
Spectator Risks at Sporting Events

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Abstract

Introduction: Spectator injuries take place at sporting events as a result of incidents in the playing arena. Venues assume little responsibility to ensure spectator safety based on the legal doctrine of "assumption of risk". This paper reviews the literature to define the risk to spectators at baseball and hockey venues.

Methods: A search of MEDLINE, LexisNexis, and Google was carried out for relevant articles including reports in the medical, legal, and lay press.

Results: Only 5 studies were found in the literature. 51 media articles were found addressing this topic. Most research originates from the legal community. At least 5 spectator deaths have been reported at baseball games since 1970. There are only 2 known spectator deaths at hockey games.

Conclusion: There is a need for injury surveillance at sporting events. Such research will help define the risk and help venue operators increase spectator safety.

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INTRODUCTION

Over 15 million Americans attend sporting events yearly.^[1, 2] Spectator death and injury have occurred in hockey and baseball. ^[3, 4] Despite these deaths, little information quantifies the risk to spectators or discusses ways to reduce these risks. Many spectators may falsely assume that they are safe at such events, or that the owner/operators of sporting venues are ensuring their safety and will take responsibility if they are injured. The different responses of these sports to spectator injuries have important implications for injury prevention and future research. This article will specifically review spectator injury at baseball and hockey events. In each of these categories specific examples will be provided of injuries. A description will also be given of the principles of liability and the idea of "assumption of risk".

METHODS

A search of MEDLINE, LexisNexis, and Google was done. Keywords used included "spectator injury", "injury",

"hockey injuries", "baseball injuries", "assumption of risk", "recreation", and "spectator death". Review articles, research studies, media articles, and legal cases were reviewed. Bibliographies of all sources were also reviewed.

RESULTS

In the media 51 articles were found which addressed spectator injury secondary to events in the playing area. In the medical and epidemiological literature 5 articles were found which dealt with this subject. The date range of the articles is from 1978 to 2004. In baseball, 5 spectators appear to have been killed as a result of objects leaving the field. With the available data it is not possible to estimate the number of baseball spectators injured. Only 2 examples of hockey spectator deaths were found in the media. As with baseball there is not enough data to estimate the number of injuries to hockey spectators. With the current state of research it is not possible to estimate the actual risk to spectators who attend baseball and hockey games.

RESULTS FOR BASEBALL

No comprehensive listing exists, by stadium or division type, of the number or severity of spectator injuries occurring at baseball games. One recently published study

by Milsten gives the incidence of injuries to Major League Baseball (MLB) fans from foul balls as 35.1 injuries per every million spectator visits. The paper gives limited detail regarding the actual injuries.^[5] The only other discussion of spectator injuries at baseball games occurs in the legal literature. The majority of baseball injuries to spectators occur from baseballs leaving the field at high velocity and entering spectator-viewing areas, with the most vulnerable areas down the 1st or 3rd base lines, or directly behind home plate. More rarely, injuries occur from other flying projectiles such as broken bats.

TYPES OF BASEBALL INJURIES

The majority of injuries involve facial or head trauma from direct contact with a hit baseball. Injuries from objects other than baseballs, such as fractured baseball bats that go into the stands, are less frequently described but equally serious. At a professional baseball game in Canada, a 39-year-old woman was struck by a bat while sitting in the third row. The woman required 11 days of hospitalization for unknown injuries.^[6] Most injuries suffered by fans involve the head and maxillofacial region which makes sense given that the head and face are the most exposed areas.

PRINCIPLES REGARDING LIABILITY FOR INJURY AT BASEBALL GAMES

The legal literature surrounding baseball injuries discusses primarily the liability surrounding injuries, not the injuries themselves. Courts operate under the premise that the spectator “assumes the risk” of attending a baseball game. The courts feel that it should be obvious to the spectator that a baseball can hit them. This is why the back of many sporting tickets carry a warning declaring that there are inherent dangers in attending the game. It is unclear if spectators truly appreciate what is written on that warning, or what the legal ramifications are to them if injured. Spectators at most professional sporting events fall under this same “assumption of risk” concept. The legal principles which apply to baseball liability are similar to those which apply to hockey. Nationally, plaintiffs who take non-sporting venue related owner negligence cases to trial win a verdict 37% of the time.^[7] In contrast, except in “extraordinary” circumstances, spectators injured by objects from the field almost never win damages.^[3]

Courts analyze several factors when deciding if a fan has assumed the risk. The closer the spectator is to the playing surface the higher the likelihood that they have assumed the risk. Courts look at whether the injury occurred during the

game and if the spectator had been to previous games. In the event that a spectator has been to a previous game, it is assumed that the spectator should be more familiar with the inherent dangers. Legal criteria regarding whether the game is in progress exist because if the game is not in progress then the spectator has less reason to expect that projectiles might leave the playing area. Normally if these criteria are even partially met, the spectator or the spectator's family will not win an award.^[8] None of the legal criteria actually define the risks faced by spectators.

