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## Original

# LA INFLUENCIA DEL TURISMO EN LA SALUD DEL ESTADO PSICOFÍSICO DE LAS PERSONAS DE TERCERA EDAD

## THE HEALTH IMPACT OF TOURISM ON THE PSYCHOPHYSICAL STATE OF ELDERLY INDIVIDUALS

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## RESUMEN

El objetivo de esta investigación es conocer el impacto de las actividades turísticas en la condición psicofísica de las personas de tercera edad. **Materiales y métodos.** En tal experimento transformacional, participaron 221 personas de entre 60 y 65 años que asisten a la Universidad de la tercera edad (152 mujeres y 69 hombres). Cabe señalar, que la frecuencia de clases en la Universidad de la tercera edad era de 3 clases semanales con una duración de entre 40 a 60 minutos. El programa está diseñado para 6 meses y consta con períodos preparatorios (adaptación), períodos principales (de salud) y de apoyo. Cada de los períodos estuvo orientado para conseguir un conjunto de tareas. Se utilizó SF-36 para evaluar la calidad de vida. Para la evaluación de la satisfacción que tienen los participantes con la vida, se utiliza el índice de satisfacción con la vida (LSIA). La actividad física se evaluó mediante la ayuda de la prueba PWC150. El nivel de éxito de la adaptación psicosocial se evaluó mediante la ayuda de un cuestionario modificado de Rogers y Diamond. El rendimiento mental se evaluó mediante la ayuda de la prueba de corrección de Bourdon. Para analizar la significación estadística de las diferencias entre los datos se utilizó el criterio de Wilcoxon. En cada caso, se comprobó la hipótesis y se calculó el valor "r". Las conclusiones sobre la importancia de las pruebas se realizan en un nivel de significancia de 0.05. En las condiciones de la Universidad de la tercera edad, durante la implementación del concepto, se observó una dinámica positiva en los indicadores de actividad motora, calidad y satisfacción con la vida, capacidad mental y física, tasas de envejecimiento, adaptación sociopsicológica, funciones cognitivas, estado psicoemocional corregido. Sin embargo, al final del estudio notamos cambios significativos en los indicadores integrales de adaptación social y psicológica, es decir, los indicadores de autopercepción (mujeres  $68,8 \pm 0,7$  puntos; hombres  $- 78,8 \pm 4,1$  puntos) y comodidad emocional (mujeres  $63,3 \pm 1,7$  puntos, hombres  $69,2 \pm 1,2$

puntos) ( $p= 0,05$ ). Como se predijo, para las personas de tercera edad que continúan la autoeducación en la vejez, el programa de turismo tuvo un efecto positivo en los indicadores de actividad cognitiva. **Conclusión.** La práctica de turismo para la salud tiene un efecto positivo sobre el estado psicofísico de las personas de tercera edad. La combinación de actividad física, interacción social y nuevas experiencias ayuda a mejorar la salud emocional, física y cognitiva.

**Palabras clave:** vejez, actividad motora, turismo.

**ABSTRACT**

The purpose of our research is to ascertain the impact of tourism activities on the psychophysical state of elderly individuals. Materials and methods. 221 people took part in the transformative experiment aged 60-65, who attend the University of the Third Age (152 women and 69 men). It is worth mentioning that the frequency of classes at the University of the Third Age was 3 classes per week, lasting 40-60 minutes. The program is designed for 6 months and consists of preparatory (adaptation), main (improvement) and supporting periods. Each of the periods was aimed at achieving a set of tasks. To assess the quality of life SF-36 was used. To assess the satisfaction of the participants' lives, the Life Satisfaction Index (LSIA). Physical activity was evaluated using the PWC150 test. The level of success in psychosocial adaptation was assessed using a modified Rogers and Diamond questionnaire. Mind performance was assessed using Bourdon's correction test. The Wilcoxon test was used to analyze the statistical significance of the differences between the data. In each case, the hypothesis was tested, and the p-value was calculated. Conclusions regarding the significance of testing were made at the 0.05 significance level. In the conditions of the University of the Third Age, during the implementation of the concept, positive dynamics of indicators of motor activity, quality and satisfaction with life, mental and physical working capacity, rates of aging, socio-psychological adaptation, cognitive functions, psycho-emotional state were fixed. However, we note significant changes in integral indicators of socio-psychological adaptation at the end of the study, namely, in the indicators of self-perception (women –  $68.8 \pm 0.7$  points; men –  $78.8 \pm 4.1$  points) and emotional comfort (women  $63.3 \pm 1.7$  points ; men  $69.2 \pm 1.2$  points) ( $p=0.05$ ). As was anticipated, for elderly individuals who continue self-education in their later years, the tourism program had a positive impact on cognitive functioning indicators. Conclusion. Involvement in health tourism has a positive impact on the psychophysical state of elderly individuals. The combination of physical activity, social interaction and the acquisition of new experiences contributes to the improvement of emotional, physical and cognitive health.

