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THE PROPENSITY TO RISKY BEHAVIOUR AND SUBJECTIVE RISK ASSESSMENT AMONG SELECTED GROUPS OF DIVERS

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ABSTRACT

In this study, it was assumed that the propensity to risk behavior is a relatively persistent feature of an individual's behavior. A person prone to risk, having the choice of taking a risky or cautious behavior, usually chooses to choose a risky behavior. The level of propensity to risk is related to the perception of the size of the threat and the motivational tendency to risk behavior. Risk management, and therefore managing your own safety, is a skill that is particularly important among people who undertake activities with a high level of risk. These include all underwater activities. The aim of the research was to find an answer to the question of whether there is a relationship between the level of risk behavior and the subjectively assessed risk in diving? Also, are there differences between different groups of divers in terms of risk behavior?
112 divers from public services (military formations, police, PSP) participated in the study, of which the results of 67 people were finally analyzed. The Ryszard Student's Risk Behavior Test, the Makarowski Risk Acceptance Scale and the proprietary subjective risk assessment questionnaire were used. It has been shown that among all professional groups of divers, the group of policemen is more prone to risky behaviors than the other groups. No other dependencies have been confirmed.
Keywords: diving, risk assessment, bravado.

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INTRODUCTION

Generally speaking, diving can be divided into recreational and professional. In both these areas a significant risk of an occurrence of accidents and fatalities exists. This warrants addressing the issues of safety and hazards in diving and the associated risks.

Recreational diving, for fun and pleasure, has developed dynamically in the last few decades. Presently, recreational diving is being practised by an ever increasing number of people. This is facilitated by the availability of diving equipment, the possibility to travel abroad and the lack of legal and health regulations. The range of recreational diving is growing from the simplest forms, which are practised by millions of people, to extreme forms intended for the few, such as "technical", cave, high-mountain and record-deep diving. The popularity of recreation is determined by recreational, hedonistic, cognitive (underwater tourism), aesthetic, integrative or cathartic motives [1]. The universality and availability of diving and its extreme forms generate potential threats to the health and life of divers.

Sports forms of underwater competition are also developing, the most dangerous of which is the so-called "freediving", which until recently was classified as a serious diving accident and called diver's crushing.

Professional diving is a profession which in all its forms is very different from recreational, amateur or sport diving. The main goal in professional diving is work, not fun or the pursuit of personal passions. It encompasses a wide variety of underwater activities accompanied by serious risks. Typically, a commercial diver works in cold harbour waters, with little or no visibility. One of the main workplaces for commercial divers is in the shipbuilding industry, nuclear power plants, oil rigs, the operation of hydraulic structures and the like. Common underwater tasks include inspection and maintenance of underwater structures, especially at oil rigs, pipelines transporting crude oil underwater or, more rarely, rescuing property. Professional diving sometimes involves the use of explosives or immersion in water contaminated with biological, chemical or even radioactive agents (e.g. at nuclear power plants) [2,3,4].

Deep and long dives constitute a separate physiological and technological challenge. These are usually carried out using the saturation technique, i.e. a group of divers spend periods of days, sometimes more than a month, under pressure in hyperbaric complexes, which is more effective in terms of cost and time.

Professional diving also includes diving performed in public services. Such divers are usually police officers, firefighters, military personnel or rescuers. In this case there are additional risks, determined, for example, by the combat conditions.

Scientific studies on risk and its consequences in specific groups of professional divers and amateur divers are extremely rare. This is primarily due to the lack of access to figures that can be analysed; no diving organisation or institution is interested in rendering accident data available.

In the case of amateur diving, the various dive training federations are careful not to disclose the number of accidents among their trainees, as this could (and rightly so) be used to draw conclusions about the quality and level of training. The international organisation Diving Alert Network (DAN) [5], may have offered some hope, but it soon proved to be simply a commercial insurance company focused on insuring amateur divers.

In military diving, accidents are very rare worldwide due to the level of training. For understandable reasons, information about them is not made available to the general public [6]. The situation is similar with "public safety divers", i.e. in the case of Poland, divers who are officers of the Ministry of Internal Affairs.

