

## DROWNING PREVENTION EDUCATION IN POLAND AND THE ATTITUDES OF BATHERS

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**Purpose:** The article presents a comprehensive study of the attitudes of bathers within identifying potential challenges and opportunities as well as recommendations for the future of drowning prevention education.

**Design/methodology/approach:** The study employs literature analysis, tabular comparisons, and questionnaires of bathers. The approach for the research was based on a desktop evaluation of accessible information, statistics, and other data from international and sources. The qualitative data acquired from self-research was used in the statistical analysis. The research group had 314 respondents, and the research was scheduled for the summer vacation season of 2021.

**Findings:** Parallels exist in governance and policy alignment, while disparities are evident in economic development and sectoral priorities. These findings offer a nuanced understanding of shared traits and distinct differences shaping the business landscapes and economic paths of these Central European nations.

**Research limitations/implications:** The research has limitations, such as its specific timeframe and omitted variables.

**Practical implications:** Practical implications extend to i.a. the need of implementing effective prevention programs (level 1 prevention) of safe behavior on the water and include this from the municipal level through the regional and national levels and introducing of a multi-year, unified national program of education and behavior in water areas, will increase the swimming skills of all age groups and reduce drowning.

**Social implications:** The study suggests indicating systemic measures aimed directly at people enjoying water activities, with educational activities playing the most important role in eliminating the so-called "low swimming culture," which manifests itself in a lack of basic knowledge of the specifics of the water area used for swimming and the swimming skills possessed.

**Originality/value:** The uniqueness of this research lies in the development of a technique to survey bathers' sentiments via an innovative, self-developed questionnaire mobile application, which allowed the interviewer to conduct the survey on a mobile device and independently by the tourist after receiving a link or scanning a "QR code". The research findings are applicable

to both academic discourse and practical implementations, providing unique insights to foster collaboration and development within policymakers' institutions and organizations.

**Keywords:** Swimming, drowning, water rescue, drowning prevention, recreation, bathers, Poland.

**Category of the paper:** research paper.

## 1. Introduction

Drowning is a global public health challenge (Leavy, Gray, Della Bona et al., 2023) and it is recognized as one of the top causes of unintentional injuries and a leading cause of injury-related deaths in many countries, including Poland (Turgut, Yaman, Turgut, 2004).

Drowning prevention is a tough and diverse public health concern that necessitates local, national, and worldwide actions (Leavy et al., 2016, Leavy et al., 2015). Preventive activities, specifically drowning prevention education, are characterized in the literature as a set of planned and timed actions targeted at causing subject changes with the goal of producing a specified consequence. such example of such activity is the teaching of first aid in schools, the goal of which is to improve the status of safety in a given area or social group through improved awareness and education. The essence of this form of activity is the subject's intention, which he chooses to achieve a specific goal (Adamczyk, 2020; Zalewski, Sikora, Czapiewski, 2021). Subject organizations, particularly the Water Volunteer Rescue Service of the Zachodniopomorskie Voivodeship, (*Zachodniopomorskie Wodne Ochotnicze Pogotowie Ratunkowe, org.*), pursue their purpose of improving safety in Poland through a system of rescue, preventative, and prophylactic actions. The work of WOPR WZ is focused on achieving the main aim stated in the organization's statute by coordinating aid and preserving people's lives or health in water areas. Statutory preventative tasks are carried out in preventive financial and educational programs involving the understanding of the risks connected with the usage of water areas, particularly through educational campaigns among children and young people. In Poland, the legislator defines the profile of preventative activities in Article 4 of the Act of August 18, 2011 on the protection of persons residing in water areas (Sikora, 2020; Adamczyk, 2023; Ustawa..., 2011). Within the context of statutory activities, the tasks outlined in the Act are assigned to water area managers as well as WOPR WZ economically. Taking the challenges posed by the legislator and the organization into account, the purpose of this article was defined as analyzing the profile of people using bathing beaches in the West Pomeranian region in the context of outreach and the effectiveness of preventive water education activities (Adamczyk, 2020; Zalewski, Sikora, Czapiewski, 2021). The obtained results are a probe to profile the people who use the bathing beaches and to identify the locations and social groups that are

subject to insufficient preventive measures and are vulnerable to the occurrence of a life-threatening event (WHO, 2023).

By rearranging preventive actions so that they are targeted to audiences from risk categories, a holistic approach to the issue and application of conducted results into organizational activities can improve the condition of security in Poland. Moreover, it emphasizes the need of building strong alliances and global governance to support multisectoral and intersectoral action for drowning prevention (Jagnoor, Kobusingye, Scarr, 2021).

The study's findings also contribute to future discussions about the cooperation of socioeconomic environment actors, quadruple helix model actors in the implementation of drawing prevention education, and the development of a type of social capital aimed at the formation of social networks of drawing prevention education actors (Zakrzewska, 2016).

## 2. Literature review and research gap

Preventive initiatives carried out by Polish services aim to raise community awareness and prevent situations that endanger human health and life. Each socioeconomic entity (e.g., the police, fire department, entities allowed to perform water rescue) that has this type of activity as part of its statutory and regulatory obligations disseminates knowledge within the scope specified for the service. The Water Volunteer Rescue Service of the Zachodniopomorskie Voivodeship is one nity in the West Pomeranian Voivodeship that plans, coordinates, and reports on initiatives to promote water safety. This entity's primary instructional tasks include issues such as drowning and sudden cardiac arrest (SCA). According to the World Health Organization (hereafter WHO), drowning is one of the most prevalent causes of unintended injury or loss of life, accounting for up to 7% of all deaths. Poland, like the United Kingdom and France, has a system in place to ensure maritime safety. Despite this, Poland has a drowning rate of 2.1 incidents per 100,000 inhabitants, placing it between highly developed countries that provide water safety and poorly developed countries that do not. The ease of access to unsecured bodies of water along the Baltic coast and on inland seas is one element in occurrences. Everyone involved in water tourism is responsible for ensuring safety by reducing the likelihood of an incident (taking care of equipment, reporting the outing, planning the activity - observing the route, meteorological conditions, ensuring communication) and its consequences (providing vests, rescue equipment, weather listening, communication, as well as training in operating a craft and first aid) (Zalewski, Sikora, Czapiewski, 2021; Ustawa..., 2011; Yusuf, Hawken, Ounpuu et al., 2004). After reviewing the literature and assessing the operations of worldwide organizations and educational organizations with a similar profile to WOPR WZ, it is vital to highlight the relevant

correlations by presenting the primary activities that comprise a chain of water safety in Poland, namely:

- prophylaxis (first-degree prevention) - actions taken prior to the implementation of the proper water activity, preparing participants and the location for its safe implementation.
- prevention (level II prevention) - actions taken during the implementation of water activities, based on rescue supervision and countermeasure interventions and active events; and
- rescue - rescue and search actions undertaken in the event of an emergency event (Zalewski, 2017).

