

Development of a Sports Safety Promotion Framework Based on KABP Theory and 4M Management

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Abstract: This study explores the significance, current research landscape, and conceptualization of sports safety promotion. Safety in sports is fundamental to youth physical activities, and an excessive focus on or neglect of safety is unwarranted. Globally, numerous countries have extensively researched sports safety promotion and implemented diverse strategies. Drawing from KABP (Knowledge, Attitude, Behavior, Practice) theory and 4M (Man, Machine, Medium, Management) management, this paper presents a conceptual framework for sports safety promotion. It integrates these theories to devise a comprehensive accident prevention model within a sports safety promotion system. The framework prioritizes enhancing students' safety literacy and underscores the practical application of safety knowledge and skills in simulated sports settings following structured safety education. It aims to enhance students' competency and proficiency in averting sports-related injuries.

Keywords: Knowledge, Attitude, Behavior, Practice theory; Man, Machine, Medium, Management management; Sports safety promotion; Youth sports safety

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1. Introduction

For any human endeavor, the paramount requirement is the safety of life, serving as the fundamental cornerstone. It is only when sports activities are conducted safely that young individuals can engage in physical pursuits unabated, thereby fostering their physical and mental well-being. Presently, reports of safety incidents associated with sports activities are increasingly prevalent. These recurrent safety incidents have inflicted irreparable harm upon the students themselves and have profoundly impacted their families. However, excessive fixation on safety is equally untenable. For youth, participation in sports activities and the acquisition of sports skills are pivotal behaviors contributing to their development. Their psychological maturation may not always facilitate discernment regarding self-protection, cessation of activity, and the pursuit of achievement. Thus, it is imperative that sports safety promotion align closely with the practical realities of students' lives, addressing the systematic progression of their growth, maturity, and accomplishments. This delineation warrants deep

contemplation among scholars.

2. Current research on sports safety promotion

Sports safety promotion is a multi-faceted and comprehensive concept encompassing not only individual physical health but also educational, managerial, and legal dimensions ^[1]. Within the realm of sports learning and practice, physical education teachers play a vital role. They safeguard students' safety and well-being by enhancing their awareness of sports safety and fostering self-protection skills. This involves implementing a range of educational activities and safety measures to mitigate potential hazards.

In China, school administrators and teachers are pivotal in governing school sports safety. To enhance the risk awareness and management capabilities of physical education teachers and administrators, scholars and practitioners have delved into research, proposing effective strategies and measures ^[2]. These include strengthening physical infrastructure, implementing risk assessment protocols, and enhancing safety consciousness among students and educators. However, China faces challenges such as overzealous safety measures leading to the cancellation of sports programs, highlighting the need for a balanced approach to safety management.

Internationally, various nations have pursued extensive research and development in sports safety promotion. For instance, the United States has crafted detailed "School Sports Safety Manuals" to guide physical education teachers and safety personnel in organizing sports activities. Japan employs diverse methods, including classroom instruction, to impart safety education to students. Russia integrates life safety education into school sports and devises numerous teaching frameworks. Additionally, countries like the United Kingdom and Australia ensure legal safeguards for schools and educators involved in sports, providing a structured framework for safety guidance. Moreover, effective implementation of preventive measures is paramount. Schools must conduct routine safety inspections, ensure equipment integrity, and provide comprehensive safety education and warm-up routines. Establishing robust emergency response mechanisms is also critical to mitigate harm in the event of accidents.

In short, sports safety promotion constitutes a multifaceted endeavor, necessitating holistic consideration across legal, preventative, awareness, response, and mental health education domains. Only through such comprehensive efforts can students truly relish the joys of sports within a safe and nurturing environment.

3. Concept of sports safety promotion based on KABP theory and 4M management

3.1. Concept of sports safety promotion based on KABP theory

The "Knowledge-Attitude-Behavior-Practice" (KABP) theory, proposed by Western scholars in the 1960s, outlines a progressive model for behavior change (**Figure 1**). According to this theory, knowledge serves as the foundation for behavioral change, while beliefs and attitudes act as driving forces. Although research indicates that knowledge does not solely dictate behavior, there exists a significant correlation. This theory is considered mature in the realm of human health behavior change. In the context of safe sports behavior among students, acquiring knowledge and information about safe practices aims to cultivate beliefs and attitudes conducive to safe behavior. Only with a firm grasp of safe sports knowledge can students actively adopt safe practices or amend unsafe behaviors. This process necessitates steadfast safety beliefs and attitudes. The progression from knowledge to belief and subsequently to behavior prioritizes safety in sports participation. Therefore, utilizing safety education interventions with students is both feasible and effective.

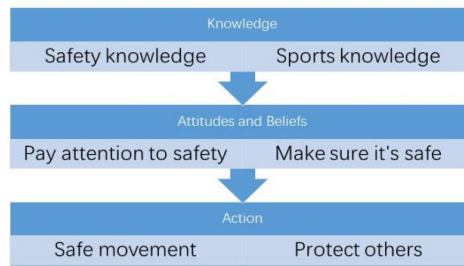


Figure 1. Safety promotion knowledge, attitude, behavior, practice implementation model

3.2. Concept of sports safety promotion based on 4M management

The safety of youth sports can be effectively managed through the lens of the 4M management: Men, Machine, Medium, and Management (Figure 2). Safety management, an interdisciplinary field bridging management and safety sciences, focuses on the systematic prevention of accidents and mitigation of losses [3]. This framework offers a structured approach to categorize factors influencing sports safety, encompassing four main categories of unsafe elements. Human behaviors are identified as the most direct contributors to accidents, while machine-related hazards serve as primary causal factors. Environmental conditions also play a significant role in accident occurrence, alongside deficiencies in management practices, which indirectly contribute to safety lapses.

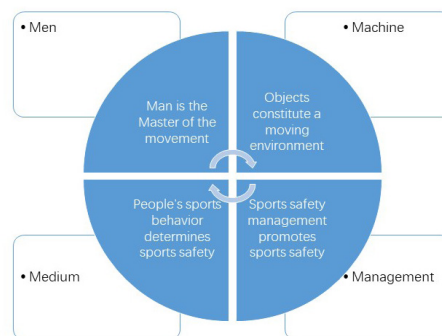


Figure 2. A concept of campaign safety promotion based on 4M management

4. Sports safety promotion system of collaborative accident prevention model

The sports safety promotion system, derived from the principles of the 4M management and integrating the KABP theory model and sports safety management model, underscores three main dimensions: individual students, others, and additional factors (Figure 3). The individual aspect encompasses both fundamental and sports safety-related information. Other dimensions involve human-machine interactions, safety information, as well as the physical environment and management aspects within sports settings. Concerning students' safe sports behavior, the acquisition of knowledge and information aims to cultivate beliefs and attitudes conducive to safe practices, thereby perpetuating or altering such behaviors. Within the sporting context, both the individual participant and others play pivotal roles. As these actors assimilate safe sports knowledge and adopt corresponding behaviors or modify existing unsafe practices, a progression akin to “theory-behavior-experience” in sports safety knowledge and conduct unfolds. Sports participants, building on their comprehension of sports-related information, blend their sense of responsibility for their health with further positive reflections, thereby evolving attitudes toward sports safety into deeply ingrained beliefs.

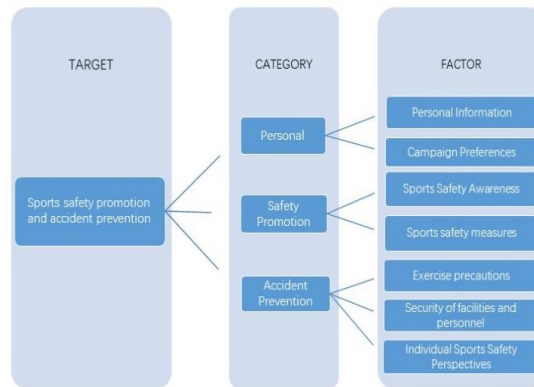


Figure 3. A sports safety promotion system with a synergistic accident prevention model

5. Conclusion

There exists an intermediary relationship between sports safety promotion and the prevention of sports injuries, resembling a subset akin to safety education or life safety education. Sports safety promotion emphasizes both instilling and enhancing students' awareness and competence in safety, with a focus on proactively fostering students' personal safety competencies. Conversely, safety education prioritizes the dissemination of safety knowledge and skills, emphasizing the accumulation of knowledge and experience in injury prevention within specific sporting contexts. The prevention of sports injuries is intimately intertwined with safety education. Amidst ongoing educational reforms, contemporary sports safety promotion underscores the practical application of safety knowledge and skills in simulated sporting scenarios following the comprehensive instruction of sports safety knowledge, aimed at augmenting students' proficiency and practical experience in averting sports-related injuries.

Disclosure statement

The authors declare no conflict of interest.

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