Knowledge, Attitudes and Practices of Parents in an Urban Coastal Community on Preventing Childhood Drowning

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ABSTRACT

Objective. To describe the knowledge, attitudes and practices of parents in an urban coastal community on drowning prevention.

Methods. A descriptive cross-sectional study design was used in the study. Systematic random sampling was used and 431 parents were included as respondents in the study. A questionnaire that was developed and pre-tested was used to determine the knowledge, attitudes and practices on drowning prevention among parents in households with at least one child.

Results. The respondents' knowledge on general aspects of drowning such as its preventability and to whom and where it could happen seems to be sufficient (67-99%). Awareness of drowning prevention programs and activities in the barangay is quite low, and awareness of any legislation is even lower. The respondents seem to have positive attitudes toward supervising children while swimming or playing in high risk areas, in buying and wearing flotation devices, and participating in drowning prevention measures. Although 60 % claimed to have supervised their children while swimming in the sea, river, lake or swimming pools, more respondents (67 % - 88%) had admitted that their children had never worn flotation devices when they swim or play in most bodies of water. More than 93% of the parents have not participated in any program or activity on drowning prevention.

Conclusions. The study seems to show that, in the surveyed coastal community, there is a high level of knowledge in terms of the general aspects of drowning and there are positive attitudes in terms of measures and activities to prevent drowning. However, this has not translated to similarly appropriate levels of drowning prevention practices.

Key Words: childhood drowning; knowledge, attitude and practices; drowning prevention

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Introduction

Water makes up almost 70% - 80% of a person's body and of the earth's surface as well. This is proof of its importance for man's survival. People's fascination and attraction to water has also made it one of the most popular sources of recreation, play and fun. It has become a venue for bonding with family and friends.

The situation is no different for adults as it is for children. Water touches every aspect of children's lives. They need it to grow, they are comforted by it, and they are cleaned and cooled by water. Water to most children means fun, recreation and adventure. Water, though, can be dangerous as children can actually drown in just a few centimeters of water at the bottom of a bucket, in the bath tub or in manholes.[1]

A number of injury-related outcomes may arise through the recreational use of water and its adjacent areas. Prominent among these are drowning and near-drowning; major impact injuries including spinal injuries resulting in various degrees of paraplegia and quadriplegia; and head injuries resulting in concussion, brain injury and loss of memory and motor skills; fall injuries including fractures and dislocations resulting in temporary or permanent disability; facial injuries resulting in jaw dislocation; scarring; and abrasions; cuts, lesions and punctures.

Drowning is the process of experiencing respiratory impairment from submersion/immersion in liquid.[2] According to the World Report on Child Injury Prevention (2008), approximately 175,000 children and youth under 20 years old around the world died as a result of drowning in 2004. An overwhelming majority (98%) of these deaths occurred in low-income and middle-income countries.[1] In South and East Asia, the recent community surveys done in five countries (Bangladesh, China, Philippines, Thailand and Vietnam) revealed that the death rate in these five countries was 30 per 100, 000 population.[3] In the Philippines, drowning is also a leading cause of child injury and death. Based on the Philippine National Injury Survey done in 2003, the fatal injury rate in childhood (0-17 years) was 58.9/100,000 children and the leading cause was drowning. For children after infancy (1-17 years old) drowning was the leading cause of mortality with a rate of 9.8/100,000.[4]

The Philippines' unique geographical and climatic conditions pose a risk for drowning. Being an archipelago, it is surrounded by bodies of water. There are cities and municipalities that lie along coastal areas where residents depend on water for their livelihood either by harvesting the bounties of the sea or as a tourist / recreational destination. Likewise, lack of implementation of laws related to water safety especially those related to local sea travel has contributed to the rising number of those who drown. While statistical data indicate that drowning is considered a health problem in the Philippines, there is very little literature on the topic. To date, although there are several policies on injury prevention, there is a lack of a comprehensive drowning prevention program for children that will address this problem. In developing such a program, the parents would be an important target group. Results of this study may guide program planners in identifying the specific strategies for managing this problem in the pilot community.

