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DROWING CAUSES ON GUARDED SWIMMING BASINS IN POLAND. EXPERIMENTAL APPROACH

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ABSTRACT

This study aimed to identify the factors that may prevent an early response to a drowning episode and the lifeguard perceptions about the critical signs possessed by a drowning victim. Study 1: The level of lifeguard surveillance (n=29) was video recorded prior-, during- and after two simulated drowning episodes that occurred in 7 Polish aquatic facilities. Study 2: A survey assessed the lifeguards' perceptions about the critical signs they would expect from a drowning victim to be alerted (n=236) and the criterion $\chi 2$ was used. Results: The sampled lifeguards were not able to perform effective surveillance of bathing pools because they were unable to identify the simulated victims due to failure in maintaining an organized scanning strategy and because they were placed at the shallow side instead of being spread around the pool. Water safety organizations need to undertake major updates in their manuals and education. Aquatic facilities need to introduce daily operating procedures that would involve weekly staff training, frequent lifeguard rotations, application of various models and continuous professional development. Finally, the aquatic facilities patrons should not depend their safety only on lifeguards.
Keywords: surveillance; lifeguarding; lifesaving; drowning; water safety.

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INTRODUCTION

Drowning is a leading cause of death and one of the solutions that have been suggested to cope with it is to swim in areas that maintain effective lifeguard surveillance. More precisely injury epidemiology data from all around the world confirm that the burden of drowning is a serious health and social problem worldwide [1,2,3,4,5,6]. A considerable proportion of these drowning episodes could have been avoided if aquatic activities were undertaken under effective lifeguard surveillance [7,8,9]. For example, some publications reveal that the possibility of having a drowning death within areas supervised by specific lifeguard services is very rare [10].

To be able to achieve high standards of surveillance numerous techniques have been developed and applied in the lifeguard industry. For example the *Protection Rule 10/20*, was introduced to serve as a tool for both lifeguards and their supervisors. According to this Rule, lifeguards scan every 10 seconds their designated aquatic zone and have 20 seconds for responding to an aquatic emergency [11]. At the same time, their supervisors can easily observe whether the lifeguards maintain a conscious and standardized way of visual surveillance. Although this technique has been criticized for its practical weaknesses to achieve its real goals (i.e. to detect the victim within 10 seconds), however it is still considered as a valuable tool against the drowning battle when combined with other techniques [12]. Similarly, the *Protection Rule 30/120*, suggested a similar 30 seconds scan of the water allowing a 120 seconds time for rescue intervention in larger bodies of water (i.e. coastal areas and inland water; [8]. In addition, the *5-Minutes Scanning Strategy*, suggested that lifeguards should make changes in their position, scanning patterns, and mental rehearsals of potentially dangerous situations every five minutes [9] to cope with the common symptoms of the lifeguard duty (e.g., fatigue, monotony, stress, noise, boredom, and poor visibility due to water reflection from splashing; [13,14,15,16]. Moreover, some companies have even designed intelligent devices that detect the submerged drowning victims acting as the lifeguard's third eye [17,18,19], but their weakness is the low availability due to their relatively high installation cost. Therefore, the responsibility of detecting a drowning victim was, is and will continue to be a major responsibility of the lifeguard on duty.

Despite the above efforts to arm the lifeguards with the necessary techniques they often fail to remain vigilant at a desired level and thus are unable to notice a drowning victim. Precisely, the limited research that is available in the lifeguard field, has shown that regardless of whether the lifeguards scan the water, often are unable to identify a drowning person. For example, in a study that assessed 500 lifeguards in more than 90 U.S. pools, it was found that although they maintained a quality 10/20 rule scanning, they were able to identify the simulated drowning victim (i.e. a manikin) that had been placed underwater in average of 74 seconds after the actual submersion. Lifeguards noted the presence of the manikin within 10 seconds on only 46 occasions (i.e., 9% of the tests; [14]. Similarly, others reported that lifeguards were only occasionally effectively vigilant (e.g., n=34, 19, 38.2%; n=41, 6, 14.6%; [20]. Finally another study showed that simulated drowning lifeguard audits appear to offer a useful strategy to improve lifeguard surveillance and decrease swimmer risk-taking at public swimming pools (n=14 USA swimming pools; [21] underlying indirectly the importance of effective vigilance during the scanning process.

