Human Risk Factors In Avalanche Incidents

Albert (albi) E. Sole 1, Carolyn A. Emery 1, Brent E. Hagel 2, Robert A. Stebbins 3, Barbara A. Morrongiello 4
1 University of Calgary, Faculty of Kinesiology, Calgary, AB, Canada; 2 Calgary Health Region, Calgary, AB, Canada; 3 University of Calgary, Faculty of Social Sciences, Calgary, AB, Canada; 4 University of Guelph, Guelph, ON, Canada

An average of 12 people die in avalanches each year in Western Canada. The risk factors for the avalanche phenomenon have been extensively studied. The risk factors associated with the decision making process that leads individuals to expose themselves to avalanche hazard are less well understood. The recommended first step in an injury prevention program is to survey the population to discover the extent of the problem and the risk factors that predispose a person to injury. A retrospective, self-report, web-based, cross-sectional survey designed to measure potential risk factors for avalanche involvement was developed and validated. The survey was administered in September - December 2007 so as to obtain a representative sample from the population of skiers, snowboarders, climbers and snowshoers who entered avalanche terrain in Western Canada in the previous year. Back country skiers are at greater risk of experiencing an avalanche incident than out of bounds skiers or cross-country skiers and snowshoers [Odds Ratio (OR)=2.4]. Males who typically travel with other males are at greater risk than females and males who travel in mixed gender groups at least 75% of the time (OR=2.6). Participants in the 25-29 (OR=2.6) year age range are also at greater risk than younger or older people. Attitude may have a strong association with risk of experiencing an avalanche incident (OR=6.7).