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Original Research Article

Aqua aerobics as a form of physical activity for older adults

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Abstract

Background: Older adults entering retirement often have more free time than before. They can dedicate it to various forms of activity that may support deeper self-realization, strengthen family relationships and existing interests, or open up new opportunities to enrich their lives. The aim of this study was to examine how water-based physical activity influences the psychophysical condition of retirees participating in aqua aerobics classes. **Methods:** A diagnostic survey method was used in the form of an original questionnaire developed specifically for this study. **Results:** Individuals attending the analyzed classes reported numerous benefits from physical activity in water. The most frequently mentioned were improvements in physical fitness and well-being. Participants took part in the classes to improve their health and establish social connections. Most of the participants did not experience any reluctance toward exercising in water. However, some issues included a lack of swimming skills, fear of water, concerns about illness, and feelings of embarrassment. **Conclusions:** Water-based physical activity brought numerous health benefits, and the participants demonstrated a clearly positive attitude toward aqua aerobics. These exercises may represent an important form of physical activity for older adults. The study results contributed to improving the quality of the conducted classes.

Keywords: aging, retirement age, physical activity in a water environment, aqua aerobics

Introduction

The number of older adults is increasing due to the extended average human lifespan. Medicine now deals with the elderly more frequently than in the past [1]. Many facilities have been developed to support seniors and people with disabilities, which has also contributed to the increase in societal life expectancy [2]. Therefore, old age should no longer be associated solely with negative phenomena. Often, older adults who retire gain more free time than before. They can devote this time to various activities that promote deeper self-realization, strengthening family relationships, enriching existing interests, or exploring new ways to enhance their lives.

Aging is one of the natural and inevitable stages in every person's life. Proper health-promoting behaviors incorporated into daily life can significantly slow down adverse health-related changes. "Successful aging" can be defined as aging with a low risk of developing various chronic diseases while maintaining high levels of both physical and mental fitness [3].

Physical activity plays a key role in the aging process, affecting physical, mental, and emotional health. Studies have shown that individuals who regularly engage in physical activity have a greater chance of living longer compared to those leading a sedentary lifestyle. Regular exercise reduces the risk of age-related diseases, which in turn increases life

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expectancy [4]. These individuals are also more likely to take on new challenges and try new things. The human body is designed for movement, which is essential for maintaining a high level of fitness and avoiding illness. Movement benefits not only the body but also the mind. It promotes well-being and a zest for life, which are crucial in later years.

Aging is often associated with passivity, frailty, and a deteriorating position in society, which may lead to, for example, depression [5]. The transition to retirement is particularly important, as many seniors associate this period with the loss of social status, financial security, and prestige [6]. However, retirement also has a positive side. Seniors can focus more on themselves, fulfill themselves in social or political roles, or as grandparents caring for grandchildren. They also have more free time, which they may use for solitary activities such as reading books or watching TV [7]. Today's seniors differ significantly from the stereotypical image of a grandmother or grandfather, remaining physically and socially active [8].

Physical activity in a water environment has a beneficial effect on the entire human body. A key element is the stimulation of the cardiovascular and respiratory systems, which, when regularly exercised, improves overall physical condition (increases the efficiency of the heart and lungs). Repetitive exercises in a high-resistance environment lead to significant improvements in fundamental motor abilities such as strength and endurance, as well as overall fitness and the function of various body systems.

The body is influenced by various physical properties of water, such as the apparent reduction in body weight due to buoyancy (offloading), increased resistance due to water density, increased pressure, changes in thermal conditions resulting from water's high heat capacity and conductivity, and water movement caused by the displacement of water molecules [9].

One form of water-based activity is aqua aerobics. Terms such as water aerobics or aqua aerobics are often used interchangeably [10]. It is a full-body workout that uses equipment and water resistance during physical exercises. Due to the offloading effect of water, the intensity of work on various muscle groups can be easily adjusted, making these exercises suitable for people of different ages and with various dysfunctions or limitations.

The aim of this study was to examine the significance of water-based physical activity in the opinion of women over 60 and men over 65, i.e., those of retirement age, who participate in aqua aerobics classes. The study analyzed the benefits of participating in water-based classes, their impact on psychophysical health, and the realization of social values among older adults.

