

From Sports Injury Prevention to Safety Promotion in Sports

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Abstract

Every fifth unintentional injury treated at a healthcare facility in the industrialised part of the world is associated with sports or physical exercise. This article reviews the literature regarding the theoretical and practical underpinnings for community-based sports safety promotion, including both professional and recreational sports. While injury prevention entails the implementation of specific interventions in terms of structural or educational measures, sports safety promotion includes also the antecedent and wider campaigns that are required to succeed with these measures. Comprehensive sports safety promotion programmes thus require that the perspective on the sports injury problem is made broader than consideration of the individual athlete. The results display that involvement in sports safety issues from the sports federations that formulate policies and allocate resources is necessary for coordinated implementation of programme actions. The authorities responsible for sports facilities and legislations in the civil society also need to be included, because of the fact that they control many of the central safety determinants in the sporting environment. It is concluded that the sports injury problem needs to be addressed in liaison with the leaders of socially defined sports communities and the governments representing geographically defined civic communities, and that the safety-supporting environment in professional sports is underdeveloped compared with other areas of working life.

Only a few decades ago, sports and physical exercise were seldom on the agenda when issues concerning public health and the general quality of life were discussed. Today, the situation is radically changed. New communication and mass media technologies have made top-level sports competitions develop into a global entertainment industry, and watching the best athletes compete on television is maybe the most popular past time in the world.^[1] For example, the major soccer club competitions in Europe are each week watched by about 100 million spectators over cable television and the Internet. Broadcasting of sports events has grown to constitute an entertainment industry comparable with commercial film and music. In England, the television rights for the Premiere League alone were for the 2001–02 season worth about GBP £180 million.^[2]

In parallel to the progress in professional sports, we know that many of the diseases that constitute major threats to population health are inversely related to the level of leisure-time physical activity. Repeated studies have found that the inverse relationship between exercise and disease is valid for many organ systems, besides the well known beneficial effects on the cardiovascular system.^[3] Exercise also has a positive impact on the bone density of post-menopausal women^[4] and on the prevention of diabetes mellitus.^[5] Physical activity among the young is, therefore, promoted by public health agencies and the maintenance of exercise habits with increasing age is encouraged. However, both because of their vigorous nature and the rapid development of the top competitions into market-regulated commercial enterprises, sports and physical exercise also create risks of adverse consequences on several levels. In Scandinavia, for example, injuries sustained during leisure-time skiing and Sunday soccer result in thousands of lost working days every year,^[6] and almost every week the media reports on a well known athlete who is unable to compete because of injury. The consequences of such an injury are often both a premature end of a professional career and an economic loss for an employer.

Research suggests that about every fifth unintentional injury in a typical community in the industrialised part of the world is associated with sports or physical exercise. In the US, an estimated 7 million children and adults presently receive medical attention for sports injuries each year, corresponding to 2.6 injury episodes per 100 persons.^[7] The highest rates are for children aged 5–14 years (5.9/100 persons) and persons aged 15–24 years (5.6/100 persons), and the rate for males is more than twice the rate for females. A team sport, basketball, is in this context the sports activity that accounts for the most injury episodes, with a rate of about 0.4 injury events per 100 persons. Australia has recently reported 3.7 cases of medically treated sports injuries per 100 persons,^[8] corresponding to a hospital admission rate of 0.2/100 persons, an emergency room presentation rate of 1.7/100 persons and a general practitioner presentation rate of 1.9/100 persons. Also here, more males are reported to be injured than females and younger age groups are over-represented. Australian football, a team sport, is associated with the highest number of injuries (accounting for 24.0% and 22.0% of presentations to emergency rooms and general practitioners, respectively). The European countries constitute no exception, as sports injuries for several decades have been known to represent a quantitatively important and serious health problem.^[9,10] The sports responsible for the most frequent injuries in the European countries at present are soccer and basketball among males, and gymnastics and volleyball among females.^[11] A large portion of these injuries represents fractures, while approximately 4% of the total number of injuries require hospitalisation.

