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Childhood Drowning Prevention in Palm Beach County

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CHILDHOOD DROWNING PREVENTION IN PALM BEACH COUNTY

CAPSTONE PROJECT

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by

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Abstract

Background: Drowning accidents are devastating, not only in terms of human life, but also in health care costs. The total cost of a single near-drowning resulting in brain injury can be more than $4.5 million (Florida Department of Health, 2010). According to the World Health Organization (2010), coastal drowning in the U.S. alone accounts for $273 million each year in direct and indirect costs, compared to Canada and Australia, whose annual costs are $85.5 million and $173 million, respectively.

The state of Florida, which includes and is surrounded by many bodies of water, fosters the types of environments for these accidents to occur. In addition, the state's beautiful tropical climate prompts the need and desire for swimming pools. These swimming pools increase the risks of childhood drowning. In 2009, the Florida Department of Health (Office of Injury Prevention) identified the top counties in Florida with the highest number of drowning deaths in the 1-4 age groups. Palm Beach County was listed as one of the top counties.

Purpose: The purpose of this project was to raise awareness of childhood drowning in Palm Beach County and develop a preventative program that will aid in reducing the number of deaths caused by this accident using evidenced-based research.

Theoretical Framework: The framework that guided this project was the Health Promotion Model (HPM) proposed by Nola Pender. It defines health as a positive dynamic state, not merely the absence of diseases.

Method: This project utilized purposive convenient sample. For the purpose of this project, there was a maximum of 90 parents/caretakers participating in the project. This

project utilized a pre- and post-test interventional quasi experimental design to assess parents and caretakers' knowledge regarding childhood drowning prevention.

Results: Thirty volunteers were recruited to assess their knowledge about childhood drowning incidents and their knowledge about cardiopulmonary resuscitation (CPR). With the help of a pre-assessment tool, it was discovered that the majority of parents/caretakers living near a body of water in Palm Beach County were lacking knowledge about CPR and childhood drowning preventative measures. 60 qualified volunteers were given a pre-test and a post-test. The statistical results of the pre-test were compared to the statistical results of the post-test. The results demonstrated that the majority of the 60 volunteers showed a significant improvement in the area of knowledge about childhood drowning, its causes, and measures to prevent the incident from occurring.

The mean score for all 60 participants in the pre-test was 8.7 (±3.104), and the mean score in the post test increased to 13.5 (±2.333). The negative mean rank is less than the positive results of the Wilcoxon-Sign Rank test, which revealed that the main purpose of this project, to raise awareness of childhood drowning prevention in parents/guardian of Palm Beach County, Florida and to develop a preventative program that would aid in reducing the number of deaths caused by this type of accident, has been met for this project sample in Palm beach County.

Conclusion: The results of the post-test reflect that, after being educated about ways to prevent drowning incidents; more parents became aware of risks of drowning and how to implement preventative measures in the lives of their children. The knowledge acquired from the drowning prevention program will not only save lives but will also contribute to

the reduction of the astronomical economic burden placed on insurances agencies and government when these deadly drowning incidents occur.

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DEDICATION

I would like to dedicate this manuscript to my two blessings from my heavenly father: my lovely son Eduardo and my beautiful daughter Tiffany. This entire process could not have been possible without your patience, love, and support. Thank you for being the constant motivator that propels me to keep moving forward despite the many challenges that come my way. I love you more than words could ever describe. My love for you makes every fiber of my heart cry out to God, "Thank you for such great blessings!!!"

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CHAPTER ONE

According to the World Health Organization (WHO), drowning is the third leading cause of unintentional injury-related deaths worldwide, accounting for 7% of all injury-related deaths, with an estimated 388,000 annual drowning deaths worldwide. The WHO (2010) defines drowning as the process of experiencing respiratory impairment from submersion/immersion in liquids.

Global statistics may significantly underestimate the actual public health problem related to drowning. Statistics show that children, males, and individuals with increased access to water are most at risk of drowning (WHO, 2010). In 2004, an estimated 388,000 people died from drowning, making it a major public health problem worldwide. Drowning injuries account for nearly 10% of total global mortality (WHO, 2010).

The WHO (2010) reported that childhood drowning is on the rise, and it is affecting many countries around the world. In Australia, drowning is the leading cause of unintentional injury death in children aged 1-3 years. In Bangladesh, drowning accounts for 20% of all deaths in children aged 1-4 years. In China, drowning is the leading cause of injury death in children aged 1-14 years. In the United States of America, drowning is the second leading cause of unintentional injury death in children aged 1-14 years.

The Florida Department of Health (2010) reported that Florida's residents under the age of 10 are most likely to drown in swimming pools, and Florida residents over the age of 10 are most likely to drown in natural bodies of water. In 2007, for children under age 5, 76% of drownings occurred in swimming pools (58), 13% in bathtubs (10), and 10% in a natural bodies of water (8). Outcomes are classified as death, morbidity, and no

morbidity. According to Florida Department of Health (2011), it takes less than five minutes and less than two inches of water for a child to drown.

Using Pender's Health Promotion Model (HPM), this project implemented various strategies to raise awareness and educate the residents of Palm Beach County about the incidence of childhood drowning.

Background of the Project

In 2009, the Office of Injury Prevention (Florida Department of Health, 2009) identified the top counties in Florida with the highest number of drowning deaths in the 1-4 age groups. The top counties were Brevard, Dade, Escambia, Hillsborough, Lee, Orange, Osceola, Palm Beach, and Pinellas. Some of the contributing factors that may increase childhood drowning in Palm Beach County include cultural and language barriers; the environment, or having many bodies of water; socioeconomic problems, which include not having proper resources for education/swimming lessons; and parenting education, including parents underestimating the amount of time and water it takes for a child to drown, leaving infants unsupervised or alone in bathtub, and parents/community not fully understanding the dangers and not being aware of the statistics of drowning in the state of Florida. There were no psychometric properties reported.

Ang (2010) conducted a study aimed at the epidemiology of pediatric near-drowning and drowning victims in Singapore to determine the risk factors that will guide drowning prevention strategies. The study revealed that one of the reasons childhood drowning is on the rise is due to the emphasis that is being placed on leisure and lifestyles. Lifestyle choices are exposing our children more than ever before to

swimming pools and other recreational bodies of water. According to Brenner and Taneja (2010), another reason why toddler drowning is so prevalent is due to toddlers' developmental stage of curiosity and exploration. Their motor skills allow them to access open bodies of water, but, at the same time, they are not cognitively developed enough to understand the risk of submersion. Males tend to exhibit more risk-taking behaviors than females.

The state of Florida, made up of so many bodies of water, provides a high number of locations for these drowning accidents to occur. Statistics show that, unfortunately, childhood drowning in Florida is on the rise. Florida overwhelmingly has the highest unintentional drowning rate in the nation for the 1-4 year old age group in 2010 with a drowning rate of 7.29 per 100,000 populations. Florida also had the highest drowning rate in the nation for the 1-14 age group in 2010 with a drowning rate of 2.67 per 100,000 populations (Florida DOH, 2010). Florida's beautiful tropical climate prompts the need and desire to get into swimming pools and other bodies of water to reduce body temperatures during the hot summer months. These swimming pools and other bodies of water increase the risks of childhood drowning.

The scope of the problem is that Florida loses more children under age 5 to drowning than any other state (Florida Department of Health, 2011). The Florida Department of Health (2011) recorded that annually, in Florida, enough children to fill three to four preschool classrooms drown and do not live to see their fifth birthdays. This figure was obtained by evaluating the death certificate data from 2005, which also showed that the overall number of drowning deaths in Florida increased from 2004. There was an increase in the total drowning deaths for the 1-4 age groups, from 66 in 2004, to 75 in 2005. Near-drowning accidents for 2005 increased to 227 from 222 in

2004. Initial 2006 death certificate data showed that the drowning deaths for the 0-4 age group for the period from January to October was 72, compared to 67 deaths for the same time period in 2005 (Florida Department of Health, 2010).

The Centers for Disease Control and Prevention (2010) reported that drowning is the leading cause of unintentional death among children in the 1-4 age groups. Three children die every day as result of drowning. Florida's drowning death rate among children aged five is the highest in the nation. In Florida, drowning happens year round; however, most fatal and non-fatal drowning occurs in the spring and summer (Florida Department of Health, 2010).

