirodnoj ishrani, što je 10 % više nego u prethodnoj dekadi. Ovaj procenat dojene dece je blizu postavljenog cilja od 50 % za 2025. godinu. Cilj za 2030. godinu je da 70 % dece bude na prirodnoj ishrani. U istom periodu 47 % novorođenčadi je dobilo prvi podoj u toku prvog sata života, a postavljeni cilj je bio 70 % dece.² Statistički podaci o proporciji dojene dece i praćenje stopa dojenja u Republici Srbiji još uvek ne mogu da se dobiju iz rutinske zdravstvene statistike, iako su preko potrebni. Do ovih podataka se dolazi ciljanim nacionalnim projektima kao što su „Koordinacija implementacije standarda prilagođenih potrebama majke i deteta” i „Standardi regionalnog sistema neonatalne zdravstvene zaštite u Srbiji,” koje je sproveo Institut za zdravstvenu zaštitu majke i deteta Srbije „Dr Vukan Čupić”. Za upoređivanje i praćenje kretanja stope dojenja, kao i za planiranje aktivnosti u vezi sa podsticanjem dojenja, najčešće se koriste podaci iz Istraživanja višestrukih pokazatelja položaja žena i dece u Republici Srbiji (Multiple Indicator Cluster Dyrvey, MISC). Prema poslednjim podacima MISC-a kod 90,4 % dece u Srbiji je započeto sa dojenjem, ali samo 12,8 % dece se isključivo doji do 6. meseca života.³

ULOGA DOJENJA U OČUVANJU ZDRAVLJA MAJKE

Mnoge studije su pokazale da dojenje smanjuje mogućnost razvoja postporođajnih poremećaja ponašanja majki. Hormoni povezani sa dojenjem, oksitocin i prolaktin, imaju antidepresivno i anksiolitičko dejstvo, tako da žene koje doje razvijaju postporođajnu depresiju znatno ređe. Dojenje jača emotivnu vezu između majke i deteta.⁴ Majke koje doje lakše i brže gube prekomernu telesnu težinu koju su stekle u trudnoći. Hormoni koji se luče tokom dojenja pomažu da se materica vrati u svoju regularnu veličinu i preveniraju postporođajno krvarenje.⁵ Mnoge studije su pokazale da je dojenje, a naročito dojenje od godinu dana i duže, protektivni faktor za razvoj karcinoma dojke. Karcinom dojke je, prema podacima Svetske zdravstvene organizacije, drugi, najzastupljeniji karcinom, odmah posle karcinoma pluća i drugi vodeći uzrok smrti kod žena u 2020. godini, u svetu.⁶ Istraživanja su pokazala da je rizik od karcinoma ovarijuma obrnuto proporcionalan dužini

breastfeeding, but only 12.8% of children are exclusively breast-fed until the 6th month of life.

Key words: breastfeeding; public health practice; COVID-19.

dojenja i broju dojene dece.⁷ Za majke dobrobit od dojenja je i smanjenje rizika za pojavu dijabetesa tip 2 i kardiovaskularnih bolesti.⁸