Although the problem of drowning in the context of preventive measures is widely discussed by authors of the world literature on an annual basis, only few publications on the subject of research and on the subject of correlation of profiles of people using bathing beaches and organization of preventive measures of services ensuring the safety of people in water areas have been found for Poland (Zalewski, Sikora, 2020).

### **3. Conducted research – methodology and research group**

For the purposes of this study, the analysed region of the West Pomeranian region compared to Poland is identified with each of the sixteen existing regions in accordance with the Nomenclature of Territorial Units for Territorial Statistics (NTS) in force in Poland, prepared based on the European Nomenclature of Territorial Statistics Units (NUTS) (Zalewski, Sikora, Czapiewski, 2021). The region included in the study is of size corresponding in this classification to the NUTS 2 level as a unit of the administrative division of the second-level country, as indicated by many authors (Korenik, 1999; Strahl, 2005; Paradysz, 2012).

The research methodology was based on a desktop-based review of available information, statistics, and other data from international and sources (Embase), reports and publications of the European Environment Agency (EEA), and reports of Poland's Chief Sanitary Inspector. The statistical analysis was carried out using qualitative data gathered through self-research. The research time frame was scheduled for the summer vacation season of 2021.

The quantitative study's goal was to examine the profile of people who use aquatic places as well as the functional capacity of the perception of water safety in an aquatic area, allowing us to define the decision-making elements for selecting a bathing area. The research was carried out using a unique, self-developed questionnaire mobile application. The preparation of a survey in the form of a web application allowed the interviewer to conduct the survey on a mobile device and independently by the tourist after getting a link or scanning a "QR code". The first three questions included respondents' preferences and choices in terms of the kind of swimming locations they used. The next four questions included swimming abilities and water

survival skills, as well as the predicted degree of swimming ability among the public. The eighth and ninth questions examined the regularity with which people spent time at Polish beaches and the kind of activities they did during that time. The final two questions were analyzing personal emotions of safety during water tourism and the Polish water safety system.

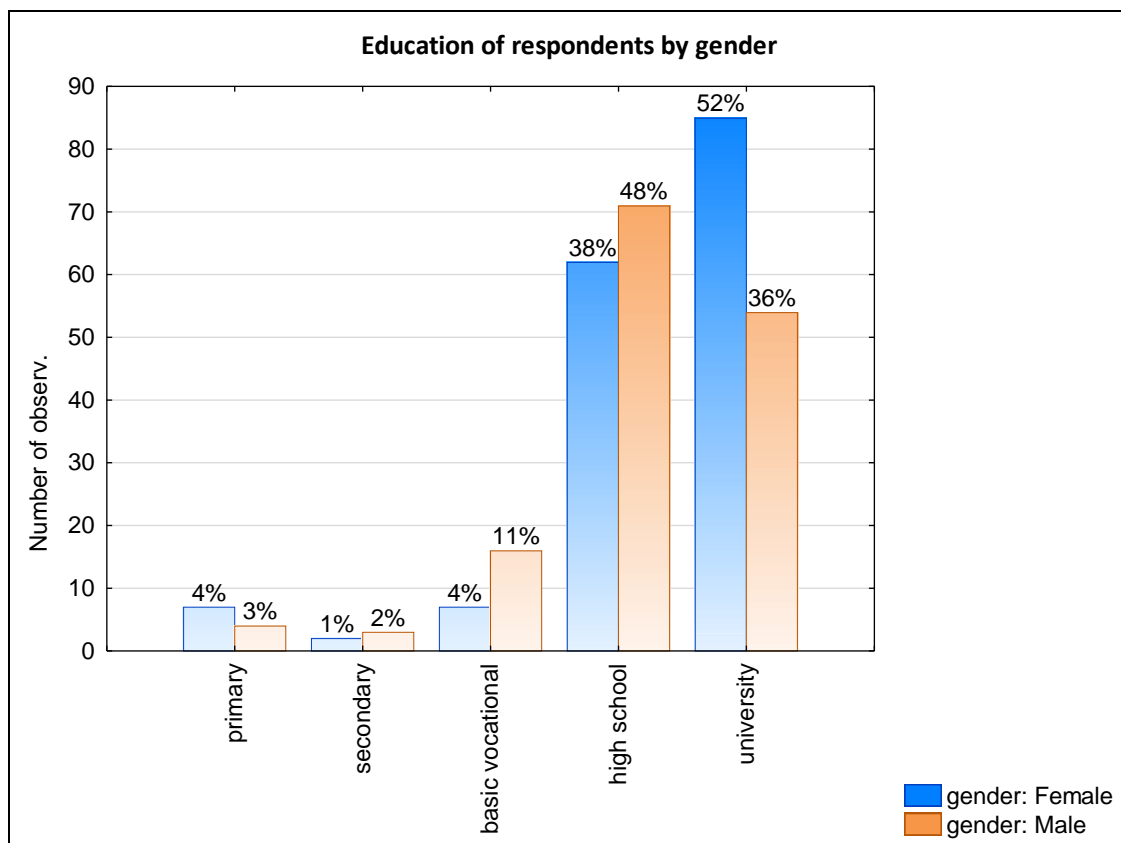
The research group included people staying on the beaches of the West Pomeranian region in the towns of: Międzyzdroje, Kołobrzeg, Jarosławiec, Stępnica, Szczecin, Szczecinek, Stargard, and Czaplonek. As a result, the research group consisted of 314 respondents who completed the questionnaire, 3 of whom were eliminated owing to incompleteness or deceptive responses (3 participants stated their age as 1 year).

The study included 163 women aged 16 to 73 and 148 men aged 17 to 76 (Table 1). In terms of education, the majority of respondents had a secondary or higher education (Figure 1).