Lack of reliable data makes statistical research difficult or impossible. Due to the lack of data on recreational diving accidents in Poland, data contained in Diving Alert Network Reports from the period 2002-2007 are often used [5]. Among the few Polish-language publications devoted to the analysis of diving accidents, the studies by Poleszak (2008) [7] or Krzyżak (2014) merit attention. Krzyżak, using information taken from the website "Forum Nuras" cites 99 serious diving accidents, among which 70% ended in the death of the diver [8]. Also available on the market is Strugalski's study of 121 various diving incidents, which served the author to draw teaching conclusions [9]. However, this study was not based on scientific research methods.

In view of the above risks, is it reasonable to expect that there will be a high level of propensity for risky behaviour among divers? The aim of the research presented in this paper is to understand the phenomenon of subjective risk in diving and to seek differences in the level of assessed risk among professional divers representing various forms of underwater activities. A group of divers from fire brigade, police and military formations were analysed.

SAFETY, RISK, HAZARD

The issue of security is an important area of scientific consideration of philosophy, sociology, psychology, pedagogy, as well as politics, economics, ecology, theory of information and communication or military strategies. From an axiological point of view, security should be treated as one of the absolute values, and thus it is one of the basic human needs, as it gives us a sense of certainty and stability [10]. The analysis of phenomena related to security requires the definition of several concepts related to it. Firstly, a distinction needs to be made between security as a state, feature or characteristic and security as a process (dynamics, variability, development). Secondly, security has to be considered in the context of a specific situation, expressing its subjective scope (with whom or what is security concerned?) and objective scope (which area of human activity is security concerned with?), and in a spatial context (when and where does the activity takes place?) [11].

Security is the opposite of danger. A threat is something that can cause an accident, illness or harm. It is also a situation that can, with some probability, bring loss to an individual [12].

Threats can be external and internal. External hazards are not under our direct control, they exist independently of us. In the case of diving, external hazards result from the physical and chemical properties of water and their effects on the human body underwater. Particularly important here are dangers resulting from

from the physical properties of the water, as it determines phenomena related to pressure, resistance or buoyancy.

Underwater visibility, temperature and hazards from the animal world also affect diver safety [13].

The internal hazards, on the other hand, lie in the diver, in his low performance and in the mistakes he makes, i.e. in the flaws and weaknesses of the person. Seemingly, they may depend on the subject's behaviour, but very often he is not able to recognize these threats correctly and does not know how to control them. As a result, the level of internal threats can be high and often even exceeds external threats [14]. Krzyżak (2014) based on the literature, states that diving accidents are most often caused by inappropriate behaviour of victims or other divers, due to inexperience, thoughtlessness or ignorance [8].

Safety and risk are related to the phenomenon of risk-taking. When acting in the knowledge of a threat, one takes greater or lesser risks. Risk means the probability that the intention pursued may fail, that events leading to losses may occur. Risk refers to an undertaking whose outcome is uncertain [15]. Risk is the product of the probability of a loss occurring and the consequences that are associated with that loss. Risk is perceived as higher when the magnitude of the loss and its probability of occurrence are higher. Expected loss is the sum of all negative outcomes weighted by their probability of occurrence. The above parameters illustrate the mathematical approach to calculating risk, which sets the standard for making rational choices (Fig. 1).

Risk	=	Probability of an incydent	x	Effects of this occurence

Ryc. 1 Diagram illustrating the measure of the amount of risk in a given activity [14].

The above function indicates that our actions are always accompanied by some kind of risk, and a state of security is simply characterised by a low level of risk of loss of life, health, material or non-material goods. Making optimal decisions to minimise risk during an activity is related to risk analysis and assessment. This requires mastering the ability to identify hazards and then analyse the likelihood of negative events occurring. This is referred to as risk management, which is a system of methods and actions aimed at reducing risk.

