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PSYCHOPHYSICAL HEALTH AND GENERATIVITY OF OLDER ADULTS

The trend of global population aging has led to an increase in the number of studies addressing the determinants of successful aging. Here, we argue that successful aging depends on psychophysical health and the successful overcoming of the generative stage. Therefore, this study aimed to examine the relationship between mentioned variables and selected sociodemographic characteristics of older adults. The study involved 101 respondents ($M=71.7$; $SD=3.06$), mostly residing in urban living conditions and having a lower level of education. The surveys were conducted using SC-Q, RAND-36, and the Adapted Loyola Generation Scale. The results of the multiple regression analysis showed that the model consisting of physical and psychosocial health dimensions statistically significantly predicts generativity ($F_{(8,89)}=2.17$; $p<.05$). These eight predictors explain 16.3% of the variance in generativity ($R^2=.163$). The t-test for independent samples revealed significant differences between respondents from the city and respondents from the village for the following variables: physical functioning ($t=2.23$; $p<.05$), vitality ($t=2.16$; $p<.05$), emotional well-being ($t=2.60$; $p\leq.01$), physical pain ($t=3.10$; $p<.01$), general health ($t=2.65$; $p\leq.01$), and generativity ($t=3.23$; $p<.01$), while no significant difference was found for other variables. Examining the differences in the physical and psychosocial health variables and generativity showed statistically significant differences between respondents without children and respondents with two children in the level of physical functioning. We also examined differences in variables concerning the order of birth and determined that there are statistically significant differences only in the level of achieved generativity concerning birth order ($F_{(4,95)}=3.17$; $p<.05$). Life in rural areas is associated with the unavailability of healthcare, while lower education is associated with lack of adequate coping

strategies. Adding to the peculiarities of this cohort, we get a clear picture of the need to ensure a better quality of life for this growing population.

Keywords: older adults; psychophysical health; generativity

1. INTRODUCTION

Novi Pazar gained the epithet of the youngest city in Europe in 2010. with a share of 49% of the population under 29 years of age. The demographic picture of Novi Pazar according to Lešević et al. is different from the trend of popularization of Novi Pazar as the youngest city (Lešević, Pavlović & Đorđević 2019). The last decade, the period after 2011 is characterized by the outflow of youth to Western European countries, or the need to emigrate in 58% of cases (according to Petrović, Backović & Petrović 2017), and the number of older adults does not decrease (Lešević, Pavlović & Đorđević 2019).

Demographic aging under the influence of economic, social, cultural, technological, health, and all other reasons certainly changes the notion of psychological and social aging. In psychology, sociology, and related sciences, a small number of researches focus on the psychological aspects of aging, and especially important are those researches that connect the physiological and psychological dimensions of age. Observed globally, today's population is shaped by two main trends: aging and urbanization, which refers to the migration of the population from rural to urban areas. The growth trend of the population of older adults is also maintained in Serbia, with estimates from 2018, the share of people over 65 in Serbia was 19% with a growth trend until 2030, where it is estimated that 21% of older adults will be represented (Janković et al. 2018). It is especially interesting to study the aging process in the city of Novi Pazar, which until 2011 recorded the largest natural increase in Serbia (Zdravković 2016), which is the opposite of the global aging trend.

The subject of the psychology of aging is twofold because it encompasses aging as a dynamic process and old age as a particular stage of life (Reyna, Goodwin, Ferrari 2007). Since the World Health Organization defines health not only as the absence of disease but as complete physical, mental, and social well-being, it should be noted that this organization in the proclamation *Vision for Health* in 1993 defined health as two semantic inversions *Add years to life*, but also *Add life to years*, indicating not only life expectancy but also the quality of life (WHO 2015). In the context of the

natural aging process, it is important to analyze and understand the aspects of mental health that contribute to the well-being and balance that is sought in this last stage of the life cycle. Assessment of quality of life significantly contributes to successful aging and represents a broad context under the complex influence of physical health, psychological state, level of independence, social relationships, and relationships with the most important aspects of the environment. The questionnaire we used in our research covered the spectrum of the most important measures of quality of life. In general, beliefs about aging can contribute to the health and well-being of the elderly, and the sense of generativity or that one cares for and contributes to the well-being of others can influence health and well-being (Moieni et al. 2021). With aging, general physical functioning changes, followed by a decline in physiological functions and psychological functioning, followed by changes in the emotional, cognitive, and social aspects. Socially acceptable criteria for adequate adaptation to aging include harmony between internal mental state and external circumstances, then continuity between past experience and current way of adjustment, acceptance of the inevitability of old age, as well as the existence of a certain degree of satisfaction arising from safety and relaxation due to lack of responsibility (Zdravković et al. 2010). As age limits shift, it is to be expected that older models of periodization should be revised in the future. The monitoring of lifelong development has contributed to the formation of several current theories of aging, from which various interpretations and observations of aging are developed. One of the most famous is Erik Erikson's theory of psychosocial development, which was the basis for this research. One of the theories mentioned is Brandtstadter's (Brandtstädter & Greve 1994) theory of adaptation to aging, which includes three stages: assimilation, accommodation, and immunization viewing aging as a successful balance between acceptance, adaptation, and protection against changes that occur over time. Dowd (1975) uses a rational choice approach to describe aging. According to this approach, with age we become more and more dependent on others and less and less free to make decisions independently, therefore socialization is a very important element for quality aging. Levinson's life cycle theory (Levinson 1977) emphasizes that aging is the result of the readiness to face successes and failures in achieving life goals set in earlier periods of life, and the readiness to adapt goals to personal needs and opportunities of a certain age. According to Erik Erikson, the creator of the theory of psychosocial development, middle adulthood is characterized by generativity versus stagnation. This developmental phase is characterized by intense generativity that will show its consequences, positive or negative, in old age. According to Erikson (1963, according to Schaie & Wills