The consideration of the above alarming problem raises several questions. What factors may cause a lifeguard delay in identifying and responding to a drowning incident? Are qualified professional lifeguards able to achieve an early response to a simulated drowning episode offering thus an estimated of what could possible happen in a real emergency situation? Does lifeguard perception about how a drowning victim looks like help them identify those in distress?

Answering to these questions will be essential in terms of water safety effectiveness for a number of reasons. First of all, we will be able to identify the causes that might trigger avoidable delays currently present in terms of drowning prevention, rescue and treatment. In other words, we will be able to have a pre-, in- and post-event intervention to the drowning problem. Consequently, this will allow us to prevent several avoidable social, financial, legal and health related negative consequences (e.g., post traumatic stress disorder for the rescuer or the victim, lawsuits, costs of hospitalizing casualties, divorces, and death; [22,23,24,25, 26,27,28]. In addition, this will allow water safety organizations, aquatic facility operators and lifeguards to provide a more meaningful and effective services to the general public, meeting thus the scope of their obligation in the society. Therefore, the aim of the present study was to analyze a sample of lifeguards in terms of vigilance effectiveness, to identify the factors that may prevent an early response to a drowning episode, and to assess their perception about the expected critical signs possessed by drowning victims.

METHOD

Consideration of the debate about different paradigms [29-33], their strengths and limitations [34,35], led to the decision to undertake a mixed-methods approach consisting of two studies [35]. The first involved the statistical analysis of the variables that involved in two simulated drowning episodes that were undertaken and video recorded in several aquatic locations to unaware qualified lifeguards that were on duty (n=29). The second involved the statistical analysis of a survey that was undertaken by a number of qualified lifeguards (n=236). Participants of both samples worked as lifeguards in Poland. Ethical approval was obtained by the Bioethical Board of the Medical Academy in Poland to conduct both studies.

STUDY 1

PARTICIPANTS

A convenient sampling method [36] obtained 7 aquatic locations, in which the vigilance of 29 lifeguards (males=23, mean age= 26,1, SD= 11.6; females=6, mean age=20, SD=2.1) was tested. The participants were qualified by the Polish national organization, Imperial Lifeguards Association, and worked as professional lifeguards in various aquatic facilities. Drowning victims were simulated by the same

adult male and a 10-years old child for all examined participants (Table 1).

INSTRUMENTATION

Several instruments were used throughout the research process. A video camcorder was used to video record the simulated drowning incident and the lifeguard response during the incident (JVC GR-D23E digital video camera). A stopwatch was used to record a predetermined 45-minutes period that was considered to be a long enough time frame for observing various responses and collecting a number of data in relation to lifeguard performance while on duty (e.g., level of scanning, potential intrusion to other activities outside the lifeguard profession, ability of early response etc).

PROCEDURE

The chosen testing method was inspired by previous scholarly work [13,14]. The test consisted in immersing a human being dummy on the bottom of the pool and starting a stopwatch which was measuring the time elapsed from the immersing the dummy till the moment of starting the rescue operation [37,38]. All examined aquatic environments were life-guarded. The test was carried out when lifeguards were on duty and bathing by clients was allowed and indicated with a white flag. Lifeguards primarily were not informed about the test. A hidden amateur camcorder was used to record for a 45-minute period the activities of the lifeguard(s) on duty at all examined aquatic environments, and at the same time a simulated drowning episode to see how they would respond to this episode.

The experiment included trials of two simulated drowning episodes of an unconscious adult and a conscious child victim. The drowning victim pretenders swam for a few minutes and then immersed. The submersion location was at various distances of 5-15 meters from the lifeguard(s) on duty depending on the sort of the dimensions of the aquatic facilities where the tests were undertaken. In terms of acting, the adult simulated an unconscious victim, without any external signs of calling out for help (i.e. shouting, waving the hands and posing facial expressions). He then submerged under the water staying still on the bottom of the pool for over a minute. To be able to submerge, he was wearing a number of scuba diving type weights that were hidden around his waist below his swimwear. Although this contradicted with the typical belief on how drowning victims look like that is portrayed in lifeguard text books [39,40], however, it corresponded with the findings of more well established research findings and observations that confirmed that a drowning victim is not capable of making efforts to shout for help because breathing is a more urgent priority at the moment of immersion for non-swimmers [41-46]. Similarly, the acting of the child victim was consisted in simulation of uncoordinated, mortal moves of arms over the water surface with a tilted head by 10-year-old boy [42]. After a 30-40 seconds immersion, the child submerged and stayed under the water surface for a few seconds. Below the water surface, both victims maintained a standardized body position at the bottom of the aquatic environment in all incidents. To be more precise, they were face down to the bottom, with their arms stretched, legs staying apart whereas their body was flabby and bent at the spine. This position corresponded with descriptions of how a drowning victim looks like given by several related sources (e.g., forensic experts and water rescue specialists; [17,47].