This study describes the knowledge, attitudes and practices of parents in an urban coastal community on drowning prevention. Specifically, the study aimed to: (1) describe knowledge of parents in an urban coastal community on the general aspects of drowning; measures to prevent drowning; response efforts in case of drowning; drowning prevention activities in the community; (2) describe attitudes of parents on supervising children while swimming or playing near bodies of water; wearing and buying flotation devices; and participating in drowning prevention activities; (3) describe practices of parents on supervising children while swimming or playing near bodies of water; wearing of flotation device; and participating in drowning prevention activities.

Methods

A descriptive cross-sectional study was conducted in an urban coastal community in Northern Philippines and 431 parents were interviewed using the systematic random sampling design. A questionnaire that was developed and pre-tested was used to determine the knowledge, attitudes and practices on drowning prevention among parents in households with at least one child. Prior to actual data collection, permission was obtained from the City Health Office and Barangay Council, and consent was obtained from the respondents. The purpose of the study was explained and the respondents were assured of their anonymity. Data was collected by trained field personnel from August 23 to October 19, 2009 and analyzed using Epi Info Version 6.

Results

A total of 431 parents, with ages ranging from 19 to 70 years were interviewed. The mean age was 37 years. Majority (78%) of them were females (Table 1).

Table 1. Age and sex distribution of respondents

Age group	Male		Female		Total	
	No.	%	No.	%	No.	%
19-28	15	16.1	78	83.9	93	21.6
29-38	28	18.1	127	81.9	155	36.0
39-48	27	22.7	92	77.3	119	27.6
49-58	16	30.2	37	69.8	53	12.3
59 & above	7	63.6	4	36.4	11	2.6
Total	93	21.6	338	78.4	431	100.0

A. Knowledge on General Aspects of Drowning, Drowning Prevention Measures, Response Efforts and Community Drowning Prevention Activities

General Aspects of Drowning. The respondents' knowledge on general aspects of drowning is high. Almost 80% of them knew that drowning could be prevented. A large majority (75% - 77%) knew that drowning does not only occur among people who go swimming and that even children who are able to swim may still drown. Majority also knew that a child may drown in different bodies of water (Table 2).

Table 2. Knowledge on general aspects of drowning

General Aspects of Drowning	Number with Correct Response (n=431)	Percent
a. Drowning can be prevented (Correct response: True)	342	79.4
b. Only people who go for a swim may drown (Correct response: False)	333	77.3
a. A child who knows how to swim can never drown (Correct response: False).	324	75.2
b. A child may drown in (Correct response: Yes to all):		
Swimming pool	416	96.5
Sea or ocean	428	99.3
River	419	97.2
Canal or ditch	335	77.7
Creek	398	92.3
Well	390	90.5
Pail	297	68.9
Bath tub	305	70.8
Barrel or drum	364	84.5
Septic tank	289	67.1

Measures to Prevent Drowning. More than 93% of the parents said that adult supervision is the best way to prevent drowning among children. When asked to specify measures to prevent drowning in different bodies of water, 'supervision by caregivers or guardians' has also consistently ranked among the top two responses in all the bodies of water (Table 3).

