Drowning prevention measures directed at a river basin: a new strategy

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Introduction

Drowning kills many young and healthy people who are at the peak of productivity, leaving behind broken families. In 2012, 6.369 people (3,3/100.000 inhabitants) died by drowning (SOBRASA, 2014). Understanding this dynamic and knowing the drowning profile is very important to develop the best preventive measures. In this study we've considered drowning deaths as a sustainable development indicator in the river basin. River basins, separated by watersheds represent the geographical catchment area of a key resource for human life – water. This feature is a strong attraction for many types of activities such as irrigation, recreation, navigation, energy, housing and others.

In light of the above, the availability of water as a resource facilitates the occupation of the river basin practically throughout its all territory, fact that in general, is defined by high population density rates. River basins constitute themselves as a socially constituted strategic place for planning drowning prevention actions.

The State of Paraná has 399 municipalities, totalling a population of 10.439.601 inhabitants (IBGE-2010).

Objective

Implement a preventive campaign according to characteristics of drowning in the Paraná's River Basin III with an emphasis on education, development and sustainability, articulated with teams of environmental educators working in this region that serves as a reference for other regions of Paraná.

Methods

For this study we analysed the drowning data for Paraná State, focusing on the Paraná's River Basin III, retrieved from the occurrences record system of Paraná's Fire Department (SISBM), and the number of drowning deaths retrieved from the National Health System Database (DATASUS), for a 3 year-period (2010-2012).

Between 2010 and 2012, 1.043 people from Paraná drowned to death (3,32 deaths/100.000 inhabitants in the state), representing an average of 347 people/year. The majority of deaths (62%) registered in DATASUS was attended by teams of Paraná Fire Department (n=650) and this was the sample used to assess the drowning profile and the death classification among the 16 river basins (SCHINDA, 2013). Paraná River Basin III has an average of 26,33 drowning deaths per year, being the 7th river basin with highest number of drowning deaths in the state of Paraná - rate of 4,01/100.000 inhabitants. The main activity immediately prior to drowning was bathing/recreational swimming (49,05% of all cases) and the prevailing locations were river rapids (35,85%), followed by dams (32.08%). The precipitating cause of drowning deaths was related with problems during swimming in 36% of all cases.

Results

Based on the knowledge and analysis of the causes and of the drowning profile described for this specific basin we've listed the priority preventive measures:

- 100% attention to children supervising them at an arm distance;
- Do not drink alcohol before bathing/swimming;
- Always wear a lifejacket when boating and while engaging in adventure aquatic sports;
- Do not go into dark and unknown waters;
- Use floating materials tied to a rope to help someone in danger of drowning;
- In rivers and dams always wear a lifejacket;
- Do not get into river rapids;
- Encourage learning how to swim;
- Never go beyond waist height;
- Do not overestimate your swimming ability.

Conclusions

With the results of this research it was possible to understand the drowning problem in the region and through this evidence we have developed a training course for Environmental Education Managers, to disseminate the preventive recommendations in the 29 municipalities of the Paraná River Basin III.

References

1. Schinda, Antonio. Drowning Epidemiology: State and public policy in Paraná, 2013; Sobrasa , 2014.