**Table 1.**  
*Age distribution of respondents*

Variable	Gender	Valid surveys	Minimum	Maximum	Bottom quartile	Upper quartile
Age	Women	163	16	73	35	49
Age	Men	148	17	76	30	50

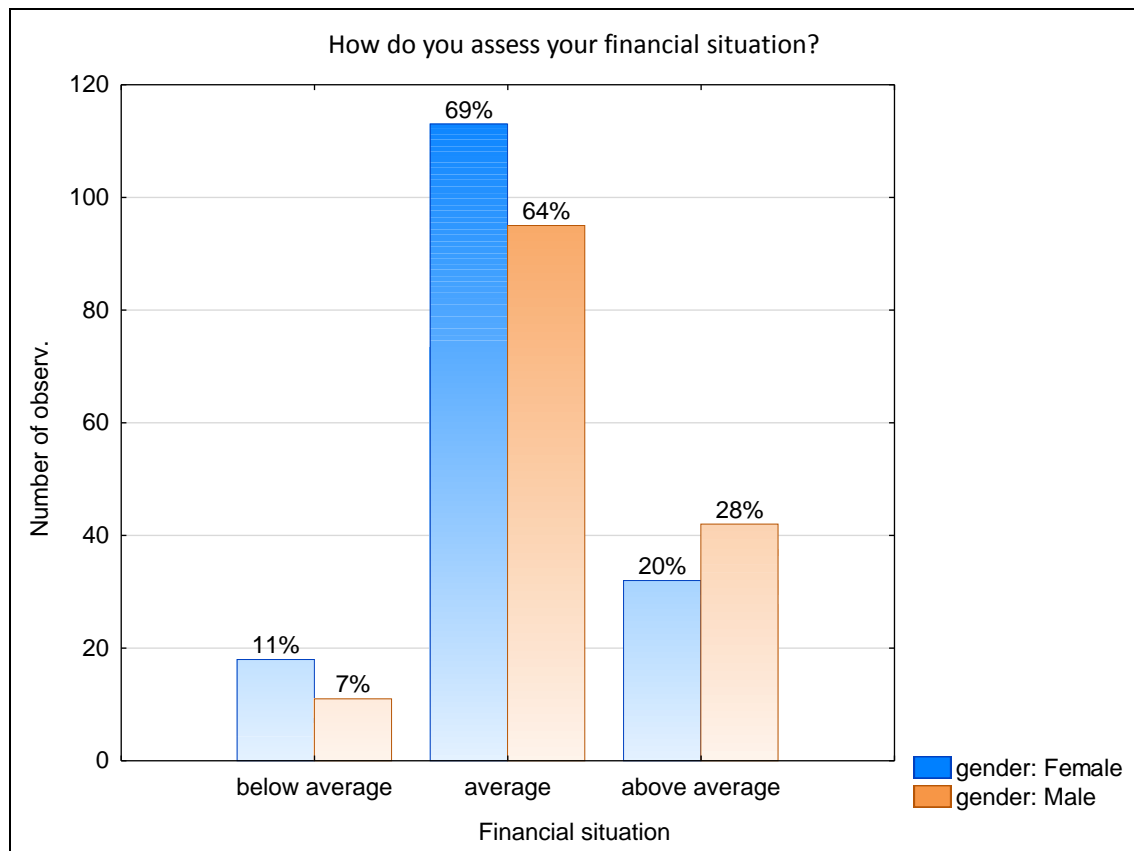
Source: Authors' own research.



**Figure 1.** Research group, variable: respondent education level, gender.

Source: Authors' own research.

In terms of respondents' material situations, they largely classified it as ordinary, one in five respondents thought it was above average, and only a small percentage believed it was below average (Figure 2).



**Figure 2.** Respondents' financial situation.

Source: Authors' own research.

#### 4. Research results considering bathing area

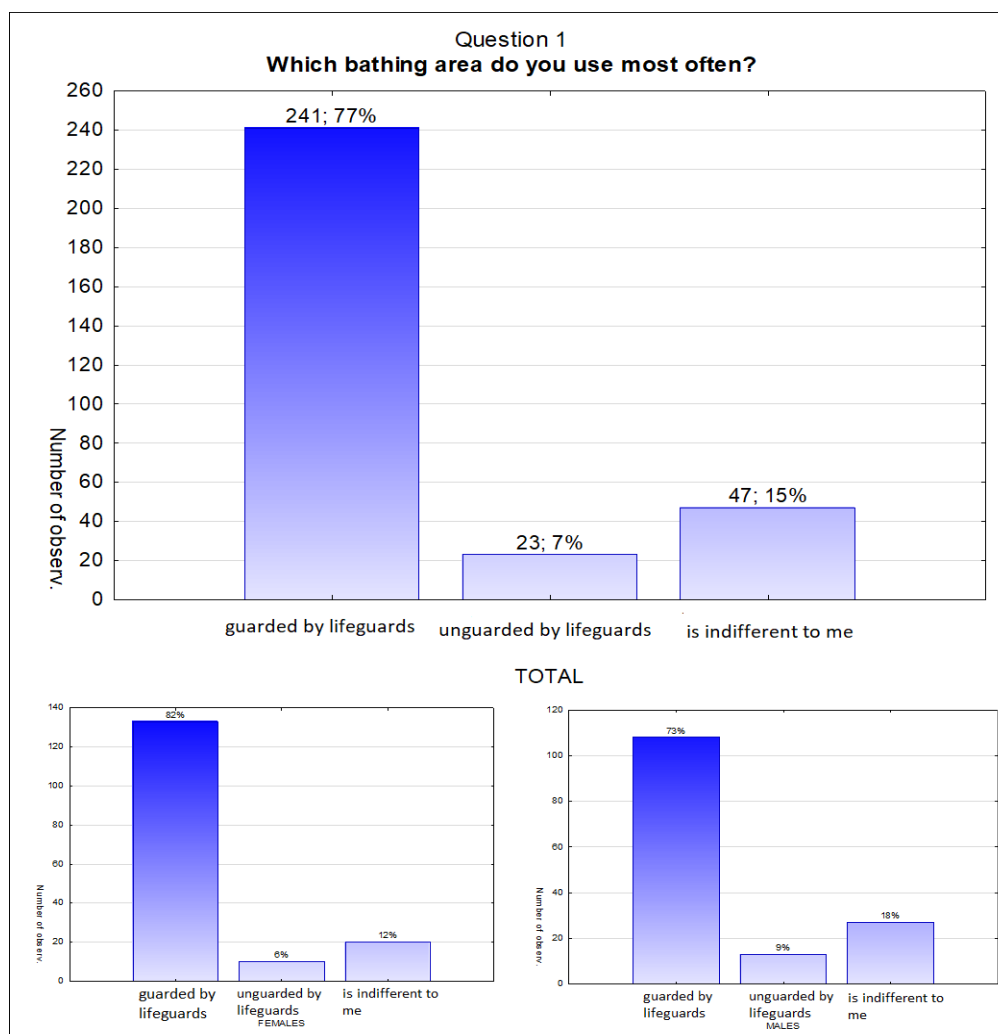
Taking into account the responses to the question "Which bathing site do you use the most often?" 77% of respondents stated they prefer to bathe at a lifeguarded beach, 7% prefer unsecured beaches, and 15% said they were indifferent. Respondents' choice of bathing locations was not influenced by their level of education. Men utilize safe bathing sites less frequently (72%) than women (82%), and they are more likely to pick unguarded locations (9%) or none at all (Table 2, Figure 3).