**Keywords:** old age, physical activity, tourism.



## INTRODUCTION

Population ageing is one of the key characteristics of the modern world. It is predicted that by 2050, the number of people aged 60 and older will increase to 2 billion, which will correspond for 15% of the world's total population (WHO). This significant increase in the elderly population is associated with increased life expectancy and a range of factors, including genetic characteristics, environmental conditions (ecology, nutrition) and sociocultural factors, such as access to medical care and the ability to maintain health (Ahn Y.-D. et al., 2019, Andrieieva O. et al., 2019, Jafari A. et al., 2020).

The primary goal of contemporary research is to ensure that the additional years of life are active, productive and healthy. This requires a comprehensive approach to healthcare, social support and the development of new methods-treatment and care for the elderly people.(Barbosa BT, et al. 2019). Population aging is a significant challenge for society, that has to find and implement strategies to improve the quality of life for the elderly population and support their needs (Márcio F. R., 2019, Skalacka, K., 2023, Vale R. G. de S., 2018, Yelizarova O, 2020).

Analyzing the daily activities of retirees, experts note the irrational organization and "meaningless" content of their lives (Banakh et al., 2023). This can be seen through mistimed and irrational nutrition, insufficient time that spent outdoor, inadequate physical activity, disruptions in the balance of work, rest and sleep patterns (Tiaotrakul, A., Montiean, S., & Jaruchart, T. 2023). Crisis situations that arise in elderly individuals have negatively affected their mobility (Soori, S., et al. 2022, Monteiro A. M., et al. 2019, Hakman A., et al. 2021). According to researchers, an effective way to address this problem is to involve the elderly in regular physical activity with a health and recreational focus (Andrieieva O. et al, 2019, Federici A., et al., 2019, Lanzara, I., et al. 2021, Larasati et al., 2019, Shkola O. et al., 2022). The effectiveness of such approaches has been supported by scientific studies (Park, S. G., 2006, Martínez-Vidal A. et al., 2011, Shim Y.-J et al., 2019, Márcio F. R. et al., 2019, Hakman A. et al., 2019). Physical activity positively influences well-being, mood, physical health and both physical and cognitive performance in various population groups while reducing stress (Andrieieva et al., 2022; Kozina, Z. et al., 2018). The importance of physical activity in

improving psychophysical well-being, especially nowadays, has been highlighted by authors (Theofilou P. 2013, Monteiro A. M., et al. 2019, and Hakman A. et al, 2021).

Tourism activities are particularly significant for the elderly, as they have a consequential therapeutic effect. Traveling contributes to improve physical state, preserve mobility and endurance, reduce stress, improve sleep and psychological well-being, that becomes increasingly important whilst aging process (Cojanu, F., Catanescu, A., George, N., & Visan, P., 2023). Tourism stimulates brain activity and keeps it in tone, helps to prevent falls and maintain balance. According to Andrzejgeise, Agnieszka Geise, Radosław Plebanek (2021), tourism activities expand horizons and stimulate interest towards new knowledge, that enriches life in old age.

Among scientific research, most of the attention by researchers has been focused on involving mature and elderly individuals in regular physical activity, without considering the therapeutic effects of tourism activities for this age group. This underscores the appropriateness and necessity of conducting research to study the impact of tourism activities on the psychophysical well-being of elderly individuals.

## METHODS

### *Participant.*

A total of 221 individuals, aged 60-65, who were attending the University of the Third Age, participated in the transformative experiment. This group consisted of 152 females and 69 males. Notably, the sessions at the University of the Third Age were held three times a week, lasting 40-60 minutes each. During practical sessions, considerable attention was given to the psychosocial well-being of participants and the correct execution of physical exercises with proper breathing techniques.

### *Organization of research.*

An analysis of the experience that indicates working with Universities of the Third Age revealed the specific features of the socio-pedagogical environment, including: socialization of retired individuals; the possibility of lifelong education; expectancy to obtain new knowledge, abilities, skills that are targeting the requirements of technological progress; carrying out educational work; creation of friendly interpersonal relations, motor activity increase; health care.



