

as a value nor a conception of the factors that predict a high value for safety at work. The aim of this study was to examine the different aspects of safety as a value, and to determine the factors that predict that safety will be highly valued in organisations, and the relations between personal values, work values and safety as value. Understanding the factors related to the high value of safety is essential when aiming to improve safety in organisations, since values influence employee perception of safety and safety performance.

Methods We developed a 'Workplace values and value of safety' (WVVS) questionnaire based on a literature review and interviews. The questionnaire consists of A) three safety aspects: 1) safety performance, 2) safety values, and 3) factors that strengthen safety as a value; and B) Schwartz's Basic Human Values Scale (BHVS); and C) a Work Value Survey (WVS). The respondents ($n > 1200$) are from three Finnish companies from different fields of industries representing different personnel groups. We will use conventional statistical analysis, but also exploratory data-analysis techniques, aiming to identify interesting sub-populations whose behaviour differs from the norm, as well as to form a novel hypothesis regarding the effects of values on occupational safety.

Results The results show the factorial structure of the WVVS questionnaire, reveal the factors that predict a high value for safety, and show the relations between personal and work values and the value of safety.

Conclusions Our results improve understanding of practices that could support, promote and share safety as a value in organisations. We need new tools to share values and encourage members of the organisation to acquire them.

Drowning and Water Safety

Post Wed 3.11

1009 TRENDS IN DROWNING DEATHS AMONG CHILDREN IN JAPAN: 1995–2014

¹Yuko Uchiyama, ²Tetsuro Tanaka, ³Michio Tanaka, ³Hiroko Ishii, ⁴Yoshiaki Ikemi, ⁵Hiroo Matsuda. ¹Japan Women's College of Physical Education, Japan; ²Japan Child Policy Research and Promotion, Japan; ³Second Naminori Nursery, Japan; ⁴Kanto Gakuin University Graduate School of Engineering, Japan; ⁵Center for Child Abuse Prevention, Japan

10.1136/injuryprev-2016-042156.1009

Background In Japan, drowning is the second leading cause of deaths due to unintentional injuries following motor vehicle crashes among children. Drowning took the lives of 80 children aged 0–14 in 2014. The purpose of this study is to analyse the trends in drowning death rates and the share of drowning in unintentional injuries among children.

Methods Mortality data on unintentional injuries including drowning provided by the Vital Statistics of Japan was used. The deaths caused by the Great East Japan Earthquake in 2011 were removed from the analysis to avoid confounding.

Results The drowning death rate among all ages was 4.5 per 100,000 population in 1995, and 6.0 in 2014. Among infants under 1 year old, the drowning death rate was 1.9 per 100,000 population in 1995, and 0.2 in 2014. Among 1–4 year olds, the drowning death rate was 3.7 per 100,000 population in 1995, and 0.5 in 2014. Among 5–9 year olds, the drowning death rate was 1.7 per 100,000 population in 1995, and 0.4 in 2014.

Among 10–14 year olds, the drowning death rate was 0.7 per 100,000 population in 1995, and 0.6 in 2014.

The share of drowning death in all deaths due to unintentional injuries among all ages was 12.3% in 1995, and 19.2% in 2014. Among infants under 1 year old, the share of drowning death in all deaths due to unintentional injuries was 6.7% in 1995, and 2.6% in 2014. Among 1–4 year olds, the share of drowning death in all deaths due to unintentional injuries was 27.9% in 1995, and 18.6% in 2014. Among 5–9 year olds, the share of drowning death in all deaths due to unintentional injuries was 21.3% in 1995, and 31.4% in 2014. Among 10–14 year olds, the share of drowning death in all deaths due to unintentional injuries was 14.1% in 1995, and 29.4% in 2014.

Conclusions Drowning death rates among children decreased significantly, but the share of drowning death in all deaths due to unintentional injuries virtually did not change. This means that the incidence of drowning was stable and high compared to other unintentional injuries.

To reduce the number of drowning deaths, it is important for not only students but also parents, teachers and doctors to learn about drowning facts and statistics. It is also necessary to improve health education including drowning prevention curriculum in cooperation with various health specialties to create a healthy school environment for students.

1010 SLSA PERSONAL PROTECTIVE EQUIPMENT (PPE) PROJECT – DEVELOPMENT OF THE LEVEL 25 LIFEJACKET

Barbara Brighton, Anthony Bradstreet. Surf Life Saving Australia

10.1136/injuryprev-2016-042156.1010

Background Surf Lifesavers and Lifeguards operate in an inherently hazardous aquatic environment. Recently, Surf Life Saving Australia (SLSA) has lost 3 lifesavers in surf sports competition and training, and in the United States there have been 2 lifeguards drowned during operational service.

The risk remains that a lifesaver or lifeguard may become incapacitated in the water, become submerged and unable to be located to receive timely medical attention.

The objective of the project was to deliver a specification for a lifejacket that would reliably return an incapacitated individual to the surface but also minimise impacts on performance to a level as low as reasonably possible.

Methods SLSA engaged James Cook University and SAI Global to conduct the assessment process and assist in development of a fit for purpose specification.

The first stage assessed and ruled out the Level 50 International Standard as having excessive buoyancy and adversely impacting exertion levels while conducting tasks such as duck diving. It was then hypothesised that a similarly designed slimline lifejacket with a lower level of buoyancy could feasibly fulfil the objectives.

The second stage assessed a variety of buoyancy aids that were not compliant with any standards. These devices were readily available in the international marketplace as impact vests, surface vests, and competition vests commonly used for individuals engaged in extreme sports such as wakeboarders, big wave surfers and kite boarders.

