

# *Promoting Safe Winter Sports and Support for the Beijing 2022 Olympic and Paralympic Winter Games: A Global Collaborative Education Program*

Guan Hongwei\*

**Abstract:** Safety is critically important for any sport or recreational activity. Skiing and snowboarding are winter activities that are potentially beneficial to health and fitness. However, they present a significant risk of injury. If not well managed, high injury rates will negatively impact the ski industry and its development. The purpose of this study was to systematically review the literature of safety and injury prevention programs specific to recreational alpine skiers and snowboarders in China and compare them with those implemented in the United States to promote safe snow sports and prepare skilled ski patrol and injury prevention professionals for the Beijing 2022 Olympic and Paralympic Winter Games.

**Keywords:** winter sports; skiing; snowboarding; safety and prevention

Beijing's successful bid for hosting the 2022 Olympic and Paralympic Winter Games has created an exciting opportunity for the winter sports industry in China. Skiing and snowboarding, activities that are fairly new to the majority of the Chinese population, are becoming more popular.

The purpose of this study was to systematically review the literature of safety and injury prevention programs specific to recreational alpine skiers and snowboarders in China and compare them with those implemented in the United States. Based on literature reviews, field observations, and interviews/consultations

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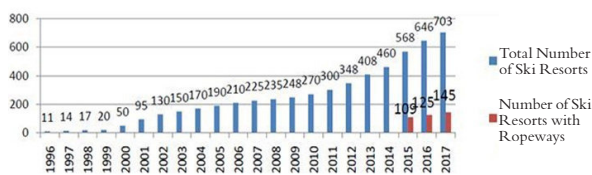
with snow operations directors, and certified instructors from the Professional Ski Instructors of America the American Association of Snowboard Instructors (PSIA-AASI) certified instructors, and the NSP (National Ski Patrol) certified instructors, recommendations to improve the snow sport safety and injury prevention programs in China are made to facilitate healthy winter activities. As a result, an ongoing collaborative education program is introduced and discussed which is designed to promote safe snow sports and prepare skilled ski patrol and injury prevention professionals for the Beijing 2022 Olympic and Paralympic Winter Games.

The China Knowledge Resource Integrated Database (CNKI.NET) was used to search scholarly Chinese articles regarding Chinese on ski injuries and safety from 2000 to the present. Search terms “mass skiing & Injury or safety” (in Chinese) retrieved a total of 48 articles. Search terms “Ski injury/safety” and “Ski instructor/instruction” retrieved a total of 6 articles, while “Ski injury/safety” and “Ski Patrol/Rescue” retrieved 1 article. Articles found in academic databases, government policies and professional organization reports were also included for content analysis.

The number of ski resorts in China has grown exponentially from 50 in 2000, 270 in 2010 then, to 568 in 2015 and 703 in 2017. According to the 2017 *China Ski Industry White Book*, individual skier visits also increased proportionally, from 300,000 in 2000 to 17.5 million in 2017. Also, China’s recreational ski population has increased from 10,000 to 12.1 million in the last 20 years (Figure 1). Compared with the winter sports industries in Europe and North America, China’s winter sports industry is in its infancy. China has become the world’s largest junior ski market. However, compared with ski resort operations in the United States, two critical areas have not received due attention or investment.

These are Ski Instructors and Ski Patrol programs. Ski safety programs have been essentially neglected during this period of rapid development.

Figure 1. Ski Resorts Development in China



Safety is critically important for any sport or recreational activity. Skiing and snowboarding are winter activities that are potentially beneficial to health and fitness. However, they present a significant risk of injury. If not well managed, high injury rates will negatively impact the ski industry and its development.

In the US, the National Ski Areas Association (NSAA) reports regularly release industrial statistics which include ski participation and safety data (Figure 2 & Figure 3).

The average number of visits per season since 2000-01 was 56.5 million. During the 2016-17 season, \$8.4B was directly spent at ski resorts in the US. and there were 44 skier and snowboarder fatalities that season, compared to 39 during the 2015-16 season. The 10-year average rate was 0.71 fatalities per million skier visits.