Taking into account the specific activities of the University of the Third Age, which differ in their priority areas of operation, types of services, material resources, financial activities and staff composition, we have developed a standard program for therapeutic tourism activities for elderly individuals studying at the University of the Third Age. The implied program is structured as a comprehensive system that includes functional elements, that operate according to their intended purposes.

The outcome of this process is a program with its content, the relationships between the subject and the object of the experiment and its personalized nature. The program was founded on the principles of consciousness and activity, consideration of individual characteristics, optimal intensity and workload, the continuity of the training process, the gradual achievement of an optimal physical condition and the management of pressure and the direction of activities based on medical and sports-pedagogical diagnostic data.

The main objective of this experiment was to enhance the impact's effectiveness of therapeutic tourism on the participants of the University of the Third Age, creating conditions for their creative, intellectual, spiritual and physical development. It aimed to develop physical qualities, promote health, foster a healthy lifestyle and facilitate the rational organization of recreational physical activity in leisure time.

In the program development, we planned to assess the health status, functional characteristics and physical fitness of the participants. We used the following recommended types of physical activity routines for elderly individuals based on the literature [1]: 1) gentle; 2) therapeutic and restorative; 3) general physical fitness and wellness; 4) training; 5) fitness and longevity maintenance.

The duration of the program is 6 months and it consists of preparatory (adaptation), main (improvement) and maintenance periods. Each of these periods was directed toward achieving specific objectives.

During the adaptation period, the objectives included accelerating metabolic processes and gradually adapting the elderly individuals' bodies to physical activity, strengthening the muscle and connective tissue structure; teaching exercise techniques; increasing physical activity and developing motor skills and abilities, as well as promoting a change in

lifestyle. The adaptation period lasted for one month. All types of exercises during this period were conducted exclusively in the environment of the University of the Third Age under the supervision of a coach-methodologist and a medical professional. This period involved activities in gentle, therapeutic and restorative establishments. Significant emphasis was focused on respiratory gymnastics during practical sessions. In the therapeutic and restorative stage, the target was on consolidating achieved results, further enhancing physical abilities, mastering new exercises with minimal tension, addressing issues related to chronic conditions, optimizing physiological functions, enhancing resistance and preventing illnesses. Significant attention was given to the development, maintenance and recovery of lacking physical qualities and sustaining interest in the activities.

Throughout the progressing period, that lasted for four months, the program involved increasing the pace of exercise execution, expanding physical activity, enhancing the physical condition of elderly individuals, developing strength, coordination, flexibility and balance, muscle and connective tissues strengthening, boosting metabolism, improving endurance, and adapting body to the strength-based exercises.

During the improvement period, the program included increasing the intensity of exercises and expanding physical activity. This involved sessions of fitball aerobics, which were necessary for developing strength, coordination, flexibility, and balance. Additionally, strength trainings were incorporated, focusing on enhancing and developing muscles and connective tissues, accelerating metabolism, boosting endurance and adapting the body to strength-based exercises.

The main goal of the maintenance period was to sustain the achieved level and improve the functional characteristics and physical fitness of elderly individuals at a high level. This period aimed to preserve and strengthen their health while preventing illnesses. The duration of this period was one month. Now, participants were capable of conducting exercises independently outside the University of the Third Age due to the training and skills reinforcement, techniques and the adaptation of elderly individuals to the exercises carried out during the adjustment and improvement periods.



Predominantly, the preparatory part of the session lasted 10-15 minutes and included developmental exercises and breathing exercises. The complex of general developmental exercises consisted of both static exercises (performed while standing or sitting) and dynamic exercises (activity resulting in movement), including various forms of walking at slow and moderate paces. The main part of the session lasted 30-40 minutes and included static and dynamic general developmental exercises, both with and without the use of props or objects. Special attention was given to breathing techniques, involving dynamic inhalation, a slight pause after inhalation, deep, slow and complete exhalation. The final part of the session lasted 10-15 minutes, involving exercises performed while sitting or lying down, relaxation sessions, accompanied by calm, slow music. It's worth mentioning that during the preparatory and concluding parts, theoretical program materials were presented to the participants.

Throughout the entire period of the pedagogical experiment, the health tourism sessions for elderly individuals were conducted under varying conditions, following the provided methodology based on the concept of active aging for elderly individuals, utilizing the potential of health and recreational physical activities, with health tourism being the primary means. Organizational and methodological errors identified earlier, were eliminated, allowing for more effective conduct of health tourism sessions. Additionally, discussions were held with the participants regarding the benefits of health tourism sessions for various aging body systems, methods of dose adjustment for health sessions, the physical regimen of retirees, active aging and their potential in contemporary society.