Results Testing of these non-compliant buoyancy aids indicated poor quality control over the production processes and varying rates of buoyancy that didn't necessarily correlate to size. This

inconsistency correlated to the performance of the devices and their ability to float a person where many devices failed. This raised concerns from a consumer perspective and any perception that these devices may provide sufficient flotation to remain on the surface despite the presence of disclaimers.

Despite the inconsistencies in performance, there was sufficient data collected to inform the development of a fit for purpose specification of low buoyancy lifejackets that could be used in high performance applications. This information has since informed the review and redevelopment of the Australian Standard AS4758 Lifejackets and delivered a new class of lifejacket, the Level 25.

Conclusions SLSA are currently trialling prototypes of these Level 25 Lifejackets to assess their possible use in Surf Life Saving activities to reduce injury and death. The final report includes policy recommendations and the necessary implementation plan.

1011 REGIONAL VARIATIONS IN DROWNING DEATH RATES: POPULATION VS. AREA OF NATURAL WATER AS DENOMINATOR

¹Tsung-Hsueh (Robert) Lu, ²Pei-Hsuen Han. ¹National Cheng Kung University, Taiwan; ²Department of Health, Tainan City Government, Taiwan

10.1136/injuryprev-2016-042156.1011

Background Comparing injury death rates by region is a commonly used method to identify regions with higher risk. To correct for exposure, other denominator other than population has been used, such as per miles driven for motor vehicle injuries or per hours flown for injuries in aircraft. We sought to compare regional drowning death rates using population as denominator versus that using area of natural water as denominator.

Methods Drowning deaths in 16 regions in Taitung County Taiwan by for years 2008 through 2013 were collected as numerator in calculating drowning death rates. Mid-year population in 16 regions were used as the first denominator in calculating drowning death rates. Area of natural water (lakes, rivers, streams, beach etc.) in 16 regions were obtained from Water Resource Agency, Ministry of Economic Affairs, Taiwan were used as the second denominator in calculating drowning death rates.

Results The rankings of drowning death rates by region according to two denominators differed greatly. The drowning death rate using population as denominator in Taitung City was 6.0 per 100,000 population, which ranked 10th among 16 regions in Taitung County. The drowning death rate using area of natural water as denominator in Taitung City was 355 per square km, which ranked the 1st among 16 regions in Taitung County. We further collected data from fire bureau of Taitung County Government and found a clustering of 8 drowning deaths from 2010 through 2014 in one lake in Taitung City.

Conclusions To identify regions with higher risk of dying from drowning, we recommend of calculating drowning death rate using area of natural water as denominator as a supplement in addition to traditional drowning death rate using population as denominator.

1012 SITUATIONS OF CHILD DROWNING AND PREVENTION BY "MERIT MAKER" TEAM IN SURIN PROVINCE

¹Saluckjit Sakulrak, ²Sutep Kerdsonmuk, ³Stapon Sriwan. ¹Surin provincial health office; ²Sakard School, Noansawan school; ³Surin, Thailand

10.1136/injuryprev-2016-042156.1012

Background Drowning is the first cause of death in children who are under 15 years old in Surin province, a province located in the North East of Thailand. Death rate in year 2011, 2012, 2013, 2014, 2015 were 12.94, 11.1, 14.3, 13.9 respectively per 100,000 children who are below 15 years old. In 2014, a number of drowning children below 15 years between January-October 2014 were 28 cases. There are 32.1 percent of males and 67.86 percent of females. The percentage of drowning children below 2 years old is 17.86 percent. The percentage of drowning children age between 3 to 5 years old, 6 to 9 years old and 9 to 12 years old is 21.3 percent, 28.57 percent and 32.14 percent respectively. The place where drowning occur are community ponds, pond in the field, canal and pond in home and can be calculated as 35.7 percent, 35.7 percent, 10.7 percent and 10.7 percent respectively. We found that 14.3 percent of children can swim and 85.7 percent of children cannot swim and all of them have no skill in survival swimming. The factor leads to drown is that 46.3 percent of them play in the risk water with friends, 42.86 percent of them was drops in the risk water, 7.14 percent of them was catch the fish and 3.57 percent of them was help their friend who drowning.

Methods The main factor is that most of children do not know how to swim; therefore, they have no skill to help themselves while drowning. In addition, there is few standard pool in local communities. Many schools have no swimming program for students. Also, parents cannot swim and there have many source of water near home and school where children can jump in. According to children behaviour, they like to play in the water with friends during their school break or vacation. The main point we focus on is how children can float in the water and have a right skill to help people or their friends from drowning and have skill on primary resuscitation. Since there are not many standard swimming pool available.

Mobile pool which is given from a supporter is one choice. We adapt survival swimming curriculum for trainer and children. The trainer taught children in easy steps and used easy equipment to help children floating in the water such as plastic bottle. This saves time and is not dangerous while training in mobile pool. We plan best practice school model in local communities. Children who have good skill can train another child. Every district have Trainer.

Results More than 80 percent of students who pass 15 hours of survival swimming curriculum can float in the water. The longest hour some children can float is 4 hours. The important technique is they need to learn the right way of how to breath by mouth, how to keep air in lung, make right position and use empty plastic bottle (1,000 ml) when floating in the water. By the knowledge management from team network corporation from Hospital, Health station, School, Local administration and another volunteers which work in Province, district and sub-district, we learn how to be a good teamwork to help children. Our team call