Incidents Requiring Hospital Care

Descriptive Epidemiology of Injuries and Illnesses at a University Wellness and Recreation Center: 1987 to 2006

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INTRODUCTION

Musculoskeletal disease and dysfunction represents a significant healthcare burden as indicated by the United State Bone and Joint Decade (2002-2011) initiatives. Awareness and proper management is an important step in reducing the overall morbidity associated with musculoskeletal injuries. Physical activity is important for wellbeing and health. Many universities operate wellness and recreation centers providing a variety of activities ranging from personal fitness to intramural sports. Patrons deserve to know the risks associated with participating in recreation center activities and facility administrators need objective incidence data when making policy and resource allocation decisions. Despite the need for objective data, there is paucity of literature describing injuries and illnesses occurring in these facilities.

The purpose of this study was to analyze the descriptive epidemiology of incidents occurring at a university wellness and recreation center.

STUDY DESIGN & METHODS

The study design was descriptive epidemiology. Data were aggregated from facility incident reports from one Midwestern comprehensive university with an average enrollment of approximately 13,000 students. Reports included the academic years from 1987-1988 to 2005-2006. An incident report was completed each time a patron required facility personnel, first-responder, or emergency medical services (EMS) intervention for both injuries and illnesses. Each report included the following:

1. Gender
2. Date and time of incident
3. Status of the patron (student, employee, etc)
4. Facility where the incident occurred
5. Incident work related or not
6. Incident activated emergency medical services
7. Incident required transportation to a hospital
8. Patron was seen at a hospital
9. Body part injured
10. Nature of incident (musculoskeletal, illness, etc)
11. Activity at time of incident

Incident frequencies were reported for all years. Exposure frequencies were available for recreation center patrons beginning in the 1998-1999 academic year, but did not discriminate between gender or patron type. The overall incidence rate per 100,000 patron visits and the 95% confidence intervals (CI) were calculated for recreation center incidents only. Intramural sports that used the outdoor intramural fields were not included in the incidence rate because participants were not required to scan their identification card. Nature of the injury was constrained to musculoskeletal, illnesses & general medical conditions, wounds, dental injuries, concussion, eye injuries, and unknown.

RESULTS

There were a total of 2330 incident reports completed across the 19 years of analysis with males accounting for 80.0% (Figure 1). There was a 284% increase in the frequency of incidents when the new Wellness and Recreation Center opened in 1997, but only a 43% increase in the number of incidents requiring hospital care (Figure 2). Students accounted for 91.9% of the injuries while employees accounted for less than 2% of the incidents. Only 8.4% of the incidents required emergency medical service transportation to hospitals while 23% of all incidents eventually sought medical care.

The overall incidence rate per 100,000 patron visits (Figure 3) was 59.0 (95% CI, 55.7 - 62.4). The rate of incidents requiring hospital care was 8.6 (95% CI, 7.4 – 9.9) per 100,000 patron visits. The most frequent locations and types of injury (Table 1) included musculoskeletal injuries to the ankle (43.4%), wounds to the face (14.7%), and musculoskeletal injuries to the knee and lower leg (13.5%). Table 2 shows that recreational and intramural basketball accounted for the majority of incidents (55.3%) followed by intramural flag football (13.7%). The majority of injuries occurred in February (24.2%) and October (20.2%) corresponding to the beginning of the basketball and flag football intramural seasons respectively.

DISCUSSION

Overall, the injury rate for injuries occurring during indoor recreation and intramural activities was low compared to collegiate sports. Powell and Dompier (2004) reported an injury rate of 2780 per 100,000 athlete exposures for men’s basketball and 3120 per 100,000 athlete exposures for women’s basketball. These data demonstrate that recreational and intramural activities have a lower injury rate. Considering only those incidents occurring during general exercise, then the incidence rate is 1.5 per 100,000 patron visits suggesting physical activity at a wellness and recreation center is safe.

CONCLUSIONS

These data were limited to those incidents that were brought to the attention of facility personnel, thus many incidents may have gone unreported. The majority of incidents reported were those that affected ambulation (ankle injuries) or that required wound care. Injuries that did not effect a patron’s ability to walk out of the building or did not require blood cleanup may be under-reported in these data, but may have required subsequent medical care.

• Recreational and intramural sports activities are safe when compared to collegiate sports.
• Recreational and intramural basketball and intramural flag football have the highest risk of injury.
• General exercise activities are safe despite some inherent risk of injury.
• Administrators of similar size facilities can expect an average incident rate of 0.7 per monthly patron visit that will require EMS transportation.
• Nearly 3 patrons a month will require hospital care during the heaviest months of intramural activities.

References:
