

# Empirical justifying the possibility of educating specialists of the mountain rescue on subject of the medical rescue – example of Poland

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- ☑ **A** Study Design
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- 📊 **C** Statistical Analysis
- 📄 **D** Manuscript Preparation
- 🏠 **E** Funds Collection

## Abstract

### Background & Study Aim:

The dynamics of interest, especially in wealth societies, of the extreme forms of physical activity (EFPA) is overlooking a rational organizational solutions, technological and as well as technological and educational aimed at providing an optimal safety for participants. Mountain environment is attractive for people all year, regardless of nationality, age, gender, health status and other personal virtues. However, there are not reasonably using the resources of people who can pursue their passions of life in mountain rescue services in the professional course or as volunteer. The aim of the research is knowledge of the preferred forms of extreme physical activity of students of different faculties in terms of their willingness to specialize in the widely understood mountain rescue.

### Material & Methods:

We analysed declarations 424 students of the University of Rzeszów (Poland) divided into: life sciences (n = 219), humanities, social and arts sciences (n = 115), technical sciences (n = 90).

### Results:

Willingness to work or to volunteer in the rescue services (but not everyone with EFPA experience) declared 183 students (43% of 424), including the most numerous: 134 (61% of 219) life sciences; 39 (31% of 125) humanities, social and arts sciences; 13 (14% of 90) technical sciences. Leaders of ranking students (in %), who declared willingness to work or to volunteer in the rescue services (but not everyone with EFPA experience) are: emergency medical care 90% (38 of 42); tourism and recreation 67% (81 of 121); pedagogy 61% (23 of 38). The leader still among 72 students who declared EFPA are: 15 students of emergency medical care; 12 ex aequo tourism and recreation; physics; 10 physical education.

### Conclusions:

According to the criteria of the Bologna Declaration of flexible studying the research findings are making the possibility of creating on the course of emergency medical care the specialty advanced mountain rescue. They are empirically reasonable grounds to create on universities and colleges the multidirectional inter units classes for potential groups of volunteers not only mountain rescue.

### Key words:

extreme sports • medical rescue • inter course • Bologna Declaration • sport education

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**EFPA** – “extreme form of physical activity are extreme sports, often classified according to the environment in which they are performed (water, land, air), extreme form of physical recreation as well as gainful activity or voluntary service, and all varieties of physical activity that meet at least one classification criterion of the feature associated either with extreme risk of injury or death, or extreme body burden with high level of effort, or extreme coordination difficulty” [4, p. 19]

**Extreme sport** – noun a sport considered more dangerous and thrilling than ordinary sports and often involving hazardous airborne stunts and tricks [29].

## INTRODUCTION

The dynamics of interest, especially in wealth societies, of the extreme forms of physical activity (EFPA [1-4]) is overtaking a rational organizational solutions, technological and as well as technological and educational aimed at providing an optimal safety for participants. Curiosity about the unknown, risk and associated emotions along with the prospect of discoverer’s fame and wealth – these are perhaps the most important motives and at the same time goals (direct or indirect) of the everlasting human tendency related to EFPA. While pursuing these goals, people often lose their lives or continue them as a disables person.

This situation may be to some extent reflected by a the hierarchy of the frequency of terms used by students from various university faculties to determine the “extreme nature” of sport: danger 21%, threat to health 21%, risk 20%, threat to life 10% and emotions 9% [5]. Students of Polish universities declare that 15% [6] to 16% [5, 7] of them undertake EFPA. For example the majority of 80 Polish paragliders investigated (62%) practice this sport to have an opportunity to enjoy the views and feel pleasure from low-risk flights. Over one third of respondents stated, however, that they have propensities to fly in difficult weather conditions and to sports flights [8].