2001), generativity is defined as a process within which an individual generates his or her achievements, works hard, and strives to be the best possible person in the family – as a child and a parent, in the profession – as a successful worker, on the social level – as a useful member of the community, but also individually – in fulfilling some personal preferences and desires from youth. Successful resolution of the conflict of identity development in middle age results in complete generativity, while stagnation is a process that an individual goes through due to failure at this stage of life. A very responsible adult age that is characterized by the care of children and parents at the same time, the so-called “sandwich generation” precedes old age as the last age of development. If an individual generates his/her achievements without major psychophysical consequences, he/she can move toward the next stage of integration. It is certain that during our generation we invest much more energy to achieve the goals of this developmental stage and that such a condition can be reflected in our psychophysical health. Therefore, we consider the issue of achieved generativity important, as well as the relationship that this process can have with psychophysical health.

The lack of responsibility refers to the feeling of completeness of the parental role through the completed cycle of parenthood that accompanies the departure of children from the parental home, as well as through the finalization of the work process. Parents who assess that their children are successful in their independence will have a reflection of personal success through fulfillment in the parental role. Generativity is understood as a lasting contribution, and some authors believe that generativity is the desire of an individual to invest in himself/herself, in the forms of life and work that will outlive him or her (Kotre 1984). Research shows that generativity as a developmental phase should not be closed in middle age, but its power and importance are transferred to old age (Warburton, McLaughlin & Pinsker 2006).

The standard model of generativity is extended by contemporary theorists Mc Adams and de St. Aubin introducing a multidimensional model of generativity. A particularly important component of this model is “generative care” where older people’s generative efforts can contribute to self-acceptance, positive evaluation of earlier life, and ultimate ego integration and experience of meaning in life (Carlson, Seeman & Fried 2000; James and Zarrett 2005; Warburton et al. 2006). Post-socialist countries are characterized by a state of dissatisfaction caused by getting out of the lulled socialist comfort zone for most older adults. Modern capitalist societies are unprepared to go through the process of social transition, so the intensification of the feeling of care for the descendants and the impossibility to contribute to the new generations is

more and more present among the older population (Despotović et al. 2018). On the other hand, generativity can contribute to a sense of satisfaction in old age and successful aging, as evidenced by research examining the relationship between physical and mental health and generativity (de St. Aubin and McAdams 1995; Grossbaum and Bates 2002; Keyes and Ryff 1998; Morphei & al. 2004). According to Junaković, Nekić, and Randić (2016), there is very little research that connects generativity with the quality of life in old age, the authors suggest that generativity can also be viewed as a personality trait. Most research done with older adults has included generativity as a significant variable that accompanies successful aging and is associated with the quality of life of older adults (Warburton, McLaughlin & Pinsker 2006).

Some recent research shows a connection between generativity and the previous material status of the respondents. Interpretation of the results points to the knowledge of the older adults that they can ensure a peaceful and comfortable old age and provide help and support for new generations (Kavečan-Erdeš & Fazlagić 2018), leads to a cumulative dimension of generativity and a sense of complete generativity to meet life goals. Aging successfully, according to Erickson's model, meant realization at the stage of generativity, where the accumulation of all life successes is visible through general satisfaction. Research today finds as many as 105 different variables that determine successful aging (Cosco et al. 2014) and usually the primary measures relate to different biomedical models of successful aging. With this paper, we wanted to check what relations exist between psychophysical constructs and generativity in relation to some sociodemographic characteristics of the older population.

The aim of this paper was to examine whether older adults have entered a new developmental age with the achieved level of generativity, which sociodemographic characteristics can model this process, as well as the relationship between general psychophysical health and generativity.