Drowning accidents are devastating not only in terms of human life but also in terms of health care costs. According to Florida Department of Health (2010), the total cost of a single near-drowning that results in a brain injury can be more than $4.5 million. For every near-drowning prevented, the typical medical costs for a near-drowning victim can range from $75,000 for initial treatment to $180,000 a year for long-term care (Florida Department of Health, 2010). According to the WHO (2010), coastal drowning in the U.S. alone accounts for $273 million each year in direct and indirect health care costs, compared to Canada and Australia, whose annual costs are $85.5 million and $173 million, respectively.

The rise in childhood drowning in these counties triggered the Office of Injury Prevention to launch a campaign themed "Keep Your Eyes on the Kids." This campaign addressed the issue by emphasizing the importance of adult supervision when a child is around bodies of water, especially pools. The campaign also addressed the issue by distributing educational material and Water Watcher Tags, which are color tags worn by

the adult who should be supervising the children playing or swimming near bodies of waters. The importance of close and constant monitoring of children who are near any body of water by at least one adult needs to be emphasized.

On April 7, 2011, the Drowning Prevention Coalition of Palm Beach County released the ABCs of water safety in order to enhance safety in and around water. "A" stands for adult supervision. Whenever children are around water, parents should be at arm's length, providing visual and close supervision. "B" stands for barriers and beach safety, such as having properly working barriers around bodies of waters that meet the proper requirements. "C" stands for classes. The public is encouraged to take CPR classes in addition to water safety courses at local aquatic facilities to learn the skills necessary to survive in the water.

On December 17, 2007, the Virginia Graeme Baker Pool and Spa Safety Act (P&SS) became a federal law. Virginia Graeme was the granddaughter of former Secretary of State James Baker. She died in a hot tub accident where she was suctioned and pulled down. This sad incident drove her family to lobby the U.S. Congress for pool and spa safety and to educate the public on the importance of continuous supervision of children in and around water. The Florida Residential Swimming Pool Law became effective on October 1, 2000. This law requires that new residential swimming pools have at least one of the following: an enclosure, pool safety cover, exit alarm on doors or self-closing, and doors self-latching device on entries to the pool. The enclosures must have a barrier at least four feet high on the outside and surrounding the perimeter of the pool. Gates to the swimming pool must be equipped with self-closing and self-latching devices (Pool Safety, 2010). Even with such a statute in place, there are still gaps that

need to be addressed, especially for pools built prior to the year 2000, since those pools do not have to adhere to this new law.

Hyder et al. (2008) published an educational article regarding childhood drowning in low-and middle-income countries (LMIC) and the urgent need for intervention. The paper focused on LMIC drowning incidents' death data, risk factors, absence of public health interventions, lack of research on intervention of effectiveness and cost-effectiveness, and lack of national drowning prevention programs. Some of the suggested risk factors for drowning are age, gender, economic status, rural residence, and race. Common interventions for drowning prevention included proper pool fencing, adult supervision of children near water, lifeguards, and water safety training. However, the authors did not address epidemiological data, the explanation of childhood drowning events, cost effectiveness, analysis of intervention, and drowning prevention programs.

The WHO (2010) stated that individual and community education on drowning awareness, risks associated with drowning, and water survival skills' education appear promising to prevent drowning incidents. Drowning prevention awareness programs in Palm Beach County can assist in reducing this devastating tragedy that is claiming the lives of so many of our children. Parents and caretakers need to be educated about the danger of having children near bodies of water, the alarming mortality statistics, and preventative measures to keep their children safe. It is suggested that the nursing profession can play a significant role in the education process.

Problem Statement

There has been an increase incidence of childhood drowning in Palm Beach County. In 2009, the Office of Injury Prevention identified the top counties in Florida

with the highest number of drowning deaths in the 1-4 age group. The top counties were Brevard, Dade, Escambia, Hillsborough, Lee, Orange, Osceola, Palm Beach, and Pinellas. Some of the contributing factors that may increase childhood drowning in Palm Beach County include cultural and language barriers; the environment, or having many bodies of water; socioeconomic problems, which include not having proper resources for education/swimming lessons; and parenting education, including parents underestimating the amount of time and water it takes for a child to drown, leaving infants unsupervised or alone in bathtub, and parents/community not fully understanding the dangers and not being aware of the statistics of drowning in the state of Florida.

Purpose

The purpose of this project was to raise awareness of childhood drowning in Palm Beach County and to develop a preventative program that may reduce the number of deaths caused by these accidents using evidenced-based research.

Theoretical Framework

The framework that guided this study was the Health Promotion Model (HPM) proposed by Nola Pender. The HPM describes health as a positive dynamic state, not merely the absence of diseases, and it is structured around education and prevention. Pender (2006) stated health promotion is not only an "approach to wellness," but is also the activities inspired by the desire to increase well-being and fulfillment of the individual human potential (p. 51-52). Health promotion should be the preferred method for health care, rather than just trying to avoid illness and focusing all energies on detection and maintenance.

The HPM, proposed by Pender (1982; 1996), is a competence, or approach, oriented model that was designed to be a "complementary counterpart to models of health protection" (p. 51). It defines health as "a positive dynamic state not merely the absence of disease." (p. 51) For Sussman, (2012) the model of health promotion is to increase the client's level of well-being. Unlike the Health Belief Model, the HPM does not include "fear" or "threat" as a source of motivation for health behavior (Pender, Murdaugh, & Parsons, 2006, p. 50). The HPM describes the multi-dimensional nature of persons as they interact within their environment to pursue health. In other words, the HPM is structured under the belief that through education and comprehension of the intrinsic benefits, individuals will make lifelong commitments towards attaining and maintaining healthier lifestyles.

The Health Promotion Model focuses on the following three areas: individual characteristics and experiences; behavior-specific cognitions and affect; and behavioral outcomes. The HPM notes that each person has unique personal characteristics and experiences that affect subsequent actions. Pender asserted that the set of variables for behavioral-specific knowledge and affect have important motivational significance and that these can be modified through nursing actions.

Pender's HPM is used internationally for research, education, and practice. Health-promoting behaviors should result in improved health, enhanced functional ability, and better quality of life at all stages of development. The final behavioral demand is also influenced by the immediate competing demand and preferences, which can derail intended health promoting actions. Health-promoting behavior is the desired outcome and is the endpoint in the HPM.

Assumptions of the Health Promotion Model (HPM)

There are four assumptions of the HPM (Pender et al., 2006):

1. Individuals seek to actively regulate their own behavior.
2. Individuals in all their biopsychosocial complexity interact with the environment, progressively transforming the environment and being transformed over time.
3. Health professionals constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span.
4. Self-initiated reconfiguration of person-environment interactive patterns is essential to behavior change.

Throughout nursing, the effects of nature versus nurture are examined as health care providers work to improve on current theories and patient care. Many, if not all, of the decisions individuals make and act on are predominantly based on past life experiences. Each person's experience has a different effect on future decisions he or she makes, based on the individual character traits of the individual.

Theoretical Propositions of the HPM

The HPM is based on several theoretical propositions (Pender et al., 2006):

1. Prior behavior and inherited and acquired characteristics influence beliefs, affect, and enactment of health-promoting behavior.
2. Persons commit to engaging in behaviors from which they anticipate deriving personally valued benefits.
3. Perceived barriers can constrain commitment to action, a mediator of behavior as well as actual behavior.

4. Perceived competence or self-efficacy to execute a given behavior increases the likelihood of commitment to action and actual performance of the behavior.
5. Greater perceived self-efficacy results in fewer perceived barriers to a specific health behavior.
6. Positive affect toward a behavior results in greater perceived self-efficacy, which can in turn, result in increased positive affect.
7. When positive emotions or affect are associated with a behavior, the probability of commitment and action is increased.
8. Persons are more likely to commit to and engage in health-promoting behaviors when significant others model the behavior, expect the behavior to occur, and provide assistance and support to enable the behavior.
9. Families, peers, and health care providers are important sources of interpersonal influence that can increase or decrease commitment to and engagement in health-promoting behavior.
10. Situational influences in the external environment can increase or decrease commitment to, or participation in, health-promoting behavior.
11. The greater the commitment to a specific plan of action, the more likely health-promoting behaviors are to be maintained over time.
12. Commitment to a plan of action is less likely to result in the desired behavior when competing demands over which persons have little control require immediate attention.
13. Commitment to a plan of action is less likely to result in the desired behavior when other actions are more attractive and thus preferred over the target behavior.

14. Persons can modify cognitions, affect, and the interpersonal and physical environment to create incentives for health actions.

Major Concepts and Definitions

Major concepts and definitions of the HPM are individual characteristics and experience, prior related behaviors, frequency of the similar behavior in the past, and direct and indirect effects on the likelihood of engaging in health promoting behaviors.