People who undertake certain EFPA find themselves useful in military, anti-terrorist formations and rescue services. Therefore, as far as the selection of appropriate specialists, it is important to divide their experience into environment (water, land, air), in which they practice, and afterwards certain specialties in motor skills and gear used [1, 4, 8-12]. Appropriate training methods within the EFPA differ from those developed by practitioners and theorists of sports science, however psychological (mental) preparation is of particular importance [13, 14].

Mountain environment is attractive for people all year, regardless of nationality, age, gender, health status and other personal virtues [15-17]. However, there are not reasonably using the resources of people who can pursue their passions of life in mountain rescue services in the professional course or as volunteer.

The aim of the research is knowledge of the preferred forms of extreme physical activity of students of different faculties in terms of their willingness to specialize in the widely understood mountain rescue.

## MATERIAL AND METHODS

### Participants

We analysed declarations made by 424 students of the University of Rzeszów (Poland). The studied group was randomly and purposively selected among students of three areas of science and in each one among three fields of education divided into: 90 technical sciences (33 physics, 31 technical education, 27 informatics science); 115 humanities, social and arts sciences (49 economics, 38 pedagogy, 28 history), 219 life sciences (121 tourism and recreation, 56 physical education, 42 emergency medical care). Average age of studied persons amounted to 21.8 years and places of residence included: city of more than 100,000 residents (n = 100), city of less than 100,000 residents (n = 128), village (n = 196). Such sampling allows to generalise the research results as for the entire population of students of Rzeszów University, a university with a typical structure for medium-sized Polish high school (typical Polish high school with numerous faculties).

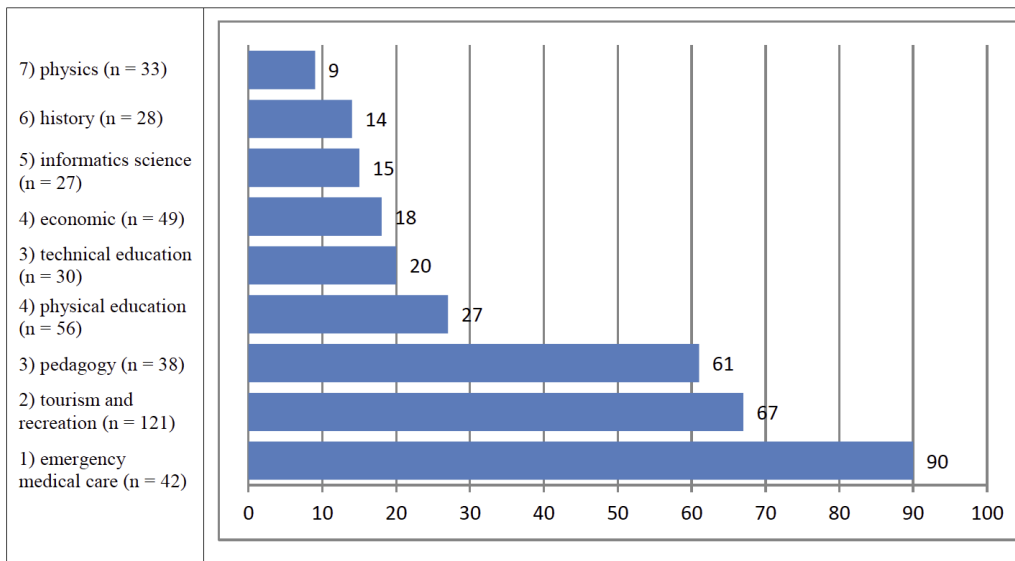
### Procedures and tools

Research procedure is based on the anonymous survey developed by the author. The test method is based on the assumption that while completing an anonymous questionnaire, the respondents will be more honest than during an overt personal survey. The analysis of results was merely to establish distribution of answers to questions posed in the questionnaire (basic descriptive statistics of the results shown in the table and on the figures).

