

Assessing Water Safety Attitude and Behavior towards Drowning Prevention among Adolescents in South Region, Malaysia

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Abstract

Drowning is a global issue, and preventing drowning is a global challenge. In most industrialized countries, it is the leading cause of death in young children. In Malaysia, based on the 2019 causes of death report, drowning ranked as one of the top five main factors contributing to the mortality rate among individuals aged 15 – 40 years old. However, drowning prevention is still a major ignorance because the community perception that drowning is an unavoidable incident. It is important to explore the attitudes and behaviors regarding drowning prevention specifically among adolescents to develop focused interventions and to promote positive water safety culture. This study aims to assess water safety attitudes and behaviors towards drowning prevention among adolescents in South Region, Malaysia. The sample for this study comprised of eighty-five university students (N=85) who were administered a self-report questionnaire consisting of 16 items on water safety attitudes and behaviors. The reliability is between 0.78 and 0.82 across all domains. The findings showed that the adolescents involved in this study have a positive water safety attitude and behaviors towards drowning prevention. Adolescents' favorable attitudes and actions toward the open water environment may have been influenced by the water safety education they received. To enhance understanding and develop effective interventions, more extensive study is required that includes larger sample sizes and encompasses a broader population in Malaysia.

Keywords: Drowning Prevention, Attitude, Behaviors, Water Safety, Adolescents

Introduction

Water-based activities are one crucial part of outdoor recreation. Swimming, fishing, boating, scenic walkways, and wildlife observatories are several recreational opportunities available on the ocean and inland waterways (Curtis & Curtis, 2010). An increase in the number of participants in water-based activities causes plenty of unintentional injuries including drowning. According to the World Health Organization (2021), drowning is the third leading cause of unintentional injury death worldwide, accounting for 7% of all injury-related deaths. It is estimated that around 236 000 people die from drowning around the world (WHO, 2021) and most of the cases involve youngsters drowning. According to recent drowning data, there are increased incidences of drowning among Asians, accounting for 12% of the entire drowning toll but only 6.6% in 2002. The true cost of drowning is understated because such data excludes most non-fatal cases (Szpilman et al., 2016). Sadly, due to the many cases left unreported, the true figure is likely to be higher. Some drowning victims in low- and middle-income nations never make it to the hospital, preventing the incidence from being officially recorded (Szpilman et al., 2016).

In Malaysia, based on the 2019 report on causes of death, drowning ranked as one of the top five main factor contributing to the mortality rate among individuals aged 15 – 40 years old. In addition, drowning prevention is still a major ignorance because the community thinks drowning is an unavoidable incident (Farizan et al., 2021). There are estimated at least one person dies every day because of drowning incidents in Malaysia but the community is still unaware of the dangers of involving water-based activities (Hariati, 2018). According to Jabatan Bomba dan Penyelamat Malaysia (JBPM), most of the drowning incidents occur because the victims were the people who are from other states, and they were not alert of warning signs and the weather of the place (Awani, 2020). Besides, previous studies found that risk-taking behaviors, and swimming ability are all well-established risk factors for adolescent drowning (Ojeda, 2019; Petrass & Blitvich, 2014). To decrease risk factors, education addressing these risk factors is required. This will cut mortality by altering people's attitudes and behavior (Weiss, 2010; Ojeda, 2019).

It is tough to explain human behavior in all of its complexities. It can be approached on various levels, ranging from physiological processes to societal institutions at the other end of the spectrum (Ajzen, 2019). It is common practice for psychologists to explain human behavior by reference to stable underlying dispositions (Heider 1958; Campbell 1963; Ajzen, 2005). Most human behavior appears to be goal-directed (Heider, 1958; Lewin, 1951; Ajzen, 2019). The best way to explain human social behavior is that it follows well-defined plans. According to a recent Global Report on Drowning, behavioral, environmental, and occupational risk factors account for more than half of global drowning mortality (Moran et al., 2018). The construct of perceived behavioral control was added to deal with situations in which people may lack complete volitional control over the behavior of interest (Ajzen, 2002). Besides, perceived behavioral control can be greater over the behavior when the individuals think they possess more resources and opportunities as it is an exogenous variable that has both a direct effect on behavior and an indirect effect on behavior through intentions (Madden et al., 1992).