Personal Factors

Personal factors are categorized as biological, psychological, and socio-cultural. These three conjectures are predictive of a given behavior and shaped by the nature of the target behavior being considered.

Personal Biological Factors

Personal biological factors include variables such as age, gender, body mass index, pubertal status, aerobic capacity, strength, agility, or balance. For the purpose of this project, an example of the conjecture is children's gender, since males have been found to be more likely to become victims of drowning incidents than females.

Personal Psychological Factors

Personal psychological factors include variables such as self-esteem, self-motivation, personal competence, perceived health status, and definition of health. For purpose of this project, the parents/caretakers' personal and individual motivation to be prevent drowning incidents plays a role in preventing drowning incidents. In addition, the parents/caretakers' competence or ability to rescue a child from drowning plays a role in saving children's lives.

Personal Socio-Cultural Factors

Personal socio-cultural factors include variables such as race, ethnicity, acculturation, education, and socioeconomic status. The parents/caretakers' personal and individual level of education and their perceptions of what constitutes danger with relation to bodies of water affects the chances for potential childhood drowning. This project also addressed the parents/caretakers' social and cultural beliefs in order to determine if they needed help to prevent possible drowning incidences.

Perceived Benefit of Action

The perceived benefit of action is the anticipated positive outcomes that will occur from a specific health behavior. With respect to this area, one of the benefits this project looked to provide is increasing the parents/caretakers' knowledge of ways to prevent drowning incidents. The greatest benefit this project provided was that children's lives will potentially be saved by the actions taken by their parents/caretakers.

Perceived Barriers to Action

Perceived barriers to action are the anticipated, imagined, or real blocks and personal costs of understanding a given behavior. For purpose of this project, the author attempted to determine the parents/caretakers' barriers to prevent drowning incidents, such as education, financial status, and culture, among other factors.

Perceived Self-Efficacy

Perceived self-efficacy is defined as judgment of personal capability to organize and execute a health-promoting behavior. Perceived self-efficacy influences perceived barriers to action so higher efficacy results in lowered perceptions of barriers to the performance of the behavior. For the purpose of this project, this area was not explored.

Activity Related Affect

Activity related affect is defined as the subjective, positive, or negative feelings that occur before, during, and after behavior based on the stimulus properties of the behavior itself. Activity related affect influences perceived self-efficacy, which means the more positive the subjective feeling, the greater the feeling of efficacy. In turn, increased feelings of efficacy can generate further positive affect. For the purpose of this project, this area was not explored.

Interpersonal Influences

Interpersonal influences are defined as cognition concerning behaviors, beliefs, or attitudes of others. Interpersonal influences include norms (expectations of significant others), social support (instrumental and emotional encouragement), and modeling (vicarious learning through observing others engaged in a particular behavior). Primary sources of interpersonal influences are families, peers, and health care providers. In this area, the author attempted to bring to the attention of parents/caretakers the need to have a specific designated individual assigned to watch the children when around bodies of water.

Situational Influences

Situational influences are defined as personal perceptions and cognitions of any given situation or context that can facilitate or impede behavior. Situational influences may have direct or indirect influences on health behavior. In this area, the author attempted to make the parents/caretakers aware of the fact that their personal distraction (telephone, pool parties, etc.) could boost the possibilities that unattended children will wander around bodies of water, increasing the probability of drowning. Without constant

supervision, children can disappear from their parents/caretakers' view in a matter of seconds.

Behavioral Outcome: Commitment to Plan of Action

The behavioral outcome is the concept that intention and identification of a planned strategy leads to the implementation of health behavior. Commitment to a plan of action propels the individual into and through the behavior unless a competing demand that cannot be avoided or a competing preference that is not resisted occurs (Pender et al., 2006).

Immediate Competing Demands and Preferences

Immediate competing demands and preferences are those alternative behaviors over which individuals have little control because there are environmental contingencies such as work or family care responsibilities. Competing preferences are alternative behaviors over which individuals exert relatively high control, such as choice of ice cream or apple for a snack. Considerations have to be made in each case where the parent/caretaker is the sole provider. Does the parent work two jobs? Does he or she need a baby sitter? Can he or she afford childcare? Are the parents aware of the community resources are available to help monitor the safety of the child/children in each specific case?

Health-Promoting Behavior

Health-promoting behavior is the endpoint or action outcome directed toward attaining positive health outcomes such as optimal well-being, personal fulfillment, and productive living. In this section, the author brought to the attention of parents/caretakers the importance of early swimming lessons for children.

Relationship of Theoretical Framework to This Project

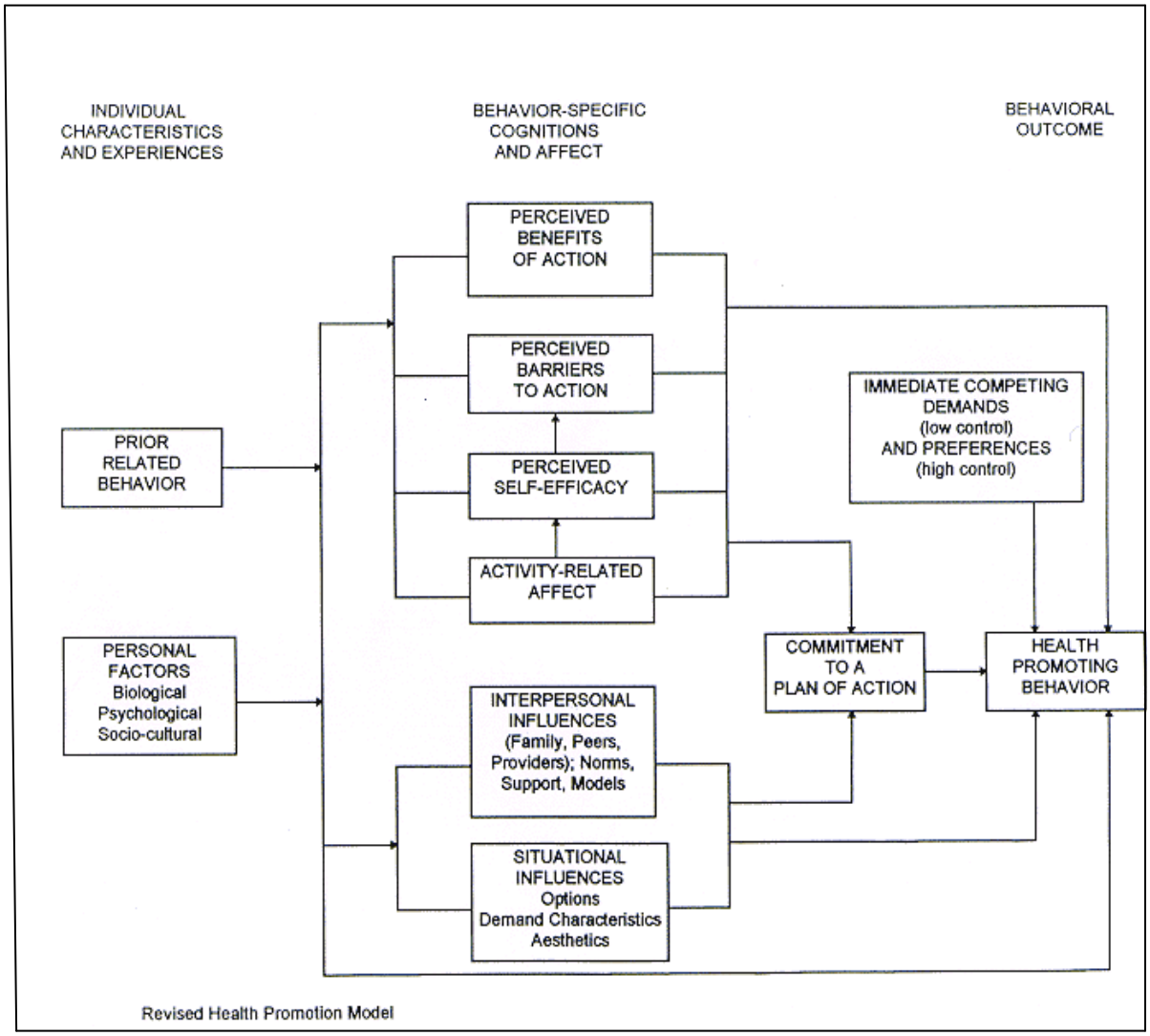

Figure 1. Original Health Promotion Model 1982, revised 1996 (Pender et al., 2006).