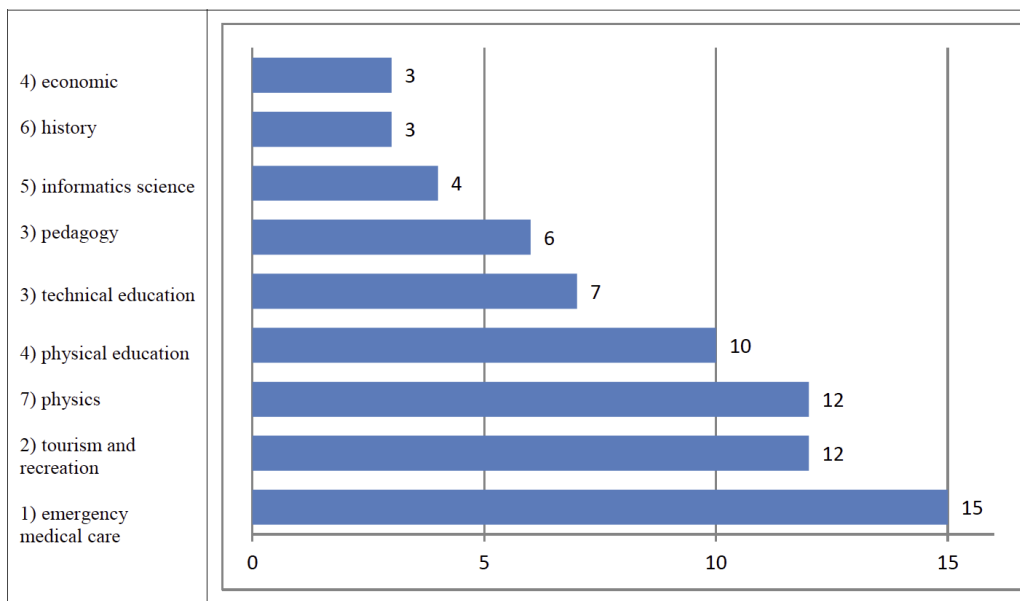
## RESULTS

Willingness to work or to volunteer in the rescue services (but not everyone with EFPA experience) declared 183 students (43% of 424), including the most numerous: 134 (61% of 219) life sciences; 39 (31% of 125) humanities, social and arts sciences; 13 (14% of 90) technical sciences. However, far less (72 students, 17% of all respondents) declares the experience of EFPA including the most numerous: 37 (17% of 219) life sciences; 36 (29% of 90). Compliance declaration applies to students with group of technical sciences: 13 (14% of 90).

Leaders of ranking students (in %), who declared willingness to work or to volunteer in the rescue services (but not everyone with EFPA experience) are: emergency medical care 90% (38 of 42); tourism and recreation 67% (81 of 121); pedagogy 61% (23 of 38) (Figure 1).



**Figure 1.** The proportion of students (in %), who declared willingness to work or to volunteer in the rescue services (but not everyone with EFPA experience) – ordinal variable is a higher value of the proportion indicator.



**Figure 2.** The number of students with particular faculties who declared experience EFPA (positions in the ranking from Figure 1 are provided before the name of the faculty).

The ranking is modified after adopting the number of students from particular faculties who declared experience EFPA as a criterion. The leader still are: 15 students of emergency medical care; 12 ex aequo tourism and recreation; physics; 10 physical education (Figure 2).

On average, one student declares to participate in two EFPA. Students of physical education are most active (on average over 3 EFPA). Physical education

students and students of tourism and recreation are the most versatile. The most popular among the 72 students with the experience of EFPA (with the possibility of multiple declarations) concern mountain environment: skiing (53%), trekking (47%), mountain biking (31%), climbing (29%) (Table 1). The similar is the distribution of preferences, the more expressive activity of 15 students of emergency medical care: skiing (60%), trekking (47%), mountain biking (33%).

**Table 1.** The list of EFPA preferred (with the possibility of multiple declarations) by 72 students (position in the ranking in Figure 1 is an ordinal variable of faculties).