After the completion of the video recording the audio-visual files were stored in a computer, visually observed. This observation generated variables that corresponded to those reported in the international lifeguard related literature that contribute to lifeguard effectiveness or emerged for first time in the recorded videos. Information that was retrieved from the survey, was entered into a spreadsheet MS Excel, and then imported into the statistical program STATA 9.1 A qualitative approach was followed for discussing the findings.

STUDY 2

PARTICIPANTS

A criterion sampling method [36] obtained a sample of people (n=236, males=203, mean age= 26.1, SD=8.5; females=33, mean age= 23.9, SD=4.3). All participants were qualified by the Polish national organization, Imperial Lifeguards Association, and had worked as professional lifeguards in various aquatic facilities.

APPARATUS AND PROCEDURES

An information sheet was distributed to potential participants prior to the interview explaining the nature and objectives of the study and informed consent was obtained [48]. The survey questions were conducted using a structured schedule, which assessed the perception of how a drowning victim may look like depending on the lifeguards' working experience. Confidentiality and anonymity were maintained throughout, and individuals were not identifiable from the raw data [36]. The results were subject to statistical analysis. Information that was retrieved from the survey, was entered into a spreadsheet MS Excel, and then imported into the statistical program StatisticaPL [49,50]. The selection of statistical method was based on literature [51,52]. The analyzed variables were expressed in a nomilal scale, using the statistics of chi-square ($\chi 2$; [53]).

RESULTS

Results of the present research include sets of data of the two studies. The first study employed a number of video-recorded simulated drowning episodes (n=29) and the second surveyed a higher number of lifeguards to identify their perception about the critical signs that they would expect to note on a drowning victim to realize the occurrence of a drowning emergency situation and act accordingly (n=236).

In the first study we examined the reaction of the lifeguards on two specific and separate adult and child victim simulated drowning episodes. Twenty three of them were males aged 18-74 years old, mainly 18-21 years old (16 people) and one person was older than 34 years old. In terms of location and nature of the aquatic environment, most drowning simulations occurred at Wielum (8, 28%), Krotoszyn (5, 17%) and Miedzyzdroje (6, 21%) in outdoor swimming pools (8, 28%) and lakes

(7, 24%; Table 2 and 3). In terms of time, most drownings were simulated during the time frame of 16:00-18:00 for both the adult and child episodes (33, 57%; Table 4). In terms of dimension of the aquatic environment, each lifeguard was presumably responsible for supervising in most cases about 445m2 of aquatic area (8, 28%; tables 5 and 6). In terms of the level of education, most of those on duty were qualified lifeguards (i.e., 27, 93%) whereas only two were either qualified senior lifeguard or instructor (Table 7). In terms of depth, most drowning episodes were simulated at waters areas up to 1.70m deep for both victims (43, 74%; Table 8) and only a few of them in deeper water (Figure 1). In most occasions, lifeguards were positioned at the same place (41, 71%) instead of being spread around at the aquatic bathing location to maintain a more quality visual surveillance (Table 9). Similarly, only a limited percentage of them was looking at the water visually observing the bathers at all times (16, 28%) whereas most of them looked sometimes (24, 41%) and others never at the water and the bathers (18, 31%; Table 10; Figure 2). More specifically, within the time frame of the video-recorded 45 minutes that the quality of lifeguard surveillance was placed under the microscope of this research, lifeguards observed the water as opposed of participating in activities outside of their profession only occassionally in both drowning simulated episodes. During the rest time they were engaged in activities such as eating, talking together, filling in forms, swimming and talking to mobile phones (Figure 3). Finally, in terms of drowning prevention theory and model, it was shown that no one noticed the victim neither maintained any of the recommended in the literature scanning strategies (e.g., the Protection Rule 10/120 the Protection Rule 30/120, the 5-min Scanning Strategy).

In the second study we examined the perception of the lifeguards. Most surveyed participants had worked only a few weeks as lifeguards (males=66, 32.5%; females=17, 51.5%; Table 11). This working experience had been obtained in various aquatic locations but mainly in lakes (females 16, 48.5%; males 88, 43.3%) and water parks (females 14, 42.4%; males 82, 40.4%; Table 11).