2. METHOD

In this study, we investigated the relationship between psychophysical health and generativity concerning sociodemographic characteristics in respondents older than 65 years. Therefore, the research aims to determine the characteristics of psychophysical health, the degree of generativity, and the interaction that these constructs have with sociodemographic characteristics.

The research included a convenient sample of the elderly who gave verbal consent to participate in the research. We collected the sample in the open where the elderly

respondents most often spend time, such as parks, promenades, and clubs for pensioners. In cooperation with the gerontological center in Novi Pazar, the questionnaires were applied in one day with the voluntary consent of the interested elderly.

Data were processed using the SPSS statistical package, version 20. Descriptive statistical methods, Pearson's correlation coefficient, t-test for independent samples, Post hoc test, and multiple regression analysis were used for data processing. The researchers predicted that psychophysical health was a predictor of generativity and that they were correlated with sociodemographic variables such as place of residence, parity, birth order, and education.

2.1. Sample

The sample of the research was made by older adults from Novi Pazar (N=101), with a range from 65 to 85 years (M=71.7; SD=3.06). According to the WHO criteria, old age is divided into early (65-74 years), middle (75-84 years), and deep old age from 85 and over (Papalia & Wendkos 1992, as cited in Brajković 2010) The research was conducted on the territory of the city of Novi Pazar, including the Gerontology Center in Novi Pazar at the end of 2018 and in the first half of 2019. Out of the total number of respondents, 56.4% were women, while 42.6% were male respondents.

2.2. Instruments

The survey method was used for data collection. The selection of respondents was random by selecting respondents according to age. Respondents over the age of 65 were included in the research process while the final age limit was indeterminate as we intended to include all three subgroups of older adults. The condition for completing the questionnaire was the verbal consent of the elders to participate in the research, regardless of the presence of acute or chronic mental and physical illnesses. The survey was anonymous and the process of completing did not last longer than 45 minutes.

The questionnaire for examining the socio-demographic characteristics was designed for research purposes and is intended to collect general data on respondents and socio-demographic data about their families. The questions included information related to the personal characteristics of the respondents such as: gender, age, level of education, place of residence, and order of birth in the family, but also information

about the family of the respondents where we were first interested in parity and whom they live with.

Table 1. The research sample according to demographic variables

Variable	Category	N	%
Sex	Male	43	42.6%
	Female	57	56.4%
	missing values	1	1.0%
Age	65-70 years	48	47.5%
	71-75 years	25	24.8%
	76-80 years	12	11.9%
	81-85 years	10	9.9%
	86+ years	5	4.9%
	missing values	1	1.0%
Education	lower education	49	48.5%
	secondary education	35	34.7%
	higher education	11	10.9%
	missing values	6	5.9%
Homeplace	City	77	76.2%
	the countryside	24	23.8%
Whom do you live with?	Alone	13	12.9%
	with spouse	24	23.8%
	with children in the same household	28	27.7%
	in a nursing home	34	33.7%
	missing values	2	2.0%
Which child are you by birth order?	First	35	34.7%
	Second	19	18.8%
	Third	15	14.9%
	Fourth	16	15.8%
	fifth or higher	15	14.9%
	missing values	1	1.0%
How many children do you have?	None	21	20.8%
	One	14	13.9%
	Two	29	28.7%
	Three	21	20.8%
	more than three	15	14.9%
	missing values	1	1.0%

The RAND-36 Health Survey (Version 1.0) (Hays & Shapiro 1992; Stewart et al. 1992) was designed to assess the physical and psychosocial health of healthy as well as chronically ill adult individuals. It consists of eight subscales, and they are grouped in the following way: *Dimensions of psychosocial health* – emotional well-being, role limitations due to emotional problems, social functioning, energy fatigue; as well as the *dimensions of physical health* – physical functioning, role limitations due to physical health, physical pain, and general health. This is the most commonly used measuring instrument for assessing the quality of general psychophysical health of older adults and is characterized by clarity and precision of items, predictability, and simplicity of application, which is especially important for the authors of the study. Within each dimension of the subscale, questions are given that correspond system-

ically and meaningfully to the subscale they are examining, and some of the examples are like: in domain limitations due to physical health – *During the last 4 years, have you had any problems during work or other regular daily activities due to your physical health condition?* Physical pain – *Do you achieve much less than you want due to physical difficulties?* In the domain of social dimension, the questions are multiple-choice. Respondents are asked a question and have the opportunity to choose one offered answer: *How much did your physical or emotional health problems bother you with social activities such as visiting family, friends, etc.?* Each of the mentioned subscales has eight questions related to the dimension it examines and the answers are recorded by the respondents by choosing one of the offered ones: *constantly, most of the time, a good part of the time, some time, short time, and no*. In addition to demographic data, there is another additional item in the questionnaire, which is an indicator of the perceived change in the health status of the respondents. The questionnaire consists of 36 questions organized in eight domains, and those are identical to the ones that were applied by Hays and Shapiro in their Medical Outcomes Study MOS (Hays & Shapiro 1992; Stewart et al. 1992). High scores on all subscales speak of a better health condition of the individual. The reliability of the instruments on our sample is within reasonable limits, with Cronbach's alpha coefficients ranging from .78 to .95.

