

Students' Level of Knowledge and Awareness on Life-Saving Techniques

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Abstract: This study aimed to determine the level of knowledge on life-saving techniques and level of awareness on the basic principles of life-saving among the BSMT (Bachelor of Science in Marine Transportation) students of John B. Lacson Foundation Maritime University (Arevalo), Inc. It was conducted during the second semester of school year 2019-2020 among the 290 BSMT 2 students chosen through cluster random sampling. The instrument used was a researcher-made questionnaire duly validated by a panel of jurors. It had undergone reliability testing with an obtained value of 0.97. The descriptive statistics used were mean and standard deviation while the inferential statistics utilized the One-way ANOVA (Analysis of Variance) and Scheffe. The results of the study revealed that when taken as an entire group, the level of knowledge on various life-saving techniques among the second year BSMT students was "Very High" implying that the students were exceedingly knowledgeable about various life-saving techniques. Moreover, the level of awareness about the basic principles of life-saving was "High" suggesting that students were aware of the basic principles to be observed in life-saving. However, significant differences were noted in the knowledge as well as in the awareness among the second year students when classified according to sections. The Scheffe results indicated that Polaris 2A, Polaris 2B, and Bellatrix showed significantly higher mean scores in both knowledge and awareness compared with other sections. The findings of the study suggest that generally, the second year BSMT students have acquired the necessary knowledge and information regarding various life-saving techniques and are familiar with the procedures and precautionary measures to follow during water rescue because of the thorough instruction in PE (physical education). It is recommended that the school may continue improving, innovating and providing quality education to its students with the use of Instructional Guide in PE.

Key words: Life-saving techniques, maritime education, water rescue, descriptive.

1. Introduction

Life threatening situations associated with inclement weather or maritime accidents are inherent in the seafaring profession. It is for these reasons that seafarers should be equipped with knowledge and skills to handle these undesirable events that may arise in the course of their voyage. The John B. Lacson Foundation Maritime University as the vanguard in maritime education is committed to provide its students with quality education and training to prepare them for life at sea. Aside from the mandated aquatic sports being included in the BSMT (Bachelor of

Science in Marine Transportation) the curriculum like swimming, life-saving, rowing, and sailing the institution is also requiring students to take basic training courses which include First Aid, Firefighting, and Survival of Life at Sea.

Learning life-saving skill is always a wise idea especially among the future seafarers. According to Edmundo [1] basic swimming techniques along with proper life-saving procedures are important. They can help even untrained swimmers and rescuers improve water safety. Even among experienced swimmers and trained lifeguards, entering the water to perform rescue should be done only as a last resort. A common water safety phrase taught to lifeguards is "talk, reach, throw, row, go" to signify the order to follow in

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rescue attempts. Proper procedures involve the following steps: The first step involves talking to the victim to help him get to shore, to a pier, a boat or the side of the pool if he is calm enough; then, reaching for him with your hand, a pole or other objects to pull him without jeopardizing your own safety; throwing a life preserver or rope so you can pull him in is advisable if he is quite distant. If the person is in the lake or the ocean and not close by, looking for a rowboat, canoe, jetski, rubber raft or other floating device is the best course of action. Entering the water and attempting the rescue yourself should be done only if none of the other options mentioned is viable.

According to the International Life-Saving Federation [2] there are main skills for life-saving in order to prevent drowning or reduce significantly the cases of drowning in pools, lakes, rivers and beaches. These different skills involve spotting of emergency situations at a crowded beach or pool, recognizing dangerous situations, assessing situations, deciding what to do, reacting in the right way, running, swimming short and long distances with or without fins, paddling rescue boards or skis, driving rescue boats, snorkeling, scuba diving, searching under water and rescuing with or without equipment and carrying and towing techniques. In addition, it is also vital for lifesavers to be trained physically and theoretically along with medical knowledge of cardiopulmonary resuscitation (CPR) and first aid.

In a study conducted by Michniewics, Walezuk, and Rostkowska [3] they assessed the effectiveness of various variants of water rescue. They found out that the timing of the rescue in reaching the victim with the use of rescue canister takes a bit longer time but increases the effectiveness of the rescue and the lifeguards' safety. Moreover, rescue of the active victim without equipment jeopardizes the lives of both lifeguards and victims.

The study of Furelos et al. [4] assessed the efficacy of rescue equipment in lifeguard resuscitation efforts for drowning. The equipment includes fins, rescue

tube, and RB (rescue board) which are frequently used by lifeguards. Findings revealed that the total rescue time was significantly lower using RB while good quality of CPR before and after water rescue was observed in all trials. Thus the use of propelling or floating equipment saves time and reduces drowning mortality. A more intensive CPR training is recommended for lifeguards considering the need for efficient ventilation among drowning victims.

Petrass and Blitvich [5] stressed that drowning is a prevailing public health issue especially among the young adults and conducted a study to examine their ability to perform a rescue and their level of aquatic rescue knowledge. Their findings revealed that young adults lacked the physical capacity and knowledge required to safely perform a rescue, a factor that may place them at an increased drowning risk if they attempt an aquatic rescue. Thus they emphasized the need for research to consider how best to promote aquatic rescue competency among young adults considered as a high risk group.

