

Security and risk management in outdoor sports – an exploratory systematic review

Seguridad y gestión del riesgo en el deporte al aire libre - revisión sistemática exploratoria

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Abstract: The development and growth of tourism has increased the practice of nature and adventure sports, which is directly correlated to the risk inherent to the unpredictability of the environment and human reliance. In this exploratory systematic review, we set out to search for insight attained in the last decade, regarding safety and risk management in outdoor sports. We use the following sources: electronic databases (web of knowledge, b-on, rcaap), plus master's and doctoral dissertations. The keywords used in our research were, in Portuguese, English and French: "Risk"; "Safety and risk management sport"; "Safety and risk management in adventure sports"; "Risk in outdoor activities"; "Risk in adventure sports"; "Safety in adventure activities". From the 40 articles selected, only 33 attended to the necessary criteria: empirical studies of the past 10 years, pertaining academic dissertations, scientific articles or books. It resulted in 33 selected readings, comprising 17 international studies and 16 national.

Keywords: Adventure Sports, Safety and Risk Management.

Resumen: El desarrollo y crecimiento del turismo ha llevado al aumento de la práctica de los deportes en la naturaleza y aventura, con un riesgo asociado. En este estudio de revisión sistemática, se objetivó investigar el conocimiento producido en la última década, referente al tema de la seguridad y gestión del riesgo en los deportes de naturaleza y aventura. Utilizamos las siguientes fuentes: bases de datos electrónicas (web of knowledge, b-on, rcaap), y disertaciones. Las palabras clave utilizadas fueron: "Riesgo"; "Riesgo en las actividades al aire libre"; "Riesgo en el deporte aventura"; "Riesgo en el deporte de aire libre"; "Seguridad y gestión del riesgo en el deporte"; "Seguridad en las actividades de aventura" "Seguridad y gestión del riesgo en el deporte aventura. De las 40 producciones científicas listadas, sólo 33 atendían a los criterios de inclusión: estudios empíricos de los últimos 10 años, referentes a disertaciones académicas, artículos científicos o libros. Resultaron en 33 producciones seleccionadas, comprendiendo 17 estudios internacionales y 16 nacionales.

Palabras claves: Deportes Aventura, Seguridad y Gestión del Riesgo.

Introduction

The designation for this type of activities is not consensual, having assumed various names, depending on if we're facing a touristic, sporting or environmental perspective, etc. From Active Tourism, Adventure Tourism or Nature Tourism, if referring to a touristic perspective, passing through Adventure Sports, Nature Sports or Adventure Physical Activities in Nature, if referring to a sporting perspective. According to Carvalhinho (2006), we can still come across some terminological confusion in regards to the name given to these types of physical and sporting activities, depending on the agendas of different organizations and the multiple contexts in which the respective activities unfold.

The development and growth of national tourism has led to the increase of adventure sports involvement, characterized by its risk and environment unpredictability. Currently, the concept of risk is variable, according to the environment to which it is associated (Aven, 2012) and the individual's perspective. Therefore, according to these individuals and

they're experience or expertise, what one must do to be cautious and prevent risk can also vary.

Sensations like vertigo, adrenaline, risk, strong emotions and of overcoming have become part of the everyday language of those who have given themselves up to adventure and to calculated risk, standing points on which Nature Sports are defined by (la Mendola, 2005). Here, Adventure can refer to exploration of the different natural environments (earthly, aquatic and aerial environments). Risk is the challenge, that provokes fear and at the same time an unmistakable pleasure caused by the fusion of the different elements of Sports, Adventure, Radicalness and Nature.

It is considered that risk works as a stimulus and source of pleasurable feelings for the individuals involved or drawn to these adventure activities. These physiological factors of the stimulation of pleasure have been extensively studied by authors such as Richard, Alamino and Simões (2007).

With this emerges more and more concerns regarding safety issues with the practicing of these adventure activities which are the areas with more associated risks such as falls, slips, drowning and other dangers related to the activities according to Abeta and Mtur (2009); from Almeida and Silva

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(2014) and Silva (2016) 's point of view the various practices of adventure activities entail several other risks depending on their type, on various risk factors and on the context of the uncertainty associated to them.

It is important to point out that it is crucial to associate risk to danger and vulnerability since the ways of mitigation almost always act upon the reduction of vulnerability, removing people from the dangerous places or by giving them tools of resistance or resilience. However, prevention is possible and can contribute in a more effective way to avoid loss of human lives and consequently allow a more efficient approach from the agents of Proteção Civil, regarding the preparation and response of protection and rescue efforts, as well as in the rehabilitation and recuperation phase of society, economy and the environment (Neves, 2013).