Table 3. Knowledge on measures to prevent drowning among children

Measures to Prevent Drowning Among Children	Number Who Gave the Response (n=431)	Percent
a. Adult supervision is the best way to prevent drowning among children (True)	403	93.5
b. Measures to prevent drowning in swimming pools		
Caregivers/guardians to supervise children	245	56.8
Wear flotation device	36	8.4
Do not go in deep areas	35	8.1
c. Measures to prevent drowning in the sea or ocean		
Caregivers/guardians to supervise children	236	54.8
Do not go in deep areas	43	10
Wear flotation device	31	7.2
d. Measures to prevent drowning in the river		
Caregivers/guardians to supervise children	213	49.4
Do not go in deep areas	42	9.7
Do not bathe	30	7
e. Measures to prevent drowning in canals or ditches		
Caregivers/guardians to supervise children	113	26.2
Provide cover	84	19.5
Place barriers/fence	59	13.7
f. Measures to prevent drowning in creeks		
Caregivers/guardians to supervise children	133	30.9
Place barriers/fence	88	20.4
Place danger/warning signs/devices	46	10.7
g. Measures to prevent drowning in the well		
Cover water receptacles	150	34.8
Caregivers/guardians to supervise children	100	23.2
Do not allow to go near	31	7.2
h. Measures to prevent drowning in pails		
Remove the water	122	28.3
Caregivers/guardians to supervise children	111	25.8
Cover water receptacles	94	21.8
i. Measures to prevent drowning in the bath tub		
Remove the water	162	37.6
Caregivers/guardians to supervise children	128	29.7
Provide cover	39	9
j. Measures to prevent drowning in barrels or drums		
Cover water receptacles	191	44.3
Caregivers/guardians to supervise children	112	26
Remove the water	55	12.8

- From b to j (top three answers only)

Response Efforts in Case of Drowning. More than one third (37%) of the respondents claimed to know what to do if a child in their own household was involved in a drowning incident. Majority of them (52%) said first aid and cardiopulmonary resuscitation (CPR) should be performed (Table 4). However, less than 10% of them admitted to having skills in performing CPR on drowning victims of any age category. Eleven percent (11%) said CPR should be given to a drowning victim within 5 minutes (Table 5). Almost 27% of the parents were aware of a treatment facility for child victims of water immersion. However, only 11% mentioned 'bring to health facility' as a response effort to be done in case a child member of the household drowns (Table 4).

Table 4. Knowledge on response efforts in case of drowning

Response Efforts in Case of Drowning	Number	Percent
a. Knows what to do in case a child in own household drowns **(n=431)**	158	36.7
b. Specific response efforts to be done in case a child in own household drowns **(n=158)**:		
Call for help	14	8.9
Administer first aid / CPR	82	51.9
Bring to health facility	17	10.8
Save victim	22	13.9
No information	23	14.6
c. Is aware of a treatment facility for child victims of water immersion **(n=431)**	116	26.9

Table 5. CPR knowledge and skills among household members

CPR Knowledge and Skills	Number	Percent
a. Respondent knows how to perform CPR on (n=431):		
an infant	16	3.7
1-5 yo child	29	6.7
6-10 yo child	32	7.4
11-18 yo child	37	8.6
An adult	40	9.3
b. CPR should be given to a drowning victim within (n=431):		
1 min	9	2.1
5 min	49	11.4
10 min	8	1.9
15 min	2	0.5
30 min	3	0.7
Do not know	360	83.5
c. Respondent is certified to perform CPR (n=431)	6	1.4
d. At least one household member is certified to perform CPR (n=431)	27	6.3
e. At least one household member has attended CPR training (n=431)	58	13.5
f. Source of CPR training/certification (n=58)		
School	11	19.0
Provincial Disaster Coordinating Council	3	5.2
Red Cross	1	1.7
No information	13	22.4
g. CPR Training Obtained Free of Charge (n=58)	8	13.8

About 14% of the households claimed to have at least one member who had attended CPR training, while less than half of this figure (6%) claimed to have one household member who is certified to perform this procedure. Only six (1.4%) of the parents interviewed were able to get their certification to perform CPR. Most of those with CPR certification had obtained it in school (Table 5).

Drowning Prevention Activities in the Community. Only four out of the 431 respondents said they were aware of drowning prevention programs or activities in their

barangay, while three respondents reported to be aware of national or local legislation on drowning prevention. However, detailed information on the said program or legislation were lacking in the responses given. Three respondents were aware of the existence of drowning support groups in the barangay. The barangay health workers were cited as one of the support groups (Table 6).