RESEARCH OBJECTIVE

Generally speaking, security is an objective state of affairs, a state of absence of danger (lack of threat), freeing one from all anxiety. The concept of security also expresses the state subjectively perceived by individuals or groups. The subjective aspect of security relates to the psychological or legal state in which the individual has a feeling of certainty, support, a state of peace. Its expression is the feeling of security, which refers to the awareness of the existence of dangers, the lack thereof, the lack of knowledge about the possibility of preventing dangers [16].

One of the main classifications of risk is that there are subjective and objective risks. Subjective risk relates to an individual's perception of a situation and depends on how they perceive a threat and assess the possible consequences and benefits of engaging in a risky activity. The perception of risk is as varied as its determinants. Quantitative dimensions of perception include probability of loss, magnitude of loss, expected loss, variance and a linear function of expected value and variance. Emotions significantly influence risk assessment. Fear makes the perceived risk higher than the actual risk, while euphoria understates the perceived riskiness of a situation [17,18].

This study assumes that the propensity to engage in risky behaviour is a relatively fixed behavioural property of the individual. Propensity is a set of innate subjective properties that influence the choice of behaviour that constitutes the preferred way of solving a situation and enables a desired outcome to be achieved. The level of risk proneness is related to the individual's perception of the magnitude of the risk and the motivational tendency towards risky behaviour. A risk-prone person in a situation where the desired outcome is achieved by both risky and cautious behaviour will ordinarily choose the risky behaviour.

Man's underwater activities are a perfect example of the thesis described above. By improving one's diving skills, a person masters one of the most threatening elements of inanimate nature. On the other hand, undertaking physical activity in the natural environment is always connected with contact with various dangers and, consequently, taking risks.

The aim of the study was to examine whether:

1. there are differences between different groups of divers in terms of subjective risk assessment and propensity for risky behaviour;
2. there exists a relationship between the level of divers' propensity for risky behaviour and subjectively assessed risk in diving;
3. socio-demographic data (age, marital status) determine the subjective assessment of risk among divers; experience in diving (diving seniority, participation, witnessing an accident) condition the subjective risk assessment?

MATERIAL AND METHODS

The propensity to risk is a variable that can be measured. In the present study, propensity for risky behaviour was measured using Studenski's Risk Behaviour Test (TZR) and Makarowski's Risk Acceptance Scale (SAR) [17,19].

The TZR of Studenski measures the declared frequency of participation in a high-risk situation and of experiencing satisfaction related to risk-taking. The test questionnaire consists of 25 general statements representing risky activities or motives for engaging in risky behaviour. Subjects make a self-assessment on a 5-point scale. The assessment of the TZR results is made on the basis of standard ten norms depending on the test

results, gender and age of the respondent [19].

The Risk Acceptance Scale consists of 20 questions. Answers are given on a seven-point Likert scale from "definitely yes" to "definitely no". The minimum number of points that can be obtained is 0 and the maximum 140. The higher the value obtained, the more risky the declared behaviour [17].

In order to diagnose subjective risk assessment among surveyed divers, a proprietary subjective risk assessment questionnaire modified for the diver survey (KOR) was used [20,21]. It consists of 6 closed and 2 semi-open questions. The closed questions refer to qualitative dimensions of risk assessment. The subjective assessment of accident risk was performed on selected qualitative dimensions: overall level of risk, induced fear, controllability of risk, voluntariness, frequency of accidents and severity of accident consequences. The risk assessment indicator is the numerical score obtained in the risk assessment questionnaire survey, in which the respondents refer to the different dimensions of risk on scales.

The respondents were asked to indicate on a 7-point scale different qualitative dimensions of risk: the level of risk in underwater activities - in general and in relation to the respondent himself, the fear of a diving accident, the voluntariness of taking risks, the control of the riskiness of diving and the frequency of accidents. A lower numerical score on the scale indicated a lower level of a given qualitative dimension.

The independent variable was the respondents' experience of performing tasks in professional diving. Data were collected using a metric.

The study was conducted in the first half of 2015. Research material was obtained from 112 individuals (recreational and commercial divers were also surveyed). In the end, however, the results of 67 public service divers were included in the analysis, as the remaining individuals did not meet the requirements for the performance of the ANOVA tests (comparison of means across multiple groups). Depending on the source, samples are considered equal if they differ by 10% or at most one is 2 x larger than the other.