To handle the fact that unintentional injuries are growing into a global public health problem, safety promotion programmes have been introduced on national and local levels in many countries. Community-based programme development, building interventions on existing networks in the civic environment and emphasising broad participation, is today an established model in public health practice. For example, in Scandinavia, safety programmes based on popular participation and intersectoral co-

operation between local organisations have been in use for more than two decades. The programmes are based on continuous tracking of high-risk environments and groups, and focus preventive actions on these. Since 1989, this safety promotion model has been the foundation for the WHO Safe Community accreditation. In 2004, there were about 100 accredited local communities worldwide, constituting a network distributed throughout both industrialised and developing countries. The programmes have also been evaluated with respect to injuries in sports and physical exercise with promising results.^[12,13] Nevertheless, the recently expressed need for dissemination of research findings in a form that can be readily used at the grass roots of sports participation suggests that still only a fraction of the available opportunities to increase sports safety by broad action programmes have so far been exploited.^[14] For example, because sports are mainly performed in planned and organised settings, it is possible to take advantage of the structure of these settings when implementing safety measures. Moreover, when planning such efforts, it is relevant to consider the fact that physical activities are organised both voluntarily and for wages.

The aim of this article is to review the literature regarding theoretical and practical underpinnings for community-based sports safety promotion, including both professional and recreational sports. The scope of most previous approaches to injury prevention in sports has been limited to epidemiology and injury causation.^[15] As a theoretical concept, however, safety can be regarded as an opposite to injury, in a manner similar to how health is compared with disease. Health promotion theory and programme experiences are, therefore, reviewed to identify key design issues for sports safety programmes, and a framework for the planning and implementation of interventions is presented. For the basic set of articles to be included in the review, the Internet-based Entrez PubMed service was employed in October 2004 to search the MEDLINE databases using the terms 'sports injuries', 'injury prevention' and 'safety promotion'. From the basic set of abstracts from 4200 articles published since

1995 on sports injuries, 515 articles on injury prevention and 595 articles on safety promotion, 350 articles addressing at least two of the terms were chosen for inclusion in the review. The reference lists of these articles were used to identify additional books and previously published materials relevant for the review aim. The final set of texts included in the analysis comprised 380 articles and books. These materials were re-categorised into five classes. Two classes (health promotion and definitions on sports injury prevention) were used as preliminaries for the construction of two models conceptualising sports safety promotion (figure 1), while the central category concerned the organisation of sports safety promotion in practice. The final analysis of the texts was summarised in five models describing injury prevention analyses, the scope of safety promotion in sports, community-based safety promotion programmes and empowerment in community-based sports safety promotion, respectively.

1. A Framework for Sports Safety Promotion

Over the last couple of decades, the body of evidence on the state of global health and safety has prompted for an approach to interventions that is broader than merely disease and injury prevention. Even though the resulting set of policies for reform

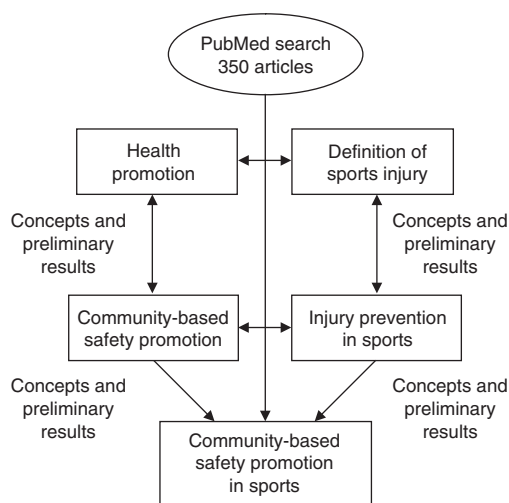


Fig. 1. An overview of the review procedure.

has been characterised as the ‘new public health’, it ‘goes back to the future’.^[16] This broad and participative approach to health problems has its foundation in objectives for public health that were stressed when the living conditions in major industrial cities threatened the health of the populations in the 19th century. The formulation of the ‘sanitary idea’ (that collective action is necessary to manage health-threatening living conditions) has today been modernised and reformulated. Stachtchenko and Jenicek^[17] describe health promotion as “the process of enabling [individuals and groups] to increase control over [relevant health determinants] and [thereby] improve their health.” To this background, modern health promotion programmes can be described as being founded on three basic propositions: (i) health is more than absence of disease (‘positive health’); (ii) promotion of health includes promoting exposure to supporting environments and living conditions (‘health promotion is more than disease prevention’); and (iii) empowerment of people by supplying them with knowledge is a central strategy to increase their influence over their health.^[18]