Table 6. Awareness on drowning prevention programs

Drowning Prevention Programs	Number	Percent
a. Is aware of any drowning prevention programs and activities in own barangay **(n=431)**	4	0.9
b. Specific program/activity that respondent is aware of **(n=4)**:		
Do not go to the sea	1	25.0
No information	3	75.0
c. Is aware of any national or local legislation related to drowning prevention **(n=431)**	3	0.7
d. Specific legislation that respondent is aware of **(n=3)**:		
NDCC	1	33.3
No information	2	66.7
e. Is aware of any drowning support group in own barangay **(n=431)**	3	0.7
f. Name of the drowning support group **(n=3)**		
Barangay Health Worker	1	33.3
Barangay Program	1	33.3
No information	1	33.3

B. Attitudes on Child Supervision, Wearing and Buying Flotation Devices and Participation in Drowning Prevention Activities

Child Supervision. Majority of the respondents (86%) agreed with the statement that parents, relatives or caregivers should watch over their children at all times when swimming in the sea, river, lake or pool and playing near bodies of water, compared to those who disagreed (Table 7). This was validated by the fact that 92% - 93% of the respondents disagreed with the statement that children may be allowed to swim without adult supervision in the sea, river, lake or pool or play near bodies of water. Almost 83% of the respondents disagreed that children may be allowed to go swimming without adult supervision if they knew how to swim.

Wearing and Buying Flotation Devices. Majority of the respondents agreed that children should wear flotation devices when riding a water vehicle, swimming in the sea, river, lake or pool (Table 8). About 84% agreed that parents should buy their children flotation devices. In terms of their personal liking to wear a flotation device, about 88% to 89% said they like wearing the device while riding a water vehicle or swimming in different bodies of water.

Participating in Drowning Prevention Activities. Almost all of the respondents expressed willingness to participate in drowning prevention measures such as discussing drowning prevention measures with their children, attending lectures, buying books and reading materials on drowning prevention. However, only a little more than one third (39%) expressed willingness to join a drowning prevention support group in the community (Table 9).

About 65% of the parents agreed to letting their children attend swimming lessons (Table 10). In terms of the medium for spreading information on drowning prevention, majority agreed that both TV and radio should be used. The proportion of parents who agreed that drowning incidents involving their children should be reported to a health facility was about 82%.

Table 7. Attitude on child supervision while swimming or playing near bodies of water

Attitude on Child Supervision While Swimming or Playing Near Bodies of Water (n=431)	Agree		Disagree	
	No.	%	No.	%
a. Parents, relatives or caregivers should watch over their children at all times when:				
Swimming in the sea, river or lake	373	86.5	58	13.5
Swimming in the pool	373	86.5	58	13.5
Playing near bodies of water	369	85.6	62	14.4
b. Children may be allowed to do the following activities without adult supervision:				
Swimming in the sea, river or lake	31	7.2	400	92.8
Swimming in the pool	32	7.4	399	92.6
Playing near bodies of water	34	7.9	397	92.1
c. Children may be allowed to go swimming without adult supervision if they know how to swim.	74	17.2	357	82.8

Table 8. Attitude on wearing and buying flotation devices

Attitude on Wearing and Buying Flotation Devices (n=431)	Agree		Disagree	
	No.	%	No.	%
a. Children should wear flotation device when:				
Riding a water vehicle	426	98.8	3	0.7
Swimming in the sea, river or lake	426	98.8	3	0.7
Swimming in the pool	426	98.8	3	0.7
b. Parents should buy flotation device for their children.	363	84.2	67	15.5
c. I like wearing a flotation device when:				
Riding a water vehicle	380	88.2	47	10.9
Swimming in the sea, river or lake	383	88.9	44	10.2
Swimming in the pool	382	88.6	46	10.7
d. Adults should wear flotation device when:				
Riding a water vehicle	425	98.6	4	0.9
Swimming in the sea, river or lake	423	98.1	6	1.4
Swimming in the pool	423	98.1	6	1.4