The participants in the study were public service divers:

1) W - diver of a special unit of the army (18 persons),
2) W - diver of a special unit of the army (18 persons),
3) M - a diver of another military formation (16 persons),
4) P - a diver of a police anti-terrorist unit (15 persons),
5) S - a diver of the National Fire Service (18 persons).

At present, military diving qualifications start with the junior diver qualification. These allow the diver to perform diving, underwater work and emergency defence operations in wired and autonomous equipment using air to a depth of 20m. The diver can subsequently train in four directions depending on the requirements for further military service:

- *Engineering divers*.
- *A miner diver.*
- *A rescue diver*.
- *A combat diver* is trained under separate rules and used in special forces [22].

Underwater work performed in units subordinate to the Ministry of Internal Affairs and Administration (the Police Anti-Terrorist Unit, the Marine Unit of the Border Guard, the Bureau of Government Protection BOR and the State Fire Service) includes the following activities:

1) special (assault, mine-pyrotechnic, reconnaissance),
2) rescue (saving human life and health and the natural environment).
3) specialised (work in confined spaces, work with breathing mixtures or oxygen),
4) training and exercises,
5) supporting - performed as part of process activities or activities supporting a rescue service or entity.

The above activities may be carried out by persons qualified as junior divers, divers and instructor divers [23].

Military divers were tested during training. Combat divers and police anti-terrorists at a stationary training in open waters for higher qualifications. All others – during in-service training at the Divers and Frogmen Training Centre of the Polish Armed Forces. The examination of Fire Service divers was conducted during annual medical examinations qualifying them to perform diving tasks in particular units – municipal and district headquarters in the region of Wielkopolska, Podlasie and Warmia and Mazury. All tests were conducted by the same person.

RESULTS

The results of basic statistics (mean, variance, standard deviation) for all subjects and by group are presented in the tables below (Tab. 1, Tab. 2, Tab. 3, Tab. 4, Tab. 5).

Tab. 1

Results of basic statistics for the whole study group.

	Without division into groups					
Variable	N	Mean	Minimum	Maximum	Variance	Std.dev.
SAR	67	**71,28358**	44,00000	102,0000	142,9032	11,95421
Risk assess.	67	**3,19652**	1,33333	5,8333	0,6944	0,83330
TZR	67	**35,61194**	2,00000	84,0000	386,7562	19,66612

Tab. 2

Results of basic statistics for a group of other military divers.

	Group=m					
Variable	Not significant	Mean	Minimum	Maximum	Variance	Std.dev.
SAR	16	**64,75000**	44,00000	85,00000	163,6667	12,79323
Risk assess.	16	**3,13542**	1,50000	5,83333	1,0527	1,02599
TZR	16	**26,68750**	9,00000	56,00000	204,7625	14,30952

Tab. 3

Results of basic statistics for the group of anti-terrorist police officers.

	Group=p					
Variable	Not significant	Mean	Minimum	Maximum	Variance	Std.dev.
SAR	15	**76,53333**	57,00000	86,00000	59,2667	7,69848
Risk assess.	15	**3,21111**	2,16667	4,33333	0,3153	0,56155
TZR	15	**47,20000**	12,00000	69,00000	307,8857	17,54667

Tab. 4

Results of basic statistics for a group of firefighters.

	Group=s					
Variable	Not significant	Mean	Minimum	Maximum	Variance	Std.dev.
SAR	18	**68,22222**	47,00000	93,00000	176,0654	13,26896
Risk assess.	18	**3,10185**	1,33333	4,16667	0,6148	0,78411
TZR	18	**26,88889**	2,00000	65,00000	416,1046	20,39864

Tab. 5

Results of basic statistics for the group of divers of the special army unit.