Furthermore, behavioral acts of people will be determined by attitude because the concept of attitude has several consequences that will lead to being one of the factors of the intention (Albert et al., 1989). The research shows that attitude has been articulated through two distinct frameworks: behavioural and cognitive. In social psychologists' theories of human behavior, the concept of attitude has been emphasized as well. Various attitudes have been examined over time, and when new social challenges arise, new attitudinal areas are

addressed (Ajzen, 2005). The inadequacy of such broad attitudes to anticipate specific behaviors directed toward the attitude's target has created new challenges for the concept of attitude to be disregarded (Wicker, 1969; Behavior & Ajzen, 2019). Attitude is one of the antecedents of intention that is the immediate determinant of behavioral acts (Albert et al., 1989). In the construction of drowning risk, water safety attitudes are important because they provide a frame of reference for organizing information and serve both motivational and cognitive functions (Stallman et al., 2017). In the theory of reasoned action, attitudes are one predictor of behavioral intentions. Attitudes are the overall evaluations of the behavior of the individual (Corner & Armitage, 1998). It is also referring to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. Other than that, attitudes develop reasonably from the beliefs people hold about the object of the attitude. Researchers form beliefs about an object by associating it with certain attributes. In the case of attitudes toward a behavior, individual belief links the behavior to a certain outcome, or to some other attribute such as the cost incurred by performing the behavior. Since the attributes that come to be linked to the behavior are already valued positively or negatively, it is automatically and simultaneously acquire an attitude toward the behavior (Ajzen, 1991). Azjen (1985) said that an attitude toward a behavior is also a positive or negative evaluation of performing that behavior.

Despite the known risks and impacts of drowning, communities do not devote enough attention, action, and resources to its prevention. The attitudes and behaviors related to drowning prevention among individuals, particularly in vulnerable populations, have not been thoroughly understood or addressed. This knowledge gap hindered effective strategies and intervention to promote water safety and lower drowning incidents targeted to specific population. Therefore, there is a need to examine and investigate the attitudes and behaviors regarding drowning prevention specifically among adolescents to develop focused interventions and to promote positive water safety culture.

Methodology

The quantitative approach had been used to explore and assess the water safety attitude and behaviors toward drowning prevention among adolescents in Malaysia. The sample information was obtained from the Ministry of Higher Education and the cluster sampling technique is used to recruit respondents. A total of eighty-five (N=85) universities students from South Region, Malaysia who are aged 18 to 29 years old were participated in this study. The instrument was adapted from Ojeda (2019), which consists of 16 items to assess adolescents' water safety attitudes and behaviors. Before the actual study was conducted, the reliability analysis was performed in the pilot study data for 30 respondents.

Table 1

Result of Cronbach Alpha

Variable	No. of Item	Cronbach Alpha
Behaviours	32	0.82
Attitude	19	0.78

The overall reliability is high as it is between 0.78 and 0.82 across all domains.

Results

Table 2, 3 and 4 present descriptive data for behavior and attitudes towards water safety in drowning prevention.

Table 2

Frequency Statistics on Behaviors of Water Safety towards Drowning Prevention

		Frequency	Percent (%)
Not worn lifejackets in a boat	Yes	17	20.0
	No	30	35.3
	Never been with friends in this situation	38	44.7
Swum without adult supervision	Yes	21	24.7
	No	36	42.4
	Never been with friends in this situation	28	32.9
Swum outside the flags	Yes	6	7.1
	No	47	55.3
	Never been with friends in this situation	32	37.6
Encouraged you or others to take risks in/on the water	Yes	13	15.3
	No	40	47.1
	Never been with friends in this situation	32	37.6
Mixed alcohol/drugs and water activity	Yes	3	3.5
	No	41	48.2
	Never been with friends in this situation	41	48.2
Ignored water safety advice and directions	Yes	8	9.4
	No	43	50.6
	Never been with friends in this situation	34	40.0
Swum where they weren't supposed to	Yes	9	10.6
	No	42	49.4
	Never been with friends in this situation	34	40.0
Dived into the shallow water headfirst	Yes	10	11.8
	No	41	48.2
	Never been with friends in this situation	34	40.0

Question: Have you been with your friends when they have

Table 3

Frequency Statistics on Behaviors of Water Safety towards Drowning Prevention

		Frequency	Percent (%)
Given you advice about water safety	Yes	75	88.2
	No	10	11.8
Paid for you to have swimming lessons	Yes	12	14.1
	No	73	85.9
Done any first aid training	Yes	35	41.2
	No	50	58.8
Supervised you or other family members when in or near water	Yes	64	75.3
	No	21	24.7
Experienced a life-threatening water incident	Yes	34	40.0
	No	51	60.0
Discussed water safety issues as a family	Yes	50	58.8
	No	35	41.2
Stopped you doing water activity because of safety concerns	Yes	50	58.8
	No	35	41.2
Encouraged you to improve your swimming ability/fitness	Yes	55	64.7
	No	30	35.3

Question: Has anyone in your family ever

The frequency statistics presented in Table 2 and 3 described the adolescents' behavior who participate in water-based activities with their friends and family. Results from the table indicated that most adolescents did not engage in any potentially harmful behaviors near open water environment. They know the risk. This indicates that most of the respondents have awareness regarding dangers and reckless behavior.

