



Self reported risk taking and risk compensation in skiers and snowboarders are associated with sensation seeking

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ABSTRACT

In alpine skiing, a controversial discussion has been taking place regarding the potential influence of wearing a ski helmet on the individual level of risk taking behaviour. The aim of this study was to evaluate whether self reported risk taking behaviour and self reported risk compensation are associated with the personality trait sensation seeking (SS) in alpine skiing and snowboarding. In total, 683 persons (36% males and 64% females) completed an online-survey about attitudes and use of protective gear in winter sports including the German version of the sensation seeking scale form V. A logistic regression analysis including gender, age, nationality, preferred winter sport, self reported skiing ability, mean skiing time per season, use of ski helmets, and SS total score was used to estimate adjusted odds ratios (ORs) and their 95% confidence intervals (95 CI) for self reported risk taking behaviour. Regression analysis revealed that a more risky behaviour increased with male gender (OR: 2.7), with an age < 25 years (OR: 1.6), with skiing (OR: 1.3), higher skill level (OR: 5.7), and a mean skiing time > 28 days per season (OR: 2.2). In addition, SS total score was significantly higher in more risky compared to more cautious people (23.8 vs. 20.3, $p < .001$). Ski helmet use was not found to be predictive for a more risky behaviour ($p > .05$). Also, skiers and snowboarders with self reported risk compensation while wearing a ski helmet had higher SS total scores compared to those who did not report risk compensation (23.8 vs. 20.9, $p = .001$). In addition, self reported risk compensation in helmet wearers increased with an age < 25 years (OR: 2.2), a higher skill level (OR: 2.5) and a mean skiing time > 28 days per season (OR: 2.1). In conclusion, self reported risk taking and self reported risk compensation are associated with higher sensation seeking total scores. The personality trait sensation seeking, not wearing of a ski helmet, appears to be associated with riskier behaviour on the ski slopes.

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1. Introduction

In alpine skiing and snowboarding head injuries account for 9–19% of all injuries reported by ski patrols and emergency departments (Ruedl et al., 2010a; Russel et al., 2010). Severe head injuries include traumatic brain injury which is a leading cause of traumatic deaths among winter sport participants (Russel et al., 2010; Ruedl et al., 2011). However, the use of ski helmets has the potential to reduce the risk of head injuries up to 60% (Hagel et al., 2005a; Sulheim et al., 2006; Mueller et al., 2008; Ruedl et al., 2010a; Russel et al., 2010; Cusimano and Kwok, 2010). Nevertheless, a controversial discussion has been taking place regarding the potential influence of wearing a ski helmet on the individual level of risk taking behaviour (Hagel and Meeuwisse, 2004; Sulheim et al., 2006;

Hagel et al., 2005b; Scott et al., 2007; Ruedl et al., 2010b). The so called risk compensation hypothesis is based on the assumption that safety appliances cause a false sense of security in their users resulting in an increased risk taking behaviour (Scott et al., 2007). Bürkner et al. (2009) reported that winter sport participants wearing safety devices have a higher level of risk taking compared to those not using such devices. Shealy et al. (2005) demonstrated that the average speed on ski slopes was significantly higher for helmet users compared to non helmet users (46 km/h vs. 41 km/h). In addition, Sulheim et al. (2006) showed that skiers who reported themselves as risk takers were more likely to wear a helmet than skiers who rated themselves as cautious skiers (43.3% vs. 29.2%; OR: 1.48). In contrast, Ruedl et al. (2010b) showed that self-reported risk taking skiers and snowboarders skied faster than cautious persons (53 km/h vs. 45 km/h) while helmet use was nearly equal in both groups (59.2% vs. 59.7%). In addition, the proportion of more skilled skiers was significantly higher (76.9% vs. 59.0%) in helmet users while the distribution of risk-taking behaviour was nearly equal (29.8% vs. 30.2%) compared to non-helmet users (Ruedl et al., 2010b). Also other studies showed that helmet use is higher in

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