ULOGA DOJENJA U OČUVANJU ZDRAVLJA DECE

Gojaznost je jedan od najozbiljnijih zdravstvenih problema i u dečjem uzrastu, i kod odraslih. Gojaznost kod dece često dovodi do gojaznosti u odraslom dobu. Dojenje može da prevenira gojaznost. Majčino mleko obezbeđuje bebi hranu koja se lako vari. I samo majčino mleko, i način na koji se beba hrani, dojenje, pomažu da se razviju zdrave navike u ishrani. Dojene bebe bolje regulišu unos hrane i zato su u manjem riziku od gojaznosti. Unos majčinog mleka, kao lako svarljive hrane, koja obezbeđuje sve nutritivne potrebe deteta, odlaže uvođenje nemlečne hrane u odnosu na nedojene bebe, kojima se nemlečna hrana uvodi ranije. A ranije uvođenje nemlečne, čvrste, hrane je povezano sa rizikom od gojaznosti.⁵ Humano mleko se sastoji od proteina, lipida, ugljenih hidrata, minerala, vitamina i mikroelemenata koji su od velike važnosti za obezbeđivanje nutritivnih potreba i pravilnog rasta i razvoja. Humano mleko sadrži IgA antitela, laktoferin, leukocite, interferon gama, citokine, koji omogućavaju bolju odbranu dojenog odojčeta od infektivnih bolesti tako što podstiču pasivnu zaštitu u gastrointestinalnom traktu i onemogućavaju priljublivanje infektivnih agenasa na sluznicu gornjeg respiratornog trakta. Takođe, u zaštiti zdravlja dojene dece učestvuju i esencijalne masne kiseline, enzimi, hormoni, faktori rasta i drugi sastojci majčinog mleka. Osim smanjenja rizika od infekcija, humano mleko smanjuje rizik i od alergija, poboljšava razvoj mozga i oka i kognitivne sposobnosti.⁹ Dok su nutritivni benefiti za fizičko zdravlje dece dobro poznati, sve veći broj istraživanja pokazuje pozitivnu ulogu dojenja u psihološkom smislu. Odsustvo dojenja ili kratkotrajno dojenje mogu biti povezani sa razvojem autizma (autism spectrum disorder, ASD). Nedavno objavljena meta analiza sa preko 2000 dece pokazuje da je među decom sa autističnim spektrom znatno manje dojene dece, nego među decom sa urednim razvojem.¹⁰

DOJENJE U VREME PANDEMIJE COVID-19

Preporuka Svetske zdravstvene organizacije je da majke sa sumnjom ili sa potvrđenom COVID-19 infekcijom, treba ohrabriti da započnu ili nastave dojenje. Majkama treba predočiti da korist od dojenja u mnogome prevazilazi rizik od mogućeg prenošenja infekcije sa majke na dete. Za decu Covid pozitivnih majki koje doje, rizik od odolevanja je mali. Deca su ili asimptomatska ili imaju blage kliničke slike. Posledice

nedojenja ili odvajanja od majke, mogu biti dalekosežno negativne.¹ U nedavno objavljenoj studiji, naučnici sa univerziteta u Kaliforniji objavili su rezultate svojih istraživanja u vezi sa mogućnošću zaražavanja deteta konzumiranjem majčinog mleka to jest dojenjem. U uzorcima mleka obolelih žena je detektovana virusna RNK, ali ni u jednom uzorku mleka nije nađena aktivna replikacija virusa, i zbog toga ovaj virus ne može da izazove infekciju kod deteta. Tako da mleko samo po sebi nije izvor infekcije za dete.⁸ U uzorcima mleka nije nađeno razmnožavanje odnosno replikacija virusa, ali u 95 % uzoraka su bila prisutna antitela IgA klase protiv SARS-Cov-2 infekcije. Osim ovih antitela u humanom mleku se nalaze i druge potencijalne antivirusne komponente, kao što su laktoferin, masne kiseline i oligosaharidi, koji su dragoceni u borbi protiv ove zarazne bolesti.¹¹ Studije u Kanadi su pokazale da vakcinacija u toku dojenja indukuje stvaranje antitela IgA klase protiv SARS Cov 2 infekcije u majčinom mleku.¹² Tako da vakcinacija majke dojlje štiti i nju i njeno odojče posredstvom specifičnih antitela u mleku.

ZAKLJUČAK

Za podsticanje dojenja potrebna je porodična orijentacija zdravstvenih ustanova, gde su roditelji aktivni učesnici u pružanju nege, uz odgovarajuću obuku i nadzor zdravstvenih profesionalaca. Od podrške zdravstvenih radnika zavisi da li će majka doživeti dojenje kao prijatno i korisno iskustvo. Zato je neophodno da zdravstveni radnici prođu obuku u znanju i veštinama potrebnim za podsticanje dojenja. U porodilištima je neophodno obezbediti uslove da majka i novorođenče dobiju pomoć i podršku za uspešno dojenje, prema međunarodnim preporukama i da započnu dojenje u okviru prvog sata od rođenja. Patronažne sestre treba da započnu promociju dojenja prilikom poseta trudnicama, a zatim da nastave nakon izlaska majke i deteta iz porodilišta. Od velike pomoći podršci dojenju bi bilo i otvaranje savetovališta za dojenje u okviru domova zdravlja. Treba podržati javna mesta koja promovišu dojenje-dojenje u parkovima, kafićima, igraonicama, čekaonicama. Dragocene su škole za trudnice i škole roditeljstva. Poznato je da se COVID-19 infekcija ne prenosi humanim mlekom jer u njemu nema replikacije virusa. Prisustvo IgA antitela u majčinom mleku pomaže u borbi dece protiv ove infektivne bolesti. Zato dojlje sa COVID-19 infekcijom treba ohrabriti da doje svoju decu. U toku dojenja neophodno je da nose zaštitne maske, održavaju higijenu ruku i dojki i sterilišu opremu nakon svakog izmlazanja.