#### *Methods.*

To assess the quality of life, the Medical Outcomes Study Short Form (SF-36) was used. To evaluate participants' life satisfaction, the Life Satisfaction Index A (LSIA) developed by Bernice L. Neugarten and others (1961) and adapted by N.V. Panina (1993) was employed. Physical activity was assessed using the PWC150 test, which measures an individual's power at standard physical exercise, where the heart rate (HR) reaches 150 beats per minute, which is the peak index for elderly people. The level of psychosocial adaptation was assessed using a modified questionnaire developed by Rogers and Diamond. Cognitive performance was evaluated with

the Burdon Correction Test. Data organization and primary analysis were performed using Microsoft Excel 2010 spreadsheets. Statistical data analysis was conducted using STATISTICA 8.0 software. The Wilcoxon test was used to analyze the statistical significance of differences between data. The Pearson correlation coefficient was calculated to measure the interrelation between variables. In each case, hypotheses were tested and p-values were computed. Conclusions regarding the significance of the testing were made at the 0.05 significance level.

#### **RESULTS**

The evaluation of the effectiveness of the implied technology allowed us to determine the quality of life indicators for elderly individuals. According to our research, at the beginning of the experiment, the components of the quality of life for respondents were in the range of 53.2-69.4 points for females and 54.8-70.3 points for males accordingly. However, by the end of the study, the quality of life indicators had significantly improved, considering all components. For instance, the "physical activity" component of the quality of life improved by  $13.3 \pm 1.4$  points in women and  $14.4 \pm 1.8$  points in men during the study. The role of physical problems in limiting daily life activities showed positive dynamics and increased by  $3.9 \pm 1.1$  points in women and by  $2.6 \pm 0.7$  points in men. The level of pain for females aged 60-65, as an indicator of quality of life, improved by  $3.2 \pm 0.8$  points, and for males, it improved by  $2.8 \pm 1.1$  points. Overall, health status improved by  $11.4 \pm 2.1$  points in women and by  $13.1 \pm 0.7$  points in men. The indicators of vitality increased by  $6.4 \pm 0.9$  points in women and  $6.3 \pm 1.2$  points in men. Social activity had a significant positive dynamic in females and increased by  $10.9 \pm 1.5$  points, while in males, it increased by  $3.4 \pm 2.1$  points. The role of emotional problems in limiting vitality had a slight increase in male behalf (by  $1.1 \pm 0.8$  points), while in females', a significant increase of  $11.2 \pm 0.4$  points was observed. The indicators of mental health showed an increase of  $5.6 \pm 0.4$  points in women and  $2.3 \pm 0.8$  points in men.

We have defined the Life Satisfaction Index as a criterion for evaluating the effectiveness of the program we proposed. At the beginning of the study, among female respondents, individuals with a low level of life satisfaction predominated (65.1%). However, by the end of the study, a larger proportion



of women reported a moderate level (54.6%) and a high level (13.8%) of life satisfaction. Among men aged 60-65 at the beginning of the study, 30.4% reported moderate life satisfaction and 31.9% reported low life satisfaction. By the end of the study, 44.9% of male respondents had high life satisfaction and 33.3% reported moderate life satisfaction.

The results from the determination of the Life Satisfaction Index using the methodology of K.

Rogers and R. Diamond allowed us to identify its levels (see Table 1). The most positive dynamics among the Life Satisfaction Index indicators for women at the end of the study are observed in the acceptance of others and emotional comfort indicators. Among men, the highest quantitative increase is found in the adaptability and the desire for dominance indicators.