The Adapted Loyola Scale of Generativity (ALGS) (McAdams, de St. Aubin 1992; Lacković-Grgin, Tucak 2006a) is based on the McAdams and St. Aubin model and is designed to estimate generative care, which is a key component of generativity. It consists of 12 claims that contain several forms of generativity, such as: transferring knowledge and skills, contributing to the community and society, endeavoring to be creative and productive, and so on. The questions are formulated as: *I try to constantly re-examine the knowledge I have gained through my own experience; I think I will be remembered for a long time even after my death, Others say that I make unique contributions to society, I am responsible for improving the environment in which I live*. Respondents give answers on a scale from one (1) to five (5), where one (1) is described as *not referring to me at all*, and five (5) as *referring entirely to me*. The ALGS is treated as a single-factor scale and based on a five-step scale respondents assess the extent to which the content of a particular claim is characteristic for them. The theoretical minimum on this scale is 12 points, and the maximum is 60, where the higher score indicates a higher degree of generativity presence, according to the author of the scale. In our research, the scale showed high internal consistency ($\alpha = .93$).

3. RESULTS

In the following rows, we will describe the relationship between generativity and the indicators of psychophysical health, as well as the differences in generativity between selected demographic characteristics of older adults and finally we will try to determine the predictive factors of generativity among participants of the third age.

Table 2. The degree of expression of generativity and the tested indicators of psychophysical health

	Variables	Mean	SD	Median	Minimum	Maximum
1	Generativity	35.71	12.59	37	12	60
2	Physical functioning	50.80	30.33	55	0	100
3	Limitations in physical Functioning	30.12	43.12	0	0	100
4	Limitations in emotional functioning	43.89	47.36	0	0	100
5	Vitality	46.80	22.48	45	5	95
6	Emotional well-being	60.49	22.29	64	8	100
7	Social functioning	66.09	29.44	75	0	100
8	Physical pain	53.62	28.66	53.75	0	100
9	General health	45.71	22.01	50	0	90

In Table 2. The examined descriptive indicators of research variables are presented.

The results of the research show an optimal level of generativity in the elderly, which points to the assumption that most of the participants in our research have completed this psychosocial phase of development. When assessing psychophysical health on the RANDOM SF-36 scale, our respondents recorded slightly higher scores on the scales of social functioning and emotional well-being (Msf=66.09; Mewb=60, 49). Physical pain (Mpp=53.62) and functioning (Mpf=50.80) are at the optimal level that can be expected in this age group. Vitality (Mv=46.86) and general health (Mgh=45.71) are also assessed as optimal, while limitations in physical (Mlpf= 30.12) and emotional (Mlef=43.89) functioning are lower.

Table 3. Correlation matrix for research variables

Variables	1	2	3	4	5	6	7	8
1 Generativity								
2 Physical functioning	.305**							
3 Limitations in physical Functioning	.271**	.637**						
4 Limitations in emotional functioning	.226*	.427**	.554**					
5 Vitality	.322**	.476**	.485**	.507**				
6 Emotional well-being	.226*	.459**	.429**	.520**	.667**			
7 Social functioning	.345**	.608**	.509**	.624**	.578**	.703**		
8 Physical pain	.292**	.603**	.520**	.387**	.567**	.492**	.593**	
9 General health	.334**	.646**	.477**	.558**	.631**	.504**	.618**	.587**

**p<0.01

The correlation matrix in Table 3 shows that the variables we used in our research are in the mutual positive correlation of medium strength. As for generativity, the strongest connection was determined with social functioning followed by general health and vitality. In addition, the Variance Inflation Factor (VIF) was calculated to test the possible multicollinearity problem. The results obtained regarding the calculated VIF values are presented in Table 8., and according to them, we can conclude that there was no multicollinearity problem between the variables ($VIF < 5$). This allows us to conduct regression analysis to determine what percentage of the variance of generativity can be explained by indicators of the psychophysical health of older adults.

Demographic factors have always been a significant variable in research on the quality of life of older adults. In this study, we examined whether socio-demographic variables such as place of residence, level of education, number of children, and order of birth, make differences in the dimensions of physical and psychosocial health and generativity.

As we can see in Table 4., the t-test for independent samples revealed significant differences between urban and rural respondents for the variables: physical functioning ($t=2.23$; $p<.05$), vitality ($t=2.16$; $p<.05$), emotional well-being ($t=2.60$; $p\leq.01$), physical pain ($t=3.10$; $p<.01$), general health ($t=2.65$; $p\leq.01$), and generativity ($t=3.23$; $p<.01$) while no significant difference was found for social functioning, limitations in physical functioning and limitations in social functioning. The lack of significance in differences in before mention variables indicates that older adults in rural and urban

environments face the same level of limitations whether they are high or low, and they also experience the same level of social functioning.