Table 9. Attitude on participating in drowning prevention measures

Attitude on Participating in Drowning Prevention Measures (n=431)	Agree		Disagree	
	No.	%	No.	%
a. I am willing to discuss drowning prevention measures with the children in my household	429	99.5	0	0.0
b. I will am willing to attend a lecture on drowning prevention.	431	100.0	0	0.0
c. I am willing to buy a book on drowning prevention.	431	100.0	0	0.0
d. I would love to read a material on drowning prevention.	431	100.0	0	0.0
e. I will join a drowning prevention support group in my community	169	39.2	261	60.6

Table 10. Attitude on other drowning prevention measures

Attitude on Other Drowning Prevention Measures (n=431)	Agree		Disagree	
	No.	%	No.	%
a. I will let my child attend swimming lessons	282	65.4	149	34.6
b. There should be a TV commercial on drowning prevention.	398	92.3	32	7.4
c. There should be a radio commercial on drowning prevention.	373	86.5	58	13.5
d. Drowning or near-drowning incidents involving children in my household should be reported to a health facility.	353	81.9	78	18.1

C. Practices on Child Supervision, Wearing of Flotation Devices and Participation in Drowning Prevention Activities

Child Supervision. Among households where the children have ever gone swimming in the sea, river, or lake, and swimming pools, majority (55-58%) of the parents claimed that they have always supervised their children. There were also more parents who always or often supervise their children while playing in the sea, river or lake (54%), than those who have never done it (27%).

However, almost all of the parents whose children have ever played near an open well (4 out of 5) or manhole (11 out of 13) never supervised their children (Table 11).

Wearing of Flotation Devices by Children. More respondents had admitted that their children had never worn flotation devices when they swam (78%) or played (79%) in the sea, river, lake, public or private-for-rent pools (67%) and when riding a water vehicle (88%), than those who said that wearing of such devices were done sometimes, often and always (Table 12).

Participating in Drowning Prevention Activities. More than 93% of the parents have not participated in any program or activity on drowning prevention (Table 13). Examples of programs where some respondents had participated in were safety precaution training by the Red Cross and basic safety training by a private agency.

Table 11. Supervision of children engaged in activities in or near a body of water

Supervision of Children Engaged in:	Never		Sometimes		Often		Always	
	No.	%	No.	%	No.	%	No.	%
a. Swimming in sea, river or lake (n=359)	72	20.1	45	12.5	44	12.3	196	54.6
b. Playing in sea, river or lake (n=266)	71	26.7	48	18.0	23	8.6	121	45.5
c. Swimming in public or private-for-rent pool (n=125)	23	18.4	14	11.2	16	12.8	72	57.6
d. Playing near an open well (n=5)	4	80.0	1	20.0	0	0.0	0	0.0
e. Playing near a manhole (n=13)	11	84.6	2	15.4	0	0.0	0	0.0
f. Playing near a bath tub (n=3)	1	33.3	0	0.0	0	0.0	1	33.3

Table 12. Wearing of flotation device by children while in or near a body of water

Wearing of Flotation Device by Children Engaged in:	Never		Sometimes		Often		Always	
	No.	%	No.	%	No.	%	No.	%
a. Swimming in sea, river or lake (n=359)	280	78.0	31	8.6	10	2.8	36	10.0
b. Playing in sea, river or lake (n=266)	209	78.6	23	8.6	8	3.0	21	7.9
c. Swimming in public or private-for-rent pool (n=125)	84	67.2	15	12.0	3	2.4	21	16.8
d. Riding a water vehicle (n=188)	165	87.8	5	2.7	1	0.5	14	7.4

