Definition of extreme physical activity determined through the Delphi method

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B Data Collection
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Abstract

Background & Study Aim: Various forms of extreme physical activity, most often referred to as 'extreme sports', have become very popular for many years. The aim of this paper is to define the term 'extreme forms of physical activity'.

Materials & Methods: The Delphi method has been applied. Research procedure is based on the experience of ten experts, specializing in solving difficult or extremely difficult issues or having documented scientific achievements in this area of human activity.

Results: The first stage of the research procedure (applied Delphi method) has revealed high consensus of experts on the main assumptions and premises of the study. High level of consensus among the experts has been demonstrated on the following issues: main premises 90%; main assumptions 90%; the definition of the term 'extreme forms of physical activity' 80%.

Conclusions: Applied procedure to determine the definition of extreme forms of physical activity with use of the Delphi method is an empirical evidence of the applicability of this procedure in systematizing key terms of numerous specialised disciplines and specialties in sport sciences (those already explored and those which will be developed in the future).

Key words: extraspection method · extreme sport · introspection method · research methodology · sport sciences

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Extraspection – epistemological term used to describe the observation of the external world (external experience) [24].

INTRODUCTION

Various forms of extreme physical activity, most often referred to as 'extreme sports', have become very popular for many years [1-7]. It is eligible to qualify numerous papers, mainly popular science ones, to this category which use the term 'survival' [8-13]. The popularity results in information noise. The confusion concerns mainly defining the concept of sport. Sport, in a narrow sense, is almost always associated with competition. In a broad sense (sport for all, recreation) it is associated with various forms of physical activity from extremely dangerous to those with highly reduced movement (e.g. relaxation exercises and meditation). Polish legislation provides the following definition of sport: "Sport is all forms of physical activity, which through casual or organized participation affect building or improving physical and mental fitness, social relationships or obtaining sport results on every level" [14]. Nevertheless, practice of some forms of physical activity has recently resulted in numerous accidents including fatal ones.

The term 'extreme sports' has not been defined unambiguously as well. Moreover, while considering extreme physical activities of a human, basic premise should be adopted stating that the term 'sport' should be used in possibly broadest sense – as any relatively systematic physical activity and even single curious feats, e.g. tandem parachute jump or bungee jump [15].

Attention should be drawn to two definitions of the term ‘extreme sports’, incidentally presented during the same scientific congress by Kalina [16] and Matuszyk [17]. Matuszyk claims that “extreme sports are those which essential (constitutive) component of sport combat content is activity of its subject directed to balance the extreme situation in which sport combat is occurring” [17, p. 229]. This group includes ‘space sports’ together with their distinctive aspects i.e. social, symbolic and personal such as climbing, mountaineering. However, this term is not sufficiently precise. Assuming that a 100 metre race is not a space sport, then is marathon running a space sport?

Kalina’s interpretation [16] involves the distinction between ‘extreme sports in the broad sense’ and ‘extreme sports in a narrow sense’. To the group of extreme sports in the broad sense we shall, in principle, include Olympic sports and all variations of professional sports, as well as certain forms of physical activities which go beyond the formula of Olympic sport, but because of the character of the performance or the risk undertaken they demand from the athlete not only specific physical and/or mental predisposition but also an adequate training. To that group we may also include all voluntary physical activities which take place in especially difficult conditions of the natural or artificial environment [16, p. 512]. With such broad definition of extreme sports, it is obvious that this set includes i.e. Olympic sport and every professional sport; survival; curious attempts (e.g. individual ski expedition to the North Pole).

The group of extreme sports in a narrow sense would include only those Olympic disciplines and those domains of professional sport, as well as those forms of physical activities which go beyond the formula of Olympic sport and the practicing of which is associated with a high health or life hazard.

In further theoretical studies Kalina and Bąk [18] have determined the identification criteria of extreme forms of physical activity and created a simple model to program physical recreation with elements involving those forms of activity (Fig. 1). They have adopted three identification criteria of this phenomenon placing each in the continuum ‘minimum’ – ‘maximum’: threat to health or life (C1), coordination difficulty (C2), body burden with high level of effort (C3).