To be able to plan corresponding programmes for sports safety promotion, the social relations and physical infrastructures underpinning sports activities in the community and the professional setting need to be represented. Thereby, similar to actions on disease aetiologies, the mechanisms that produce injury in the individual can be documented and targeted in the contexts that they appear. However, a fundamental issue associated with taking collective action on sports injuries is the inconsistent manner in which injury is defined. It has been pointed out that meaningful comparisons of communities and sports settings can only be made using data collected by similar definitions and methods,^[19] and that all current health sector systems for injury data collection need to be involved in case capture and identification.^[8]

1.1 Defining Sports Injury

Several categories have been used to base a definition of sports injury. It is difficult to compare

injury rates between environments and sites because of a lack of consensus about a universal definition of sports injury. While data from healthcare facilities are the most commonly used in community-based studies, studies in the competitive sports setting mainly employ data recorded outside healthcare. Recently, a combination of these methods for data collection has been suggested, i.e. that any tissue damage observed by a healthcare professional during competition or practice should be included in the definition of sports injury.^[20] Nevertheless, in the majority of the studies in the competitive sports context, the ‘time lost’ definition is used,^[21] i.e. an injury is defined as ‘a bodily harm an athlete has sustained in a sports-related activity that has caused absence from a practice session or competition’. This definition of injury directs attention to those injuries most likely to have consequences for the athlete’s performance, as well as for the team.^[22] Consequently, also the measure of injury severity is in the competitive sports setting based on the duration of the restriction from athletic performance. In comparison, injuries recorded in healthcare are categorised by type and severity using codes developed for the purpose of service planning, e.g. the International Classification of Disease code for injury type and external cause, and the Abbreviated Injury Scale^[23] or Injury Severity Score^[24] for severity. The estimates of injury severity in the two latter scales are calculated from mortality risk and resources needed for trauma care, implying that the association to time lost from sports is indirect and uncertain. These inconsistencies regarding the definition of sports injuries and their severity is important to keep in mind when considering safety promotion programmes in sports.

1.2 Injury Prevention in Sports

The traditional model for injury prevention programmes in sports involves four stages:^[15]

- establishing the extent of the sports injury problem;
- establishing the aetiology and mechanisms of injuries;
- introducing the preventive measures;

- assessing the effectiveness of the preventive interventions by repeating the first step.

In other areas where unintentional injuries are a problem, detailed models for analysis of injury aetiology and mechanisms have been elaborated. For example, the ‘phase-factor matrix’ introduced by Haddon for study of motor vehicle accidents^[25] has been widely used to relate unintentional injuries to factors that contribute to their occurrence and that are a potential target for interventions.^[26,27] This matrix can also be applied to sports injuries (table I). The first dimension thus represents injury-related factors, where the environment factor is broken down into physical-biological and social components, while the second dimension separates the injury causation process into pre-event, event and post-event phases. Each cell in a phase-factor matrix adapted to sports represents a locus for responding to the injury problem in sports. In the matrix, ‘sportsperson’ factors include, for example, skill level in a particular sport, the personal equipment, substance abuse and previous injury. In several sports, such as downhill skiing and ice hockey, the technical development of the gear has made the performance of the sport faster and more intense, at a development rate not balanced by the evolution of protective equipment. In this context, the ‘agent’ of injury impacts the ‘sportsperson’ through a ‘vehicle’ (an inanimate object, such as a ball or a puck) or ‘vector’ (another sportsperson). The agent factor accounts for the different forms of energy involved in the injury mechanism. Kinetic energy is the most usual agent while, for example, thermal energy and radiation can be involved in burns, sun-burn and freeze injuries. Widening the perspective, social and psychological processes can also be recognised as agents of sports injury causation, e.g. when young athletes experience major life events in association with competitions.^[28] The physical environment refers to the actual setting where the injury occurs. Sociocultural and legal norms of a community constitute the social environment. A key element in the use of the phase-factor matrix is its display of pre-event and post-event factors in relation to injury occurrence and outcome. The inclusion of the post-

Table I. The ‘phase-factor matrix’ for injury causation introduced by Haddon^[25] and adapted to sports injuries