The study of Moran and Webber [6] emphasized the need to educate the public about safety and risks of bystander rescue. They revealed that in New Zealand, drowning incidents associated with attempts to rescue others occurred in open water and most fatalities were male. The study utilized a family water safety program to promote a resource entitled: The 4Rs of Aquatic Rescue which stand for Recognize, Respond, Rescue and Revive. Their study led to a greater understanding of rescue safety but did not translate to greater confidence towards performing rescue.

The number of studies and literature pointing to the need for life-saving skills and rescue techniques among the young adults motivated the researchers to conduct this study to ascertain the level of awareness and knowledge of life-saving among the second year BSMT students of this institution as they are considered belonging to the high risk group being in the seafaring profession. This study aimed to determine the level of knowledge on life-saving

techniques and awareness on the basic principles of life-saving among second year BSMT students of JBLFMU-Arevalo, Iloilo City, Philippines.

2. Methods

2.1 Research Design

This study used a descriptive research design to determine the level of knowledge and awareness on life-saving techniques among the second year BSMT students. Descriptive research involves collecting data in order to determine relationships between variables, explores causes of phenomena or tests hypotheses and develops generalizations, principles or theories on the basis of its findings [7].

2.2 Respondents

The respondents of the study were the 290 second year BSMT students from the eight sections enrolled during the second semester of school year 2019-2020 and chosen through cluster random sampling from the total population of 709 students. They were selected as respondents of the study because they have already taken basic and advanced swimming courses in PE (physical education). The distribution of respondents is shown in Table 1.

2.3 Instrument

The study made use of a researcher-made questionnaire duly validated by a panel of experts in the field. It consisted of 20 items designed to draw students' level of knowledge on various techniques

in life-saving and their level of awareness on the basic principles of life-saving. Each item under the knowledge category is answerable by the following response options: "Strongly Agree", "Agree", "Neither Agree nor Disagree", "Disagree", and "Strongly Disagree". Each item under the awareness category is answerable by "Fully Aware", "Moderately Aware", "Somewhat Aware", "Slightly Aware" and "Not Aware".

2.4 Data Collection

The researchers first determined the sample size from the population of BSMT 2-students and randomly selected the sections to be included as respondents of the study. The researchers then distributed the instrument among the second year students last February 2019. After the retrieval of the answered questionnaires, data were collated and subjected to appropriate statistical treatment.

2.5 Data Analysis

The gathered data were tabulated and encoded using the SPSS (Statistical Package for Social Sciences). The mean was utilized to determine the level of knowledge and level of awareness on the principles of life-saving, while One-way ANOVA (Analysis of Variance) was used to test the significant difference in the knowledge and awareness among the different sections. To interpret the obtained data, the following mean scale, description, and indicators were used as shown in Tables 2 and 3.

Table 1 Distribution of respondents according to section.

Category	<i>f</i>	%
Entire group	290	100
Polaris 2A	40	14
Polaris 2B	40	14
Bellatrix	37	13
Betelgeuse	38	13
Diphda	32	10
Eltanin	37	13
Enif	32	11
Jupiter	34	12

Table 2 Mean scale, description, and indicators in determining the students' level of knowledge in life-saving techniques

Mean scale	Description	Indicators
4.51-5.00	Very high	The students were exceedingly knowledgeable about various life-saving techniques.
3.51-4.50	High	The students were knowledgeable about various life-saving techniques.
2.51-3.50	Moderate	The students were somewhat knowledgeable about life-saving techniques.
1.51-2.50	Low	The students have limited knowledge about life-saving techniques.
1.00-1.50	Very low	The students have very limited knowledge about life-saving techniques.

Table 3 Mean scale, description, and indicators in determining the students' level of awareness in the principles of life-saving.

Mean scale	Description	Indicators
4.51-5.00	Very high	The students were fully aware of the basic principles of life-saving.
3.51-4.50	High	The students were aware of the basic principles of life-saving.
2.51-3.50	Moderate	The students were somewhat aware of the principles of life-saving.
1.51-2.50	Low	The students were slightly aware of the principles of life-saving.
1.00-1.50	Very low	The students were not aware at all about the basic principles of life-saving.

3. Results and Discussion

Table 4 shows that the students' level of knowledge about the various life-saving techniques is "Very High" ($M = 4.68$, $SD = 0.48$) which implies that the students were exceedingly knowledgeable about the various life-saving techniques. The top three sections which obtained the highest mean scores were: Polaris 2A ($M = 4.94$, $SD = 0.29$) "Very High", Polaris 2B ($M = 4.81$, $SD = 0.41$) "Very High", and Bellatrix ($M = 4.76$, $SD = 0.39$) "Very High" while section Jupiter obtained the lowest mean ($M = 4.49$, $SD = 0.64$) however described as "High".