Pender's theoretical framework was appropriate for this project because it provided an opportunity to assess parents' baseline knowledge about drowning prevention, their cultural beliefs, religion, and backgrounds. Furthermore, Pender's theoretical framework provided a tool that was useful to investigate any barriers that would prevent parents from learning childhood safety. In addition, it assisted in

monitoring interpersonal influences and outcomes concerning parents' learning curve and the decrease in childhood drowning if proper safety measures are implemented.

The goal of this project was to assess the learning needs of parents in Palm Beach County and to develop an educational program to teach them about drowning prevention. Behavior-specific variables within the HPM are considered to have major motivational significance (Pender et al., 2006). Recognizing the individuals' and the community's perceived benefits of action, perceived barriers to action, perceived self-efficacy; activity-related affect, interpersonal influences, and situational influences guided the manner in which the project was rendered. For the purpose of this project, only two of the aforementioned perceived barriers to action and interpersonal influences were utilized.

To achieve the desired behavioral outcomes, this project looked at the individuals' and communities' commitment to carrying out a plan and its health promoting behaviors. Specifically, this project sought to identify the competing demands/preferences of the parents/caretakers in an effort to facilitate and increase in childhood drowning prevention methods. Health-promoting behaviors are ultimately directed towards attaining positive health outcomes for the client (Pender et al., 2006). Thus, the future goal of this project, as it pertains to health-promoting behaviors, will be to see a downward trend in the number childhood drown cases in Palm Beach County over time. However, the downward trend is not an immediate goal, due to difficulties in the feasibility of determining its success.

A goal of this project was to see an increase in the commitment of parents/caretakers to enroll and partake in CPR training. This project also sought to make parents/caretakers aware of the need to have barriers around bodies of water,

mainly swimming pools, as well as pool alarms. Another goal was to see an increase in knowledge as related to drowning prevention when compared to the initial survey.

Objectives

The objectives of this project were as follows:

1. To assess the risk factors associated with childhood drowning. Parental knowledge was assessed through a questionnaire.
2. To design an educational program based on the parental knowledge assessment
3. To implement an educational program for parents/caretakers in a selected area in Palm Beach County
4. To evaluate the effects of the educational program using a pre-test and post-test
5. To measure test results

These objectives were achieved through investigation of the following project questions in drowning prevention.

Project Questions

The above objectives were implemented through the following project questions:

1. What are the current attitudes and knowledge among parents and caretakers regarding drowning prevention of children ages six-months to five-years old in Palm Beach County?

2. Will the delivery of a culturally sensitive drowning prevention education to Palm Beach County residents reduce the risks of childhood drowning?

3. Will there be a significant difference in the pre- and post-test scores of Palm Beach County parents who attend a drowning prevention program?

DNP Essentials

The DNP program is comprised of the following eight fundamental essentials: Scientific Underpinnings for Practice; Organizational and Systems Leadership for Quality; Improvement and Systems Thinking; Clinical Scholarship and Analytical Methods for Evidence-Based Practice; Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care; Health Care Policy for Advocacy in Health Care; Interprofessional Collaboration for Improving Patient and Population Health Outcomes; Clinical Prevention and Population Health for Improving the Nation's Health; and Advanced Nursing Practice.

For the purpose of this project, the DNP student highlighted the significance of only the following four essentials: Health Care Policy for Advocacy in Health Care; Interprofessional Collaboration for Improving Patient and Population Health Outcomes; Clinical Prevention and Population Health for Improving the Nation's Health; and Advanced Nursing Practice.

Health Care Policy for Advocacy in Health Care

This essential addresses the need for established policies by which health care providers are bound in their daily operations. Health care policies are created for the most part by governmental actions, institutional decision making, or organizational standards to facilitate or impede the delivery of health care services or the ability of the provider to engage in practice to address the health care needs of their constituents.

The findings from this project will impact health care policies for childhood drowning or near-drowning. The DNP graduate will be prepared to lobby for laws that will protect our future generations and educate parents/caretakers of the dangers of body

of waters and the use of preventative measures, as well as alert the public of the governmental enacted laws.

Interprofessional Collaboration for Improving Patient and Population Health Outcome

This essential addresses the need for health care interprofessionals to function as collaborative teams in order to accomplish the Institute of Medicine (IOM) mandate for safe, timely, effective, efficient, equitable, and patient-centered care in today's complex environment. To enhance collaboration amongst interprofessionals, this essential suggests that the team members with advanced preparation in the interprofessional dimension of health assume the role of team leader.

This project sought to inform the community about childhood drowning and in doing so relied primarily on nursing professionals to be the forefront messengers. To be effective at informing parents/caretakers about the drowning epidemic among children, nurses are expected to work as members of a team, putting professionals and/or personal egos aside. At health care centers where children are patients, nurses with DNP academic preparation are expected to assume the role of team leaders and promote collaboration among team members in the delivery of drowning prevention measures.

Clinical Prevention and Population Health for Improving the Nation's Health

This essential promotes good health and risk reduction/illness prevention for individuals and families, as well as for aggregate members of the community, by being vigilant of the environmental/occupational and cultural/socioeconomic dimensions of health. Aggregates are groups of individuals defined by a shared characteristic such as gender, diagnosis, or age.

This project emphasized to parents/caretakers of children the importance of taking preventative measures to avoid children drowning and/or near-drowning. Members of the community were encouraged to have their children learn how to swim at an early age. The parents/caretakers were encouraged to learn CPR to promote prompt response to assist the victims of drowning or near-drowning incidents.

Advanced Nursing Practice

"All DNP graduates are expected to demonstrate refined assessments skills and base practice on the application of biophysical, psychosocial, behavioral, sociopolitical, cultural, economic, and nursing science as appropriate in their area of specialization" (p. 16) American Association of Nursing (2006). Advance practice nurse practitioners recognize the importance of communication between members of all auxiliaries and the need for all members to be open and receptive to information from all sources for the betterment of the patient. Health care professionals need to put their pride aside when caring for patients and their families. They must learn how to communicate and stop being so fixed on their particular specialty, to stop treating the patient in parts, and to instead take the patient as a whole, including his or her living and working environments. Advanced practice nurses are constantly educating their patients and the public, providing them with resources to help them improve their current well-being. As an APN, it is important to stay up to date on research and the latest technologies. This project will address the psychosocial, behavioral, and cultural aspects of the participants. Using evidence-based research, this project demonstrated the great impact that childhood drowning has on the economy. It also alerted and informed the public of existing policies

related to childhood drowning and encouraged ADNPs to start lobbying for new policies that will assist in redirecting the high numbers of childhood drowning incidents.

Significance of the Project

Significance to Nursing Practice

The findings from this project may affect nursing practice. Unintentional preventable injury, such as drowning, is the number one killer of our children. It is important for nurses to understand the epidemiology and the risks of childhood drowning in order to educate the public about preventative measures that can decrease childhood drowning morbidity and mortality, thereby improving health care outcomes. Health care professionals need to move outside their comfort zone, away from the confines of four walls of a clinic or hospital, and reach the people who are vulnerable where they are likely to be found. Pender et al. (2006) remind us that nurses should serve as role models of health-promoting lifestyles and as leaders to activate communities for health promotion. Nurses, as the largest single group of health care providers, continue to play a vital role in making health-promotion and illness prevention services available to all population groups, including those who are undeserved and vulnerable (Pender et al., 2006). This project sought to uncover innovative ways to deliver the message on childhood drowning.

Significance to Health Care Outcomes

The findings from this project may influence health care outcomes. Health care professionals and nursing leaders need to utilize evidence-based knowledge to educate community leaders, stakeholders, and politicians to affect changes in policy generation and modification that can bring about improved understanding and potential reduction of

this preventable tragedy. Pender et al. (2006) declared that outcome of care should continually be assessed to identify the most effective approaches for health promotion.

Significance to Health Care Delivery

The findings from this project may influence health care delivery. The global economic crisis that we are currently experiencing awakens the nursing profession to the need to conduct more research studies to discover the most cost-effective methods of delivering health care, while still maintaining safety and quality. According to Pender et al. (2006), nurse scientists need to learn how to measure economic outcomes and implement studies to evaluate the cost of health-promotion and risk-reduction interventions.