When lifeguards were asked what they believed that the critical signs of a drowning victim would be, they described four possible behaviors (Table 12). They said that the victim would lift the arms above the water, move to shore and shout for help ($\chi 2$ =22.04). The second description that was given was with a victim drifting in the water without shouting for help and maintaining the head titled back with a vertical position ($\chi 2$ =30.48). The third description they gave was that of a victim splashing the water, being panicked and shouting for help ($\chi 2$ =5.39) and the forth description was that the victim would have uncoordinated shoulder movements shouting for help loudly ($\chi 2$ = 16.63).

DISCUSSION

The aim of the present research was to identify the contributing characteristics that synthesize the lifeguard vigilance through assessment of a sample of lifeguards that worked in various aquatic locations where two simulated drowning episodes were obtained. In addition this research aimed to identify the lifeguards' perception about how a drowning victim may look like and thus, what they would expect to see for realizing a drowning episode and act accordingly. As a result of this multiple method approach, we revealed several findings that need to be discussed.

The first and most discouraging message of this study was that the sampled Polish lifeguards had no knowledge or skills to conduct quality patron surveillance. This finding corresponded with previous related research [54]. Indeed, visual observation of the video recordings that were captured in the first study revealed that none of the sampled lifeguards maintained any of the recommended scanning strategies (i.e. the protection rule 10/20, the 5-min scanning strategy etc) to keep them alert and vigilant. This inevitably led the majority of them to appear symptoms of fatigue, boredom and distraction from the lifeguard duties especially those that were filmed on a later stage of their shift (i.e., 14:00-16:00).

Secondly, lifeguards were unable to identify the critical signs of drowning. In the first study, visual observation of the videos revealed that this was because they were practically engaged in activities outside their lifeguard role (e.g., eating, talking to each other, filling in forms, talking to mobile phones etc) and because they were placed all together instead of dividing the aquatic area into zones and being responsible for all of them. Such finding corresponds with previous research that showed that lifeguards were only occasionally effectively vigilant [20]. This may indicate a lack of foundation knowledge (e.g., how the aquatic area is divided into zones, how the water is scanned etc) or lack of standard operating procedures in those aquatic environments that would otherwise had to have provisions in place for guaranteeing a higher level of vigilance (e.g., professional rotation every 20-30 minutes, observation of the lifeguards by a head lifeguard or supervisor etc; [15,55]. In the second study, this was because most of them had a false impression about what they would expect from a drowning victim to be alarmed. This may indicate that they never came across a real incident neither had the opportunity to be involved in lifeguard audits that improve lifeguard surveillance and develop a quality work ethic [21]. Indeed, given that most of the lifeguards sampled in the second study reported that they had only a few weeks of work experience, this allows the assumption that they did not have the opportunity to come across a serious incident that would inevitably have made them more cautious. Also it may indicate that their training at the first place from the organization that qualified them was outdated or did not emphasize about how they would expect a drowning victim to behave.

The sampled lifeguards of the first study were positioned at the same places of the aquatic environment while on duty. Instead of being spread around the pool and remain at the deep water where drowning is more possible to take place, they were positioned mostly in shallow water (e.g., in water depth up to 1.70m). One explanation could be that this was done because most swimmers were placed at the shallow. However, a close visual observation of the videos showed the opposite; the bathers could not possibly be accumulated at the shallow end because the swimming areas were using lane ropes that prevented this. Those staying at shallow would only touch the wall and continue swimming up and down in laps. Therefore, the aquatic location did not show any particular needs for extra lifeguard surveillance at one place (i.e., at the shallow end) and less at another one (i.e., at the deep end). This may draw the conclusion that lifeguards were standing together to socialize instead to observe the patrons.

The lifeguards of the first study failed to

recognize the instictive drowning response and the subsequent submersion of the drowning victims in all simulated episodes. Considering that lifeguards failed to identify all the 29 simulated drownings, was a very alarming finding. So far, previous research that involved manikin simulated drownings in USA reported the average response time of 74 seconds that was considered delayed for identifying the drowning manikins at the bottom of the pool [14]. In our study, none of the lifeguards was able to identify the victims even delayed while they were immersed at the water surface neither when they submerged. This indicates that those sampled presently may be poorly prepared at the first place for identifying drowning victims.