Moving one (or all) identification criteria towards maximum implies that given activity becomes more extreme (Fig. 2).

The above deliberations have given rise to the formulation of the definition of ‘extreme forms of physical activity’, which in this study has been subjected to verification based on experts’ opinion and performed in accordance with the Delphi method.

These extremely popular nowadays forms of activities, mainly through electronic media are being perpetuated in social awareness as exciting but dangerous and often inaccessible to an ordinary man form of activity. The more justified is the need to conceptualise the phenomenon and to assign distinguishing features of acceptable form of physical activity (sports or recreational). Key terms and definitions, which – by definition – create the foundations of further scientific inquiry, form the basis for this conceptualisation.

Conceptualisation – the thought process in which vague, imprecise terms (concepts) are specified and precisely defined [22].

The Delphi method (Delphi technique) – a method of group decision-making and forecasting that involves successively collating the judgments of experts [23].

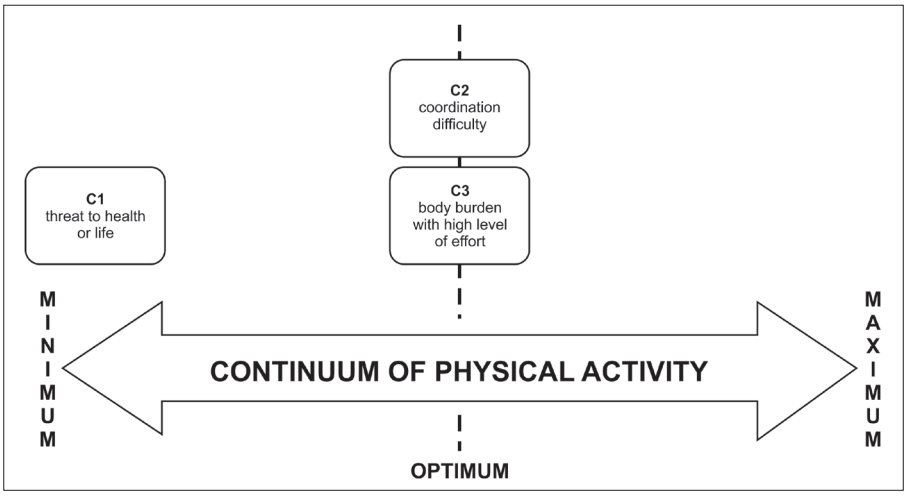

Figure 1. Model typical of recreational physical activity (based on [18]).

The aim of this paper is to define the term 'extreme forms of physical activity'.

MATERIAL AND METHODS

Research procedure is based on the experience of ten experts, specializing in solving difficult or extremely difficult situations or having documented scientific achievements in this area of human activity. The experts' group comprises one professor, two doctors with a post-doctoral degree, five doctors, two doctoral students.

Moreover, the most crucial experiences of the experts' group proving their factual qualifications to participate in determination of the definition of 'extreme forms of physical activity' include the following:

- sports career (over ten year membership in national judo team, athletics, downhill skiing);
- stunt experience in 60 films (mostly in battle scenes);
- membership and participation in scientific expeditions in the most important world organisation of discoverers-explorers *The Explorers Club*;
- participation in survival camp in the Sahara;
- numerous participations in military and police multi-discipline events;
- working with explosives and chemical combat agents;
- service in the polish elite military unit *GROM*;
- specialisation in survival trainings;
- long-term experience in training of special military and police units, water and mountain rescuers.

Preliminary definition of so-called 'extreme forms of physical activity', determined on the basis on pilot studies has been subjected to verification thought the Delphi method. The definition sounds as follows: "extreme forms of physical activity are extreme sports, including often classified according to the environment in which they are performed (water, land, air), extreme forms of physical recreation as well as gainful activity or voluntary service, and all varieties of physical activity that fulfil 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".

Research procedure consisted of presenting the content to individual experts with request for remarks concerning its modification, while the experts could not exchange their views between each other. Research moderator has been responsible for the analysis of the answers and modification of the content. The procedure is depicted by the following algorithm (Fig. 3).