Table 5 shows that the students' level of awareness on the basic principles of life-saving is "High" ($M = 4.40$, $SD = 0.74$). The result connotes that the second year BSMT students were aware of the basic principles of life-saving. The top three sections which

obtained the highest mean scores were: Polaris 2A ($M = 4.86$, $SD = 0.41$) "Very High", Bellatrix ($M = 4.59$, $SD = 0.69$) "Very High", and Polaris 2B ($M = 4.44$, $SD = 0.75$) "High" while section Jupiter obtained the lowest mean ($M = 4.30$, $SD = 0.73$) however described as "High".

Table 6 shows that there is a significant difference in the knowledge about various techniques of life-saving among the second year BSMT students when respondents were classified according to section, $F(7, 279) = 11.83$, $p = 0.000$.

Table 7 reveals that Polaris 2A, Polaris 2B, and Bellatrix obtained significantly higher mean scores in their level of knowledge compared with the other five sections who participated in the study. Superscript letters (a and/or b) represent if there is or no significant difference as a way to explain the post hoc test.

Table 4 Level of knowledge among second year BSMT students about various life-saving techniques.

Category	Mean	Description	SD
Entire Group	4.68	Very high	0.48
Polaris 2A	4.94	Very high	0.29
Polaris 2B	4.81	Very high	0.41
Bellatrix	4.76	Very high	0.39
Eltanin	4.67	Very high	0.52
Diphda	4.61	Very high	0.43
Enif	4.61	Very high	0.56
Betelgeuse	4.58	Very high	0.56
Jupiter	4.49	High	0.64

Table 5 Level of awareness among second year BSMT students in the basic principles of life-saving.

Category	Mean	Description	SD
Entire Group	4.40	High	0.74
Polaris 2A	4.86	Very high	0.41
Bellatrix	4.59	Very high	0.69
Polaris 2B	4.44	High	0.75
Eltanin	4.43	High	0.71
Betelgeuse	4.40	High	0.72
Jupiter	4.30	High	0.73
Diphda	4.12	High	0.92
Enif	4.06	High	0.97

Table 6 One-way ANOVA result for the significant difference in the knowledge about life-saving techniques when classified according to section.

Sources of variation	SS	df	MS	F	Sig.
Between groups	5.293	7	0.756		
Within groups	17.753	279	0.064	11.83*	0.000
Total	23.046	286			

Asterisk (*) means significant at 0.05 level of probability.

Table 7 Scheffe result for the comparison of means in the knowledge about life-saving techniques when classified according to section.

Section	Mean
Jupiter	4.49 ^a
Betelgeuse	4.58 ^{ab}
Diphda	4.61 ^{ab}
Enif	4.61 ^{ab}
Eltanin	4.67 ^{ab}
Bellatrix	4.76 ^{bc}
Polaris 2B	4.81 ^{bc}
Polaris 2A	4.93 ^c

Table 8 One-way ANOVA result for significant difference in the awareness on basic principles in life-saving techniques when classified according to section.

Sources of variation	SS	df	MS	F	Sig.
Between groups	16.527	7	2.361		
Within groups	65.907	282	0.234	10.102*	0.000
Total	82.434	289			

Asterisk (*) means significant at 0.05 level of probability.

Table 9 Scheffe result for the comparison of means in the awareness about basic principles in life-saving when classified according to section.

Section	Mean
Enif	4.06 ^a
Diphda	4.12 ^a
Jupiter	4.30 ^{ab}
Betelgeuse	4.40 ^{ab}
Eltanin	4.43 ^{ab}
Polaris 2B	4.44 ^{abc}
Bellatrix	4.59 ^{bc}
Polaris 2A	4.86 ^c

Table 8 shows that there is a significant difference in the awareness of the basic principles of life-saving when respondents were classified according to section, $F(7, 282) = 10.102, p = 0.000$.

Table 9 reveals that Polaris 2A, Bellatrix, and Polaris 2B and Bellatrix obtained significantly higher mean scores in their level of awareness compared with the other five sections who participated in the study. Superscript letters (a and/or b) represent if there is or no significant difference as a way to explain the post hoc test.

4. Conclusions

The “Very High” level of knowledge about various life-saving techniques among the second year BSMT students simply denotes that students are very much equipped with the necessary information, concepts and theoretical foundation in life-saving provided by the instructors. The “High” level of awareness on the basic principles of life saving clearly suggests that students are familiar with the procedures of life saving, how to choose the most appropriate technique under the given circumstance and the precautionary measures to be observed in the event of water rescue. The significant difference in the students’ knowledge when respondents were classified according to section implies that although the entire group can be considered exceedingly knowledgeable about the various life-saving techniques, students belonging to higher sections were observed to have better mean scores than others. The significant difference in the students’ awareness when respondents were classified according to sections implies that despite the high level of awareness of the students as a whole, notable variations could be observed showing that higher sections still outranked the middle and lower sections in their mean scores.

5. Recommendations

The school must sustain the students’ commendable knowledge in life-saving by continuously providing

the students with quality education they deserve through innovative teaching strategies and with the use of Instructional Guide in PE 2. Further studies about the students’ practical skills in the conduct of water rescue should also be conducted. PE instructors may conduct a study to identify the training needs of students in relation to swimming and life-saving.

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