Therefore, we decided to carry out an exploratory systematic review where we set out to search for insight attained in the last decade, regarding safety and risk management in outdoor sports practiced in Portugal and abroad.

Method

We used the exploratory systematic review methodology, allowing us to develop an assortment and selection of interventions, systematizing the findings.

The research was conducted using the following different sources: electronic databases (web of knowledge, b-on, rcaap), plus master's and doctoral dissertations. The keywords used in our research were, in portuguese: "Risco"; "Segurança e gestão do risco no desporto"; "Segurança e gestão do risco no desporto aventura"; "Risco nas atividades outdoor"; "Risco no desporto aventura"; "Segurança nas atividades aventura"; in english: "Risk"; "Safety and risk management sport"; "Safety and risk management in adventure sports"; "Risk in outdoor activities"; "Risk in adventure sports"; "Safety in

adventure activities"; and in french: "Risque"; "Sécurité et gestion des risques dans les sports"; "Sécurité et gestion des risques dans les sports d'aventure"; "Risque dans les activités outdoor"; "Risque dans l'aventure sportive"; "La sécurité dans les activités d'aventure".

Initially, all of the studies that had one of the keywords in their title were subsequently selected for further reading.

However, of the 40 scientific studies listed, only 33 attend to the necessary criteria: empirical studies regarding safety and risk management in outdoor sports or studies related with the overall theme, whether they were academic dissertations, *peer review* articles or books. The factors taken into consideration during the selection process were: review, empirical, opinion, and expert's articles, written during the time frame of 2010 to 2018.

Therefore, from the 33 selected works we noted 5 academic dissertations, 3 books and 25 magazine publications, accounting to a total of 17 international publications and 16 national publications.

Results

The 33 listed works were aggregated together by order of research conducted in Portuguese, English and French, where the keywords were firstly used in a more generic and wide-ranging research but eventually transitioning into a more specific and incisive research, using the following words: Risk (2 publications), Safety and risk management in sports (5 publications), Safety and risk management in adventure sports (10 publications), Risk in outdoor activities (3 publications), Risk in adventure sports (11 publications) e Safety in adventure activities (2 publications).

Table 1 outlines those 33 publications, highlighting the author's country of origin, the title and the year of publication, included with in the period of 2010 to 2018.

Table 1. Characteristics of the publications selected by the electronic databases.

Keyword Portuguese, English and French	Year	Country	Author and title
<i>Risco</i>	2015	Portugal	(Fernandes, A.) Análise ao processo de gestão de palavras-chave num sistema informático e riscos inerentes
<i>Risk</i>	2015	Portugal	(Cunha, A.) Risco na gestão do publico em eventos de acesso livre: Gestão de multidões
<i>Risque</i>	2017	Portugal	(Botelho, M.) Situações de risco nas atividades curriculares e extracurriculares
<i>Segurança e gestão do risco no desporto</i>	2016	Portugal	(Rodrigues, M.) Avaliação das estratégias de gestão de risco no turismo ativo: Caso do mergulho na praia do Tofo
<i>Safety and risk management in sports</i>	2014	Portugal	(Almeida, M. & Silva, F.) Segurança e gestão do risco em desportos na natureza e turismo ativo
	2014	Portugal	(Carvalhinho, L. et al.) As competências profissionais dos técnicos de desporto de natureza
<i>Sécurité et gestion des risques dans les sports</i>	2011	Portugal	(Campos, D.) Caracterização do desporto de natureza no parque da Arrábida: Riscos e potencialidades