	Group=w					
Variable	Not significant	Mean	Minimum	Maximum	Variance	Std.dev.
SAR	18	**75,77778**	58,00000	102,0000	89,7124	9,47166
Risk assess.	18	**3,33333**	2,16667	5,0000	0,8595	0,92708
TZR	18	**42,61111**	12,00000	84,0000	325,3105	18,03636

1. Differences in the propensity for risky behaviour between different groups of divers

The highest mean scores in the tests examining propensity to risky behaviours were obtained by the respondents in the group of counterterrorist police officers. In the Risk Acceptance Scale they scored 76.53 points and in the Risk Behaviour Test – 47.20 points (Table 3) The lowest results in these tests were obtained by the group of other military divers – 64.75 points in the Risk Acceptance Scale and 26.69 points in the Risk Behaviour Test (tab. 2).

The results suggest that the most risk-prone group of divers are anti-terrorist police officers. However, it should be noted that the results for all groups indicate a rather average level of propensity for risk-taking behaviour. Are individuals with a high propensity to risk suitable for work in the public services or is a low tendency to take risks a beneficial trait in operating in such units? Is it even worth being a risk-taker in diving?

2. Differences between different groups of divers in subjective risk assessment

The highest subjective risk assessment was displayed by the group of divers of the special army unit with a score of 3.33 (Table 4). The lowest risk assessment was displayed by the firefighters – 3.10 (Table 4). In individual groups differences in means for all dependent variables were observed.

The box-and-whisker diagram illustrates the results for the variable TZR, for which the differences in individual groups are the greatest (Fig. 1).

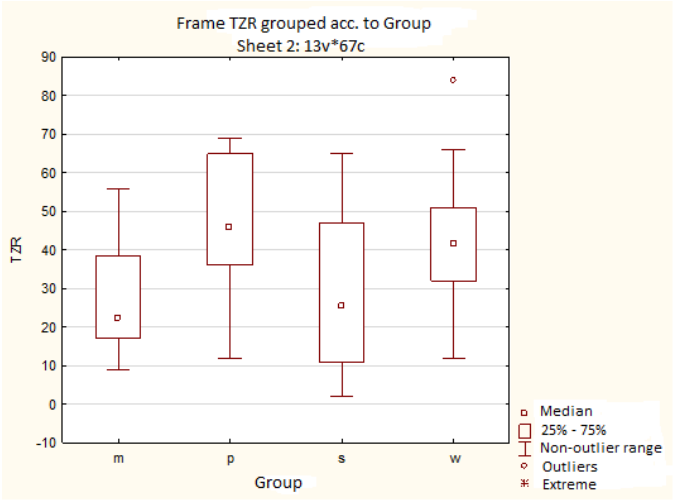

Fig. 1 Box-and-whisker diagram for the results of the Risk Behaviour Test for all groups.

A one-way ANOVA test was used to test the hypothesis of equality of means across groups. The assumptions of the test were met in the following range.

The analysed groups have a similar size and the dependent variables are measured on a minimum interval scale. Dependent variables: subjective risk assessment (Risk Assess), the result of the Risk Acceptance Scale (SAR), the result of the Test of Risk Behaviour (TZR) have normal distribution, which was checked by the Shapiro-Wilk test, obtaining in individual groups the following Risk Assess. values: $p_{(m)}=0.24$, $p_{(p)}=0.61$, $p_{(s)}=0.59$, $p_{(w)}=0.11$, TZR: $p_{(m)}=0.28$, $p_{(p)}=0.31$, $p_{(s)}=0.16$, $p_{(w)}=0.88$, SAR: $p_{(m)}=0.35$, $p_{(p)}=0.12$, $p_{(s)}=0.68$, $p_{(w)}=0.25$.

The distribution of variance is homogeneous for the TZR Risk Assess. variables, which was checked by Levene's test, this property is missing for the SAR variable (Tab. 6).

Tab. 6

Levene's test results for dependent variables.

	Levene's test for homogeneity of variance (Sheet2) The marked effects are significant with p < ,05000							
Variable	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
SAR	407,5159	3	135,8386	2376,275	63	37,7187	3,601364	0,018153
TZR	186,4890	3	62,1630	6358,306	63	100,9255	0,615930	0,607233
Risk Assess.	1,1224	3	0,3741	15,610	63	0,2478	1,509974	0,220574

The results of the ANOVA test allow us to reject the null hypothesis (of equality of means) for the TZR variable, but they do not indicate the presence of significant differences in the results of subjective risk assessment (Table 7)

Tab. 7

ANOVA test results.