Table 4. Average values of generativity and dimensions of physical and psychosocial health according to the place of residence

Variables	Category	N	M	SD	t	df	p
Physical functioning	city	77	54.49	29.59	2.23	99	.03
	village	24	38.95	30.25			
Limitations in physical Functioning	city	77	34.63	44.73	1.91	99	.06
	Village	24	15.62	34.43			
Limitations in emotional Functioning	city	77	45.02	47.68	.43	99	.67
	village	24	40.27	47.11			
Vitality	city	74	49.55	22.24	2.16	96	.03
	village	24	38.33	21.50			
Emotional well-being	city	74	63.73	22.65	2.60	96	.01
	village	24	50.50	18.15			
Social functioning	city	77	68.18	29.56	1.28	99	.20
	village	24	59.37	28.61			
Physical pain	city	74	58.51	28.16	3.10	96	.00
	village	24	38.54	25.17			
General health	city	77	48.84	20.93	2.65	99	.01
	village	24	35.62	22.76			
Generativity	city	77	37.87	11.54	3.233	99	.002
	village	24	28.77	13.54			

Table 5. shows the differences with respect to the level of education for the variables physical functioning, limitation in physical functioning, and generativity. The post hoc test determined the differences between the categories of lower education and secondary education, while no significant differences were observed for higher education.

Since the initial analysis indicated that there is a significant difference in the mentioned variables between at least two of the three compared groups, additional, i.e. post hoc tests were conducted to determine exactly between which groups there is a significant difference in the variables physical functioning, limitations in physical functioning and generativity. These tests determined statistically significant differences in the subjects of lower education and secondary education for the variables of physical functioning, limitations in physical functioning, as well as in generativity ($p < 0.05$) (Table 5.). The differences are manifested in the way that the scores of the mentioned variables are statistically significantly higher in the respondents with secondary education. This can be interpreted in a way that older adults with a higher form of education on average have better physical health, fewer limitations in physical functioning, and greater generativity than those with lower educational levels.

Table 5. Differences according to education on the dimensions of generativity, physical and psychosocial health

Variable	Category	N	M	SD	SS	df	MS	F	p
Physical functioning	LE*	49	43.18	28.30	8122.32	2	4061.16	4.85	.01
	SE**	35	62.79	27.23	77067.33	92	837.69		
	HE***	11	56.62	36.63	85189.65	94			
	Total	95	51.96	30.10					
Limitations in physical functioning	LE	49	18.88	37.34	15535.81	2	7767.91	4.43	.02
	SE	35	39.05	44.50	161515.36	92	1755.60		
	HE	11	54.55	52.22	177051.17	94			
	Total	95	30.44	43.40					
Generativity	LE	49	33.36	13.17	930.03	2	465.02	3.17	.04
	SE	35	37.36	10.81	13505.07	92	146.79		
	HE	11	42.91	10.97	14435.10	94			
	Total	95	35.94	12.39					

*_lower education

**_secondary education

***_higher education

Examination of differences in the variables of physical and psychosocial health and generativity showed that there are statistically significant differences between respondents without children and respondents with two children at the level of physical functioning (Table 6.). The differences indicate that older adults with two children show a higher level of physical functioning compared to older adults without children. Also, it can be seen that older adults without children show a lower level of physical functioning than older adults with one, three, or more children, although these differences are not statistically significant ($p > 0.05$). This finding indicates a positive effect of having at least one child to preserve physical health because while there is a significant difference between not having children and having at least one child, that significance is lost with the increase in the number of children.

Table 6. Differences according to the number of children in the dimensions of generativity, physical and psycho-social health

Variable	Category	N	M	SD	SS	df	MS	F	p
Physical functioning	none	21	40.48	29.02	11501.23	4	2875.31	3.40	0.01
	one	14	45.89	33.42	80308.59	95	845.35		
	two	29	66.90	24.22	91809.82	99			
	three	21	48.02	30.81					
	more than three	15	41.67	31.09					
	Total	100	50.66	30.45					

Table 7. Differences according to birth order on the generativity dimension

variable	category	N	M	SD	SS	df	MS	F	p
Generativity	first	35	39.40	10.13	1851.96	4	462.99	3.17	0.02
	second	19	35.84	14.13	13866.13	95	145.96		
	third	15	37.27	12.83	15718.08	99			
	fourth	16	35.63	12.93					
	fifth and higher	15	26.26	11.86					
	Total	100	35.83	12.60					

We also examined differences in variables concerning birth order. In Table 7. we can see that there are statistically significant differences only in the level of achieved generativity in relation to the order of birth ($p < 0.05$). The results show that first-born children achieve a higher level of generativity at an older age than second-born children which is in line with the prior research on this topic (McAdams & Aubin 1992; Villar 2012).