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XIX Конгрес Националне асоцијације Удружења здравствених радника Републике Србије са међународним учешћем - национални конгрес

Хотел „БРЕЗА“, Врњачка Бања, Србија, 22-26. мај 2024. године.

XIX Congress of the National Alliance of the As- sociations of Health Workers of the Republic of Serbia with international participation - national congress

Hotel "BREZA", Vrnjacka Banja, Serbia, 22-26. May 2024.

Конгрес је посвећен иновацијама и трендовима који ће обликовати будућност позива здравственог радника. Циљ организовања Конгреса је да се размотре актуелни проблеми, да се прикажу нова достигнућа у свакодневном раду, размене досадашња искуства и укаже на проблеме са којима се среће медицинска сестра-здравствени техничар. Конгрес је акредитован за медицинске сестре и здравствене техничаре (Д-1-693/23). Свечано отарање и пленум је 22. маја 2024. године у 17.00 сати у Хотелу Брежа. Тема пленарног предавања је „Аферезно прикупљање ћелија из периферне крви и лечење ћелијама посредованом хемобиотерапијом имунски-посредованих и неких малигних поремећаја применом DC и CAR-T ћелија“, академик проф. емеритус др Бела Балинт, научни саветник.

Рад конгреса је организован у бројним тематским секцијама: Офталмолошка секција, Секција сестара интензивне неге, анестезије и реанимације, Секција нефрологије са урологијом, Психијатријска секција, Пнеумофтизиолошка секција, Друштво лабораторијских технолога и техничара, Интернистичка секција са ендокринолошком, Секција ургентне медицине, Друштво гинеколошко - акушерских сестара, Педијатријска секција, Дерматовенеролошка са инфектолошком секцијом, Друштво санитарно - еколошких инжињера и техничара, Друштво физио и радних терапеута, ОРЛ секција, Секција стоматолошких сестара и зубних техничара, Секција медицина рада, Секција хируршких сестара и инструментар, Неуролошка секција, Секција опште медицине, Хематоонколошка секција, Секција сестара и техничара у рехабилитацији, Друштво фармацеутских

техничара, Секција поливалентне патронаже, Друштво струковних медицинских радиолога и радиолошких техничара, Секција сестара у ортопедији, Друштво дијететичара - нутрициониста, Трансфузиолошка секција и Секција кућног лечења.

Учешће на конгресу узео Друштва Националне асоцијације удружења здравствених радника Србије и то: Друштво медицинских сестара и техничара НАУЗР Србије, Друштво санитарно - еколошких инжињера и техничара НАУЗР Србије, Друштво дијететичара - нутрициониста НАУЗР Србије, Друштво лабораторијских технолога и техничара НАУЗР Србије, Друштво физиотерапеута и радних терапеута НАУЗР Србије, Друштво фармацеутских техничара НАУЗР Србије, Друштво струковних медицинских радиолога и рентген техничара НАУЗР Србије и Друштво бабича и гинеколошко - акушерских сестара.

Подношење радова путем онлајн платформе на интернет сајту асоцијације (www.nauzrs.rs), <https://stari-sajt.nauzrs.rs/akreditacija/index-radovi.php>. Ближа упутства и информације: телефон / факс: 018 42 84 333, е-маил: infouzrnis@gmail.com, info@nauzrs.rs, сваким радним даном од 10:00 до 15:00 сати.

Здравствена нега у примарној здравственој заштити

Health care in the primary health service

Дивна Кекуш

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Уџбеник Здравствена нега у примарној здравственој заштити, аутора проф. др Дивне Кекуш једина је публикација на нашим просторима која је и обавезна уџбеничка литература за истоимени предмет који се изучава у свим високим здравственим школама за образовање медицинских сестара, бабица и медицинских сестара васпитача.