	Analysis of variance (Sheet2) The marked effects are significant with p < ,05000											
Variable	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p	df Welch Effect	df Welch Error	Welch F	Welch p
SAR	1628,656	3	542,885	7802,96	63	123,8564	4,383183	0,007263	3	34,44329	4,382951	0,010244
TZR	5540,017	3	1846,672	19985,89	63	317,2364	5,821124	0,001413	3	34,65876	6,002710	0,002090
Risk Assess.	0,561	3	0,187	45,27	63	0,7185	0,260329	0,853696	3	34,43321	0,231401	0,873876

In the case of the SAR variable, due to the lack of homogeneity of variance in the groups, it was decided to additionally use the non-parametric Kruskal-Wallis test, which confirmed the significance of differences for this variable at the significance level of p = 0.0315. (Tab. 8).

Tab. 8

Results of the non-parametric Kruskal-Wallis test for the SAR variable.

	ANOVA rang Kruskala-Wallisa; SAR (Arkusz2) Zmienna niezależna (grupująca): Grupa Test Kruskala-Wallisa: H (3, N= 67) =9,788087 p =,0205			
Dependent: SAR	Code	N significant	Rank sum	Mean rank
m	102	16	401,0000	25,06250
p	103	15	654,5000	43,63333
s	104	18	514,5000	28,58333
w	105	18	708,0000	39,33333

In order to determine between which groups differences occur, post hoc tests were performed. For the TZR variable, these were Scheffe and HDS tests for unequal n, and for the SAR variable, a multiple comparisons test.

For the variable TZR, both post hoc tests showed statistically significant differences between the groups of other military divers (m) and police officers (p) and between police officers (p) and firefighters (s). The group of police officers revealed a higher propensity for risky behaviour than the groups of other military divers and firefighters (tab. 9, tab. 10).

Tab. 9

HSD test for TZR variable.

	HSD (unequal N); var.: TZR Marked differences are significant with p < .05000			
Group	{1} M=26,688	{2} M=47,200	{3} M=26,889	{4} M=42,611
m {1}		0,012956	0,999990	0,065199
p {2}	0,012956		0,014123	0,894592
s {3}	0,999990	0,014123		0,048977
w {4}	0,065199	0,894592	0,048977	

Tab. 10

Test Scheffe dla zmiennej TZR.

	Test Scheffe; Zmienna: TZR Marked differences are significant with z p < .05000			
Group	{1} M=26,688	{2} M=47,200	{3} M=26,889	{4} M=42,611
m {1}		0,022426	0,999990	0,090415
p {2}	0,022426		0,019367	0,908892
s {3}	0,999990	0,019367		0,082059
w {4}	0,090415	0,908892	0,082059	

For the variable SAR, a significant difference exists between the groups of other military divers (m) and police officers (p) (tab. 11).

Tab. 11

Multiple comparison test for the SAR variable.

	p-value for multiple comparisons (two-sided); SAR Independent (grouping) variable: Group Kruskal-Wallis test: H (3, N= 67) =9,788087 p =,0205			
Dependent: SAR	m R:25,063	p R:43,633	s R:28,583	w R:39,333
m		0,048026	1,000000	0,198240
p	0,048026		0,162911	1,000000
s	1,000000	0,162911		0,587406
w	0,198240	1,000000	0,587406	

Summarizing the above results, the group of police officers (p) displays a higher propensity for risky behaviour than the group of other military divers (m).

1. The relationship between divers' level of propensity for risky behaviour and subjectively assessed risk in diving

A relationship was sought between divers' level of propensity for risky behaviour and subjectively assessed risk in diving. For this purpose, the correlation coefficient between the variables Risk Assessment and TZR (0.15) and Risk Assessment and SAR (0.14) was computed. The coefficient was also quantified by group. In no case were statistically significant results obtained confirming the association of subjective risk assessment with propensity to risky behaviour.