Significance to Health Care Policy

The findings from this project may influence health care policy. Nurses and health care professionals need to understand drowning prevention and patients' cultures and attitudes towards this problem. This project may make a difference in our health care policy simply by increasing our knowledge base on:

- Childhood drowning mortality rates
- Preventative measures that can decrease childhood drowning mortality rates
- Need for culturally sensitive education to reach the parents in Palm Beach County that could be affected by this phenomenon
- Encouragement to become politically active in lobbying for laws that will protect our future generation

- Mandatory education about childhood drowning preventative measures during prenatal classes
- Childhood drowning classes for parents prior to enrolling their child in daycare

Since February 2010, the *Palm Beach Post* has reported numerous infant-drowning accidents in Palm Beach County, both in swimming pools and other bodies of water. The researcher knows a 19-month-old child who was found in a pool in October 2010. He sustained significant brain injury and is presently in a vegetative state; this incident influenced the researcher's desire to further the project on drowning prevention.

It has been estimated that for each childhood drowning fatality, about 4 children are hospitalized and 14 are seen in emergency departments and released (Harborview Injury Prevention and Research Center, 2009); however, among those sustaining immersion and losing consciousness, the mortality rate is as high as 50%. Prevention is the key to decreasing morbidity and mortality from drowning (Harborview Injury Prevention and Research Center, 2009). There is strong evidence that adequate fencing and self-latching gates substantially reduce the number of childhood drowning incidents and virtually eliminate drowning among toddlers. The CDC (2008) recommended that parents fence the pool off, make life jackets a must, learn CPR, and be on the lookout. The WHO (2010) also suggested the following strategies to prevent drowning:

- Developing and implementing safe water systems, such as drainage systems, piped water systems, and flood control embankments in flood-prone areas
- Building four-sided fences or barriers preventing access to standing water

- Creating and maintaining safe water zones for recreation
- Covering of wells or open cisterns
- Emptying buckets and baths and storing them upside down
- Ensuring there is a lifeguard at swimming areas

As described above, childhood drowning is on the rise in Palm Beach County. The increase in morbidity and mortality from drowning demands our attention. Considering the alarming statistics and the emotional devastation that childhood drowning has on families, the health care industry, and the national budget, the researcher sees it as her moral responsibility to rise to this challenge and educate Palm Beach County communities of this danger and how to prevent this tragedy.

One of the goals of Healthy People 2010 is to increase the quality and the years of healthy life (Healthy people 2010). As a future advanced practice nurse, the author can help in reaching this goal by developing preventative drowning programs in Palm Beach County, which will assist in reducing the rate of death in our community. Nursing efforts can significantly help in the implementation of prevention in view of personal contacts with individuals supervising the children. Nurses can provide educational sessions and hand out pool safety handouts and promote awareness.

Chapter Summary

Childhood drowning is a worldwide epidemic. Children are often the victim of drowning. According to the WHO (2010), evidence points to promising results in decreasing the incidence of drowning when communities are educated. The purpose of this project was to bring awareness of childhood drowning to the parents and caretakers of children in Palm Beach County, one of Florida's leading counties in this epidemic.

This chapter has addressed the objectives of this project and the significance it has to nursing practice, health care outcomes, health care delivery, and health care policy. Pender's HPM theoretical framework guided this project.

CHAPTER TWO

REVIEW OF LITERATURE

The purpose of this project was to raise awareness of childhood drowning in Palm Beach County and to develop a preventative program that will aid in reducing the number of deaths caused by this type of accident using evidenced-based research.

A search of relevant literature across disciplines was conducted to explore childhood drowning prevention from 1990 through 2012. The following computerized databases were used for this search: ABI Inform (Index of Business and Management), ArticleFirst, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Dissertation Abstracts, Educational Resource Information Center (ERIC), Medline, OVID, PubMed, Health Reference Center - Academic, Medicine, Modern Language Association (MLA),and Periodical Abstracts (PerAbs: Covering business, economics, literature, religion, psychology, and women studies). The key words used in the search were: childhood drowning, drowning prevention, childhood injuries, submersion accidents, CPR, drowning in rural areas, lessons in drowning prevention, and pool fencing. Citations were limited by language to English and by subject to exploration of the concepts. A limitation was imposed to find literature published since 1990 with classics sought by reviewing citations in the published works. A random selection process delimited the profusion of theoretical references that were found. Additionally, statistics were reviewed from the CDC, Department of Health (DOH), Harborview Injury Prevention and Resource Center, and the WHO. The search revealed various concerns and issues associated with drowning prevention. Based on the literature search conducted, this review is categorized into four sections: the first section explores

drowning in rural areas; the second addresses lessons in drowning preventions; the third focuses on effects of pool fencing and other ordinances; and the final area investigates effects of CPR.

Drowning Studies in Rural Areas

Rahman, Shafinaz, and Linnan (2008) conducted a qualitative study to determine the community perception of childhood drowning and its prevention measures in rural Bangladesh. (Rahman et al., 2008). Focus group discussions (FGDs) were conducted with mothers, adolescent students, fathers, and community leaders. Five groups of respondents were selected from four different villages of Shibpuz, a sub-district of Narsingdi, which is situated about 70 kilometers to the northeast of Dhaka city. The sample consisted of 53 participants, and 25 were women. Five groups of participants were selected from four different villages. The focus groups were held at their residences and at schools for the adolescents. Each group consisted of 8-12 participants. Storytelling exercises were used as ice breakers for the participants to open up and share their experience with childhood drowning. Each session was monitored and taped with the participants' permission. Questions used in the survey were: (a) Who drowns?, (b) Where do children drown?, (c) Why do children drown?, (d) When do children drown?, (e) What do villagers do to prevent childhood drowning?, and (f) what measures can be undertaken to prevent childhood drowning? All groups expressed the view that the drowning of children is common and very tragic. One of the participants in the mothers' group had a two-year-old who drowned; this mother stated: "Drowning is more painful than any normal death. A normal death can be acceptable but drowning or accidents like this are tormenting… and my son is no more today" (Rahman et al., 2008, p. 1).

The majority of respondents answered that children ages 5-10 have greater propensity to be drowning victims. They also mentioned that the risk of drowning is higher among boys than girls. They stated that the nature of boys are restless and are more difficult to control than the girls of the same age. All participants responded that drowning occurred very close to homes in rivers, ditches, and canals. The participants also mentioned that children could also drown in buckets, bowls, and cattle troughs. Lack of constant supervision by caregivers was considered by all participants as one of the risk factors for childhood drowning. Most of the participants affirmed that the risk of drowning was greater for children having no swimming skills. It was also reported that drowning often occurred when children ages five to six years old are learning to swim, either alone or with the help of their peers. When responding to when children drown, the greatest response was at noon when mothers are busy cooking or in the afternoon when it is resting time. As a result, they often fail to keep an eye on the young children. All groups reported that drowning of children mostly occurs during the rainy season. The participants believed that drowning was natural, it was unavoidable and predicted by God, and it was not possible for human beings to revert "God's will."

According to the authors, there were almost no preventative practices in these communities. Further discussions revealed that people knew some preventative measures, but they were rarely practiced (Rahman et al., 2008). The participants made the following suggestions that could be undertaken at personal or family level to prevent drowning. The participants emphasized that at personal or family level, supervision of children is one of the most important measures to prevent drowning. Indirect supervision measures that were suggested included having the child wear anklets. The jingling sound of the

anklets will indicate which direction the child is heading. To protect children from water sources, the participants suggested ditches in nearby residences should be filled in and fences should be erected on all four sides of ponds or ditches. The participants also emphasized that swimming instruction should be provided to the older children when they are between six to eight years old. They suggested that relatives over 15 years old could provide swimming lessons.

From a community level, the group suggested that educational and religious institutes and non-governmental organizations (NGOs) in social development should organize meetings to raise community awareness of childhood drowning risks. Participants also mentioned that ditches should be filled in and drains covered, and vigilance should always be maintained by community members. Swimming lessons should be included with non-formal education programs. On a national level, the groups expected that government should organize campaigns to prevent childhood drowning using mass media, including radio, television, and advertising at local cinemas. Although participants were educated regarding drowning prevention, no preventative measures were used due to their cultural beliefs. Bugeja and Franklin (2005) conducted a quantitative study to examine drowning deaths of young children in Victoria, Australia dams to identify common contributing factors in order to develop strategies for future prevention. Case records of drowned children aged 0-5 years from the State Coroner's Office in Victoria were reviewed for the 13-year period of 1989-2001. Twenty-seven cases of children aged zero to five years old who drowned in a dam were extracted for analysis.