**Table 2.**

Answers to the question "Which swimming area do you use?"

		Education				
		basic	middle school	basic vocational	average	higher
Which swimming area do you use most often?	guarded by lifeguards	7	4	16	108	106
	% from column	64%	80%	70%	81%	76%
	Unattended	1	1	2	9	10
	% from column	0%	20%	9%	7%	7%
	it is indifferent to me	3	0	5	16	23
	% from column	1%	0%	22%	12%	17%
Total		11	5	23	133	139

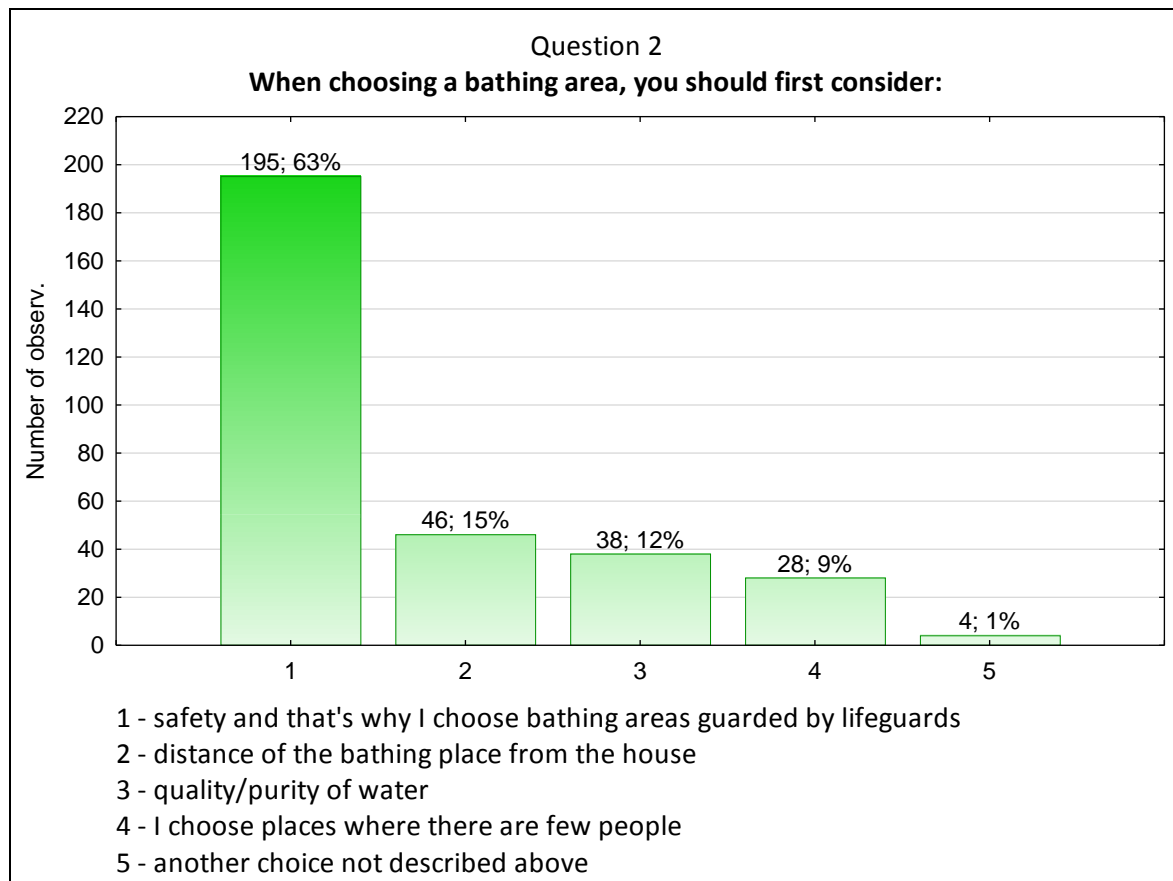
Source: Authors' own research.



**Figure 2.** Respondents' answer to the question "Which swimming equipment do you use?".

Source: Authors' own research.

According to the study, while selecting the water's spot, respondents are guided by safety, preferring bathing areas guarded by lifeguards (63%). Other respondents, on the other hand, are often guided by distance from home (14%), cleanliness and water quality (12%), or choosing bathing areas with few people (9%) (Figure 3).



**Figure 3.** The answers given by respondents to the question: What is your primary consideration when selecting a swimming area?

Source: Authors' own research.

Despite the fact that more than 75% of respondents indicate they prefer secured bathing areas, only 43% claim they never use unguarded bathing areas. Only little more than a third of men (35%) use unsecured bathing areas, while half of women (50%) do. Those who choose to bathe where there is no lifeguard, on the other hand, most often tell someone to swim out or go with another person (47%), plunge into the water calmly exploring the bottom and potential dangers (43%), or use an individual means of belay, e.g., buoy, float, wheel, foam, etc. (26%) (Table 3).