**Table 1.** Integral Indicators of Social-Psychological Adaptation of the Study Participants at the Beginning and End of the Study (according to K. Rogers and R. Diamond's methodology, 2001) (n=221), points Satisfaction with Life Index, SWL

Satisfaction with Life Index, SWL	Females (n=152)				Males (n=69)			
	at the beginning of the study		at the end of the study		at the beginning of the study		at the end of the study	
	$\bar{x}$	m	$\bar{x}$	m	$\bar{x}$	m	$\bar{x}$	m
adaptation	65,4	1,3	71,4	2,4	63,4	3,6	79,4	4,1
self-perception	62,6	3,4	68,8	0,7	68,5	3,8	78,8	4,1
acceptance of others	53,4	3,6	61,5	1,3	62,8	2,8	71,2	2,3
emotional comfort	55,7	2,1	63,3	1,7	67,7	2,5	69,2	1,2
internality	63,3	2,2	61,2	1,3	57,8	2,6	56,3	0,9
dominance desires	53,4	0,9	56,4	0,8	78,4	1,3	84,1	1,7

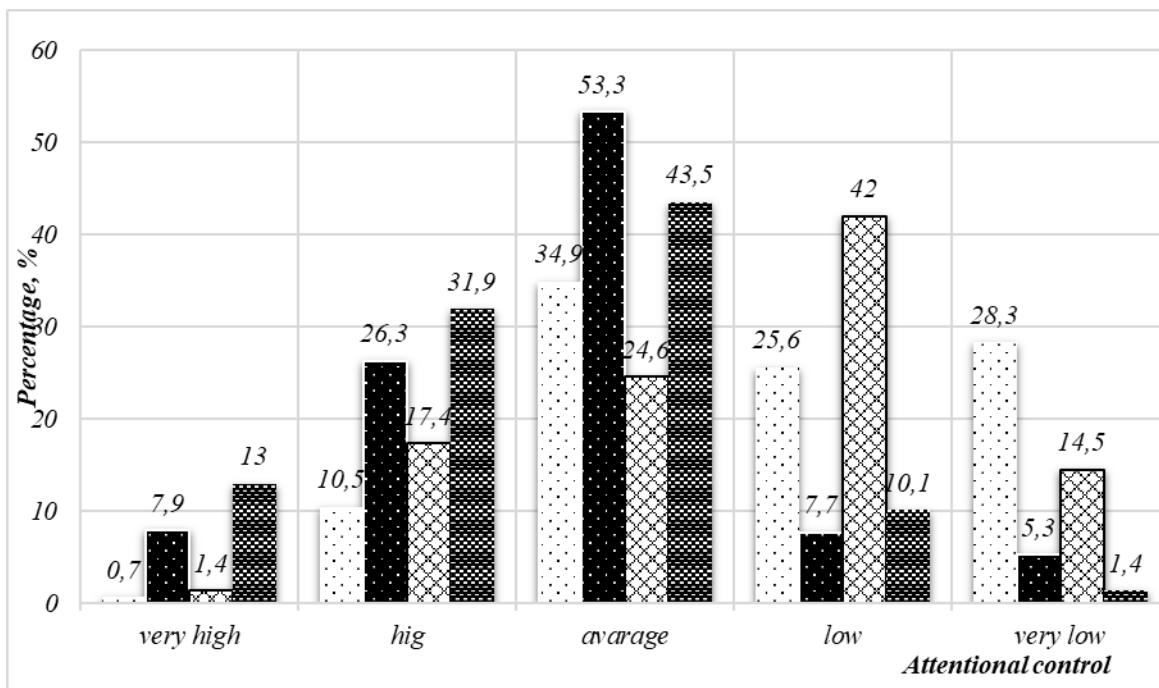
Physical capacity in old age is an important component of health, physical development, the basis of high work capacity, preparation for socially useful labor. Physical fitness is understood as an individual's ability to perform specific work through muscular efforts, which are essential for achieving a specific task. The term "physical fitness" refers to a person's potential to exert maximum physical effort in dynamic, static or mixed activities. Physical fitness of individuals aged 60-65 years at the beginning and end of the study was assessed using the PWC 150 test, which reflects according to the response of the cardiorespiratory system to physical exercise and functional readiness. At the beginning of the transformative experiment, the study participants had predominantly below-average (30.3% in women and 43.5% in men) and low (28.9% in women and 11.9% in men) levels of physical fitness. However, by the end of the study, 6.6% of females demonstrated a high level, 25.0% showed above-average fitness, 55.3% had an average level, 7.9% exhibited below-average fitness, and 5.3% had a low level. Regarding males aged 60-65 years, at the end of the study,

11.6% had a high level of fitness, 30.4% had above-average fitness, 43.5% had an average level, 11.6% exhibited below-average fitness, and 2.9% had a low level.





As it is known, physical activity has a positive impact on cognitive function. Consequently, by engaging in health tourism activities for six months, the cognitive functioning of our study participants significantly improved (Figure 1).

The data from the transformative experiment indicate positive dynamics in the cognitive functioning of the study participants. It is worth noting that during the study, individuals with moderate or severe dementia were not identified. However, at the end of the study, approximately 90.8% of women and 89.9% of men aged 60-65 had cognitive functioning within the normal range.