By linear regression analysis, we also examined the significance of the generative prediction model based on the eight dimensions of physical and psychosocial health that were used as predictors. To avoid the collinearity problem, eight predictors were centered before analysis. Other dimensions of psychophysical health weren't included because they didn't show a significant correlation with the dependent variable (generativity) and therefore weren't suited to be predictors.

Table 8. Results of standard multiple regression analysis for prediction of generativity

Variables	Generativity			VIF	Model Summary
	β	t	p		
Physical functioning	.01	.04	.97	2.58	
Limitations in physical functioning	.07	.51	.61	2.11	
Limitations in emotional functioning	-.11	-.78	.44	2.10	R = .404
Vitality	.18	1.17	.25	2.46	R ² = .163
Emotional well-being	-.12	-.80	.42	2.51	F(8, 89) = 2.17
Social functioning	.24	1.43	.16	3.05	p = .04*
Physical pain	.03	.19	.85	2.08	
General health	.14	.90	.37	2.60	

*p<0.05

The results of multiple regression analysis showed that the model that makes up the dimensions of physical and psychosocial health statistically significantly predicts generativity (Table 8.). These eight predictors explain 16.3% of the variance in generativity (R²=.163). However, no single predictor stood out as significant (p> 0.05). Based on this, we can conclude that no dimension of psychophysical health can serve as a protective factor or a risk factor for the level of generativity in the third age. Only their cumulative effect or joint action significantly predicts generativity to a certain extent. This also means that 83.7% of the variance of generativity is explained by some other factors which need to be further explored.

4. DISCUSSION

Observed in a broader context, the psychophysical health of older adults depends on several psychological and physiological changes that occur naturally in older adults, followed by the conditions in which older adults live such as climate, housing conditions, traffic infrastructure, pollution, and others (WHO, 2010). We must not forget the transitional changes that older adults in Serbia went through during their lives, which certainly modeled the quality of life and general psychophysical health of this population. Generativity in this paper is observed through the model of generativity of McAdams and de St. Aubin (1992), which includes accumulated care for offspring, and which is transferred from the late middle years to the third age.

Thus, the better the general health, the greater the emotional well-being and vitality, and the more complete the generativity will be (p ≤ .047). The results also show

that older adults in Novi Pazar and with higher education are psychophysically healthier ($p \leq .015$), those who have more children are more physically functional, and the level of generativity is related to the order of birth ($p \leq .017$). Regression analysis that included all eight variables measuring psychophysical health and generativity showed statistical significance $p \leq .037$, where eight psychophysical health factors explain 16% of the variance, and no single predictor stood out as significant ($p > 0.05$). Research examining generativity and well-being during aging shows that older adults who have more positive expectations about aging in the domain of mental health report both greater social support and lower levels of loneliness in the generativity stage (Mioeni et al. 2021).

We will first observe the relationship of sociodemographic variables to psychophysical health and generativity. Namely, older adults who live in Novi Pazar show better psychophysical health than older adults from the countryside. We assume that life in the countryside is difficult for several reasons and that the reduced or complete unavailability of institutions and organizations, poor traffic connections and infrastructure, lack of need for participation in the social life of the local community, etc. stand out as aggravating factors. In this regard, health care at all levels is first available to older adults in the city, which encourages a sense of security that they will have the necessary care and therapy in urgent situations. We must not forget the functionality and readiness of cities to provide greater mobility for older adults through the transport infrastructure and flexibility of public transport. One interesting study shows that it is easier for demented older adults in cities to recognize their neighborhood if that city is designed to be diverse and with some recognizable features (Jones 2016). According to Bokić and Čukić (2014), rural culture is “stuck” between traditionalism and mass culture, with constant migrations, and pronounced poverty, where this context of the modern Serbian rural structure gives research on the quality of life a special relevance. On the other hand, the situation in Serbia is somewhat different in relation to Europe, where according to the study of Sorensen and associates (Sorensen 2014), the quality of life of older adults from the countryside is assessed as better than that of older adults who reside in the city. In general, living conditions in the countryside were assessed as peaceful and relaxing in relation to the city.

Furthermore, in our research, there are differences in respondents in relation to education, where respondents with lower education assess their psychophysical health as worse. Respondents with lower education may estimate that they could have invested more mental and physical capacities in life to achieve full life meaning, unlike

high school respondents who lived in the socialist era and had secure jobs, stable careers, and the assumption of a stable family environment. Furthermore, we assume that older people with a higher level of education also practice a healthier life in terms of disciplining life and eating habits. Often, higher education conditions a wider social network that ensures a faster flow of information related to health and health habits, but also more frequent visits to the doctor and control. In such a safe environment, a sense of generativity helps the intrapersonal dimension of the generative model that satisfies the need for self-actualization. Similar results were found in the research of Tucak Junaković, Nekić, and Ambrosi Randić (2016), where older people in higher education show better strategies for coping with stressors associated with aging.