**Table 3.**

*Answers to the question: When you use an unguarded swimming site...?*

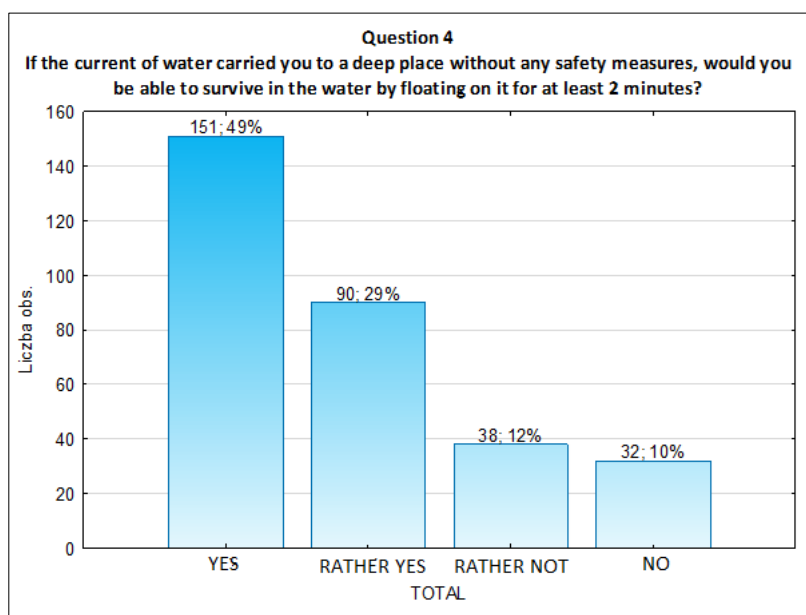
When you bath in an unguarded place is:	Women	Men	Total
I do not use unguarded places	81 50%	52 35%	133 43%
I'm informing someone to go out or I'm going with someone	63 39%	82 55%	145 47%
I have an individual means of belay (buoy, float, wheel, foam, other)	29 18%	51 34%	80 26%
I plunge into the water calmly studying the bottom and possible dangers	60 37%	73 49%	133 43%

Source: Authors' own research.



## 5. Research results considering swimming skills

Analyzing respondents' basic swimming skills<sup>1</sup>, data analysis shows that nearly 50% of respondents confirmed that they could survive floating in the water for at least 2 minutes in a situation when the water current carried them to a deep place without any means of belaying, and another 29% were fairly certain of this. Only 38% answered they would rather not hang on for such a long period of time without a belay in deep water, and 10% were certain they would not be able to cope (Figure 4). On the contrary, the results suggest that men are significantly more confident in the water, with as many as 63% of them secure in their abilities, compared to only 36% of female respondents. Figure 5 shows that 33% of women would prefer or definitely not be able to float 2 minutes without belay in deep water, but only 11% of males agree (Figure 4).

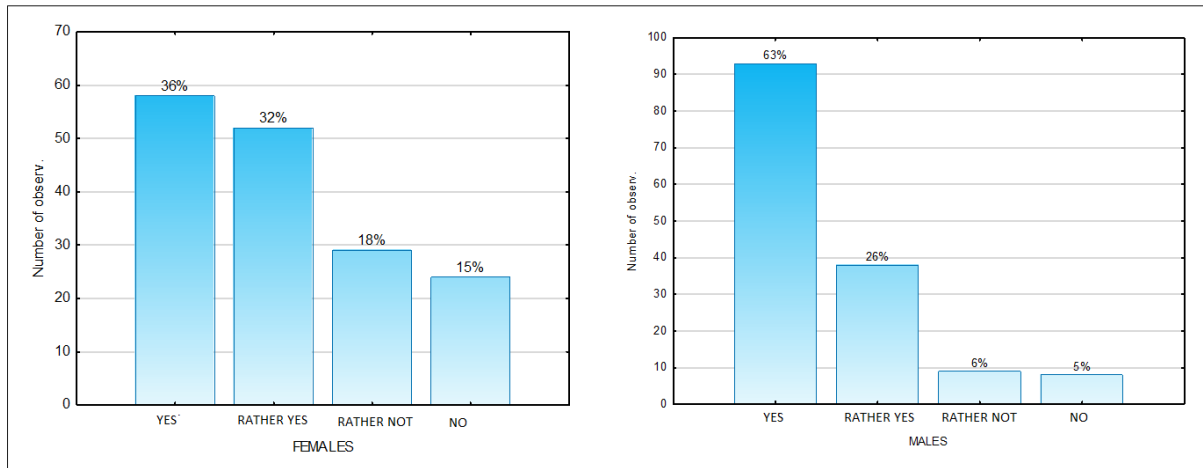


**Figure 4.** The answers given by respondents to the question: If the current of water...

Source: Authors' own research.

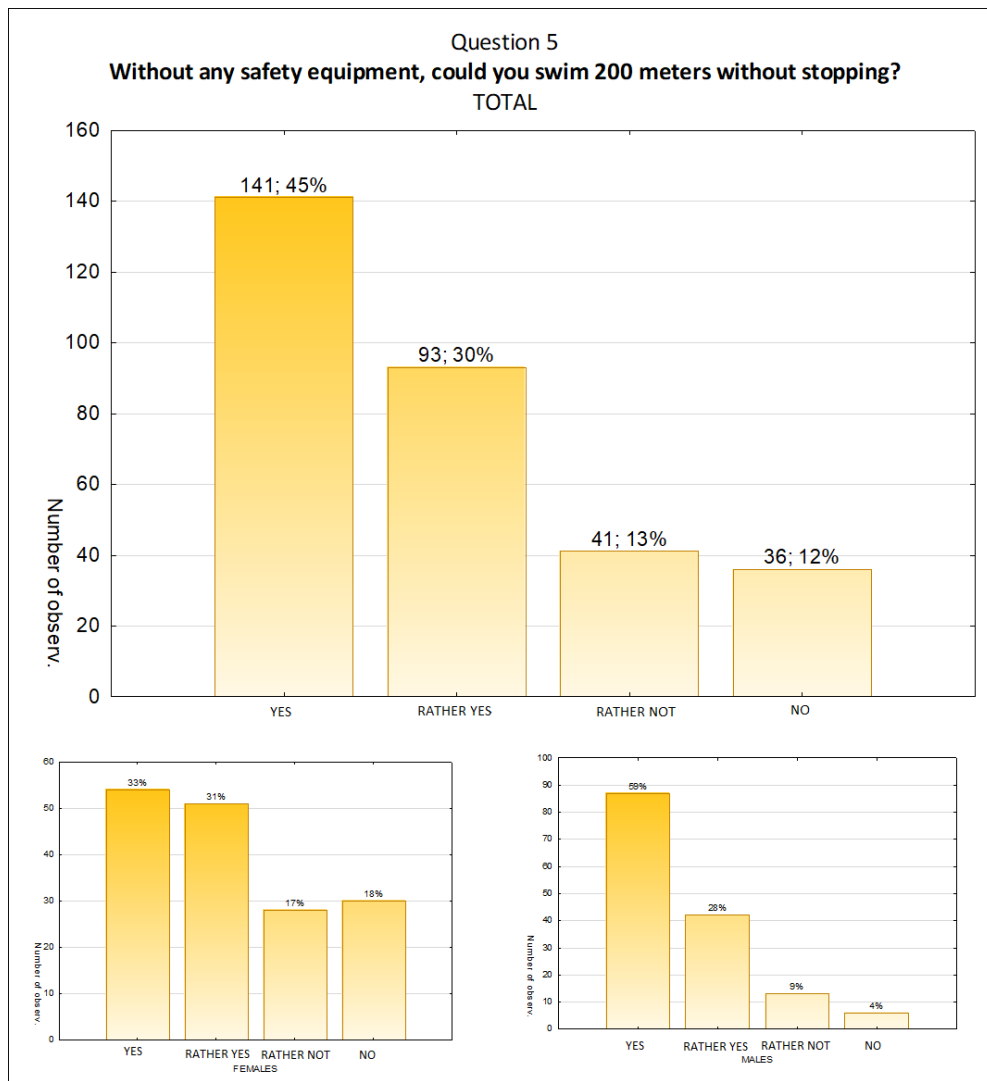
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<sup>1</sup> The authors consider that basic swimming skills comprise swimming 100 meters without using flotation devices and without pausing.



