A Survey of Prevention of Drowning Accidents in Korea

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Abstract

Purpose : The purpose of this study was to report the incidence of drowning accident in order to prevent and decrease the accidents of drowning.
Methods : Data were obtained on all accidents of drowning accidents occurred were identified by using the Emergency Activity Daily Report Data from the National Emergency Management Agency (NEMA). Results : The age, location, days, season of the drowning accident were examined. The Chi-square test was used to compare each group. All comparisons were made at the $p<0.05$ level of significance. The result show that the age of drowning accidents for victims aged 20-29 was 27.9%, and for victims aged 30-39 years, 18.7%. In reguard to the age group, drowning accidents was age 20-39; 51(44.8%). In reguard to the locations, the number of drowning accidents in a lake or reservoir was 62(53.4%). The number of drowning accidents in a lake or reservoir during etc was 51(58%). In reguard to the days, the number of drowning accidents on Saturday was 30(25.8%), on Sunday 32(27.6%). The weather of drowning accidents was sunny 60(51.8%), rainy 40(34.4%), cloudy 16(13.8%). The season of drowning accidents was summer 53(45.7%). In reguard to season, two groups are significantly different.
Conclusion : Drowning is a leading cause of injury related accidents. Understanding the characteristics of drowning is the first step to developing prevention strategies that may be beneficial for people of all ages and under nearly all circumstances are increased swimming ability, lifeguard staffing, providing life jackets, and public education activities.

Key words : Drowning, prevention, accident, Public eduction

1. Introduction

Drowning is the second leading cause of unintentional injury death globally after road traffic injuries[1]. In 2000, an estimated 449,000 people drowned worldwide[2]. Strategies to prevent these accidents depend upon characteristics of the victim, such as age, and the specific circumstances surrounding the events, which may vary by country. Lifeguards are one strategy to use with older age groups, but, unfortunately, it is impossible for lifeguards to cover all bodies of water at all times[3]. One preventive strategy that may be beneficial for persons of all ages, and under nearly all circumstances, is increased swimming instruction. Although data are limited, the available evidence suggests that many drowning victims are able to swim[4]. The purpose of this study was to report the incidence of drowning accident in order to prevent and decrease the accidents of drowning. This research provide the basic research to prevent the drowning accident.

2. Methods

The search was made of Korea with the Emergency Activity Daily Report Data from the National Emergency Management Agency. The number of the drowning deaths was 204 cases. For each of the drowning cases that was closed, the unit record file on the National Emergency Management Agency website was inspected. In this study, 204 cases are divided to aquatic activity group and etc group by drowning reason. And two groups are compared by age, date, weather, location and season.

Collected data were analyzed using SPSS WIN version 18. The Chi-square test was used to compare each group. All comparisons were made at the $p<0.05$

level of significance.

3. Results

The result show that the age of drowning accidents for victims aged 20-29 was 27.9%, and for victims aged 30-39 years, 18.7%. In reguard to the age group, drowning accidents was age 20-39; 51(44.8%). In reguard to the locations, the number of drowning accidents in a lake or reservoir was 62(53.4%). The number of drowning accidents in a lake or reservoir during etc was 51(58%). In reguard to the days, the number of drowning accidents on Saturday was 30(25.8%), on Sunday 32(27.6%). The weather of drowning accidents was sunny 60(51.8%), rainy 40(34.4%), cloudy 16(13.8%). The season of drowning accidents was summer 53(45.7%). In reguard to season, two groups are significantly different.

4. Discussion

It is intuitive that most drowning cases would occur in warm sunny summer weather, however this study quantifies the degree to which this is a factor. Nearly half of the drowning accidents occurred during summer and nearly half of these occurring on the weekends and mostly during sunny hot weather. These factors become important when formulating prevention strategies to consider staffing requirements, lifeguards, or the timing of public education campaigns(10). The main circumstance types involved in the drowning cases were aquatic activity, with half of swimming and incidental incidents involved the drowning accidents of a person attempting to rescue a family member or friend from the water.

5. Conclusion

Understanding the characteristics of drowning in the Republic of Korea is the first step to developing prevention strategies. Effective preventive strategies for most swimming situations for persons of all ages are : 1) increased swimming abilities 2) effective lifeguard staffing 3) availability of life jackets and life rings 4) public education activities.

▌References ▐

[1] World Health Organization, "Facts about injuries: Drowning ", Violence and injury department, 2003.
[2] Peden, M. M, Mcgee, K, "The epidemiology of drowning worldwide", Injury Control and Safety Promotion, pp. 195-199, 2003.
[3] Branche C. M, Stewart, S, "Lifeguard effectiveness: A Report of the working group: Center for Disease Control and Prevention". 2001.
[4] Barss, P, "In collaboration with The Canadian Red Cross. National Drowning Report. Visual Surveillance Report: 2000 Edition. The Canadian Red Cross Society, 2000.
[5] National Emergency Management Agency, "Emergency Activity daily Report Data", http://www.nema.go.kr/data/statistic.