Keyword	Year	Country	Author and title
Portuguese, English and French	2017	Brazil	(Paixão, J. & Silva, M.) O risco na conceção de instrutores de esporte de natureza
	2013	Portugal	(Neves, D.) Segurança e gestão do risco no turismo de natureza
<i>Segurança e gestão de risco no desporto aventura</i>	2013	Portugal	(Silva, M.) Gestão da segurança no turismo de aventura em Portugal
	2015	Brazil	(Rocha, J.) Os aspetos objetivos e subjetivos da segurança em turismo de aventura
<i>Safety and risk management in adventure sports</i>	2011	Portugal	(Gama, A.) Prevenção e gestão do risco em surf
	2016	Brazil	(Cavasini et al.) Uma abordagem de gestão de risco para atividades de educação ambiental ao ar livre
<i>Sécurité et gestion des risques dans les sports d'aventure</i>	2013	USA	(Kidder, J.) Parkour: Adventure, risk and z in the urban environment
	2013	England	(Glendon et al.) Human safety and risk management
<i>Risco nas atividades outdoor</i>	2016	Brazil	(Auricchio, J.) Segurança e gestão do risco nas atividades de aventura
	2014	Portugal	(Silva et al.) A importância da formação no turismo de aventura
<i>Risk in outdoor activities</i>	2012	England	(Dickson, J. & Gray, L.) Risk management in the outdoor: A whole-of-organisation approach for education, sport and recreation
	2011	Portugal	(Neves, D.) Turismo e risco na ilha da Madeira: avaliação, perceção, estratégias de planeamento e prevenção
<i>Risque dans les activités outdoor</i>	2011	Brazil	(Paixão et al.) Risco e aventura no esporte na perceção do instrutor
	2011	Brazil	(Martins, C.) A prática de esporte de aventura na escola e o risco
<i>Risco no desporto aventura</i>	2016	Brazil	(Silva et al.) Risco e práticas corporais na natureza: uma revisão sistemática
	2010	Portugal	(Sá, V.) Perceção de risco e segurança em atividades de desporto de aventura
<i>Risk in adventure sports</i>	2012	Portugal	(Regadas, P.) Perceção de risco e segurança de praticantes de desporto de aventura em meio escolar
	2016	Portugal	(Brandão, A.) Perceção de risco e segurança no canyoning, a experiência e confiança necessárias para a prática da modalidade
<i>Risque dans l'aventure sportive</i>	2013	Brazil	(Ennes, M.) Fatores de risco real nas atividades de montanhismo
	2013	England	(Ryan, C.) Risk acceptance in adventure tourism-paradox and context
<i>Segurança nas atividades aventura</i>	2013	England	(Collins, L., & Collins, D.) Decision making and risk management in adventure sports coaching
	2014	Brazil	(Paixão, J.) Esporte de aventura: processo instrucional e situação de risco
<i>Safety in adventure activities</i>	2011	Taiwan	(Tseng CH, T.) Risk-taking attitude and behavior of adventure recreationists: a review
	2014	England	(Heaney, C.) Risk management in outdoor
<i>La sécurité dans les activités d'aventure</i>	2011	England	(Dickson, J.) An introduction to risk, adventure and risk management
	2011	Portugal	(Marques, V.) A segurança nas atividades de ar livre e de aventura

In regards to the international publications, from the 17 that were selected we noted that 9 were done in Brazil, 6 in England, 1 in the United States of America and 1 in Taiwan; regarding the national studies, we registered 16 publications. As well as national and international publications were included in the time frame of 2010 to 2018.

In the whole array of publications, we verified that the word “Risk” is present in 26 of the 33 titles, followed by the word “Safety” found in 6 titles, “Perception” in 5 titles and “Prevention” in 3 titles.

Discussion

Unlike Silva et al. (2010), the gathered studies weren't just foreign studies; 50% of the selected works were found in Portugal, where most of them were academic dissertations which demonstrates the concern and necessity of developing and amplifying the awareness in this area and regarding this specific subject.

In the different publications we encountered the word risk as a common denominator, of which we can infer to be directly associated with outdoor sports, as it is referred by Almeida, and Silva (2014); Neves (2013); Gama (2011); Kid-

der (2013) and Brandão (2016); as well as it is evident that safety and perception were also some of our main study subjects, based on the need of understanding how the exerciser and the instructor face and experience outdoor sports and how well are the instructors prepared, regarding prevention, contingency and emergency plans for before, during and after the activities; it's these factors that ensure more safety to the exercisers or the total opposite, which we can also read in Gama (2011), Paixão et al. (2011), Collins and Collins (2013), Almeida and Silva (2014), Silva et al. (2014), Brandão (2016), García et al. (2016), Aparicio et al. (2016), Auricchio (2016), Paixão and Silva (2017).

Conclusion

Through this exploratory systematic review, associated to the time period starting in 2010 up to 2018, we can infer that the subject Safety and Risk Management in Outdoor Sports constitutes not only a national but also an international point of interest (16 national publications and 17 international publications), where risk is a 'word' that stands out as intrinsic to the subject and a concern to further analyse as well as to further comprehend safety in these activities and the perception of the exercisers and instructors.

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