In terms of water safety education the findings of this study could be summarized in the sentence "I will die before you stop talking". Authors felt that the creation of a poster that would deliver this message (Figure 4) would be easy to understand means of education for multiple recipients (i.e., general public, lifeguards and lifeguard organizations). Moreover, it is hoped that this "silent" way of education, will act as a vibrant way of making everyone involved in the water safety equation more aware and conscious about the potential dangers and threats.

This research was subject to a number of limitations. The first limitation was that given the nature and the size of the sample of the first study (i.e. small and convenient) that involved video recorded simulated drowning, we are not able to achieve integrations of the findings. Secondly, a potentially higher number of variables that may be related to the lack of lifeguard vigilance may have been neglected and therefore not assessed (e.g., the level and quality of training that those lifeguards received at the first place and partially determines their attitude while on duty, the work ethic of the aquatic facility, the presence of written operating procedures and a head lifeguard, possible symptoms of fatigue or other problems that may have caused lifeguards behave in such a way etc.; [15,20,28,56]. Thirdly, lifeguards were video-recorded in the first study in different times during their duty, and thus, this may have affected their level of vigilance due to fatigue.

Despite its limitations the present research had some essential implications to a number of diverse people such as lifesaving organizations, lifeguards, aquatic facility operators, bathers and their relatives [57,58]. This study demonstrated, if not an urgent need, at least a warning for manual updating in terms of content. For example, the training lifeguard manuals should be written and illustrated based on the contemporary research findings about scanning techniques (e.g., protection rule 10/20, the protection rule 30/120, the recognition of the instinctive drowning response and the factor RID of drowning, the five minutes scanning strategy, the 4 model of drowning, the C-zones, and the application of the Haddon matrix;[8,9,11,41,42,59,60]. All these will provide a more comprehensive and quality level of teaching and preparedness for those wishing to work as lifeguards or conduct comprehensive social education actions in the field [61]. In addition, this study showed a clear need for establishing interventions that will guarantee higher standards of lifeguard vigilance. This may include effective supervision of those supervising the bathers by a head lifeguard or the assistant manager of the aquatic facility [55] as well as the introduction of written operating procedures that will determine rules that will enhance the lifeguard quality and performance (e.g., site specific training before the beginning of the employment, regular staff training, mock incidents in the form of simulated lifeguard training audits, frequent rotations, and application of the theories that were discussed above for the water safety organizations; [15,21]. Finally, bathers of any age and their relatives need to be aware (possibly through a wide-spread social education via schools, universities, governing institutions, facilities, mass media etc.), that lifeguard supervision cannot by itself provide immunity from drowning, and therefore, additional responsibility and water safety awareness is needed by everyone visiting an aquatic facility for swimming, especially from those accompanying young children (i.e. parents, guardians, school teachers etc; see [62,63].

CONCLUSIONS

In conclusion, authors found the results of this study very concerning. The sampled lifeguards were unable to identify the simulated drowning victims due to failure in maintaining an organized and conscious work ethic, scanning strategy and because they were placed at the shallow side of the pool instead of being spread around the pool with emphasis in the deep water where drowning was most likely to take place. In relation to water safety organizations, the study demonstrated clearly the need for major updates in the lifeguard manual contents and education. In terms of organizing safer aquatic facilities, this study revealed the need for introducing daily quality operating procedures that would involve weekly staff training, frequent lifeguard rotations in a professional manner, the application of various theories and models currently suggested and the continuous professional development of everyone working in lifeguard settings. In relation to the general public, it was shown that aquatic facilities patrons should not depend their water safety exclusively on lifeguards.

Tab. 1

Demographic characteristics of the aquatic facilities where the study was undertaken, the lifeguards (n=29).

Aquatic Environment (location)	Number and Gender of Lifeguards	Age in years	Lifesaving Qualification
Indoor swimming pool (Kalisz)	1 M	26	Lifeguard (1)
Indoor swimming pool (Poznań)	1 M, 1 F	24, 31	Lifeguard (2)
Outdoor swimming pool (Wieluń)	6 M, 2 F	19-32	Lifeguard (8)
Waterpark (Krotoszyn)	3 M, 2 F	19-34	Lifeguard (5)
Lake (Gołuchów)	5 M	21-74	Lifeguard (4) Instructor (1)
Lake (Pilchowice)	2 M	21, 27	Lifeguard (2)
Sea (Międzyzdroje)	5 M, 1F	18-30	Lifeguard (5) Senior lifeguard (1)

Note. M=male, F=female.