The study sought to answer the following research questions:

1. What were the participants' opinions on the health benefits of engaging in physical activity in a water environment?
2. What were the main motivations for attending aqua aerobics classes among the respondents?
3. What barriers to participation in classes were identified by individuals of retirement age?
4. How did participants evaluate their own swimming abilities?

Material and Methods

Study Design

In order to analyze the research problem, a diagnostic survey method was employed, which focuses on identifying phenomena characterizing a specific population. A proprietary questionnaire consisting of single- and multiple-choice questions was used. Respondents were asked to complete the questionnaire before the start of the class, prior to entering the pool area. The completion time for the survey was approximately 10 minutes. After completion, the questionnaires were handed directly to the researcher. The study was based on the opinions of seniors participating in regular water-based classes at Park Wodny S.A. in Kraków in March 2024.

Participants

The study included 45 women and 15 men aged between 60 and 81 years. Most participants had higher or secondary education. The women were mostly married (60.0%) or widowed (28.9%), while the men were primarily widowers (53.3%) or in a relationship (40.0%). The study was conducted in a non-invasive manner, both physically and psychologically. The researcher invited participants to complete the questionnaire without applying any pressure, and participation was entirely voluntary.

Statistical Analysis Methods

Statistical analysis was conducted using basic descriptive statistics by calculating the percentage of individual responses. Microsoft Excel was used to perform the analysis.

Results

A total of 45% of respondents declared that they swim well (44.4% of women and 46.7% of men). Those who reported swimming very well were predominantly women (24.4%). A total of 11.7% rated their swimming skills as poor, with the majority being men (20.0%). A somewhat surprising finding was that as many as 23.3% of participants could not swim at all (22.2% of women and 26.7% of men) (Table 1).

Table 1. Swimming Skills of the Respondents

Swimming Skills	Overall		Women		Men	
	N	%	N	%	N	%
I cannot swim	14	23,3	10	22,2	4	26,7
I swim poorly, covering a distance of up to 25 meters	7	11,7	4	8,9	3	20
I swim well, covering more than 25 meters, but without proper technique	27	45	20	44,4	7	46,7
I swim very well, using proper sport technique	12	20	11	24,4	1	6,7
Total	60	100	45	100	15	100

Table 2 presents the health benefits of engaging in physical activity in water. Based on the respondents' opinions, it can be concluded that the majority believed water-based activity contributed to improved physical fitness—reported by 57.8% of women and 66.7% of men. Improvement in well-being was also very important to them, as reported by 40% of both women and men. Respondents also stated that it helped reduce joint pain—again, 40% of both women and men. Other reported benefits included increased flexibility (15.6%), improved skin firmness (13.3%), and other effects (4.4%).

Table 2. Health Benefits Reported by Respondents

Health Benefits Reported by the Respondents	Overall		Women		Men	
	N	%	N	%	N	%
Improved physical fitness	36	60	26	57,8	10	66,7
Reduced joint pain	11	18,3	7	15,6	4	26,7
Improved skin firmness	24	40	18	40	6	40
Increased flexibility	6	10	6	13,3	0	0
Other	4	6,7	2	4,4	2	13,3

*Respondents were allowed to select more than one answer; therefore, the total percentage does not equal 100.

The majority of respondents—68.3%—indicated that physical activity in water had a very positive impact on their well-being (73% among women), while 31.7% reported a positive impact. No one stated that the exercises had no effect or a negative impact on their well-being (Table 3).

Table 3. Well-Being of Respondents Resulting from Physical Activity in Water

Well-being	Overall		Women		Men	
	N	%	N	%	N	%
Yes, very positively	41	68,3	33	73,3	8	53,3
Yes, positively	19	31,7	12	26,7	7	46,7
No, it has little effect on me	0	0	0	0	0	0
No, negatively	0	0	0	0	0	0
Total	60	100	45	100	15	100

Respondents were asked whether they would like to engage in water-based activities more frequently. As many as 75% stated that their motivation was to improve their health, 10% said they were motivated by the desire to build social connections, 6.7% indicated joy from movement, 5% pointed to the availability of aquatic facilities, and 3.3% cited other reasons (Table 4).