Accordingly, the obtained data from the transformative experiment provide grounds to assert the effectiveness and efficiency of recreational tourism activities for elderly individuals attending the University of the Third age.



**Figure 1.** Cognitive functioning indicators of the study participants at the beginning and end of the study (n = 221), %:

-  – women at the beginning of the study;
-  – women at the end of the study;
-  – men at the beginning of the study;
-  – men at the end of the study.

## DISCUSSION

The question considering the increasing level of physical activity in different population groups remains a central focus for many researchers. Physical activity plays a crucial role in shaping a healthy lifestyle, significantly influencing overall health (Andrieieva et al., 2022; Márcio F. R., 2019 et al.). According to Larasati A. and Elman B. (2019), older individuals who are engaged in physical activity experience numerous positive effects, including increased bone density, reduced fat accumulation, improved body mass index, decreased risk of musculoskeletal injuries and lower risk of developing cardiovascular diseases, mentioning hypertension, due to its potential to lower blood pressure. Experts have observed a decline in physical activity levels among older adults, especially upon retirement (Park, S. G., 2006). This trend is associated with problems related to social communication, behavioral issues and primarily

sedentary lifestyles (Federici A., Palanca R., 2019). All of these factors contribute to insufficient physical activity levels. Self-isolation, often linked to retirement, adds to further stress, causing a threat to mental health (Gillian & Ray, 2022). Studies, such as the one conducted by Tiaotrakul A. et al. (2023), indicate that physical activity significantly influences the elevation of dopamine levels and alters neurotrophic factors with neuroprotective functions, which suppress cognitive decline and dementia, potentially helping older individuals prevent symptoms of depression and anxiety. Retirees generally spend a significant amount of time at home, leading a sedentary lifestyle, which can adversely affect psychophysical well-being (Hakman A., 2019). In accordance with research by Soori, S. et al. (2022), physical activities, including practices like pilates and aerobic exercises, enhance physical health and closely correlate with mental well-being in less active elderly women. The findings emphasize the role of these physical exercises in improving the health of older individuals. Skałacka, K. (2023), highlights the importance of experience in engaging in physical





activities during old age. Results suggest that both the frequency and intensity of physical activities improve life satisfaction among older individuals. Older individuals with low activity levels infrequently choose cognitive or physically demanding activities over less demanding ones. The most active older individuals tend to prefer frequent but light physical activities, social interaction and solitary entertainment. Engaging in tourism, serves as a comprehensive means to improve psychophysical well-being. Tourism activities combine physical activity, social interaction and the acquisition of new experiences, ultimately contributing to the enhancement of emotional, physical and cognitive health (Andrzejgeise, 2021). Taking note of the growing elderly population, further research, promotion of the potential benefits of health tourism, as an effective means of improving the well-being of older individuals, is of significant importance. The study's results align with existing scientific data, highlighting the positive impact of tourism activities that promote personal socialization (Cojanu F., et al., 2022). Furthermore, the obtained results underscore how crises accompanying individuals in their elderly years during retirement negatively affect their cognitive functioning. If elderly population discontinues professional activities after retirement, their cognitive abilities tend to decline. The exploration of new territories and places, engagement in physical movement during tourism activities stimulate cognitive functioning in late adulthood (Andrzejgeise, Agnieszka Geise, Radosław Plebanek, 2021).

## CONCLUSIONS

Based around the idea of the University of the Third Age, the implementation of the concept has resulted in positive dynamics in various indicators. This includes physical activity, standard of living and satisfaction, cognitive and physical capacity, aging rate, socio-psychological adaptation, cognitive functions and psycho-emotional well-being. However, significant shifts have been observed in the integrated indicators of socio-psychological adaptation among the participants at the end of the study, specifically in terms of self-perception (women:  $68.8 \pm 0.7$  points; men:  $78.8 \pm 4.1$  points) and emotional comfort (women:  $63.3 \pm 1.7$  points; men:  $69.2 \pm 1.2$  points) ( $p=0.05$ ).

It is reasonable to conclude that for older individuals who continue their self-education in later life, the health tourism program has positively influenced cognitive functioning. Considering females, 7.9% exhibited a very high level of cognitive capacity, and 17.4% showed a high level. As for the male part, 13.0% demonstrated very high cognitive capacity and 31.9% exhibited a high level ( $p=0.05$ ).

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