Table 4

Descriptive Statistics on Behaviors and Attitude of Water Safety towards Drowning Prevention Among Universities Students

	Mean	SD
Attitude	2.63	.39
Behavior	1.76	.36

Table 4 shows that adolescents in South Region, Malaysian have a positive attitude and behaviors as the value of attitude is ($M = 2.63$, $SD = 0.39$) more than average score and the value of behaviors is ($M = 1.76$, $SD = 0.36$) as it is below than composite score. These two dimensions are correlated as attitude is linked to behaviors and they are affecting each other.

Table 5 shows the differences in water safety attitude and behavior between genders. The relationship between water safety attitudes and behaviors among adolescents was demonstrated in Table 6.

Table 5*Behaviors and Attitude of Water Safety towards Drowning Prevention Between Genders*

	Group	N	Mean (SD)	t	df	P value
Behaviors	Male	30	1.96 (0.33)	4.12	83	.001*
	Female	55	1.65 (0.33)			
Attitude	Male	30	2.49 (0.38)	0.44	83	.36
	Female	55	2.46 (0.39)			

Note. * $p < .05$

These findings indicate that male and female, both had positive attitudes and behaviors, however there is only significant difference in behaviors between genders. There was a significant relationship between attitude and behaviors as presented in Table 6 ($p < .05$, $r = 0.43$).

Table 6*Correlation between Attitude and Behaviors of Water Safety*

	Attitude
Behavior	-0.43

Note. * $p < .05$

Discussion

The findings of this study showed that adolescents in South Region Malaysia have good behavior and a positive attitude towards water safety, which is important in reducing the risk of drowning. The research outcome found that the value of the behaviors dimension was significantly lower than the mean. A lower mean value of behaviors indicates that adolescents are practicing appropriate water safety habits to reduce the risk of drowning. The results showed that teenagers' attitudes were generally positive, with higher scores correlating to more enthusiastic support for the attitudes that were evaluated. Most of the respondents claimed that they would never engage in risky behavior near open water because they know it is not safe. They are able to follow the water safety instructions as presented in the result. Besides that, they had been given water safety tips by their friends and family. The influence of attitude on behavior is regarded to be strongest as the attitudes and behaviors are closely related, as suggested by Moran (2019), who argues that safety attitudes are crucial in shaping safe behaviors (Ajzen & Fishbein, 1977).

Next, the result showed that there is significant difference in behavior between male and female. Female adolescents may have a more accurate perception of risk compared to males. They have a tendency to be more cautious and risk-averse, which may translate into safer behaviors when engaging in activities involving water (Pouramin et al., 2020). Cultural factor also may explain the difference of behavior since female may have specific expectations or restrictions leading to higher level of safety precaution (Pouramin et al., 2020). According to Ojeda (2019), the greater education of adolescents has led to smaller inequalities across all two dimensions. Moreover, Moran (2009) discovered that when compared to males, females typically exhibited greater water safety awareness and more enthusiasm for the topic. This is consistent with Rejman et al (2020), who also discovered that males are more likely to engage in risky behaviors, such as developing negative attitudes and putting themselves in potentially dangerous circumstances while near or in the water. However, there is no difference in attitude between genders. Promoting water safety attitude should be a collective effort for

both males and females, as everyone should prioritize safety when engaging in water-related activities.

There is an association between behavior and attitude in water safety as reported in the research outcome. Researchers conclude that adolescents' attitudes are linked to their actions or behavior in drowning prevention framework. The results demonstrated that excellent behavior follows from a positive attitude. This is consistent with the outcome of the first objective, which showed that teenagers exhibited appropriate positive behaviors and attitudes. According to Corner and Armitage (1998), one predictor of behavioral intentions is one's attitude, which may be thought of as an individual's overall view of their own behaviors. In addition, Ajzen (1991) argued that when it comes to attitudes, individual belief associates the behaviors in question with a certain consequence or quality. Attitude refers to an individual's beliefs, opinions, and evaluations towards water safety, while behavior refers to the actions and choices individuals make in relation to water-related activities (Corner & Armitage, 1998). Attitudes play a crucial role in shaping an individual's perception of risk associated with water activities. If someone has a heightened perception of the risks involved in water-related activities, they are more likely to exhibit safer behaviors.