Injury time-line	Sportsperson	Physical environment	Social environment	Agent-vector/vehicle
Pre-event phase	Physical preparation	Ill-maintained playing surface	Competitive strain	Size/type of ball/puck
Underlying risk factors predisposing for injury	Previous injuries	Weather conditions	Fair play culture	Type of stick
	Inadequate equipment Doping		Checking rules Insurance covering all injuries	Opponent in same body size
Event phase	Overexertion	Transportation resources for injured	Safety policy	Personal equipment injuring opponent
Injury causes	Breach of instructions	First-aid kits available	Healthcare professional available at site	Breach of rules by opponent
	Foul play (self)		First-aid educated coaches	Careless play by opponent
Post-event phase	Post-injury care	Rehabilitation facilities	Rehabilitation professionals available	Severity of tissue damage
Determination of final injury severity and consequences	Psychological support	Equipment for individual rehabilitation programmes	Rehabilitation policy Family and social support Post-injury facility audit	Severity of psychological damage

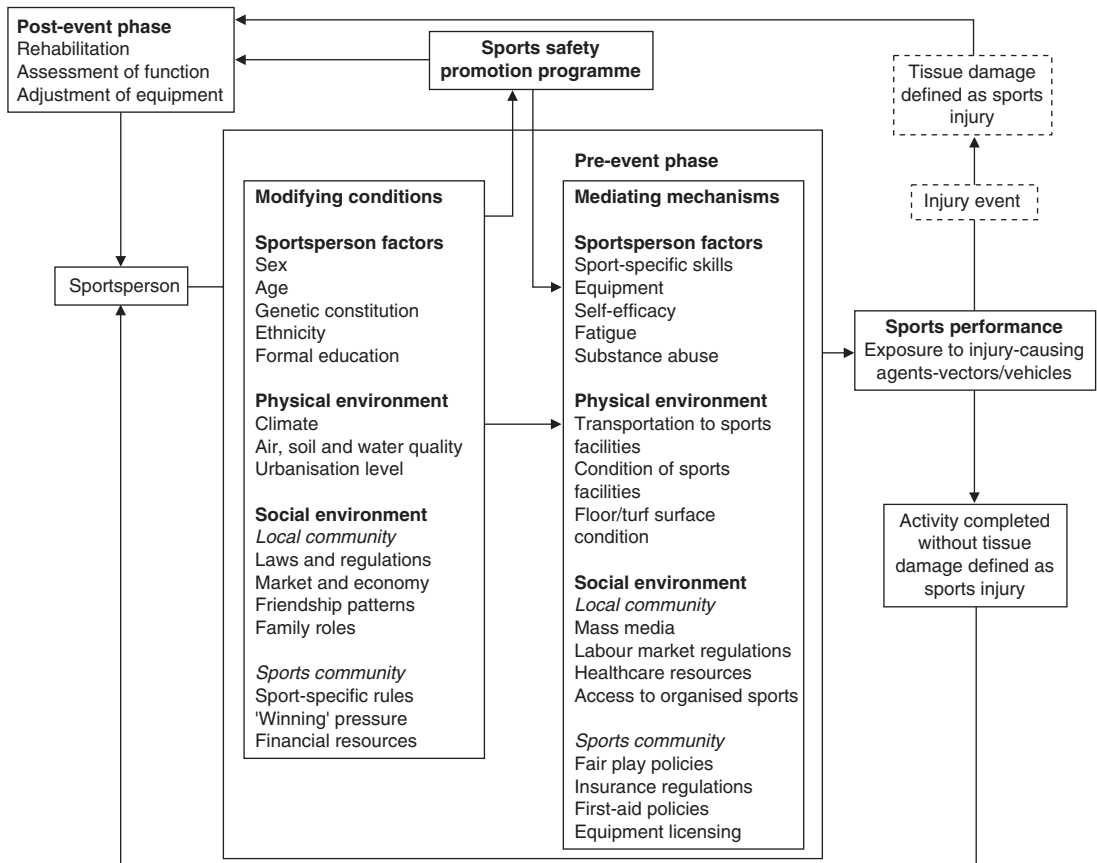


Fig. 2. A socioenvironmental framework for community-based sports safety promotion.

injury phase of acute care and rehabilitation is to improve outcomes when injury is not prevented. The majority of injured individuals return to sport activities when they consider the injury as healed. However, the risk for a new injury almost always increases, thus implying that the consequences of different rehabilitation approaches for the individual but also for the sports organisation and society at large, need to be analysed in different settings.

