Real and perceived swimming ability, perceptions of drowning risk among Japanese university students

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Introduction

Japan has one of the highest rates of drowning in OECD countries (4.8 per 100, with most (88%) occurring in open water. Two thirds (64%) of the victims drowned during swimming, fishing, and recreation-related activities (Community Police Affair Division, Community Safety Bureau Japan 2009). While, swimming ability has been promoted by water safety organizations as a critical asset in drowning prevention, little is known about the protective value of swimming in relation to drowning prevention and the true extent of the risk of drowning in society (Moran, 2009). The causes of drowning must dictate especially what we teach, content, and to a lesser degree, how we teach (Stallman et al., 2008). Therefore, an international project entitled the Can You Swim Project? was conducted among Japanese university students in order to explore the relationship between swimming competency, students estimates of their competency, and their perception of the risk of drowning.

Method

One hundred thirteen (n=113, 65 males and 48 females) university physical education students enrolled at three institutions were the subjects of the study. They firstly completed a questionnaire containing 20 questions and then performed practical tests of swimming ability. The questionnaire consisted of a) perception of their ability, b) perception of their ability to perform these in open water and c) their perception of risk in five specific scenarios. Practical tests consist of seven aquatic skill including: 1) Distance swimming, 2) 100 m swim on back, 3) Floating in deep-water, 4) Dive into 2m depth, 5) Swim 25m underwater, 6) Surface dive to 2m depth, and 7) Contact rescue tow 25 meters. Data from the completed questionnaires were statistically analyzed by using SPSS Version 16.0 in Windows. Mann-Whitney U tests and Spearman RHO correlations were used to compare the swimming abilities and gender differences.

Results and Discussion

Most students could swim more than 300m (70%); one quarter (24%) could swim less than 200m. One half of the students could float for less than two minutes and one quarter (25%) completed the 100m swim on their backs. No significant differences were found in actual swimming-related abilities between male and female students, although more females than males did not complete the tests of: dive entry into pool (female 23%; male 11%), surface dive to 2m (female 33%; male 19%), and 100m swim on back (female 28%; male 9%). Similarly, no differences were found in self-estimated swimming abilities by gender. Spearman rank order correlations were moderately strong between actual and self-estimated swimming ability ($p = .577$) and floating ability ($p = .640$), significant at the 1% (two-tailed). This suggests that both of male and female students estimated their own swimming abilities with accuracy.

More females than males estimated higher risk of drowning for each of the five drowning scenarios that students were asked to estimate the personal degree of risk. When all risk estimates were aggregated, significant differences in risk of drowning perceptions were found between males and females ($p =.013$, significant at the 1% level, 2-tailed). The most significant gender difference ($p =<.001$, significant at the 1% level, 2-tailed) in risk perceptions related to falling into the river when fully clothed, with only 57% of males compared with 79% of females estimating the risk of drowning to be high/extreme.

Conclusion

This present study found no significant gender differences in real and perceived swimming abilities as tested but further research is required to determine how these findings apply to other groups. This study found that male students tend to underestimate the potential dangers in the risk of drowning.

References

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