Some states have laws regarding who is responsible for spectator safety at baseball games. These laws specifically address protective shielding for spectators. The Illinois Baseball act is typical of the laws that exist in many states. It says,

“The owner or operator of a baseball facility shall not be liable for any injury to the person or property of any person as a result of the person being hit by a ball or bat unless: (1) the person is situated behind a screen, backstop, or similar device is defective (in a manner other than width or height) because of the negligence of the owner or operator of the baseball facility: or (2) the injury is caused by willful and wanton conduct, in connection with the game of baseball, of the owner or operator or any baseball player, coach or manager employed by the coach or operator.”

Other state laws are similar to the Illinois law.^[9]

In 1986, a woman suffered a broken jaw from a foul ball. She was about 3 feet away from the edge of a protective screen. The appeals court found that the stadium was not under the obligation to fence in the entire spectator area. The court stated that

“spectators accept the inherent dangers in a sporting event and assume the risk of injury insofar as such risks are obvious and necessary”.^[8]

Some courts feel that a bat leaving the playing field constitutes an extraordinary circumstance that may make the venue operator liable. A California Court found in favor of one plaintiff who was struck by a bat because it felt that it was not common knowledge that bats might fly into the stands. In this case, a 6-year-old child had her jaw broken by a baseball bat at a MLB game. The child was sitting close to the field on the 3rd base line when a bat fragment curved around a net meant to protect spectators and struck her causing a deficit in the use of her arms. A lower court awarded the family a million dollars.^[10] The Court of

Appeals, however, overruled this judgment, saying that the operator had no obligation to warn spectators because the risk, even from bat injuries, is “well known”.^[9] The court went further by stating that most fans want to be involved in the game in “an intimate way”, and are “hoping that they might come into contact with some projectile from the field”, and “welcome that risk”.^[10]

SHIELDING AT BASEBALL GAMES TO PREVENT INJURIES

For 3 decades, the accepted practice to protect spectators from baseball injuries has been to place protective netting behind home plate. Presumably, protective baseball nets must have reduced the number of serious injuries. There are no regulations governing fan screening at minor league games, and the netting practices vary greatly.

According to James C. Kozlowski, a law professor at James Madison University, the guidelines for protective screening were set down in *Akins v Glen Falls City School District*.^[11]

“Owners and operators of ball fields must only provide screening for the area of the field behind the plate where the danger of being struck by a ball is greatest... such screening must be of sufficient extent to provide adequate protection for as many spectators as may reasonably be expected to desire such seating in the course of an ordinary game.”^[8]

This opinion was made despite the lack of epidemiologic data delineating the extent of risks or data determining what percentage of spectators would desire protected seating.

DETERMINING THE REAL INJURY RISKS TO BASEBALL SPECTATORS

The legal criteria cited above make major assumptions about risks that are not substantiated by data. No published studies exist to determine if spectators are aware of, understand, or agree with the assumption of risk concept which is printed on the back of their tickets. A spectator attending 1 or more prior games may or may not be aware of the different types of possible injuries. Since there is minimal research that looks at the frequency, location, or types of possible injuries, it appears difficult to believe spectators could be adequately informed of the risk. The risks would not even appear to be the same, since the velocity of baseballs pitched and hit at major league levels is higher than that at minor league or collegiate levels.

Thus, from a public health viewpoint, it is difficult to see

how the majority of spectators at professional baseball events can have a clear grasp of injury risks or legal ramifications assumed at such events. It appears even less tenable that a minor could appreciate these risks given the competing elements of speed and excitement, elements known to increase youth experimentation with risky behaviors.^[12] To say that fans “welcome a risk” is to deny the competing reality that fans “appreciate being safe”. While all fans desire a “souvenir” baseball, it requires a leap of faith unsubstantiated by data to suggest that they would sacrifice their own personal safety or that of their family for such an opportunity. ^[6, 8, 9, 12, 13, 14]

RESULTS FOR HOCKEY

Hockey is a sport similar to baseball in that spectators are in close proximity to rapidly moving projectiles. Hockey pucks can reach speeds of 150 km/hr, roughly the same speed reached by baseballs, and weigh approximately 0.16 kg (5.75 ounces).^[4,6] As with baseball, this can lead to an inherent danger for spectators, and minimal research could be found which addresses that risk.

TYPES OF HOCKEY INJURIES

As with baseball most reported injuries involve the head and face. In March 2002, a 13-year-old girl, who was sitting 100 ft (30.5 M) from the playing area, died of injuries after being injured by a hockey puck.^[4] This was the 1st spectator death in the National Hockey League (NHL) in 85 years. A study by Milzman found that during 127 hockey games, there were 122 people injured by pucks, 90 of which required stitches. Of the total injured 45% required transport to a hospital emergency room. The study also found that females and children were injured 2.6 times more frequently than adult males. As with baseball most reported injuries involve the head and face. ^[15]

There were multiple examples of hockey puck injuries to spectators found in the media. These injuries include a 13-year-old Canadian who sustained a severe head injury; a mother of a teenage player lost sight in 1 eye; a 9-year-old sustained a skull fracture; a 53-year-old sustained partial loss of vision; and a 21-year old died secondary to a head injury.^[4]

LEGAL STANDARDS FOR SPECTATOR SAFETY IN HOCKEY

The legal standards for assessing “assumption of risk” and liability in hockey injuries are similar to those used in baseball. Courts often ask the following questions when

addressing whether a hockey spectator has “assumed the risk”.

