High-risk sport research

Dominka Kupciw and Alexandra MacGregor highlight the advances, practical implications and future directions in high-risk sport research.

The heights of the skiing season is upon us, and many snow riders are gearing up to hit the slopes around the world. Every winter, more of us look for ways to make our skiing holidays unforgettable and the temptation to venture off the marked slopes in search of fresh powder has never been stronger. However, many winter sports enthusiasts were recently forced to re-evaluate their safety measures after the tragic death of the young and talented freestyle skier Sarah Burke. Sarah died following a training session crash, causing her irreversible brain damage. Although many professional skiers wear helmets, many people ignore this simple precaution.

Researchers are now interested in identifying the psychological antecedents of risky behaviour in adventure sports. Here we provide a general overview of previous risk-taking studies, outline the research findings from recent studies on the risk-taking behaviours of high-risk sport participants, and discuss the practical implications of the research.

What are high-risk sports?

High-risk sports are activities where the possibility of injury or fatality is an inherent part of participation, and specialised equipment and training is generally required in order to participate (e.g., white water kayaking, skydiving, skiing and traditional climbing). The past two decades have seen the development and increased popularitv of new sports such as kitesurfing, and unlike everyday risk-taking activities (e.g., dangerous driving) the danger associated with high-risk sports has become socially accepted in Western society; the potential outcomes, however, are equally risky.

Taking risks or “playing it safe”?

In 1993, Zuckerman defined sensation seeking as “the need for varied, novel and complex sensations and experiences, and the willingness to take physical and social risks for the sake of such experience.” Since then, there has been a tendency to assume that all high-risk sport participants are thrill seekers (Zuckerman, 1983, 2007). Given that sensation seeking and risk-taking are closely linked (e.g., Horvath & Zuckerman, 1993), it is not surprising that researchers have typically not sought to examine the details of different people’s risk-taking behaviours within these sports. Recently researchers have challenged the idea that all high-risk sport participants are risk-takers. These researchers have taken the view that some individuals deliberately take risks when participating in their sport, whilst others “play it safe” by choosing to minimise the risks involved (e.g., Paquette, Lacrosse & Bergeron, 2009; Woodman & Bandura, 2010). To understand why people take risks in these high-risk domains, it became apparent that there was a need for a valid questionnaire for examining the risk-taking behaviours of high-risk sports individuals. In the following section we will briefly present the development of the Risk Taking in Sport Inventory (RTSI).

Advances in measurement

Addressing the lack of reliable measures for investigating risk-taking behaviours in high-risk sports, Woodman and Bandura (2010) developed the Risk Taking in Sport Inventory (RTSI). The measure follows that of Paquette and colleagues’ (2009) work with skiers and snowboarders, with the clear aim of more accurately differentiating between deliberate risky behaviours (e.g., “I deliberately put myself in danger”) and precautionary behaviours (e.g., “I take time to check for potential hazards”) in high-risk sports. Deliberate risky behaviours reflect a lack of understanding and consideration for the high-risk sport environment, whereas precautionary behaviours reflect careful planning and a high degree of awareness for the risks associated with high-risk sports. As well as examining the psychometric properties of the RTSI, we used the measure to examine two key questions:

1. Are deliberate risky behaviours associated with a greater number of near misses and accidents than precautionary behaviours?

2. Are certain personality traits associated with engaging in either deliberate risky behaviours or precautionary behaviours?

Accidents

Accidents are common in many sports, but the nature of high-risk sports means that accidents are likely to be more traumatic and potentially fatal. In terms of reducing the number of accidents occurring in such sports, an understanding of the factors that may predispose someone to being more accident-prone is important. We found that engaging in deliberate risky behaviours was associated with a greater number of near misses and accidents, whereas engaging in precautionary behaviours (e.g., taking time to check for potential hazards) was associated with fewer near misses and accidents. What is most interesting is that precautionary behaviours buffered the deleterious effects of taking risks when taking on the likelihood of accidents. In other words, danger per se does not necessarily lead to accidents; it is when danger is accompanied by a lack of precaution that accidents tend to occur. There will always be individuals who will push the limits of their sport, and there will be those who are careful and do not.

Clearly, some individuals will want to put themselves in situations that are so dangerous that the consequence of failing is almost certainly death. However, the results from our study showed that engaging in certain behaviours (i.e., precautionary behaviours) reduces the likelihood of such fatalities occurring.

Personality

While high-risk sports might not be everyone’s idea of a leisure time activity, there is evidence for the existence of individuals who engage in high-risk sports. It is therefore important to establish which individuals and groups are motivated to take risks in their daily lives. Two particular characteristics have been a constant predictor of an individual’s tendency to take risks in high-risk sport participants. Conscientiousness (e.g., Castanier, Le Scanff & Woodman, 2010) and fearlessness (e.g., Castanier et al., 2010) we found that conscientious individuals engaged in precautionary behaviours, whereas less conscientious individuals engaged more in deliberate risk-taking behaviours. Indeed, conscientious individuals are characterised as being careful, thorough and deliberate, therefore it is no surprise that they tend to engage in more precautionary and less risky behaviours. If we are able to identify individuals who may be more likely to engage in deliberately risky behaviours, we may be able to provide them with the knowledge and skills necessary to ensure their engagement will result in serious injury or fatality (e.g., extra safety cover, spot checks of safety equipment). As well as identifying factors that may predispose someone to being more accident-prone, we may be able to predict which individuals are likely to engage in deliberate risky behaviours.

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Further reading


The concept of risky lies at the very centre of economic expansion; it is the driving force behind innovation and scientific development. The need for individuals to take risks is a fundamental aspect of human nature; the caveman would not have emerged from the cave to feed his family if he hadn’t taken risks. Thus, when proposing any preventative or safety strategies for high-risk sport participation it is important to recognise and maintain the element of risk that many participants specifically strive for. With this in mind, boarding enjoy, our article, the emphasis of interest is on the included analysis of the RTSI and its practical implications in the high-risk sport domain.

Take-home message

Although research into the differing behaviours of high-risk sport participants is in its infancy, there is evidence to suggest that high-risk sport participants are certainly not all deliberate risk-takers. In fact, it is likely that only a minority of these high-risk sport participants intentionally engage in risk-taking activities, others adopt safe engagement in risk-taking activities, others adopt safe options within the high-risk sport domain. These recent findings change the way people view high-risk sport participants, and creates an exciting avenue for future research in the domain.

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Acknowledgements

The authors would like to thank Tim Woodman, School of Sport, Health and Exercise Sciences, Bangor University, for his assistance in writing this article and his valuable guidance in conducting the aforementioned research project, and to all participants who took part in the study.