The authors reported that the children had reached a stage in their development where their gross motor skills enabled them to climb and wander, and their social skills had developed to a point where they were content to play on their own. The absence of constant visual caretaker supervision immediately before each drowning incident was noted. Key findings in the study revealed that the authors found a common theme. Children were located outside the house 100 meters away from the dam, and there were ineffective barriers between the yard and dam. The researchers explained that during the 13-year period, there were 27 deaths: 11 occurred on regular farms, 5 on hobby farms, and 11 on properties where it was not specified whether the property was a farm. Almost three-quarters of the children were male, and the majority was aged between one and three years old. Half of the incidents occurred on the weekend, and nearly half occurred during the summer months. Five major factors were common among incidents: stage of child development; absence of caretaker supervision; child playing outside the house; dam within 300 meters of where the child was playing; and lack of effective barriers between the dam and the child.

The authors recommended that safe play areas be implemented on properties containing dams, and the safety measure should be publicly promoted. They also recommended future public awareness campaigns by water safety organizations should be broadened to include specific safety messages and images about rural water hazards. Any public awareness campaign should address how quickly toddlers can get into danger.

Yang, Nong, Li, Feng, and Lo (2007) conducted a case control study using a stratified approach titled, “Risk Factors,” which talked about childhood drowning in rural regions of a developing country. The purpose of the study was to examine the risk

factors associated with childhood drowning in rural China. Yang et al. (2007) stated that descriptive epidemiological studies have shown that childhood drowning rates are higher in developing countries with an increasing trend in rural areas. All participants (n = 133) of the study were parents of all children aged 1-4 years who died of drowning between 2002 and 2004 in 20 districts of GuangXi Providence, and two age- and gender-matched controls each. Behavioral characteristics of the children and children's caregivers were collected using a questionnaire and analyzed using logistic regression.

The demographic included 11 districts in a coastal township and 9 districts in an inland township of GuanXi Providence, which were randomly selected. This providence has a population of approximately 48 million people. The study was carried out by listing all the townships and districts in a Statistical Package for Social Science (SPSS) file and randomly selecting cases. The controls were chosen by randomly selecting households in the districts adjacent to where the already selected study cases lived until two children from different households were identified.

The subjects were interviewed using semi-structured questionnaires designed to collect information related to the cases: when, where, and how the death took place. The questionnaire consisted of multiple choice questions that were completed with the researcher due to the lack of education of the parents and caregivers. The researcher carefully and respectfully asked the questions relating to how the drowning occurred due to the sensitivity of the matter.

The study revealed that boys (60%) and children aged 1-4 years (48%) were over represented among the cases, and 62% occurred within 500 meters of the school or home. Protective fencing or warning signs were found at only two sites. None of the children's

caregivers knew how to perform CPR. For children aged 1-4 years, significant risk factors included poor health of the caregiver, not using flotation devices, and no proper swimming lessons. For children aged 5-14 years, the main risk factors were that the children were not under close supervision and lacked the experience of regularly playing near or in water.

The key findings in this study were that childhood drowning in rural areas in developing countries could be prevented by providing safety educational programs. Such programs should focus on constant adult supervision and the use of floatation devices when children play in and near water. Clinical recommendations by the authors were to provide first aid training for CPR, install safety barriers such as fences, and investigate the effectiveness of fencing. These prevention and control programs should focus on close and constant parent and/or caretaker supervision and should also be educated with the use of buoyancy vests.

Liller, Kent, Arcari, and McDermott (1993) conducted a qualitative study to address the risk factors for drowning and near-drowning among children in Hillsborough County, Florida. The author utilized a random telephone survey from 700 households to obtain data on the risk factors of drowning and near-drowning incidents in the county. Forced-choice and open-ended questions were used to evaluate the participants' drowning-related knowledge, attitudes, and prevention behaviors, as well as the incidence of and the circumstances surrounding drownings and near-drownings among children who lived in those households. The data from this study was collected from August through December 1991. The authors discovered that even though most of the participants had some knowledge of the epidemiology of drowning and near-drowning

incidents among children, they were unaware of the importance of adult supervision and at what age children should begin swimming lessons.

The findings for this study revealed the frequency at which drowning and near-drowning incidents occurred in 1991. There were three isolated instances in which the children experienced difficulty, causing a water-related immersion. These episodes included three male children of the ages of two, six, and seven years of age. There were six additional episodes of near-drowning where the children were immediately recovered by a parent or other adult, causing no acute harm to the child. These six additional children's ages varied from one to four years of age; all incidents occurred in a residential pool. A total of nine water-immersion episodes were not reported to treatment facilities. Therefore, the actual rate of water-related events is most likely much greater than actually tallied.

These results suggest the necessity for isolation fencing. This barrier would prove to isolate the pool from the rest of the yard, decreasing chances for further water-related events. The researchers reported that when 678 parents and caretakers were interviewed, only 305 were able to perform CPR on an infant or child. The men were more likely to know how to perform CPR over the women. Forty percent of the adults questioned agreed that pool owners should be mandated to obtain CPR certification.

The literature search for drowning in rural areas resulted largely in qualitative studies. The author was unable to trace quantitative studies. The research conducted by Liller et al. is a seminal work dating back to 1993, but it was utilized in this paper because it was the only research study conducted in the state of Florida.

Overall, the studies identified that the increase in childhood drowning is due to lack of parental supervision, lack of drowning prevention education, and ineffective barriers. In addition, the studies reported that the biggest reason why children below the age of five are highly affected by this drowning experience is due to their developmental stage of curiosity and exploration. Their motor skills allow them to access open bodies of water, but at the same time, they are not cognitively developed to understand the risk of submersion. Males tend to exhibit more risk-taking behaviors than females.

The findings from the majority of the qualitative studies in this group revealed the need to raise the public awareness concerning the alarming statistics about childhood drowning mortality rates and the proper interventions that are greatly needed to reduce this mortality rate. Shi and Singh (2009) reminded nurses and health care professionals of the need to take preventative interventions and to eliminate risk factors to reduce occurrence of disease and to promote health. The intent of this project was to identify the educational needs of Palm Beach County parents/caretakers and to design and implement a drowning prevention educational program.

Lessons in Drowning Injury Prevention

Quan, Gore, Wentz, Allen, and Novack (1989) embarked on a 10-year mission to determine what prevalent characteristics and activities are associated with pediatric submersion events, if these factors are associated with a specific setting, and what preventative strategies are suggested by these events. They conducted a longitudinal study of pediatric drowning and near-drowning in King County, Washington.

The sample size consisted of near-drowning (n = 103) and drowning (n = 96) of children less than 20 years old during the years of 1974-1983. The authors identified 204

submersion incidents; 5 were excluded due to charts being unattainable. Out of 96 fatalities, 72% died at the scene, 19% died after hospital admission, and 9% died in the emergency room. Of the 103 survivors, 5% retained diminutive neurological function, and 11% sustained average neurological dysfunction. The rest were normal upon hospital discharge. A seasonal trend was noticed with most drowning incidents occurring during May and August. The data was obtained from the King County Medical examiner's office. Inclusion/exclusion criteria were used and the tool used was reliable (Quan et al., 1989).

The study showed that preschool age children were at highest risk for drowning incidents, and the second highest groups at risk were youth 15-19 years old. Most victims (73%) were boys. The majority of the fatalities occurred at lakes and rivers. Swimming pools accounted for 49% of near-drowning incidents. Inadequate supervision was the most common factor associated with submersions accidents. Quan et al. (1989) also discovered that various age groups and sites had different outcomes due to the multifaceted problems associated with near-drowning or drowning. The pattern of exposure and submersion differs in each community due to the different bodies of waters that they possess. In comparison and prediction, communities must know their local epidemiology of submersions so that they may determine proper intervention programs. Prevention programs should be aimed at providing improved fencing around pools and better adult supervision. The authors did not suggest/recommend that this study be replicated, but the findings can be generalized to other populations that reside in areas comprised of bodies of water.

Brenner et al. (2009) conducted a case control study called association between

swimming lessons and drowning in childhood. The rationale of the study was to estimate the association between swimming lessons and the risk of drowning among children aged 1-19 years. Subjects in the study were children and adolescents who died of unintentional drowning. Interviews were conducted with 88 families of children who drowned and 213 matched controls. Findings from this study revealed that out of 61 cases in the 1-4 age group, 2 children had participated in formal swimming lessons. In the age group 5-19 (27 cases), 7 had never taken formal swimming lessons. There was no statistical significance associated between informal instructions and drowning risk. The study found that participation in formal swimming lessons was associated with an 88% reduction in the risk of drowning in the 1-4 years old children. The authors recommended that researchers replicate these findings. They further recommended collecting information about swimming ability and past participation in formal swimming lessons as part of routine investigation of all childhood drowning deaths. Further recommendations are appropriate adult supervision, pool fencing, and CPR training.