Своје вишедеценијско искуство и знање у пракси и настави преточено је и усклађено према наставном плану и програму обухватајући, поред теоријској дела о систему примарне здравствене заштите и неге, и практична упутства посебно за рад у установама примарне здравствене заштите, пре свега домовима здравља као носиоцима исте.

Како су динамичан развој друштва, реформа здравственог система и ванредне епидемиолошке прилике почетком 2020. године, примарну здравствену заштиту ставиле у центар актуелних збивања, уочена је потреба новог приступа и у образовању медицинских сестара. Примарна здравствена заштита, као и примарна здравствена нега, иако назване „капијом система“ нису у значајној мери заузимале адекватно место у здравственом систему. Усвајањем ”Циљева 21 за 21 век” и ”ЦИЉЕВА/АГЕНДА 2030”, као и променама које су у најави, очекује се напредак и у образовању, са већим нагласком на превентивне услуге у оквиру примарне превенције које се пре свега односе на примену здравствено васпитних метода у едукацији становништва за прихватање превентивних мера на очувању и унапређењу здравља.

Циљ учења наставног предмета Здравствена нега у примарној здравственој заштити је стицање и развијање ширих погледа на здравље и стицање специфичних знања из области примарне здравствене заштите. Упознавање са организацијом и радом установа примарне заштите и овладавање знањима и вештинама које су неопходне у раду медицинске сестре у овој области и њиховој примени на свим нивоима здравствене заштите у спровођењу свих нивоа превенција (примарном, секундарном и терцијарном).

Књига обухвата 15 поглавља од дефинисања примарне здравствене заштите, здравственог система и нивоа здравствене заштите, промоције и унапређења здравља и организације, односно активностима у пружању сестринских интервенција на примарном нивоу, преко промотивних и здравствено васпитних метода, које се спроводе са појединцима, групама и породицама у заједници где људи живе и раде. Посебан значај дат је превентивним активностима у свим службама домова здравља са посебним нагласком на рад сестре у поливалентној патронажној служби и здравственој нези у кући.

др сци. мед. Миле Деспотовић, професор струковних студија

Академија васпитачко – медицинских струковних студија Крушевац, Одсек медицинских студија Ђуприја

15. Kongres farmakologa Srbije i 5. Kongres kliničke farmakologije Srbije sa međunarodnim učešćem, "Novine u farmakoterapiji"

14-16. Septembar 2023. godine, Vrnjačka Banja

15th Congress of Pharmacologists of Serbia and 5th Congress of Clinical Pharmacology of Serbia with international participation, „Novelties in Pharmacotherapy”

14-16th September 2023, Vrnjacka Banja, Serbia

Srpsko farmakološko društvo je jedno od najstarijih udruženje na Balkanu. Od samog osnivanja, pa do današnjih dana, predstavlja jedno od vodećih udruženja farmakologa u Srbiji, čiji su članovi brojni renomirani naučnici i stručnjaci iz oblasti farmakologije: medicinske farmakologije, kako bazične, tako i kliničke farmakologije; kao i doktori veterinarske i stomatološke farmakologije.

Srpsko farmakološko društvo je u periodu od 14-16. septembra 2023. godine organizovalo 15. Kongres farmakologa Srbije i 5. Kongres kliničke farmakologije Srbije sa međunarodnim učešćem, u periodu od 14-16. septembra 2023. godine u Vrnjačkoj Banji, pod nazivom: „Novine u farmakoterapiji”. Od poslednjeg kongresa, održanog 2019. godine u Novom Sadu, pandemija COVID-19 bolesti je u mnogome uticala je na farmakoterapijski pristup ne samo pomenute infekcije, već je i uvela određene novine u lečenju pojedinih oboljenja i otvorila vrata ka novim platformama za sintezu terapijski aktivnih molekula od izuzetnog značaja za opšte dobro pacijenatana i šire na javno zdravlje. Upravo zato su teme 15. Kongresa farmakologa Srbije i 5. Kongresa kliničke farmakologije Srbije sa međunarodnim učešćem bile odabrane sa ciljem da se lekcije naučene iz ove krize podele sa učesnicima kongresa. Prilikom pravljenja programa primenili smo još jednu od naučenih lekcija iz COVID-19 pandemije, da više nego ikada, moramo da radimo zajedno. Upravo zato su predavači na ovom skupu osim farmakologa i kliničkih farmakologa, bili i predavači iz redova kliničara, relevantnih državnih institucija poput Agencije za lekove i medicinska sredstva Republike Srbije, kao i akademskih zajednica i institucija iz naše zemlje, inostranstva (Sjedinjene Američke Države: College of Veterinary Medicine, Iowa State University, AMES, Iowa; University of Illinois, Chicago, Illinois; Mayo Clinic, Rochester, Minnesota; Ujedinjenog Kraljevstva: University of Manchester, Manchester; daleke Australije: Faculty of Science, University of Technology Sydney, Sydney; Savezne Republike Nemačke), ali i zemalja iz regiona (Republika Srpska, Crna Gora, Bosna i Herce-