**Figure 5.** The answers given by respondents to the question: If the current of water... variable: gender.  
Source: Authors' own research.

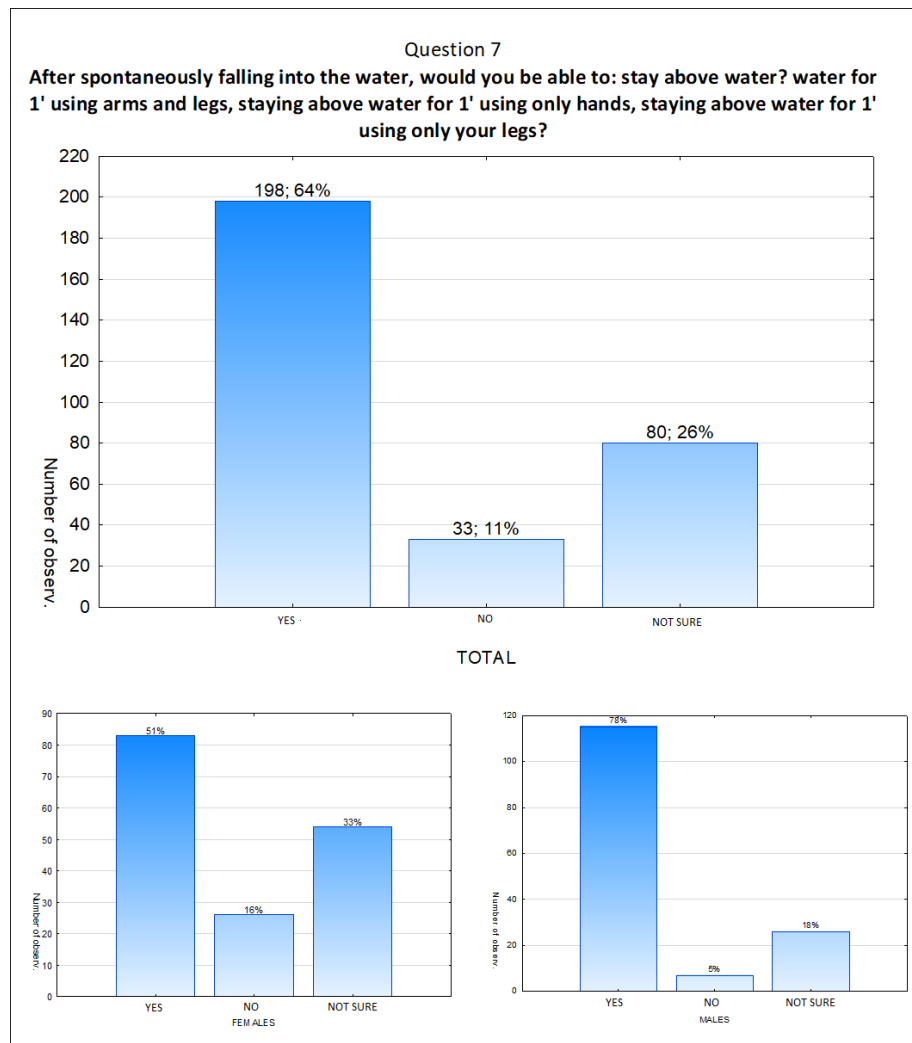
As it comes to basic swimming skills, respondents are slightly less confidence if they have to swim 200m without help without stopping. According to the respondents, 45% would easily cross such a distance, and 35% are fairly certain, with a total of 87% of male respondents and 64% of female respondents. Women are far more likely to indicate they would prefer not be able to swim such a distance (17%) or that they are certain (18%). Men who would prefer not to swim 200m without pausing, on the other hand, account for 11% of the total (Figure 6).



**Figure 6.** The answers given by respondents to the question about their swimming confidence.

Source: Authors' own research.

Simultaneously, respondents were asked whether they could stay afloat for 1 minute using their arms and legs, stay afloat for 1 minute using only their arms, or stay afloat for 1 minute using only their legs after spontaneously falling into the water. Such abilities are claimed with certainty by 64% of those polled, including 78% of men and 51% of women. Among women, one-third are unsure whether they could stay afloat for a minute in the aforementioned fashion, while 16% are certain they could not. In terms of such abilities, 18% of the males polled are unsure, and 5% are certain they do not have them (Figure 7).

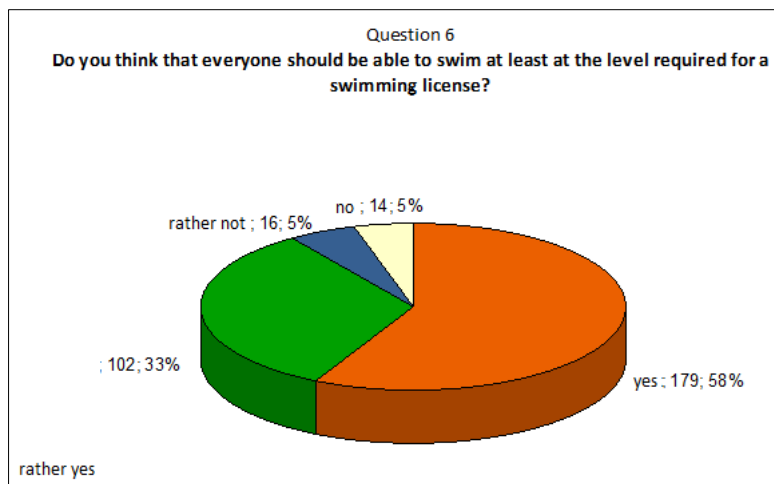


**Figure 7.** The answers given by respondents to the question about their swimming confidence after spontaneously falling into the water.