1.3 From Prevention of Injuries and Accidents to Sports Safety

Even though the phase-factor matrix makes it possible to analyse injury mechanisms in a structured manner, it is still insufficient as support for the planning of coordinated and sustainable safety inter-

vention programmes in professional and recreational sport settings. Socioenvironmental health promotion frameworks^[29,30] have previously been used to visualise disease mechanisms and relate them to structures of the environment. These constructs can be integrated with the phase-factor matrix to build a corresponding sports safety framework (figure 2). 'Modifying conditions' here represent the sportsperson and the social and environmental factors that are independently involved in sports injury mechanisms, but which normally cannot be influenced by intervention programmes. The 'mediating mechanisms', in contrast, are the factors that are regarded as modifiable within planned interventions. Examples include the facilities used for physical exercise, level of sport-specific skills, and the quality of rehabilitation protocols allowing previously injured

players return to practice and competition. Mediating mechanisms in the built environment play a particularly important role in the promotion of safety during sports and physical activity. Regarding everyday physical exercise, comparative studies have shown that as a consequence of unsafe walking and bicycling conditions, pedestrians and cyclists are more likely to be killed or injured in the US than in Germany or the Netherlands.^[31]

In order to reduce injury rates and to encourage spontaneous physical activity, a range of measures thus remains to be implemented in the areas of urban planning and road construction. The physical environment also has importance for safety in professional sports, for example, in outdoor sports, natural playing surfaces are increasingly being substituted with artificial turf products. However, many sports originally performed on grass are characterised by sprinting, stopping, cutting and pivoting situations, where shoe-surface relationships are essential and frictional resistance must be within an optimal range. Although the differences in play on artificial turf and natural grass are decreasing, the surfaces still exhibit unique injury patterns. Studies in American football have indicated significant playing surface effects by injury mechanism, anatomical location of injury and type of tissue injured. Higher incidences of non-contact injuries, surface/epidermal injuries, muscle-related trauma and injuries during higher temperatures have been reported on artificial turf, while higher incidences of long-term injuries, head and neural trauma, and ligament injuries have been reported on natural grass.^[32] In soccer, the early versions of artificial turf products did not allow sliding tackles because high friction led to burn injuries. The second generation of artificial turf for soccer has been associated with a tendency for fewer serious injuries, but more minor injuries, when compared with natural turf pitches.^[33]

In attempts to decrease injuries, new generations of artificial turf have recently been marketed. However, the design of artificial turf products that can meet both high demands regarding injury risk and on the quality of play is complex.^[34] It is probable that the development of such products will require

an even closer cooperation between manufacturers, researchers, athletes and sports federations.

1.4 Community-Based Sports Safety Promotion

While the socioenvironmental framework displays sports injury mechanisms and relates them to the environment and possible intervention areas, it does not provide concrete guidelines for planning and implementation of actual safety promotion programmes. Modern strategies for organising health and safety promotion are based on empowerment of communities by bringing together relevant authorities and experts for collecting and analysing data on the injury problem, and supplying the results to the organisations having resources and mandate for taking preventive action.^[35-37] A community is normally defined as a group of people who share some or all of the following: geographic boundaries; a sense of membership; culture and language; norms and values; and common health and safety conditions.^[38]

When approaching sports safety promotion from a community perspective, there are several circumstances that have to be considered. For example, performers of many sports belong to communities that are not bound by geographical boundaries. They form 'sports communities' that can be based on membership in a local sports club, but where the identification also can be primarily emotional.^[39] Abundant transportation services, mass media and inexpensive personal information technologies are today included in the infrastructure underpinning these socially, rather than geographically, defined communities. The members of a sports community can be measured in tens of thousands, such as in bandy or lacrosse, but they can also include millions of associates, such as in baseball or soccer. This boundary-crossing nature of sports communities has been described to be the result of two distinct but closely related processes.^[40] On the one hand, involvement in sports leads the individual to a greater sense of globality, i.e. an increased consciousness of international matters and the world as a whole. In parallel, there is a process of 'glocalisation', where-