Table 4. Respondents' Motivation for Participating in Classes

Motivation	Overall		Women		Men	
	N	%	N	%	N	%
Desire to improve health	45	75	34	75,6	11	73,3
Joy of movement	4	6,7	2	4,4	2	13,3
Building social connections	6	10	4	8,9	2	13,3
Availability of aquatic facilities	3	5	3	6,7	0	0
Other	2	3,3	2	4,4	0	0
Total	60	100	45	100	15	100

The vast majority—42.2% of women and 66.7% of men—reported that they did not experience any barriers to engaging in water-based physical activity. Among women, 22.2% indicated that a lack of swimming skills was a potential barrier, 8.9% reported a fear of water, 11.1% expressed concern about illness, 13.3% mentioned embarrassment, and 2.2% pointed to other factors. Among men, 26.7% selected “other,” and 6.7% indicated embarrassment as a barrier (Table 5).

Table 5. Barriers Related to Water-Based Activity

Barriers	Overall		Women		Men	
	N	%	N	%	N	%
Fear of water	4	6,7	4	8,9	0	0,0
Lack of swimming skills	10	16,7	10	22,2	0	0,0
Concern about illness	5	8,3	5	11,1	0	0,0
Embarrassment	7	11,7	6	13,3	1	6,7
Other	5	8,3	1	2,2	4	26,7
I do not experience any	29	48,3	19	42,2	10	66,7
Total	60	100	45	100	15	100

Discussion

Human physical activity should be tailored to the individual’s needs, desires, expectations, and capabilities. It is generally believed that the efforts proposed for older adults should be aerobic in nature to avoid excessive strain on the musculoskeletal and cardiovascular systems. Physical activity conducted in a water environment, performed at aerobic intensity, appears to be one of the most appropriate forms of exercise for post-working-age individuals. By identifying the expectations and challenges reported by respondents, the present study may contribute to improving the quality of such classes—for both participants and instructors.

Physical activity in older age is particularly important when potential health problems or decreased vitality reduce motivation to engage in non-essential physical effort. Aging is a natural and inevitable stage of life. Proper health-promoting behaviors adopted early in life can significantly slow adverse health-related changes. "Successful aging" is defined as aging with a low risk of developing chronic diseases while maintaining high physical and mental performance [11]. Therefore, it is necessary to find forms of activity that reflect the values and expectations of each individual. These may include the desire for rest, competition, enjoyment, or the maintenance, restoration, or enhancement of physical and mental health. These needs can be fulfilled in various ways—one of which is physical activity as part of physical culture [12].

The choice of a particular psychophysical activity is based on personally held values. Identifying an individual’s needs and describing the values associated with meeting those needs lays the foundation for planning actions. What is considered valuable may become the goal and motivation for one’s behavior. Humans live simultaneously in two overlapping domains—nature and culture—and their actions should take into account the essential integration of physical and mental components. These integrate into a unified and indivisible structure—the *anthroposphere*, a specifically human world shaped and interpreted according to personal expectations and capabilities [13]. The fullest possible realization of values becomes the foundation of a satisfying existence. Experiencing a “good quality” of life largely depends on one’s worldview and the way values are prioritized and interpreted. A person’s subjective perception forms the basis for whether their life is deemed comfortable or satisfactory [13].

One of the most versatile forms of physical activity is water-based exercise. Its popularity is due to its accessibility, versatility, and effectiveness, and it can be practiced at any age, year-round [14]. Water activity positively affects both physical and mental health by: improving the course of chronic diseases (respiratory conditions, cardiovascular disorders, musculoskeletal issues), increasing glucose tolerance through enhanced insulin sensitivity, supporting bone mineralization, preventing certain cancers, reducing pain, lowering fall risk, improving sleep and overall quality of life, reducing infections, decreasing the number of medications taken [15–17].

However, water-based classes may also present certain challenges—particularly fear of drowning. The sense of existential threat is among the most intense human fears. Most actions are more effective and comfortable when not accompanied by fear, and when a person feels safe. Values related to fulfilling the need for safety are some of the most fundamental [18]. During water classes, it is essential to ensure maximum safety through the presence of lifeguards, appropriate water depth and temperature, exercises adapted to the participants' capabilities, and an atmosphere of psychophysical comfort.