Source: Authors' own research.

According to the findings of the research, it was also interesting to examine respondents' attitudes toward the requirements of the so-called Swim Card - a document certifying the ability to swim<sup>2</sup>, i.e. whether they believe everyone should be able to swim at least at the level required for the Swim Card. Moreover half of those polled (58%) replied "yes," with an additional 33% strongly convinced. Only 10% of those polled felt that this level of swimming is not appropriate for everyone (Figure 8).

<sup>2</sup> A Swim Card can be acquired by passing an exam that includes: a) swimming 200 meters in standing water in any direction and at any time, including at least 50 meters in the backstroke, b) jumping into the water from a height of at least 0.7 m, c) swimming at least 5 meters beneath the water's surface in standing water, beginning at the water's edge.



**Figure 8.** Respondents' attitudes toward the requirements of the so-called Swim Card.

Source: Authors' own research.

## 6. Research results considering frequency and the type of water activity

Respondents were also questioned how often they spent time on the water and what activities they did in Polish water regions in the previous year. Only 10% of respondents spend at least once a week on the water (5% of women and 15% of men), while another 10% do so at least once a month (7% of women and 12% of men). Respondents say they are more likely to spend a dozen (43%) or several (37%) days each year on vacation. (Table 4).

**Table 4.**

*Responses to the question: How many days do you spend your free time on the water in a year?*

How many days a year do you spend your free time on the water?						
	women		men		total	
regularly at least once a week	8	5%	22	15%	30	10%
regularly at least once a month	12	7%	18	12%	30	10%
several days a year	83	51%	53	36%	136	43%
a few days a year	60	37%	55	37%	115	37%
TOTAL	163	100%	148	100%	311	100%

Source: Authors' own research.

Respondents most frequently bathe at guarded bathing beaches (68%), with 75% of women and 68% of males doing so. In contrast, 23% of respondents bathe in wild beaches, with women bathing at half the rate of men. Kayaking is a common pastime among responders. This pastime is undertaken by 20% of respondents, however men (28%) are more inclined to do it than ladies (13%). Fishing is another sport that is far more popular among men, with 16% of them participating compared to 7% of female respondents. Sailing, on the other hand, is practiced by approximately 9% of those polled. Women (9%) and men (10%) both like sailing. Rowing

(including rowing tourist boats, pedal boats, and other watercraft) is popular with both sexes, with 8% participating. Scuba diving (4%), windsurfing (4%) and kitesurfing (2%) are among the less popular water activities (Table 5).

**Table 5.**

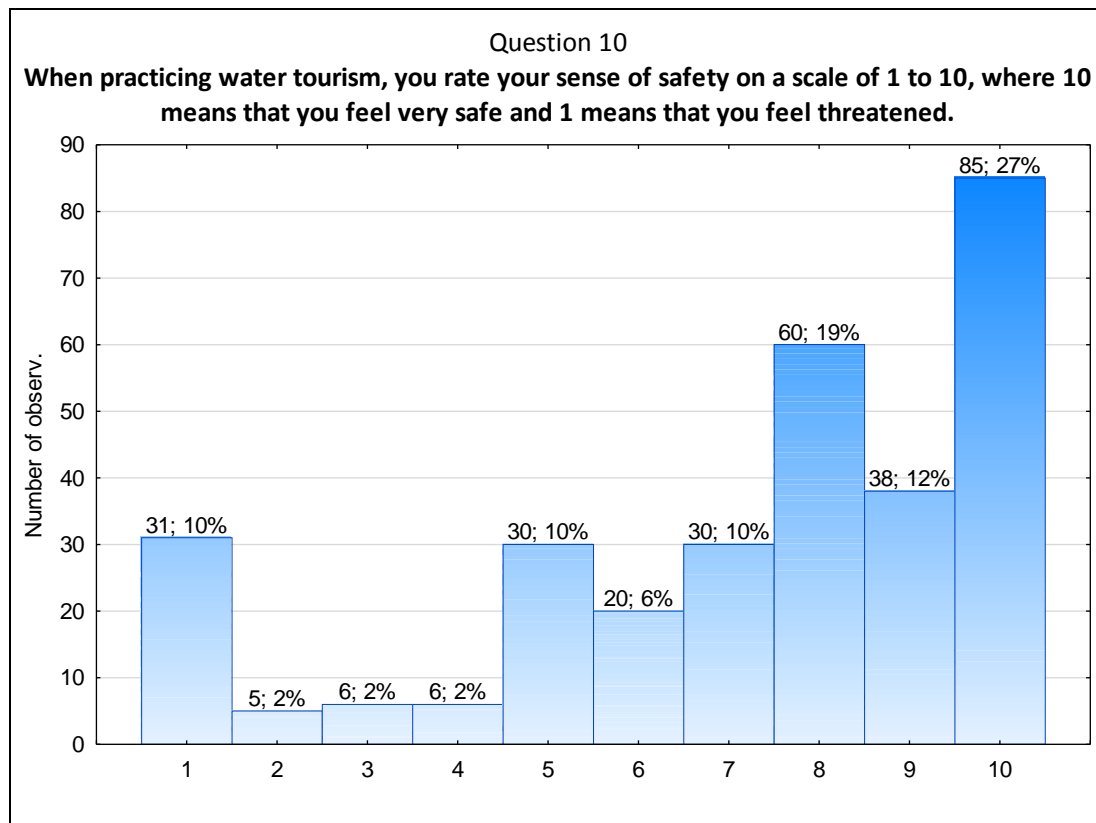
*Respondents' answers to the question: During the past year, I have carried out the following activities in Polish water areas*

During the past year, I have carried out the following activities in Polish water areas:						
	women		men		total	
bathing in guarded swimming areas	122	75%	90	61%	212	68%
swimming on wild beaches	26	16%	46	31%	72	23%
windsurfing	5	3%	8	5%	13	4%
kitesurfing	3	2%	4	3%	7	2%
sailing	14	9%	15	10%	29	9%
Motor boating (motor boats, scooters, jet skis, other craft pulled behind a motorboat)	0	0%	0	0%	0	0%
fishing	11	7%	24	16%	35	11%
kayaking	21	13%	41	28%	62	20%
rowing (including rowing tourist boats, pedal boats, other watercraft)	12	7%	13	9%	25	8%
scuba diving	6	4%	7	5%	13	4%
other	8	5%	14	9%	22	7%

Source: Authors' own research.