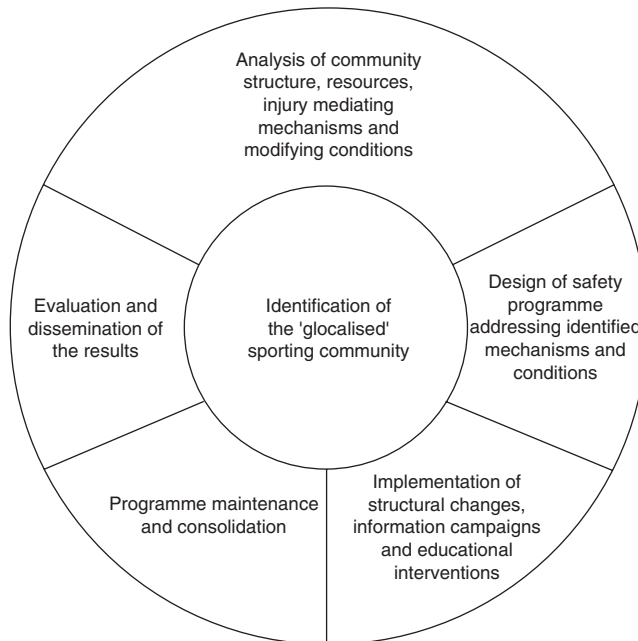


Fig. 3. A five-stage process for organisation of community-based sports safety promotion programmes.^[41]

by local communities adapt and redefine international sports norms and practices to suit their needs and customs, thereby contributing to transformation of the same norms. A community-based sports safety promotion programme, therefore, has to include sports organisations at both international and local levels, that is:

- International sports federations, where rules and norms of conduct in organised sports can be addressed. Rule changes that have been successful for preventing injuries have been reported for specific sports, e.g. ice hockey, where compulsory use of the face mask by young players has drastically reduced eye injuries.
- National or regional sports associations, where, for example, sport-specific high-risk situations can be addressed, e.g. by prohibiting outdoor competitions in cold weather conditions.
- Local sports clubs, where professional or amateur athletes can be supported to avoid injuries by implementing social, psychological and physical safety measures into their routines.

In other words, if modern community-based strategies for organisation of health and safety promotion are to be used in the sports setting, designs of applied programmes have to include forming alliances with these 'glocalised' sports communities at all levels, collecting and analysing specific data, and using the results to support decision-making in the relevant organisational contexts. Nevertheless, the sports communities alone cannot manage all issues related to sports safety, e.g. problems related to deficient sports facilities and substance abuse. A community-based sports safety promotion programme also has to form alliances with geographically defined communities in efforts to develop safe local facilities and environments for physical activities. The practice of sports safety promotion programmes, therefore, will require the formation of organisational connections in several dimensions simultaneously.

Bracht et al.^[41] have introduced a five-stage process that can be applied for organisation of safety programmes in glocalised sports communities (figure 3). The first stage concerns establishing the

baseline for the programme and setting priorities. It involves constructing a profile for the globalised sports community including injury incidences in various strata of the population, assessing the community's capacity by listing ongoing safety activities, and identifying any modifying conditions and mediating mechanisms associated with occurrence of sports injuries. The second stage involves setting up an organisational structure, defining safety goals and designing safety interventions targeted at the identified mediating mechanisms. These interventions can include, for example, structural changes, and information campaigns in mass media or safety education. In the third stage, a time-line is established and the interventions are implemented. The fourth stage concerns the maintenance and sustainability of the intervention efforts, e.g. by integrating the intervention activities into community structures and establishing a positive organisational climate to retain staff and volunteers. In the final stage, the interventions are evaluated and the results are disseminated. Formative evaluations assist in re-designing the programme, while summative evaluations identify what has been achieved and what lessons have been learned.

Even though empowerment of disadvantaged groups is a central tenet in community-based health and safety promotion,^[42] there is a risk that sports safety programmes help to preserve a top-down community structure and thus even exacerbate inequality in power.

A number of disadvantaged groups have been identified in the history of sports, distinguished by factors such as socioeconomic status,^[43,44] ethnicity^[45] and sex.^[46] Another set of factors is related to the development of a sports entertainment market. Based on the increased commercialisation, participation in elite sports has only during the latter part of the 20th century evolved from being a leisure-time activity to potentially a lifelong vocation based on salaried employments.^[47] When comparing today's professional athletes to other employees, it can be observed that there can be a 1000-fold higher risk for occupational injury in many professional sports than in comparable industrial vocations, and

that about 10% of the workforce is normally absent due to injuries.^[48] In parallel, only a small minority of young athletes aiming for a professional career succeed in earning an income that makes them economically independent for the rest of their lives. Despite these facts, it is in professional sports seldom acknowledged that in a modern society, employment has to be accompanied by measures for workplace safety, occupational rehabilitation and compensation for early retirement due to injury. Despite the injury risk, there is in professional sports too seldom a regulated organisational infrastructure in place that can ensure communication between the leadership of a particular sporting community, the athletes and the surrounding society in safety issues.