The disadvantage of our study is that we did not observe gender differences because an interesting study by Stewart (Stewart 2005) on a sample of university-educated women of the third age shows that most women have increased awareness of personal identity and self-confidence with increased preoccupation about the aging process. The results also show that respondents with higher education also achieve better generativity. Generativity is higher if we have lived a meaningful professional life, which is more certain with higher education. Older people with higher education are more respected in the community in which they live, we assume that they had or have a better social position, which is important in personal self-evaluation. Physical functioning distinguishes respondents according to the number of children, while those aged without children and with two children differ in vitality. Limited physical functioning and vitality are the most important measures of the general functionality of older adults, and the lack of instrumental support that children of this age usually provide to their parents makes older adults insecure.

For older adults who cannot self-serve, children are the first helpers, and often children provide a person who is at the service of their parents if they are prevented. The problem of environmental limitations and functionality is especially emphasized in older adults with reduced mobility, who need additional physical help and care. Vitality, physical and mental, is reflected in the social interaction that older adults have with their children. Children are part of the social network which is a significant predictor of good psychophysical health and quality of life. Social networks and social support are especially important in the entity of preserving and improving health (according to Despotović 2012). Respondents perceive that it is important for them to have someone to rely on in order to achieve and maintain physical functioning, and just knowing that their children are there for them if needed is enough for “peaceful aging”. Children represent a significant emotional and instrumental support that can

inevitably affect the improvement of the health of older adults, preservation, and rehabilitation of health (De Belvis et al. 2008). positive correlation with measuring instruments for assessing the quality of general psychophysical health- SF 36 and can significantly predict stable psychophysical functioning (Zhu et al. 2021).

Furthermore, research in Serbia shows that caring for older adults is one of the crucial moments of harmonious family life, especially in the segment of intergenerational solidarity (Bobić, Vesković Anđelković 2020). Total generativity significantly differentiates the old ones based on the order of birth. Parents' investments in first-born children are higher, parents also view older children as knowledge bases and teach them responsibility, leadership, and self-discipline earlier. Older children remain role models for second-born children, and the guidelines and responsibility with which they should guide the younger generations offer them the possibility of occasional self-evaluation of personal integrity. First-born children retain the position of the most responsible towards all other children in the family, which could affect the moment of satisfying the generative need "need to be needed" according to Lacković-Grgin (2014). The best position may be given to first-born children who satisfy the second stage of generativity according to Vaillant (Vaillant 1993) the stage of guardian of meaning versus rigidity. The latest research, in two culturally different countries such as China and Denmark, was concerned with examining the potential of intergenerational encounters, family and social ties, and their impact on alleviating loneliness and increasing well-being in the elderly. The results show that the influence of intergenerational encounters is extremely large and that it improves the quality of life of the elderly, especially *filial piety* (sons' dedication; Ren et al. 2022).

This stage is characterized by the initial care for one or more young family members and ends with keeping the meaning and leading the ones closest to us as well as further members in preserving values and traditions. Finally, guided by the recommendations of the World Health Organization that age is well understood through the phrase "add life to years", the regression analysis model of our research shows that. The model shows the predictive significance of all eight examined variables of psychophysical health combined, with none of them having an individual significant impact. The dimension of psycho-physical health and satisfaction with what has been achieved can be predictors of generativity in old age. However, emotional well-being has been shown to be a significant predictor variable for years (Moventhan, Nivethitha 2017). Older people who are in better physical health will have a better perception of generativity (Grunewald et al. 2012).

Optimal aging can be understood as a system of strategies that we have adopted during life in order to compensate for the normative shortcomings of old age. Many people function below the limits of their reserve abilities throughout their lives, which does not particularly hinder them in their youth, but in old age, those individuals who manage to function closer to their own limits and who can strengthen social support systems will feel much better and act more capable than those who failed in that life mission (Baltes & Carstensen 1996). Successful aging could be supported by the achieved generativity in middle age and optimal psychophysical health, which would make old age easier and more meaningful through the awareness that we have managed to respond to life's tasks set at an early age.

5. CONCLUSION

We consider the trend in the research of older adults over 65 to be important since the effect of the cohort and the variability of living conditions significantly model the quality of life of older adults, which directly reflects on their psychophysical health. It is especially important to expand the criteria in the selection of those sociodemographic variables that specify the sample in our country in order to contribute to a more precise picture of older adults, and with the help of which we get guidelines for preventive and active programs aimed for this population.