## 7. Research results considering sense of security

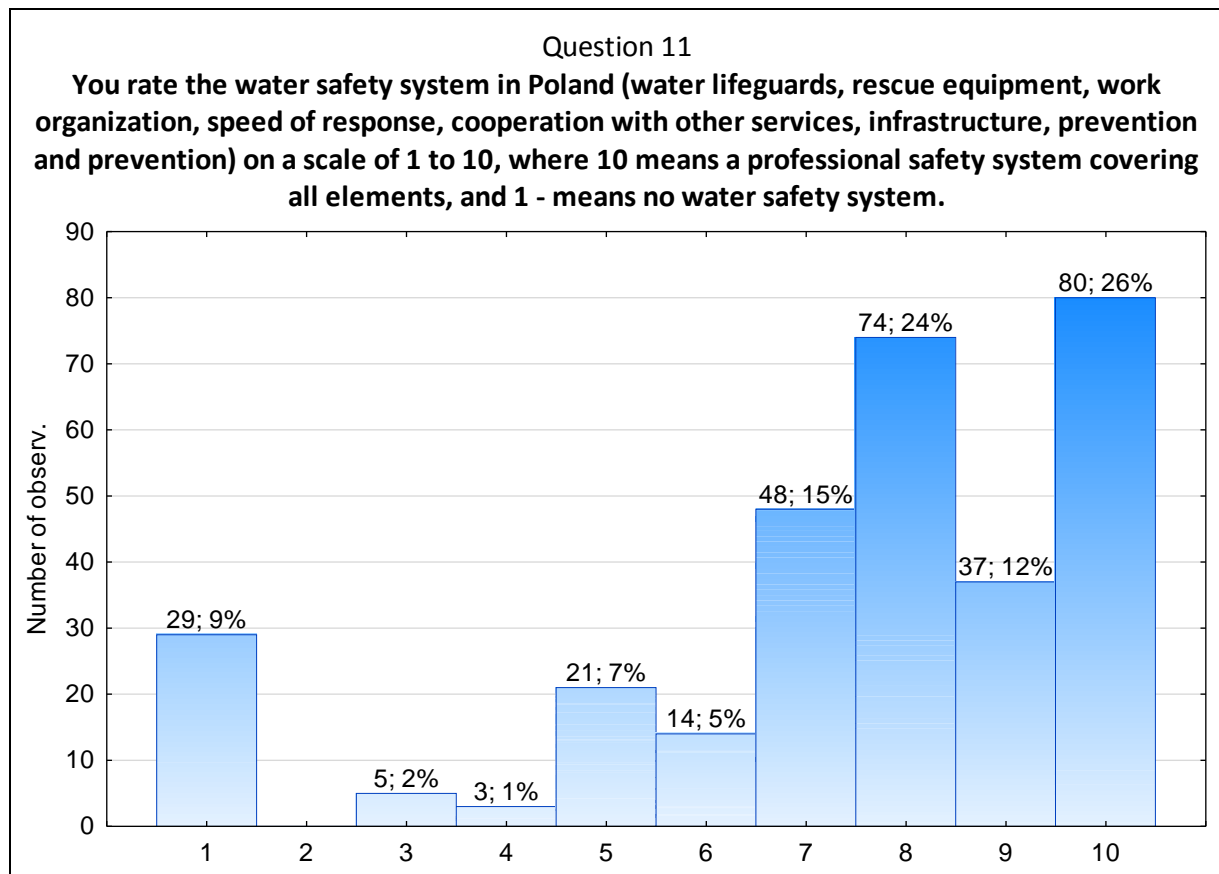
On a scale of 1 to 10, respondents were asked to rate their degree of safety when participating in water tourism, with 1 indicating that they felt endangered and 10 indicating that they felt very safe. Almost half of the respondents (48%) assessed their own sense of safety on the water as at least 8, indicating that they feel safe on the water, with 10% feeling very safe. 10% of respondents reported feeling uncomfortable on the water, with 16% rating it at or above 4 (Figure 9).



**Figure 9.** Respondents' attitudes toward their sense of security.

Source: Authors' own research.

Those interviewed also rated Poland's water safety system (water rescuers, rescue equipment, work organization, response time, collaboration with other services, infrastructure, prevention, and education) on a scale of 1 to 10, with 1 indicating no water safety system and 10 indicating an existing professional water safety system. 16% of respondents assessed the safety system as inadequate, while 62% regarded it as good or even professional (26%) (Figure 10).



**Figure 10.** Residents' assessment on Poland's water security system.

Source: Authors' own research.

## 8. Conclusions and findings

As a result of surveys on the demographics of those who use aquatic places and the usefulness of the perception of water safety in an aquatic area, authors have interpreted the data as follows:

- the frequency of staying at the water is related to the fact that staying on the water is a type of vacation spent,
- men are more likely than women to engage in various water activities,
- while the majority of respondents claim that they would definitely swim a distance of 200 m without stopping, not everyone believes that everyone should be able to swim at least the level required for a swimming card. 72% of this group agrees, while 21% are not convinced. At the same time, 7% do not expect similar abilities from others,
- among those who are unsure if they would be able to swim 200m without stopping, 43% are certain that society should be able to swim at the swimming card level, while 48% are less convinced,



- those who believe they would rather not swim 200m would prefer (41%) or are quite sure (49%) that others should swim well. This is also the assumption of 78% of those who stated that they could not swim 200m without assistance.

Furthermore, one of the primary methodological findings from the research is that education in the field of drowning prevention in Poland, as well as the attitudes of people who use water areas, provide material for investigating this phenomenon on a national basis. The research and analysis allowed for the creation of a profile of people who engage in water activities, as well as the functional ability to perceive their own safety in an aquatic setting.

Taking into account the practical findings from the research, the author made an attempt to recommend the following:

- implement effective prevention programs (1st level prevention) of safe water behavior from the municipal to the regional and national levels.
- the implementation of a multi-year, comprehensive national program of water education and behavior will improve swimming skills in all age groups and minimize drowning.
- education on the principles of water behavior for adults over the age of 50 who are at high risk of drowning, especially because their physical fitness is limited and their body's capacity may be lowered.

It is recommended to implement systemic measures aimed directly at people participating in water-related activities, with educational activities playing the most important role in eliminating the so-called "low swimming culture," which manifests itself in a lack of basic knowledge of the specifics of the water area used for swimming and the swimming skills possessed.

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