The studies conducted in drowning lessons for injury prevention alert the public as to how the community can save our younger generation by simply designing and implementing safety intervention programs, improving fencing, enforcing adult supervision, learning CPR, and teaching young children to swim.

This project incorporated the recommendations made by the authors of these studies by assessing parents/caretakers' knowledge base about childhood drowning prevention by utilizing a questionnaire, analyzing the results, and designing an educational program that will assist in increasing parents/caretakers' drowning prevention knowledge.

Effects of Pool Fencing Ordinances

Logan, Branche, Sacks, Ryan, and Peddicord (1998) conducted a study on childhood drowning and the fencing of outdoor pools in the United States in 1994. The purpose of the study was to determine the importance of proper fencing around an outdoor swimming pool in U.S. households and to describe the fencing in relation to household factors, such as demographic. These authors were looking to find the estimated number of drowning that may have been prevented by the use of proper fencing around residential pools among children less than five years old in the United States.

The sample size included 5,238 adults who gave demographic and household information, including whether the household had an outdoor swimming pool and if it was enclosed with a fence. The data was collected and weighed to produce national estimates and percentages. The numbers of preventable drowning were estimated with a population-attribute risk equation.

The results revealed that approximately 18.5 million American households owned or had access to an outdoor swimming pool, and 76% of them (13.9 million) appeared to have adequate fencing. Adequate fencing was associated with household income and type of home. The author estimated that 19% of pool-related drowning among children <5 years of age in 1994 (88 drowning) might have been prevented if all residential pools in the United States were properly fenced. The authors concluded that drowning can be prevented with adequate pool fencing that prevents the child from having access to the water, even when a responsible adult is not present.

The research conducted by Logan et al. (1998) suggested that even if all residential pools in the United States were properly fenced, most drowning among

children less than 5 years old would not be prevented. Therefore, additional strategies, such as pool covers and alarms, are needed to better help prevent a drowning from occurring. Logan et al. (1998) recommended that the community at large and especially caretakers should be educated about water safety, including the importance of constant monitoring of children at pools, the value of CPR training, and removal of toys from pools.

Morgenstern, Bingham, and Reza (2000) conducted a study on the effects of pool-fencing ordinances and other factors on childhood drowning in Los Angeles County from 1990-1995. The authors used a retrospective dynamic cohort study that addressed drownings among children younger than 10 years that occurred in residential swimming pools in a matched case control study. The purpose of this study was to estimate the effects of local pool-fencing ordinances and other factors on the rate of childhood drowning in Los Angeles County, California. The study identified 146 child drownings. Findings from this study revealed that drowning rates were relatively high among toddlers (aged 1-4), boys, and African Americans, as well as in areas with a high density or in residential swimming pools. Pool fencing ordinances were not associated with a reduced overall rate of childhood drowning. The authors did not make any recommendations.

The results from this study on pool fencing revealed that children less than five years of age are the most impacted by this tragic type of incident. In order to reduce the alarming statistics of childhood drownings, the authors recommended that individuals cover pools, remove toys in and around the pools, and have alarms at the gate. Additional recommendations included that parents be educated on water safety and

constantly monitor children around bodies of water as well as parents and caretakers learn CPR. Despite the recommendations made concerning ordinances of pool fencing, Morgenstern et al. (2009) revealed that pool fencing ordinances were not associated with reduced overall rate of childhood drowning. This project informed parents/caretakers of the potential benefits of saving a child's life by having pool fences, placing alarms on the gates, and removing toys from the pool area**.**

Effects of Cardio Pulmonary Resuscitation (CPR)

Kyriacou, Arcine, Peek, and Kraus (1994) conducted a case control study to determine the effects of immediate resuscitative efforts and the neurological impact they have on children with submersion injuries. It was designed to determine if the immediate resuscitation by rescuers reduce the occurrences of severe neurological damage or even death in documented cases of children that have drowned. This study used logistic regression to calculate an adjusted odds ratio. The authors of the study defined immediate resuscitation as any action taken by rescuers or bystanders to restore respiration and revive the subject upon immediate retrieval from the submersed position. The study consisted of 166 children ages 0-14 years old, who suffered a drowning event that resulted in apnea or significant altered respiration at the time of recovery from May 1984 through August 1992. The patients were admitted through the emergency room at Huntington Memorial Hospital in Pasadena, California. The patients were selected through a computer search and ICD9 codes.

The results showed that all subjects had an observed and documented episode of apnea at the time of submersion. These outcomes were evaluated on the basis of neurological impairment or death. The exposures were verified by family and friends

and/or paramedical personal who witnessed the event. Some of the study factors included age, gender, duration of submersion, hypothermia, presence of apnea, resuscitative effort, and the clinical outcome. The children that had a good outcome were 4.75 times more likely to have a history of immediate resurrection than children with a poor outcome. Various types of resuscitative efforts and potential confounding factors were also evaluated. Mouth-to-mouth resuscitation and CPR were among the most effective types of prevention of death or severe anoxic encephalopathy. The medical charts were reviewed, which provided information on submersion event, presence of apnea, immediate resuscitative effort, and the outcome of CPR. All of the patients sustained fresh water submersion. The most important consequences of submersion injury are hypoxemia and its effect on the brain. A consistent pattern has been seen through all studies: the majority of drowning victims have been male.

This study reported that the majority of drowning events occurred in private residential pools, followed by bathtubs, spas, and public pools. Only a few cases occurred in buckets, rivers, lakes, or ponds. In most of the cases, the mother was the most frequent rescuer and provider of immediate resuscitation. Kyriacou et al. (1994) reported that 124 (74.7%) children had a completely normal neurologically outcome, 12 (7.2%) children had mild anoxic encephalopathy, 8 (4.8%) children had severe anoxic encephalopathy, and 22 (13.3%) children died prior to discharge from the hospital. Thirty-three of the children arrived in the emergency department in cardiopulmonary arrest; of those, 29 had a poor clinical outcome. One hundred and forty-eight children received some type of immediate resuscitative intervention. The study also confirmed that immediate resuscitative effort demonstrated a good neurological clinical outcome. The authors of

the study asserted that the decisions to initiate resuscitative efforts, and the type of resuscitative efforts to administer, are not influenced by the subject's age, gender, or duration of submersion. The study suggested that all parents, siblings, and caretakers should be taught simple, yet effective artificial respiration methods so that in such cases where a tragedy occurs, there can be better clinical outcomes.

Quan (1989) stated that submersion injury is a complex and multifaceted event that varies with the victim's age; socioeconomic, climatic, and geographic settings; and availability of bodies of water. Most pediatric drowning deaths in the hospital are due to cerebral rather than pulmonary causes; all are due to anoxia.

The authors of this study stated that immediate resuscitation, prior to the arrival of paramedical personnel, is associated with better neurological outcomes in patients hospitalized with submersion injury. The article stated that prolonged submersion is associated with poor neurological outcomes. The authors strongly recommended that more injury prevention programs be designed and implemented and that more first aid training, such as CPR classes, be taught, especially to the population in rural areas. More fences erected around bodies of water can help to prevent unnecessary drownings. In addition, it was highly recommended that these children have close and constant supervision. It was also suggested that children start using buoyant vests whenever they go into bodies of water. Other strong recommendations made were that future public awareness be increased by campaigning for water safety and implementing safe play areas on properties containing dams.

This project focused on developing an educational preventative program to educate parents/caretakers about drowning prevention and to teach CPR, since the

research studies demonstrated that knowing CPR can save a child's life. Every minute counts when it comes to brain damage.

Chapter Summary

Although no precise statistical data exists on the total number of water-related injuries, it is estimated that 140,000 injuries associated solely with swimming activities occur annually (CDC, 2008). This chapter reviewed and presented the literature findings addressing the four major categories that affect childhood drowning and the need for interventional programs for high prevalence areas such as Palm Beach County. Specifically, the literature highlighted cultural beliefs and practices regarding drowning in rural areas, lessons in drowning injury prevention, effects of pool fencing ordinances, and effects of CPR on drowning victims. The studies revealed, among other important facts, the leading factors for children drowning or near-drowning and ways to help prevent the occurrence of these incidents, as well as the estimated cost for the medical treatment of each victim.

CHAPTER THREE

METHODS

The purpose of this project was to raise awareness of childhood drowning in Palm Beach County and to develop a preventative program that may reduce the number of deaths caused by this accident using evidenced-based research.