Through our research, we tried to observe the concept of generativity through the prism of the newest model of generativity with the central concept of "generative concern" which refers to stabilizing the Ego in the last phase of life through self-acceptance and positive evaluation of life. Age brings with it physical limitations that can slow down self-acceptance, and which directly reflect on the degree of generativity, we assumed that older adults who are aware of physical, emotional, and social limitations will have better self-acceptance or more pronounced generative concern which is normal in this age.

In their paper Ehlman & Ligon (2012) concluded that an individual's inner desire combined with cultural demand is the motivational source producing generative action, the results of this paper have shown that our older adults have a pronounced level of generativity, what's missing is the right cultural channel for its expression and also social support of higher institutions and organizations. Older adult education programs are needed, as prevention programs for the development of adequate coping strategies for tasks specific to their age. Their unique life stories need to be told as a part of important historical dates that they have lived through. Intangible cultural her-

itage workshops are another excellent channel for expressing generativity. Successful aging is a complex concept; we believe that for it to be understood a holistic approach is required that includes knowledge of all the variables that determine this process.

We dedicate this final section to recommendations for future researchers to improve their methodological designs toward a better understanding of the relationship between generativity and psycho-physical health. Our research is based on a correlational design, and although we obtained a low to moderate positive correlation between the predictor and the dependent variable, this combination of predictors explains only 16.3% of the variance in generativity, which tells us that the remaining 83.6% depends on some other factors and remains unexplained. Also, we must point out the limitations of the conclusions that can be extracted based on the results of questionnaires which are conducted on the principle of self-reporting and are subject to the flaws and errors that occur with all self-report measures.

The limitations of our study relate primarily to the limited number of sociodemographic variables that could contribute to a higher quality of this paper and a clearer picture of the impact of demographic and social dimensions. In the statistical analysis, we did not specifically address gender differences, which may be a limitation in understanding whether life roles change attitudes toward generativity. We suggest that future research focus on interpreting whether “male” and “female” roles in middle age conditions have a higher or lower degree of generativity in later years. We also invite colleagues from the nearby region to further investigate this topic of aging in the city of Novi Pazar, which bears the epithet of the youngest according to the age structure of young people, which is declining due to their migration to Western Europe.

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PSIHOFIZIČKO ZDRAVLJE I GENERATIVNOST STARIH

Sažetak:

Trend globalnog starenja stanovništva doveo je do povećanja broja istraživanja koja se bave uspešnim starenjem. Ovde tvrdimo da uspešno starenje zavisi od psihofizičkog zdravlja i uspešnog prevazilaženja generativne faze. Stoga je cilj ovog istraživanja bio da se ispita odnos između navedenih varijabli i odabranih sociodemografskih karakteristika starijih osoba. U istraživanju je učestvovao 101 ispitanik (M starost = 71.7), većinski nastanjeni u gradskoj sredini i nižeg stepena stručne spreme. Instrumenti korišćeni za prikupljanje podataka su bili sledeći: Upitnik za ispitivanje sociodemografskih karakteristika, Upitnik za ispitivanje zdravlja RAND-36 i Adaptirana Loyola Skala Generativnosti (ALGS). Rezultati multiple regresione analize su pokazali da model koji čine dimenzije fizičkog i psihosocijalnog zdravlja statistički značajno predviđa generativnost ($F_{(8,89)}=2.17$; $p<.05$). Ovih osam prediktora objašnjava 16.3% varijanse generativnosti ($R^2=.163$). T-testom za nezavisne uzorke utvrđene su značajne razlike između ispitanika iz grada i ispitanika sa sela za varijable: fizičko funkcionisanje ($t=2.23$; $p<.05$), vitalnost ($t=2.16$; $p<.05$), emocionalnu dobrobit ($t=2.60$; $p\leq.01$), telesnu bol ($t=3.10$; $p<.01$), opšte zdravlje ($t=2.65$; $p\leq.01$), i generativnost ($t=3.23$; $p<.01$) dok za ostale varijable nije pronađena značajna razlika. Ispitivanjem razlika kod varijabli fizičkog i psihosocijalnog zdravlja i generativnosti pokazano je da postoje statistički značajne razlike između ispitanika koji su bez dece i ispitanika sa dvoje dece u nivou fizičkog funkcionisanja. Ispitivali smo i razlike u varijablama u odnosu na red rođenja i utvrdili da postoje statistički značajne razlike samo u nivou postignute generativnosti u odnosu na redosled rođenja ($F_{(4,95)}=3.17$; $p<.05$). Život u ruralnim područjima povezan je sa nedostupnošću zdravstvene zaštite, dok je niže obrazovanje povezano sa nedostatkom adekvatnih strategija suočavanja. Dodajući posebnosti ove kohorte dobijamo jasnu sliku o potrebi da se obezbedi bolji kvalitet života ove rastuće populacije.

Ključne reči: stari; psihofizičko zdravlje; generativnost

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