Svečano otvaranje kongresa

govina, Severna Makedonija, itd.), kao i predstavnici farmaceutske industrije. Interesantne i aktuelne teme programa su bile: terapija bakterijskih infekcija, racionalna primena antibiotika, bakterijska rezistencija, farmakoterapija COVID-19 infekcije, dugotrajni COVID i njegovo lečenje, savremeni pristup lečenja HIV i HCV infekcija, antigljivična terapija, terapija bola, farmakoterapijski pristup lečenja onkoloških i hemato-onkoloških oboljenja, izazovi u lečenju pedijatrijske populacije, itd. Kongresu je prisustvovalo preko 170 učesnika iz zemlje i 20 učesnika iz inostranstva. Učesnici su bili lekari primarnog, sekundarnog i tercijalnog nivoa, svih specijalnosti: kliničke farmakologije, opšte medicine, infektivnih bolesti, hematologije, onkologije, virusologije, bakteriologije, epidemiologije, imunologije, interne medicine, pulmologijae, kardiologije, nefrologije, dermatologije, psihijatrije, anesteziologije, urgentne medicine, hirurgije, itd., medicinske sestre, kao i farmaceuti, bolnički farmaceuti i doktori stomatološke i veterinarske medicine.

Ovaj kongres je ukazao da postoje potrebe za novim terapijskim opcijama i inovativom terapijom lečenju onkoloških, hemato-onkoloških pacijenata, pacijenata sa HIV infekcijom, određenim intrahospitalnim gljivičnim infekcijama. Na kongresu je takođe diskutovana visoka stopa bakterijske rezistencije i dostupnost novih antibiotika neophodnih za lečenje intrahospitalnih multirezistentnih bakterijskih infekcija. Konačno, istaknut je značaj kliničkog farmakologa u multidisciplinarnim timovima odgovornim za lečenje kompleksnih pacijenata sa velikim brojem komorbiditeta.

Prof. dr Gordana Dragović Lukić,
Medicinski fakultet Univerziteta u Beogradu
Predsednik Srpskog farmakološkog društva
Predsednik Naučnog odbora Kongresa Srpskog
farmakološkog društva



Lauret nagrade "Prof. dr Vladislav Varagić" Srpskog farmakološkog društva za 2023. godinu, doc. dr Dragana Srebro, sa prof. dr Nebojšom Nick Kneževićem, prof. dr Ljiljanom Bukaricom i prof. dr Gordanom Dragović Lukić.

Uputstvo autorima za pripremu rukopisa

Instructions for authors for the preparation of manuscripts

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Uređivanje časopisa i postupak sa rukopisom sledi uputstva Akta o uređivanju naučnih časopisa Ministarstva prosvete, nauke i tehnološkog razvoja Republike Srbije (www.mpn.gov.rs) i preporuke Međunarodnog komiteta urednika medicinskih časopisa ("Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals") (www.icmje.org), Komiteta za etiku u izdavaštvu: COPE (<http://publicationethics.org>) i Međunarodnog udruženja medicinskih urednika (www.wame.org). Uređivanje naučno-stručnih sadržaja časopisa je potpuno nezavisno.