Number of stages has been determined by the level of consensus (or disagreement) of the experts on the correctness of adopted premises and assumptions of the reasoning and the definition of the key term of this research project, namely *extreme forms of physical activity*.

RESULTS

The first stage of the research procedure (applied Delphi method) has revealed high consensus of experts on the main assumptions and premises of the

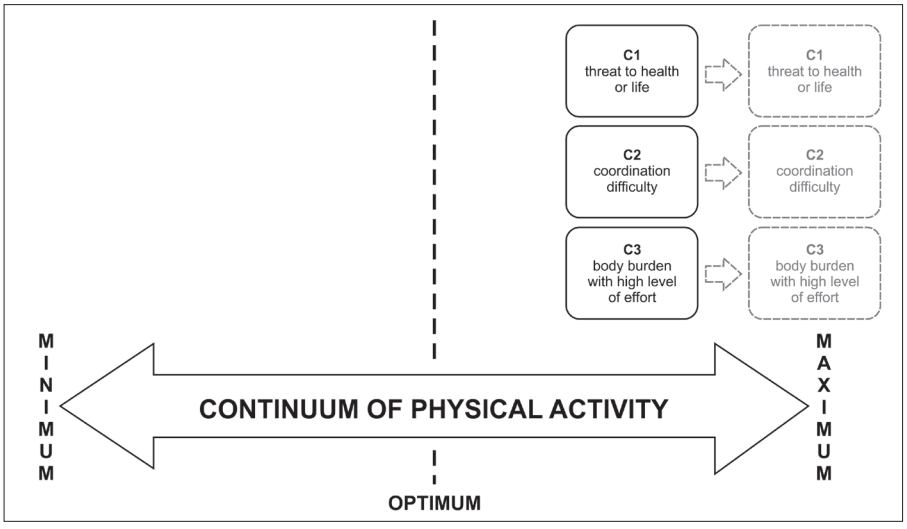

Figure 2. Model typical of extreme forms of physical activity (based on [18]).

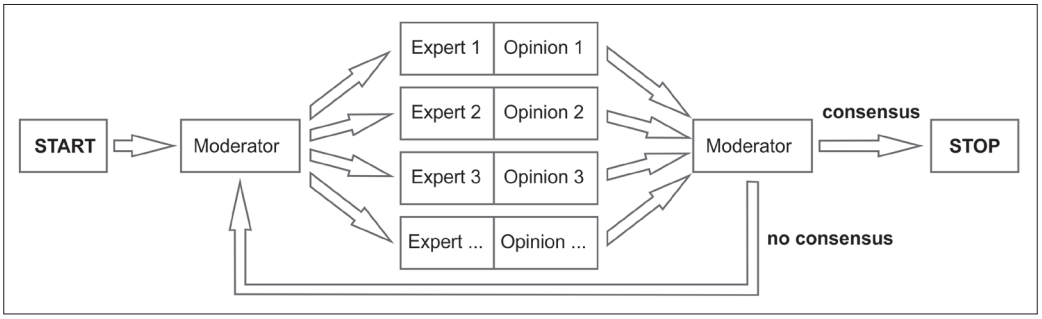

Figure 3. Algorithm applied in the Delphi method.

study. In the subsequent stages some disagreement among the experts has concerned mainly the definition of 'extreme forms of physical activity'. One of the experts has pointed out lack of identification of activity consisting of extreme reduction of movement with extreme activity. Other has indicated vagueness of the word 'gainful', accurately arguing that i.e. "drug dealing is also gainful employment burdened with high risk of injury or death".

The experts have almost unanimously accepted the following definition: "extreme forms of physical activity include all professional activity or voluntary service as well as all varieties of physical activity that fulfil 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".

High degree of consensus among the experts has been demonstrated on the following issues:

- main premises 90%;
- main assumptions 90%;
- the definition of the term 'extreme forms of physical activity' 80%.

DISCUSSION

Human activity is undoubtedly a complex issue. Thereby, it requires application of various tools and research methods on different stages of analysis. While in analysis of e.g. motor skills tried-and-tested methods with verified accuracy have been developed, in research on e.g. conceptualisation of specific issues or defining concepts various methods are applied, having both supporters and opponents.