While it may seem that participation in water-based classes requires at least basic swimming skills, and most participants did demonstrate such abilities to varying degrees, 22.2% of women and 26.7% of men could not swim at all. Thus, swimming ability was not a prerequisite for participation. Despite this, the participants reported feeling safe and willingly took part in the sessions.

Aqua aerobics is a form of water-based physical activity. Exercises are performed in water at varying depths, often using equipment and accompanied by music. This allows for comprehensive effects in the physical domain, such as: reduction of body fat, development of muscle mass, increased bone density, improved cardiovascular and respiratory endurance, increased muscle strength and stamina, enhanced coordination, increased joint mobility, and stimulation of the immune system.

In terms of mental benefits, aqua aerobics supports stress reduction, relaxation, motivation to take action, and greater body awareness. It also has social, emotional, and kinesthetic benefits. Social effects include building interpersonal relationships, acceptance of others, and teamwork skills. Emotional benefits involve motivation for self-improvement and personal development. Kinesthetic benefits are reflected in better body awareness and recognition of one's own physical capabilities [19].

This study also confirmed the health benefits experienced by respondents who engaged in water exercise, especially in terms of improved physical fitness, enhanced skin firmness, and reduced joint pain. These positive effects likely contributed to improved well-being. A majority of participants—68.3%—reported that water-based physical activity had a very positive impact on their well-being. This was particularly pronounced among women (73%), while men were almost evenly split between “very positive” and “positive” ratings. No respondent reported a negative impact or no effect at all. These results indicate that water activity has a beneficial influence not only on physical fitness but also on mental health.

Water-based physical activity occurs under specific conditions, including limited visual and verbal communication, increased body exposure, and fear of water. These factors can act as barriers to participation. The most frequently cited barriers among women were lack of swimming skills (22.2%), fear of water (8.9%), concern about illness (11.1%), and embarrassment (13.3%). Among men, 26.7% selected "other," while 6.7% mentioned embarrassment. Nevertheless, the majority of men (66.7%) and a significant proportion of women (42.2%) reported no barriers to water activity. Despite some discomfort, the value and benefits gained from participation outweighed the concerns.

Engaging in physical activity is usually associated with the hope of fulfilling specific needs and expectations. These needs contribute to the perception of value and serve as sources of motivation. The primary criterion for selecting a value is its ability to satisfy personal needs [20]. The desire to fulfill one's expectations is the main motivation for taking action. In this study, 75% of participants cited the desire to improve health as their main motivation for participating in aqua aerobics. Another 10% were motivated by the opportunity to build social relationships, and 6.7% by the joy of movement. Additionally, 5% of women noted the availability of aquatic facilities. Peer influence may also boost motivation—this was observed among women, who often attended classes with companions, while men tended to attend alone.

The overall opinion expressed by respondents was unanimous: water-based exercises can be an important form of physical activity for older adults.

Limitations of the study

The study lacked a comparison group of individuals who did not participate in aqua aerobics, which limits the ability to objectively evaluate the intervention's effectiveness. Additionally, outcome assessment was based solely on participant self-reports, without objective measurements of physical or mental health changes. The lack of analysis of long-term effects further limits the ability to assess the durability of the reported benefits.

Conclusions

Water-based physical activity provided numerous health benefits, resulting in a significant improvement in the participants' well-being. The most important motivations for engaging in aqua aerobics were the desire to improve health and establish social connections. Most participants did not report any reluctance toward participating in water activities. However, certain challenges were identified, such as lack of swimming skills, fear of water, concerns about illness, and feelings of embarrassment. While most participants stated that they could swim, nearly one-quarter did not possess this skill. It was concluded that aqua aerobics may be an important form of physical activity for older adults.

Practical Implications

Aqua aerobics can serve as an effective way to support the psychophysical health of seniors. Most participants reported improved physical fitness, reduced joint pain, and enhanced well-being. One of the key motivators was the desire to build social connections, which is an important aspect of preventing social isolation in older age.

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