Faculty	N	Skiing	Trekking	Mountain biking	Climbing	Windsurfing	Combat sports	Diving
Economic	3			2	2		1	
History	3	3	2					
Informatics science	4			4				1
Pedagogy	6	1	5	4	1	2		
Technical education	7	5	4		1		2	
Physical education	10	10	6		7	9	3	1
Physics	12	5		3	8			
Tourism and recreation	12	5	10	4	2	3	1	
Emergency medical care	15	9	7	5		2		
<b>Sum of declaration</b>		<b>38</b>	<b>34</b>	<b>22</b>	<b>21</b>	<b>16</b>	<b>7</b>	<b>2</b>
<b>Proportion (%)</b>		<b>53</b>	<b>47</b>	<b>31</b>	<b>29</b>	<b>22</b>	<b>10</b>	<b>3</b>

### DISCUSSION

The result of our study is optimistic as 90% of students predestined to mountain rescue (from faculty of the emergency medical care) declared willingness to work or to volunteer in the rescue services. Of all students surveyed, the greatest number (n = 15) from faculty of the emergency medical care declare experience in EFPA. They are also the leaders in three EFPA which are most popular in this population – skiing, trekking, mountain biking.

However, conclusions of other studies on the same population are pessimistic [5, 7]. Small number of respondents (6%) declared that they freely select classes during the course of studies. Nearly 1/5 of students (18%) knows the assumptions and possibilities guaranteed by the Bologna Declaration and 76% do not have knowledge about them [7]. These are the main barriers to the implementation of these attractive and socially useful EFPA into education programmes at universities with numerous faculties. Lack of knowledge of the principles of the Bologna Declaration which is so widespread among students reflects at the same time a limited pressure exerted on the university authorities so that courses not only about EFPA will be organised.

The issue discussed in the last paragraph is multifaceted. It is directly connected with insufficient

monitoring not only of the needs of certain group of people and evident social needs, but also of the unique knowledge. This issue was emphasised by Barczyński et al. [18] in the context of language barriers [18]. It is all about the effects of longterm political isolation (the Iron Curtain) due to which many important scientific discoveries and recommendations based on empirical argumentation were not available to people who do not know natural languages spoken in the countries of the Eastern Pact. These barriers are effectively overcome by the Editors of *Archives of Budo* which, as it can be reasonably assumed, stimulates dynamic development of new sub-discipline of science, i.e. the science of martial arts. The example of such positive expansion of scientific knowledge regarding judo is a secondary analysis of papers published in Russian mainly in the last decade [19, 20].

Similar opportunities emerge in front of specialists capable of creating sub-discipline science of extreme sports. Rationale is provided in scientific publications devoted to methodological aspects of EFPA [1, 4, 10] and papers informing about EFPA in sport, recreation and tourism [2, 3, 9, 21-24], or even in rehabilitation and treatment of people with disabilities [25]. Moreover, experimental works which use tests and motor simulation based on specific actions of rescue services are not common [26, 27]. However, a significant mental barrier in this area results from

underestimation of the need to draw up dissertations (undergraduate and graduate), based on knowledge specific for given field of education. There is empirical evidence that students of physical education in one university prefer the subject of their dissertation to be specific for this specialty (86%), whereas in another one only 52% do that [28]. Overcoming of these barriers and consistent promotion of EFPA i.a. in terms of necessary competences of emergency medical care specialising in mountain rescue constitute a basic prerequisite for attempts undertaken to distinguish a unique specialty in medicine – mountain medicine.

## CONCLUSIONS

According to the criteria of the Bologna Declaration of flexible studying the research findings are making the possibility of creating on the course of medical emergency care the specialty advanced mountain rescue. They are empirically reasonable grounds to create on universities and colleges the multidirectional inter units classes for potential groups of volunteers not only mountain rescue.

## COMPETING INTERESTS

The authors declare that they have no competing interests.

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