2. Socio-demographic data (age, marital status) and subjective risk assessment among divers

It was also checked whether the socio-demographic profile of the subjects determines the subjective risk assessment. Socio-demographic data were first examined independently (age and marital status separately). The graph shows the dependence of subjective risk assessment on age. It does not take the shape of any typical function (linear, quadratic, polynomial or other), which means that there is no relationship between these variables (Fig. 2).

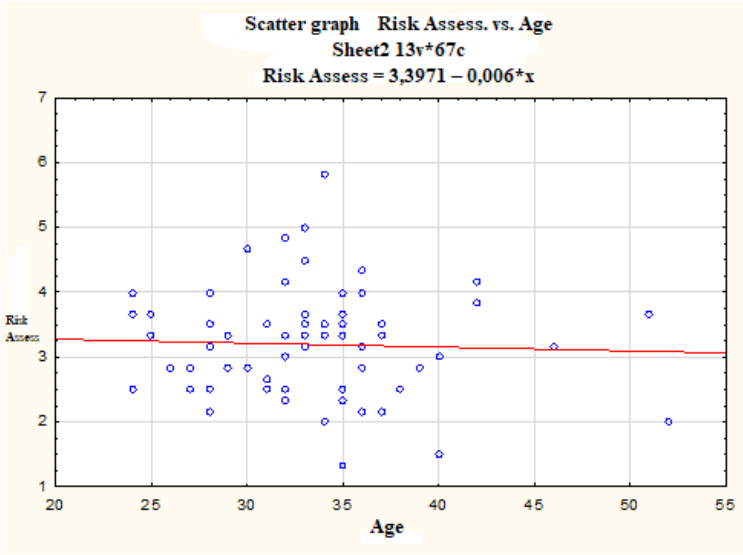

Fig. 2 Dependence of subjective risk assessment on the age of respondents.

The graphs analysed by group look similar. For the groups of military special unit divers (w) and anti-terrorist police officers (p), the linear correlation coefficient was -0.396 and 0.399 respectively – a low correlation. The one-way ANOVA test showed no significant differences between the groups with different marital status.

3. **Diving experience (diving seniority, participation, witnessing an accident) vs. subjective risk assessment among divers.**

The extent to which diving experience determines subjective risk assessment was also investigated. The distribution of the variable concerning participation in or witnessing a diving accident was heterogeneous in the population sampled and therefore this factor could not be taken into account. However, the relationship between subjective risk assessment and seniority in diving, i.e., the number of years spent diving, was examined. The scatter plot shows the dependence of subjective risk assessment on seniority. No functional relationship can be seen in the graph (Fig. 3). Also when divided into groups, the scatter plots do not assume the shape of any function. Thus, no dependence of the subjective risk assessment on the length of time spent practising the activity can be established.

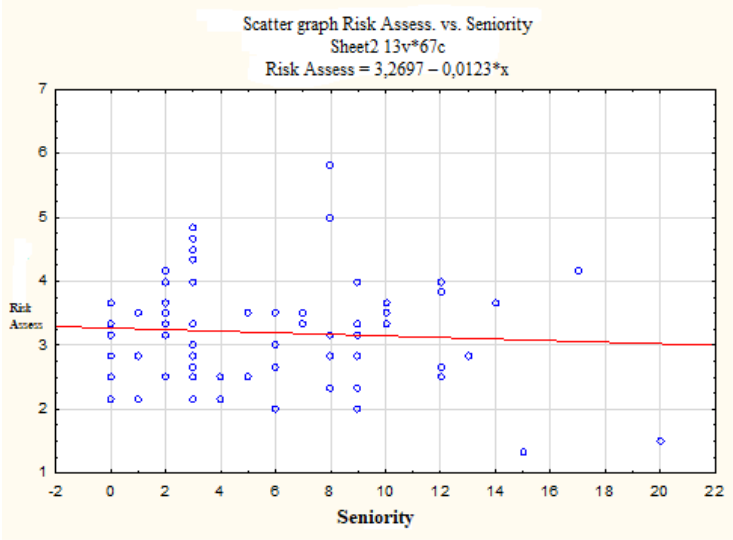

Fig. 3 Dependence of subjective risk assessment on diving seniority.