Systematic routines for incident reporting and design of broad interventions are only beginning to be found.^[49] Therefore, based on the fact that disadvantaged groups can be identified in most sports settings, a sports safety promotion programme being at a level with modern safety standards requires an institutionalised empowerment practice to be established in the sports community at hand. Labonte and Laverack^[50] attribute a weakness in present health and safety promotion programmes to a lack of clarity in how to implement empowerment in day-to-day programme planning. They point out that that empowerment can be reconciled with top-down planning if a parallel design track is run outside the main programme (figure 4). An implication of their observation for community-based sports safety promotion is that sufficient time must be allowed to involve the sports communities in an empowering way in order to be able to pay attention to the sportspersons who are least able to express their needs.

2. Discussion

In this article, theoretical and practical underpinnings for sports safety promotion have been reviewed. The analysis displays that safety promotion in sports is the establishment of a community environment where sportspersons and their organisations provide leadership in assessing their own resources and safety needs, where the infrastructure and policies support safety, and where essential

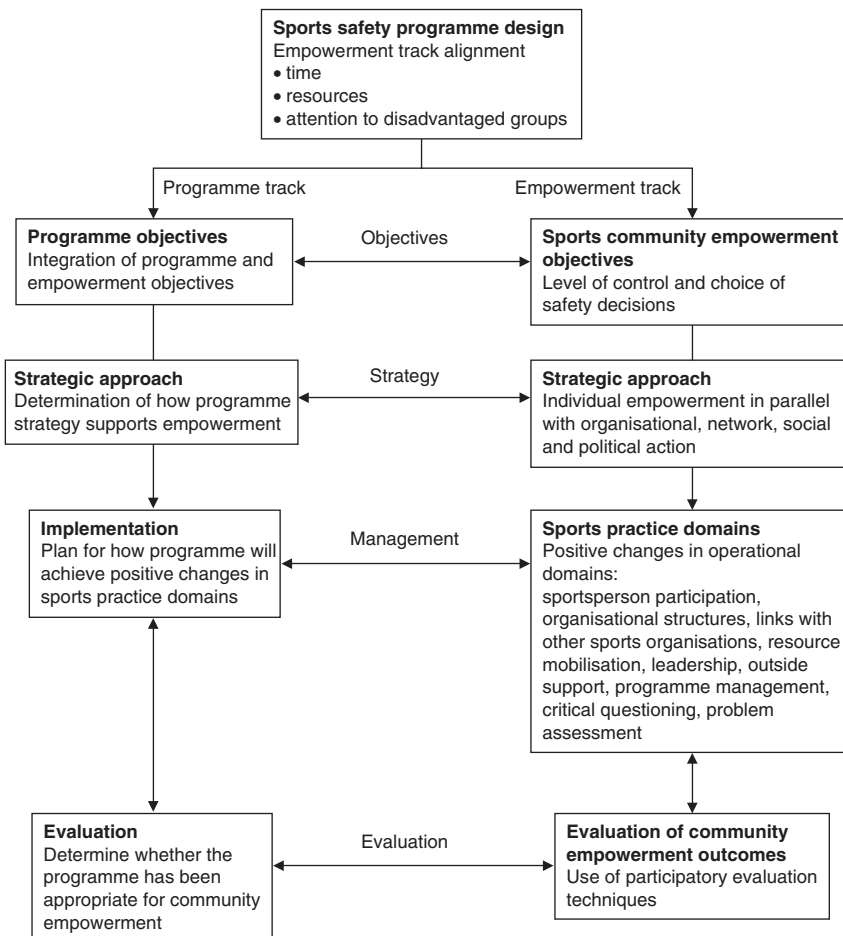


Fig. 4. Use of a parallel programme track for implementation of empowerment practices in community-based sports safety promotion programmes.^[50]

injury prevention services, including quality first-aid and rehabilitation, are available.