- Was the danger obvious so that the patron must have assumed the risk by attending?
- Was the danger so obvious that the owner or operator were under no duty to warn or protect the spectators?
- Is the spectator familiar enough with the game to understand the dangers?
- Are the facilities constructed in accordance with normal standards?
- Would it have been possible to have constructed additional safety features at a reasonable cost without impeding visibility?

As with baseball, few of these questions address the actual risk to spectators.

Court decisions resulting from suits brought by hockey and baseball spectators are quite similar. In *Sawyer v State*, a 13-year-old was injured by a hockey puck. The court stated that:

“she admits to having seen pucks striking the [protective]net on her previous visits to the arena and, ... it cannot be said that a reasonably prudent person of [the plaintiff's] years, intelligence, and degree of development, would not have fully appreciated the danger and, hence... assumed the risk”.^[9]

The above case illustrates the same acceptance of inherent risk. Even though the spectator was a minor the court found that in this case she was able to appreciate the dangers involved and “assume the risk”.

PROTECTIVE SHIELDING TO PREVENT INJURIES TO HOCKEY SPECTATORS

Despite similar legal liability, professional hockey has responded to spectator injuries differently than professional baseball. For instance, the NHL and other venue operators responded to the recent spectator death by increasing safety devices at hockey venues. The NHL mandated that protective screens around the rink must be at least 5 ft (1.52 M) high and mandated protective netting to stretch from the top of the protective screen to the ceiling.^[16] The City of Winnipeg spent \$44,000 to place netting around the entire circumference of all its 30 public rinks. Many people in

Canada have argued that the Plexiglas screens around the rink should be increased from 8 to 16 feet.^[3] The Canada Safety Council has listed spectator injury from hockey pucks as a serious concern.^[4, 17]

DISCUSSION

There are significant medical and legal concerns regarding spectator injuries at baseball and hockey venues. From a public health viewpoint, the central question is can more be done to reduce and prevent spectator injuries at sporting events? Looking at the examples of baseball and hockey, it is instructive to realize that different approaches to injuries have resulted in different potential risk profiles. At hockey events, the risk of serious injury to spectators may have declined with the changes made widely across venues. Neither professional nor minor league baseball have made similar uniform safety changes.

Defining what spectators consider acceptable levels of risk at sporting events is an important question. A potential way to do this is by looking at levels of risk that people accept in daily life. For instance, the *Journal of Compensation and Working Conditions* gives the average risk of dying for workers in the United States as 49 /1 million workers each year.^[18] In the year 2000, airlines experienced 8.4 fatalities/1 million passenger enplanements.^[19] Comparing the risks of automobile travel (more commonly thought of as safe) to motorcycles (more commonly thought of as dangerous) shows that in 2000 there were 1.5 deaths/1 million miles traveled in automobiles compared to 27 deaths/1 million miles traveled on motorcycles.^[20, 21] The examples used above have known levels of risks associated with them allowing people to choose whether to accept the risk or not. With spectator injuries at sporting events, the risk is not known. Currently, spectators' only notice of risk is the liability assumption warning printed in small print on the back of tickets. Whether this warning is read, understood or impacts on spectator behavior at sporting events is unknown.

The U.S. legal system has ruled that people who willingly assume risk cannot hold the owners of baseball or hockey venues liable for damages if they are injured as a result of actions on the playing surface. From the review of the literature it is obvious that there is a risk to attending these events. This literature also demonstrates a significant lack of data about epidemiology of spectator injuries. Given the fact that a large number of people each year attend large spectator events, some type of injury surveillance system is needed.

An injury surveillance system could answer many important questions. For instance, how many spectators are injured or killed each year? The answer to this question would help quantitate the actual risk faced by spectators. It would allow spectators and the parents of small children to make intelligent decisions regarding how safe it is to attend different events. Other research questions might include the relationship between the use of alcohol and injury frequency and severity. Do repeated visits to sporting events raise or lower the likelihood of spectator injury? Do most of the injuries consist of minor orthopedic injuries or more serious head injuries? The answers to the questions would allow sporting venues and clubs to better protect spectators. It could also lead to a change in how the games are played. Perhaps if certain injuries are common then changes could be made to the balls, pucks, or safety equipment. Racetrack operators have already noted that wheels were sometimes flying into stands so wheel tethers were placed on cars.

The only way to answer these questions would be by first conducting prospective studies of spectator injuries at sporting events. Collaborative efforts between sports industry and researchers would facilitate data collection. For instance, most venues have EMS personnel already present. This may represent an opportunity to collect and record injury information on site, making national data collection much easier. Such a project would give epidemiologists access to larger data sets for analysis and the sports industry valuable information on how to better protect spectators.

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