Figure 2. Estimated Number of Skier/Snowboard Visits in the US from 2000/01 to 2016/17

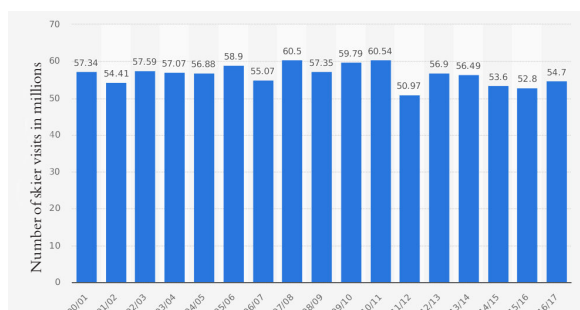
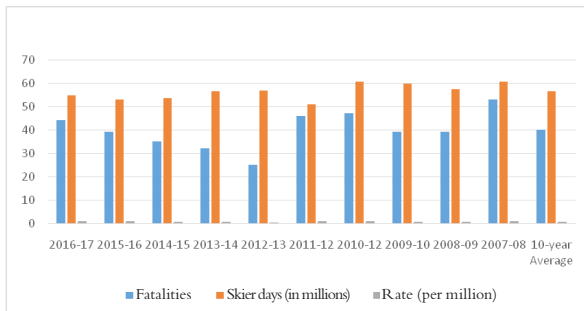


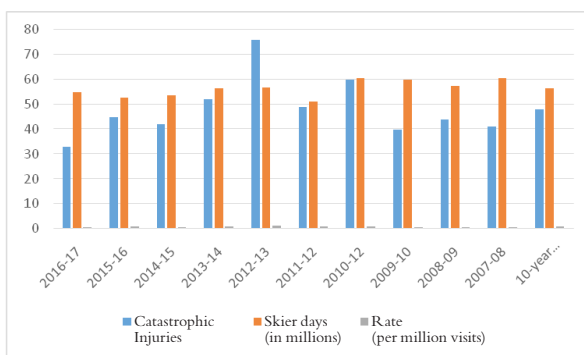
Figure 3. 10-Year Fatal Incident Rate per Million Participants



Source: NSAA, 2017

The NSAA reports that there were 33 catastrophic injuries that occurred at US ski areas during the 2016-17 season, significantly below the ski industry's 10-year average of 48 catastrophic injuries. Based on 54.8 million skier visits tallied last season, the catastrophic injury rate for 2016-17 equates to 0.60 catastrophic injuries per one million skier/snowboarder visits, well below the 10-year average of 0.85.

Figure 4. 10-Year Catastrophic Injury Rate per Million Skier/Snowboarder Visits



Source: NSAA, 2017

Ski safety statistics in China are not reported by any professional organization or agency. Although the 2017 *China Ski Industry White Book* is a comprehensive report in its 3rd edition, safety data are not included. In a recent study, it was reported that an increasing injury rate of 10% or above was observed from 2008 to 2011 based on data collected from 70 ski resorts in China, and the death toll was 26 in 2011. The catastrophic injury number increased

by 32% in 2011. Many factors have suggested as to what might have led to the high and rising injury rate. A lack of certified ski instructors or ski patrol programs are very common in many of the newly developed ski resorts, where business has been focused on profit. Not many people involved in the ski industry truly appreciate the value and critical importance of educational programs that help reduce injury and fatality rates.

As Beijing is preparing to host the 2022 Winter Olympics, quality educational programs to train more ski instructors and skilled ski patrol professionals are in urgent need. China ski industry investors, colleges and universities should take a lead in global collaboration with the long-established professional organizations, especially the PSIA-AASI and the NSP.

Founded in 1961, the PSIA-AASI is the world's largest organization dedicated to teaching people how to ski and snowboard. Founded in 1938, the National Ski Patrol (NSP) is the largest organization of its kind. NSP has followed its creed of "Service and Safety" since its establishment. The NSP Mission is to help keep people safe on the mountain and during other outdoor activities. The NSP has worked closely with other countries in Outdoor Emergency Care education and assisted with the establishment of patrol associations in Canada, Korea, New Zealand, Israel, Turkey, Argentina, and Chile. It is now time to add China to the list.

As Ithaca College celebrates its 10-year anniversary with its Chinese partner institutions, the Winter Sport Skills and Injury Prevention Program has been developed as a global collaboration education program, partnered with Greek Peak Ski Resorts, Cornell University, and Capital University of Physical Education and Sports to promote safe snow sports and prepare skilled ski patrol and injury prevention professionals for the Beijing 2022 Olympic and Paralympic Winter Games.

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