Conclusion

As a result of their positive mindset and water-safety-focused actions or behaviors, adolescent residents of Malaysia's southern area have lower risk to drown than the national average. Adolescents' favorable attitudes and actions toward the open water environment may have been influenced by the fact that they were taught about water safety formally or informally. The findings demonstrate that positive attitudes towards water safety, along with knowledge and awareness, can lead to responsible positive behavior and adherence to safety guidelines. As the number of drowning-related fatalities among young individuals continues to rise, further extensive study in this field is required. Concerningly little is known about how to prevent such accidents, which is why more extensive study is required.

Conflict of Interests

Mai Dhaniah Meor Ab. Rahim, Sharifah Maimunah Syed Mud Puad, Muhammad Wafi A. Rahman, Mohamad Firdaus Ahmad and Nur Syazwani Zulaikha Safwan declare that they have no conflict of interest.

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References

- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Bechmann (Eds.), *Action control: From cognition to behavior* (pp. 11-39). New York: Springer Verlag.
- Ajzen, I. (1991). The Theory of Planned Behavior . *Organizational Behavior and Human Decision Processes*, 179-211.
- Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control and the Theory of Planned Behavior. *Applied Social Psychology*, 665-683.
- Ajzen, I. (2005). *Attitudes, Personality and Behaviour*. New York: Open University Press.

- Albert, D., Aschenbrenner, K. M., & Schmalhofer, F. (1989). Cognitive Choice Processes and the Attitude-Behavior Relation. In *Attitudes and Behavioral Decisions* (pp. 61–99). https://doi.org/10.1007/978-1-4612-3504-0_3
- Behavior, O., & Ajzen, I. (2019). The Theory of Planned Behavior The Theory of Planned Behavior. 5978(August). [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Curtis, J. A., & Curtis, J. A. (2010). Journal of Environmental Planning and Demand for Waterbased Leisure Activity Demand for Water-based Leisure Activity. (November 2014), 37–41. <https://doi.org/10.1080/713676706>
- Farizan, N. H., Mani, K. K., Sutan, R., & Hod, R. (2021). A Concept Paper on Improving Parental Knowledge and Practices on Water Safety and Their Children: A Guide for Drowning Prevention. *International Journal of Academic Research in Business and Social Sciences*, 11(15). <https://doi.org/10.6007/ijarbss/v11-i15/10651>
- Moran, K. (2009). Re-thinking Drowning Risk : The Role of Water Safety Knowledge , Attitudes and Behaviours in the Aquatic Recreation of New Zealand Youth.
- Moran, K., Webber, J., & Stanley, T. (2018). Protection Motivation Theory (PMT), Risk of Drowning, and Water Safety Perceptions of Adult Caregivers/Parents. *The Open Sports Sciences Journal*, 11(1), 50–59. <https://doi.org/10.2174/1875399x01811010050>
- Ojeda, W. L. (2019). Acceptability And Feasibility Of A Water Safety Intervention for Adolescents Aged 14-19 Years by A Dissertation Submitted to the Faculty of the College of Nursing in Partial Fulfillment Of The Requirements For The Degree Of Doctor Of Philosophy And Doctor. 0–130.
- Petrass, L. A., & Blitvich, J. D. (2014). Preventing adolescent drowning: Understanding water safety knowledge, attitudes and swimming ability. the effect of a short water safety intervention. *Accident Analysis and Prevention*, 70, 188–194. <https://doi.org/10.1016/j.aap.2014.04.006>
- Pouramin, P., Nagabhatla, N., & Miletto, M. (2020). A Systematic Review of Water and Gender Interlinkages: Assessing the Intersection with Health. *Frontiers in Water*, 2. <https://doi.org/10.3389/frwa.2020.00006>
- Rejman, M., Kwasna, A., Chrobot, M., Kjendlie, P. L., & Stalman, R. K. (2020). Perceived versus real swimming skills of adolescents under standard and challenging conditions: Exploring water competencies as an approach to drowning prevention. *International Journal of Environmental Research and Public Health*, 17(11). <https://doi.org/10.3390/ijerph17113826>
- Stallman, R. K., Moran, K., Quan, L., & Langendorfer, S. (2017). From Swimming Skill to Water Competence: Towards a More Inclusive Drowning Prevention Future. *International Journal of Aquatic Research and Education*, 10(2). <https://doi.org/10.25035/ijare.10.02.03>
- Szpilman, D., Tipton, M., Sempstrott, J., Webber, J., Bierens, J., Dawes, P., ... Queiroga, A. C. (2016). Drowning timeline: a new systematic model of the drowning process. *American Journal of Emergency Medicine*, 34(11), 2224–2226. <https://doi.org/10.1016/j.ajem.2016.07.06310>