Table 13. Participation by respondent in drowning prevention program or activity

Details of Participation	Number	Percent
a. Has Participated in Any Program or Activity on Drowning Prevention (n=431)		
Yes	22	5.1
No	402	93.3
No information	7	1.6
b. Type of Program or Activity Participated In (n=22)		
Safety precaution training by Red Cross	5	22.7
Basic safety training by private agency	4	18.2
Other seminar	1	4.6
No information	12	54.5

Discussion

The respondents' knowledge on general aspects of drowning such as its preventability and to whom and where it could happen is reasonably sufficient (67% - 99%). Awareness of drowning prevention programs and activities in the barangay is however quite low, with only 4 of the 431 respondents saying they were aware of any. Awareness of any legislation is even lower with only 3 being aware of any existing legislation on drowning prevention. More than half (52%) of the respondents claimed to know how to perform first aid or CPR, however this could still be improved considering that almost all of them live near the sea and therefore the risk of their children being involved in a drowning incident is quite high. In addition, only 9% admitted that they knew how to perform CPR on an adult victim and less than 10 % knew how to do it for children from various age groups. More than 83% of the respondents were also not able to give information when asked how soon CPR should be given to a drowning victim. Only 14% of them said that there is at least one household member who has attended CPR training, and only 6% said that at least one household member is certified to perform CPR. Most of them mentioned the school as the source of CPR training while less than 2% mentioned the Red Cross. The Red Cross could be tapped as a major source of this training since it is known to provide this service for a minimal fee.

The respondents seem to have positive attitudes toward supervising children while swimming or playing in high risk areas, in buying and wearing flotation devices, and participating in drowning prevention measures. Drowning prevention programs may capitalize on these positive attitudes, and even reinforce them.

It is a common notion that sufficient knowledge and positive attitudes would translate into the recommended behavior. This study, however, demonstrated the fact that this is not always so. While most of the respondents exhibited a sufficient level of knowledge and a positive attitude in terms of drowning prevention measures, they do not always adhere to the advocated behavior. Most notable in this study is the finding that respondents are cognizant of the fact that adult supervision is an effective way of preventing drowning. Attitude with respect to adult supervision of children was also positive. However, the respondents supervised their children to varying degrees. Children who are exposed to open bodies of water are not always supervised by their adult companions (parents or caregivers). This study also revealed that children are more often supervised when they swim compared to when they just play near bodies of water.

The same also holds true with regard to knowledge and attitudes on the use of flotation devices and the actual use of such. While they realize the value of using flotation devices as preventive measures, a small proportion actually uses these devices all the time.

The differences in the extent and frequency of adult supervision and the wearing of flotation devices were also determined, to an extent, by the perceived threat to the safety of their children as determined by their adult companions. Children are seen to be more at-risk when in open bodies of water compared to others. This is why supervision and the use of flotation devices are usually done when children are in seas, rivers or lakes. In terms of activity, the risk of children drowning were perceived to be greater when they are swimming compared to when they are just playing or running near or around open bodies of water. This is why adult supervision and the use of flotation devices are practiced more often when the children are swimming.

This study also highlights the need for supporting mechanisms for drowning prevention. While laws that deal with water safety do exist, only a handful of individuals are aware of them. Likewise, there appears to be a need to emphasize that drowning prevention is a personal responsibility rather than an issue that should be addressed mainly and solely by government or owners of resorts, swimming pools and other bodies of water. Proof of this is the fact that although the respondents were aware of CPR as a measure to save the life of a near-drowning victim, only a small proportion of the respondents actually know how to perform CPR and an even smaller proportion are certified to do so.