Introspection – is examination of one's own conscious thoughts and feelings [25].

So-called Delphi method applied herein is the representative of heuristic methods, that base on knowledge, experience and opinion of the experts in a given field. Taking into account the difficulty in defining new terms, referring to expert knowledge is a methodological procedure, which can hardly be ascribed with serious critical remarks. This method is becoming increasingly important in studies on fields which are relatively poorly explored.

According to its etymology the Delphi method refers to knowledge and experience of the experts. Hence, the most essential part of methodological correctness is appropriate selection of the experts according to qualitative criteria and their sufficient number (qualitative criterion). In performed research the fact that the experts have been very diverse, so that their knowledge and competence covered large field of studied phenomenon, has turned out to be very useful. Simultaneously, relatively small, required number of people has been retained.

The selection of only those people who possess abilities to perform scientific analysis of a studied phenomenon has been a very essential criterion from methodological perspective. This has allowed, in combination with their own experience, for applying introspective observation of reality being extremely valuable from scientific point of view. It is especially desired in scientific exploration of such fields as extreme forms of activity, where a researcher may perform double role i.e. be a subject as well. Nevertheless, preventing the experts to participate in discussion imparts as a result extraspective character to the observation.

Kalina [19] draws attention to this use of introspective observation (introspection), as he refers to diverse views on this subject presented by eminent science methodologists, professor J. Kmita [20] and professor J. Brzeziński [21, p.193]. Kalina adheres to Kmita's opinion, who claims that "(...) some of the theoretical predicates are thus connected with observational predicates that it allows

for stating theoretical predicates basing indirectly on the experiment data" [20, p.129]. Kalina argues that "(...) modern physiotherapy (rehabilitation), extreme sports as well as sports of Asian origin broaden the perspective of possible exploration with the use of this observation method (introspection – author's note). Meditation exercises, oriental relaxation and other forms of mental training pervading to these fields together with far-reaching standardization of the methodology of their application create however considerable opportunities for extraspective observation as well as clearly determine the boundaries for scientific penetration with the use of this method. Being aware of the scale of social interest in the abovementioned forms of physical activity and their availability as well as noticeable effects either positive or negative, it is hard to base on the statement that contemporary researcher of those phenomena may easily perform double role – also be a subject. Hence, he has the possibility in some sense to competently use introspective observation and practically use the results of the study – i.e. better from those who are limited by the frames of extraspective observation" [19, p. 45].

In studies on determination of the definition of 'extreme forms of physical activities' only moderator (who fulfilled the criteria required from selected experts) has access to all answers and suggestions of the experts and it is the moderator who basing on the analysis of those data can modify the issues (the content of the subsequent stages) at each stage of the study. This manner of referring to the knowledge, experience and competence of the experts in a given field is a method that allows for seeking the subjective opinions of the experts and, as the result of moderation, relatively objective (on the basis of those intersubjective assessments) evaluation of studied reality. With proper selection of the experts, the moderator can formulate new and perhaps previously unseen threads. In this study two experts (20%) have not been convinced whether it is sufficient that extreme intensity of at least one of three identification criteria of the phenomenon proves the extremality. Nevertheless, the result of consensus between opinions of outstanding experts obtained though the Delphi method entitles to consider the definition of 'extreme forms of physical activity' as accurate.

CONCLUSIONS

The independence of experts' view and their individual assessment provide grounds to believe that statements developed this way may be considered as objectively verified.

Applied procedure to determine the definition of extreme forms of physical activity with use of the Delphi method is an empirical evidence of the applicability of this procedure in systematizing key terms of numerous specialised disciplines and specialties in the sport sciences (those already explored and those which will be developed in the future).

The basic condition of effective use of this procedure in scientific research methodology is an accurate selection of the experts. Increase in the number of experts at the expense of differentiation in both practical experience and possibly academic qualifications would be imprudent (every time the lead investigator should take arbitrary decision, which of those factors is significant in a particular study or perhaps whether both are significant).

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