DISCUSSION OF RESULTS

In complex social situations, risk assessment is largely determined by qualitative aspects. The most important qualitative dimensions are the voluntariness and controllability of the risk, the catastrophic nature, the immediacy, the severity of the consequences of the risky action, the level of fear induced, the familiarity with the risk and the knowledge of the risks. Voluntary behaviour gives a sense of personal influence over the consequences of that action. People tend to overestimate the necessary risks and underestimate the voluntary risks they take, e.g. smoking or taking part in extreme sports. Controllability is generally understood as the ability to control the course of events. Risk in situations where people can exercise control over it is rated lower than in situations where the risk is beyond their influence. The perceived risk is also influenced by the level of fear that a particular type of risk arouses. The higher it is, the greater the perceived risk [24].

The qualitative dimensions of risk perception can be divided into the following three types of factors: "fear-inducing risk", "unknown risk", "level of risk exposure". The first factor is related to characteristics such as severity of consequences, fear induced, catastrophic, voluntary and controllability. This factor is most strongly correlated with direct assessments of the riskiness of different activities. The "unknown risk" factor refers to dimensions such as the novelty of the risk, the knowledge of the risk, the distance of the consequences in time. The essence of this factor is that a person becomes aware of the existence of a risk, but is unable to define it precisely due to the vagueness or unavailability of information about it. The factor relates to the number of people potentially exposed to a particular hazard. A risk is evaluated as being greater if more people are likely to experience a negative effect at the same time. The factor structure is universal, which means that the factors affecting risk assessment are the same regardless of the person performing the assessment and the type of activity assessed [25]. Risk perception as a combination of cognitive, emotional and personality determinants is reflected in the Trimpop model. There is a relationship between individual factors and situational factors. Of the situational factors, the type of activity is important. Risk perception consists of: perception of emotional symptoms, perception of physiological symptoms and cognitive evaluation of risk. The components of cognitive appraisal are: education, skills possessed, memory of recent experience, ability to learn from the experience of others [18,26].

Comprehensive training of physical activity and mental dispositions, increasing the resource of life-important human motor skills can counteract the civilisation diseases and enhance health. In direct contact with the natural environment, these acquired and improved motor skills ensure mastery over nature and allow us a better ability to overcome difficulties and adversities of modern life. A person's overall physical fitness can become a protective cloak against danger. A person is thus ready to confront the danger and fulfil his or her safety needs. Physical training shows the limits of what the human body can do. It also sets a high bar for human physicality in the form of intensive work. The reward for this effort can be the sense of safety [27].

CONCLUSIONS

1. The conducted analysis of the results allows to conclude that some significant differences exist between different professional groups of divers in the area of susceptibility to risky behaviours. The greatest differences are found in the Risk Behaviour Test by Ryszard Studenski. However, the significance of differences in the results of the Risk Acceptance Scale was also confirmed. It was found that among all professional groups of divers, the group of police officers exhibited more pronounced tendencies towards risky behaviours than the group of other military divers.
2. In the course of the research project described above, the relationship between subjective risk assessment and not only membership of a professional group of divers, but also susceptibility to risky behaviour, socio-demographic profile and experience in diving was sought. On the basis of the conducted studies, no relationship could be established between the amount of subjective risk assessment in diving and the propensity for risky behaviour, with age and marital status and the number of years of practice of this activity.
3. Subjective risk assessment among divers is likely to be more strongly related to the personality profile of public service recruits than to demographic characteristics and diving experience. Also, the average level of propensity for risky behaviour may be the result of the personality traits of a typical officer regardless of the fact that diving activities are part of the service.
4. Further in-depth research on subjective risk should be carried out to verify the above conclusions based on studies among practitioners of other outdoor activities both occupational and recreational. The determinants of subjective risk assessment may lie in other personality traits than the propensity for risky behaviour or in other experiences than those directly related to the activity in which the risk is assessed. It is not excluded that an instrument that measures subjective risk assessment should be refined or the diagnostic accuracy checked in relation to other psychological testing.

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