Findings of this study also highlighted the importance of a supportive environment. In 2002, the Department of Interior and Local Government (DILG) Memorandum Circular No. 2002–121[5], Revised Guidelines on the Organization and Strengthening of the Local Council for the Protection of Children (LCPC) incorporating thereat Early Childhood Care and Development (ECCD) Coordinating Committees at the Provincial, City, Municipal and Barangay Levels, was implemented and emphasis was on the care, health, protection and development of children. The Department of Health (DOH) of the Philippines through Administrative Order No. 2006-0016 [6] known as the "National Policy and Strategic Framework on Child Injury Prevention" (June 2006) began to build the national program on violence and injury prevention. This policy centered on planning interventions and strategies with five priority areas and drowning is one of these five areas. DOH Administrative Order No. 2007-0010 [7] known as the "National Policy on Violence and Injury Prevention" (March 2007) paved the way for the establishment of a national policy and strategic framework for injury prevention activities for DOH and other government agencies, local government units, non-government organizations, communities and individuals. In addition to provision of policies to strengthen efforts to prevent drowning, there is a also a need to put in place health facilities with basic equipment to administer care to near-drowning victims

including the need to transport them to a higher level facility; infrastructure around bodies of water (e.g. barrier fences, signages, buoys); and strict implementation of existing laws. Capability of the community workers should also be improved. In its effort to thoroughly assess the capacity of communities to provide safe environments, the DOH together with its partner agencies developed the Safe-Settings Assessment Tools[8] and Training Module on the Administration of Safe-Settings Assessment Tools[9] that communities can use in determining if environments where children live, learn and play are safe.

Improving common practices may be more difficult to address, considering the close proximity of the households to open bodies of water. Specific areas for improvement were revealed by the pilot study, such as provision of flotation devices and emphasizing the importance of wearing them among both children and adults; improving opportunity for households to participate in drowning prevention programs and activities in the community; supervising children while playing and not only while swimming in the sea or by the seaside; provision of barriers, signages, life guards and other preventive measures in natural and artificial bodies of water which children frequently go to for swimming and playing.

Conclusions and Recommendations

Based on the findings of this study, the respondents' knowledge on general aspects of drowning such as its preventability and to whom and where it could happen seems reasonably sufficient. The level of awareness of drowning prevention programs and safety-related activities in the community is however, below the ideal. The respondents are very open to the ideas of supervising children while swimming or playing in high risk areas, in buying and wearing flotation devices, and participating in drowning prevention measures. Drowning prevention programs may capitalize on these positive attitudes, and even reinforce them. Practices on child supervision, wearing of flotation devices and participation in water safety awareness activities should be improved given the children's easy access to open water.

In developing a drowning prevention program for the children in the community, the following may be considered:

a. Knowledge on various aspects of drowning prevention among parents and caregivers must be further reinforced and strengthened. Emphasis should be given on those aspects which the parents and caregivers should do, that is supervise children whether they are swimming, playing or just around areas or objects with water. The provision of flotation devices should also be packaged not as the sole responsibility of those who own and operate resorts or pools or even sea vessels but as a responsibility that must be shared by parents and caregivers. The location of health facilities that can manage near-drowning victims should also be made known.
b. Skills on drowning response measures may be improved among parents. The timeliness of delivering first aid and CPR should be emphasized. Awareness on the availability of health care facilities and emergency response teams should also be improved among parents. If needed, the capability of such facilities and teams should also be improved.
c. Different agencies including government, private and non-government involved in drowning prevention and response programs should have increased visibility in the community as it would help create a culture of water safety consciousness in the community.
d. Positive attitudes towards supervising children while swimming or playing in high risk areas, in buying and wearing flotation devices, and participating in drowning prevention measures may be reinforced. This may be done by health promotion programs emphasizing the importance of translating these attitudes to good practices.
e. In terms of practices, specific areas of improvement were revealed by the study such as making flotation devices available for children, emphasizing the importance of wearing flotation devices not only by children but by adults who should set the good example, providing more opportunities for parents and other household members to participate in drowning prevention programs and activities in the community, supervising children both while swimming and playing near bodies of water, and provisions for the availability of barriers, signages and life guards in natural and artificial bodies of water where children frequently go for swimming and playing.

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