2.1 Sharing of Power and Responsibility in Safety Promotion

In decisions about their sporting activities, all athletes, professional as well as recreational, are guided by their self-efficacy, i.e. the judgement of how well they can execute the courses of action that are required to achieve their sporting goal. This judgement is related to their previous personal experience of the sporting situation, their estimate of their own physical ability and their general knowl-

edge about sports.^[51] The present article shows that the factors included in the judgement are also part of the causal chain of sports injuries; thus there is interplay between the mediating mechanisms that lead to successful sports events and to the occurrence of sports injuries. The implication of this observation is that the organisation of sports safety promotion needs to be closely integrated with the planning of the sports activity itself. Interactions between preventive measures and the individual's motivation to perform physical activities may otherwise easily be neglected. For example, a law regulating bicycle helmet use is a mediating mechanism influencing both the rate of head injuries and the

amount of recreational cycling,^[52] and its introduction may therefore have both positive and negative effects on population health. The avoidance of such conflicts between safety measures and the willingness to perform the physical activity calls for a broad participative approach to sports safety development. In particular, the review in this article suggests that an enhanced cooperation between the sporting communities and safety and sports scientists is the most feasible way to achieve a safety development that does not interfere with the sports experience.

2.2 Limitations of the Workplace Safety Approach in Sports Safety Promotion

The analysis displays that common workplace safety principles have not been applied to professional sports. One possible reason for this fact is that hazards are in sports not separable from the vigorous core of the physical activity, as defined by its rules and practices. Safety at workplaces has historically been viewed primarily from an industrial perspective,^[53] which has led to a common understanding that safety issues are resolved by either replacing workers with machines or subtracting harmful agents from the work environment. Consequently, the development of new technology and control of contaminants have been the main methods for protecting workers. Even though technical improvement of equipment and facilities may seem to provide an opportunity for increasing safety also in professional sports, evidence from other areas of working life suggests that technical advances are not always associated with lower injury rates. For example, a specific hazard may be eliminated by new technology, but only at the cost of risk transfer to another group or situation, such as the introduction of the face mask in ice hockey, which can be associated with increased risk of neck injuries.^[54] Hence, the lesson learned from general workplace safety research is that after a certain point, new technology does not lead to further safety improvements, and it is therefore necessary to implement organisational measures specific for the sporting community.^[55]

2.3 The Globalisation of Sports Safety

This article has highlighted that sports today represent a globalised activity comparable with the market economy. Therefore, the participation of the top management of the international sports associations will be essential in resolving sports safety issues, together with an appointed delegation of responsibility for safety activities at each lower organisational level. For example, one problem in many team sports is that aggressive play in the professional 'elite' settings stimulates violence in the stands and in the community. Sports today act as 'representation collectives'; affecting ways in which groups conceive of themselves and act in relation to others.^[56] Representatives of professional clubs often address their fans using words such as 'we' and 'us', while the fans relate to the club as 'our' club. Being a fan of an athlete or a sports club provides both a possibility to feel a 'sense of belonging' and adapt to a social culture for behaviour. The interplay between the social and moral actions taken by managers and professional athletes, on the one hand, and the behaviour of their fans and young athletes looking for role models, on the other, is therefore a complex and important issue to consider when discussing sports safety. The European Federation of Football Associations and the Swedish Bandy Association are examples of sports organisations where the management has accepted the responsibility for broad safety promotion initiatives. In both these organisations, managers have not only fully included safety as a central aspect in the licensing of facilities and clubs, they have also repeatedly suspended well known players, coaches and teams having behaved aggressively against opponents or officials at major events.

3. Conclusions

This article has highlighted that sports safety promotion means the scientific consideration of the sports injury problem in cooperation with sports federations and clubs, on the one hand, and the authorities responsible for sports facilities and legislations in the civil society, on the other. The analysis also points out that the safety-supporting environ-

ment in professional sports is underdeveloped compared with other areas of working life. Using the sociocultural framework developed in the analysis as a basis, community-based safety promotion in sports can be summarised as follows:

“Sports safety promotion is a process implemented in (glocalised) sporting communities aimed at acting on mechanisms mediating sports injury and informing about conditions modifying sports injury applied at a local, national and international level by individuals, sports organisations, governments and others, including professional and amateur sports clubs. This process includes all efforts agreed upon to modify structures, environment (physical, social, technological, political, organisational) as well as attitudes and behaviours related to safety. A safety promoting sports community is also characterised by communication and collaboration among various sectors of the community and by that the contributions of ethnically, socially and economically diverse community members are equally valued.”

Acknowledgements

This study was supported by a grant from the Swedish Centre for Sports Research (CIF). The authors have no conflicts of interest that are directly relevant to the content of this review.

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