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brazan stil, za razdvajanje i isticanje sadržaja koristiti samo velika slova i/ili numeraciju bez korišćenja stilova kao što su "Bold", "Underline", "Italic". Pridržavati se pravila kucanja, iza znaka interpunkcije ostaviti jedno prazno mesto, a za veće praznine koristiti tabulator. U tabelama koristiti samo mrežu („grid“) bez upotrebe isprekidanih, punih ili duplih linija. Slike (fotografije i grafikoni) se pripremaju u odgovarajućem aplikativnom softveru (npr. MS Office Excell ili Adobe Photoshop), u crno-belom varijanti („grayscale“), u rezoluciji 300 dpi i konvertuju u format jpg, tiff ili bmp.

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NASLOVNA STRANICA. Naslovna stranica sadrži naslov rada, imena autora, institucije autora, kontakt adresu autora za korespondenciju, kratki naslov, broj reči, broj tabela i slika.

APSTRAKT. Sažetak treba da je strukturisan (cilj, metode, rezultati, zaključak), sadrži do 250 reči i najmanje 3-5 ključnih reči prema MESH odrednicama. Za rukopise napisane na srpskom jeziku naslovnu stranicu i sažetak dostaviti i na engleskom jeziku. Inostrani autori dostavljaju rukopis u celini na engleskom jeziku.

UVOD. U uvodu originalnih radova naznačiti značaj problema koji se ispituje, teorijske osnove na kojima je zasnovano istraživanje i ciljeve studije.

MATERIJAL/ISPITANICI I METODE. U delu ispitanici i metode/materijal i metode opisati opšti dizajn istraživanja, mesto i vreme istraživanja, studijsku populaciju/uzorak, načine objektivizacije praćenih ishoda i tehničke informacije, etičke aspekte i statističku analizu.

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DISKUSIJA. U delu diskusija prezentovati najznačajnije zaključke studije u svetlu dosadašnjih saznanja, naznačiti moguća metodološka i druga ograničenja i dati završni zaključak uzimajući u obzir uži i širi naučno-stručni okvir.

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TITLE PAGE. Home page contains the title of the paper, author names, institutions of the authors, contact address for correspondence author, a short title, word count, a number of tables and images.

ABSTRACT. Abstract should be structured (objective, method, results and conclusion), contains up to 250 words and at least 3-5 keywords according to the MESH headings. For the manuscripts written in Serbian language title page and abstract should be submitted also in English. Foreign authors submit a whole manuscript in English language only.

INTRODUCTION. In the introduction of the original papers indicate the importance of the problems that are examined, the theoretical foundations on which the research and study goals are based.

MATERIAL/SUBJECTS/PATIENTS AND METHODS. In subjects/patients and methods / materials and methods describe the general design of the research, place and time of the research, study population / sample, ways of objectively tracked outcomes and technical information, ethical aspects and statistical analysis. of the research. Indicate the most important characteristics of the study population or sample, submit accurate and detailed information with the measures of the central tendency (arithmetic mean, mode, median) and variability (standard deviation, standard error, confidence interval), according to their type and nature. In the results do not repeat information already presented in the attachments (tables and figures).

DISCUSSION. In the discussion part present the most important conclusions of the study in the light of previous findings, indicate possible methodological and other limitations and give a final conclusion, taking into account a narrower and broader scientific framework.

REFERENCES. The type and number of references are adapted to the type and structure of the manuscript. Generally, you should use the smallest possible number of citations and give priority to works published in extenso, preferably in the most ranked, reviewed journals. Books, monographs and Internet-published contents use in exceptional cases. If it is not necessary, avoid specifying the works in press, papers published in very concisely ("abstracts"), unpublished results (unpublished observations), personal contact information ("personal communication"). In the text, literature is cited in Arab numerals in superscript, after punctua-

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o Connolly SJ, Ezekowitz MD, Yusuf S, et al. Dabigatran versus warfarin in patients with atrial fibrillation. *N Engl J Med* 2009; 361: 1139-51.

o McPhee SJ, Papadakis M. Current medical diagnosis and treatment 2009. 48th ed. New York: McGraw-Hill Professional, 2008.

o Mark DB. Decision making in clinical medicine. In: Fauci SA, Eugene Braunwald E, Kasper DL, et al., eds. *Harrison's principles of internal medicine*. 17th ed. New York: McGraw-Hill Professional, 2008: 16-23.

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