Tab. 2:

Area of the study.

Area	**No of Lifeguards**
Kalisz	1
Poznan	2
Wielun	8
Krotoszyn	5
Goluchow	5
Pilchowice	2
Miedzyzdroje	6
Total	29

Tab. 3

Aquatic environment of the study.

Aquatic Environment	**No of Lifeguards**
Indoor swimming pool	3
Outdoor swimming pool	8
Water park	5
Lake	7
Sea	6
Total	29

Tab. 4

Recording time of the study by age category of victim (adult, child).

Recording time	Age Category of the Victim		
	Adult	Child	Total
10:00-12:00	2	2	4
12:00-14:00	1	8	9
14:00-16:00	7	5	12
16:00-18:00	19	14	33
Total	29	29	58

Tab. 5

Dimension of aquatic environment.

Dimension of Aquatic Environment	No of Lifeguards
313	1
475	5
620	2
1000	2
2500	5
3558	8
10000	6
Total	29

Tab. 6

Specific length of area supervised by each lifeguard (m^2).

Specific Length of Area Supervised by each Lifeguard (m^2)	No of Lifeguards
95	5
310	2
313	1
445	8
500	7
1667	6
Total	29

Tab. 7

Lifeguards qualification.

Qualification	No of Lifeguards
Lifeguard	27
Senior Lifeguard	1
Lifeguard Instructor	1
Total	29

Tab. 8

Water depth of victim submersion by age category of victim (adult, child).

Water Depth of Victim Submersion	Age Category of the Victim		
	Adult	Child	Total
150	6	8	14
160	13	5	18
170	0	11	11
180	3	1	4
190	5	0	5
205	2	2	4
220	0	2	2
Total	29	29	58

Tab. 9

Lifeguards were positioned around the pool by age category of victim (adult, child).

Lifeguards Positioned around the Pool	Age Category of the Victim		
	Adult	Child	Total
No	20	21	41
Yes	8	7	15
Sometimes	1	1	2
Total	29	29	58

Tab. 10

Lifeguards looked at the water all times by age category of victim (adult, child).

Lifeguards looked at the Water all Times	**Age Category of the Victim**		
	Adult	Child	Total
No	7	11	18
Yes	12	4	16
Sometimes	10	14	24
Total	29	29	58

Tab. 11

Table contains the responses of the sampled professional lifeguards in terms of working experience and aquatic location of employment (n=236).

Variable	**Female (n=33, 14%)**	**Male (n=203, 86%)**
Age (18-71) ($\bar{\times}$)	24	26.1
Lifeguard working experience		
I haven't work	8 (24.2%)	19 (9.4%)
A few weeks	17 (51.5%)	66 (32.5%)
A few months	4 (12.1%)	34 (16.7%)
A few seasons	3 (9.1%)	21 (10.3%)
A few years	1 (3%)	63 (31%)
Aquatic environment where employment as a lifeguard took place		
Sea	7 (21.2%)	71 (35%)
Lake	16 (48.5%)	88 (43.3%)
River	-	1 (0.5%)
Water park	14 (42.4%)	82 (40.4%)
Other	-	11 (5.4%)

Tab. 12

Lifeguard perception of how conscious drowning victims behave in relation with their duration of working experience (n=236).

Lifeguard Working Experience	Lifeguard Perception about Drowning Victim Behavior									
	Lifting the arms above the water, moving to shore, shouting for help		Drifting in the water, head tilted back, vertical position, no shouting for help		Splashing, panic, shouting for help		Uncoordinated shoulder movements, loud shouting for help		Other	
	*m	**d m	m	d m	m	d m	m	d m	m	d m
Very short	31%	14%	0%	19%	20%	11%	10%	22%	0%	17%
Short	51%	27%	15%	33%	32%	29%	29%	32%	0%	32%
Average	6%	20%	9%	20%	15%	23%	16%	20%	11%	19%
Long	11%	21%	42%	16%	19%	22%	22%	18%	22%	20%
Very long	0%	17%	33%	11%	13%	16%	23%	8%	67%	12%
χ^2	22,04		30,48		5,39		16,63		22,46	
position of importance	0,000		0,000		No important		0,002		0,000	

Note. *noted, **didn't note. Multiple responses were allowed for all questions because lifeguards many worked in various aquatic facilities during their career. Very short= 0-3 weeks; short= 4-10 weeks, average = 11-29 weeks; long= 30-100 weeks; very long= more than 100 weeks.

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