Objectives and Project Questions

1. Assess the parental knowledge of Palm Beach County parents/caretakers of risk factors associated with childhood drowning.
2. Create an educational program based on the parental knowledge assessment.
3. Implement a culturally sensitive educational program in innovative settings in Palm Beach County.
4. Evaluate the educational program.

This chapter discusses the research design, sampling techniques, data collection, and analysis technique. It also discusses the protection of human subjects and ethical considerations, as well as instruments used in this research project.

These objectives were implemented through the following project questions:

1. What are the current attitudes and knowledge among parents and caretakers regarding drowning prevention of children ages six-months to five-years old in Palm Beach County?

2. Will the delivery of a culturally sensitive drowning prevention education to Palm Beach County residents reduce the risks of childhood drowning?

3. Will there be a significant difference in the pre- and post-test scores of Palm Beach County parents who attend a drowning prevention program?

Project Design

This project utilized an assessment method to determine the educational needs of Palm Beach County parents/caretakers regarding drowning prevention. This assessment was followed by a pre- and post-test evaluation to assess parents' and caretakers' knowledge regarding childhood drowning prevention. This project was conducted in four phases that followed data collection procedures.

Data Collection

Data was collected from parents/caretakers of children ages six months to five to six years old. The purpose was to determine their knowledge base and to design an educational program about drowning prevention. As indicated, the project occurred in phases that incorporated the data collection procedure.

Phase One

This phase involved the recruitment of participants, and it included two steps. The first step involved pre-assessment. Flyers (Appendix C) were posted at the entrance and throughout the Caridad Clinic for potential participants to see. They were in English and Spanish. The prospective participant who approached the table located in the lobby of the clinic was provided with information about the pre-assessment phase (Appendix E) of the project. The purpose of this phase was to determine participants' overall knowledge about childhood drowning and to design an educational program specifically tailored to meet the needs of the Palm Beach County residents who utilize the Caridad

Clinic. When participants completed the form, they put it in the envelope provided and placed it in the collection box on the table. At the conclusion of this phase, the investigator began the analysis of the data collected.

Phase Two

Phase Two began with the development of the educational intervention program based on the data analysis. This program incorporated the standardized Palm Beach County Water Coalition Drowning Prevention Education program (Appendix O) with the data gathered. This was followed by the second recruitment step for participants in the educational intervention program. A specific date was determined in collaboration with the clinic leadership; then, flyers (Appendix D) announcing the educational programs were posted.

Phase Three

This phase was the educational intervention program. There were two sessions: one morning and one evening. Each session lasted no more than one and one-half hours. At the beginning of the session, the participants were provided with a cover letter (Appendix F) explaining the purpose of the project. If they chose to participate once they learned the purpose, then a demographic data form (Appendix G) was provided for participants to complete, and a pre-test (Appendix H) was administered to determine their knowledge about drowning prevention prior to the educational intervention program. On the pre-test, they were asked to place a unique identifier in the upper right-hand corner of the form. This same unique identifier was used on the post-test (Appendix H). This unique identifier was used to correlate the pre- and post-test results. The pre-tests were collected and placed in the collection box. Participants were also asked to complete a

program evaluation (Appendix L). The purpose of this evaluation was to determine the effectiveness of the intervention program. Participants were instructed notto place their actual name on any of the forms.

All forms and flyers in the study were developed in English and Spanish. The translation from English to Spanish and Spanish to English was performed by a translation expert who is a retired Special Agent (Appendix M). Although the education program was conducted in English, all the forms, including the cover letter, flyers, data collection forms, and program evaluation, were available in English and Spanish. Once the program concluded and the post-test and the program evaluation were completed and submitted, the participants were given a $10.00 dollar gift card. Anyone who chose not to complete the program was still given the gift card.

Phase Four

After the education intervention, the investigator began Phase Four, the final analysis to determine the effectiveness of the educational intervention program and the knowledge gained. During this phase, data was analyzed with a t-test. A t-test is an inferential statistical procedure used to determine whether the means of two groups are significantly different.

Setting

This project took place in Palm Beach County at the Caridad Center, where the researcher was given permission to conduct the project. The Caridad Center is a free medical and dental clinic that provides vital health services to uninsured, working poor families of Palm Beach County. Its goal is to help the working poor population stay healthy so that they can be productive individuals in the community. The center's

mission is to upgrade the health, education, and living standards of underserved children and families.

Inclusion Criteria

This project utilized inclusion and exclusion criteria to determine the eligibility of participants. The inclusion criteria consisted of:

1. Parents/caretakers must be able to read and write English or Spanish.
2. Parents/caretakers must have a child or care for a child of ages six months to five years old.
3. Parents/caretakers must be 18 years old or older.
4. Parents/caretakers must be Florida residents residing in Palm Beach County.

Exclusion Criteria

Exclusion criteria consisted of:

1. Parents/caretakers who do not meet inclusion criteria.
2. Parents/caretakers who have a child who has previously near-drowned or drowned.

Sampling Methods and Sample Size

This project utilized a purposive, convenient sample. For the purpose of this project, there was a maximum of 90 parents/caretakers. Convenient sample is defined as drawing readily available subjects to participate in a project (Evidenced-Based Practice in Nursing and Health Care Glossary, 2010). As stated by Kellar and Kelvin (2013), there is a direct relationship between sample size and power of the test to identify statistically significant differences between groups (or relationships between variables), when such

differences (or relationships) exist in the population from which samples are drawn. With a larger sample size, the ability to generalize from the sample to the population is increased. Although this project had a small sample size, the results may be generalized beyond the project population.

Ethical Considerations/Protection of Human Subjects

Approval for this project was obtained from Barry University Institutional Review Board (IRB). This is in exempted project, which is approved in category (45 CFR46.101(b)). A request for exempt status was made in accordance with Department of Health and Human Services (DHHS) Regulations, 45 Code of Federal Regulations (CFR) 46, exempt category 2(i), research involving survey procedures. Responses were recorded in such a manner that the researcher cannot reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation. Participants were instructed not to write their names anywhere on the questionnaires. Anonymity of the participants was maintained by the lack of signed consent forms and the collection of the survey in a group setting. All information on the surveys was anonymous and strictly voluntary. Only the DNP student, the SON Center for Nursing Scholarship, and a statistician had access to the data. Data, once entered into the software programs, only revealed the responses to the items on the questionnaires. All findings and results were only reported in aggregate form. By accepting the conditions stated in the cover letter and voluntarily completing the questionnaires, the participant explicitly and implicitly consented to participate in this project.

The project was described and explained in a cover letter (Appendix E), which was distributed to all participants. It also gave the participants the option to withdraw from the project at any time or for any reason with no consequences. Each participant received the announcement flyers along with the cover letter explaining the project. The name of the researcher and organization affiliated were identified, along with the purpose of the project. This was an interventional project. Completed questionnaires returned to the researcher also served as consent to participate in this project. To preserve confidentiality, there were no names or other identifiers on questionnaires, nor on the pre- or post-test. Participants were asked to place a unique identifier on the pre-test; this identifier was also placed on the post-test.

Recruitment Procedure

The Caridad Clinic representative was contacted to seek permission to post flyers at its facilities to recruit participants for the project after IRB approval was received (Appendix A). Once approval to post at the site was received and IRB approval was obtained, flyers (Appendix C) were posted at the entrance and throughout the Caridad Clinic for potential participants to read. Flyers were posted in English and Spanish.

The inclusion criteria consisted of:

1. Parents and/or caretakers must be able to read and write English or Spanish.
2. Parents and/or caretakers must have a child or care for a child of ages six months to five years old.
3. Parents and/or caretakers must be 18 years old or older.

4. Parents and/orcaretakers must be Florida residents residing in Palm Beach County.

The Caridad Clinic operates Monday through Friday from 8:00 a.m. to 4:30 p.m. and Saturday 8:00 a.m. to 1 p.m.. A total of 30 participants were recruited for this pre-assessment phase. The investigator planned to be on site for a period of one week, or until the total number of participants was achieved for this phase of the project, which took approximately 2 weeks. There was a recruitment table with information about the project at the lobby. Parents/caretakers who approached the table and expressed interest in the project were provided with the project information. If they volunteered to participate, they were given a pre-assessment from (Appendix I), including a clipboard, a pencil to complete the form, and an envelope in which to place the completed form. The data collected from this recruitment phase, along with the Palm Beach County Water Coalition educational program, was used to prepare a drowning prevention educational intervention program for Palm Beach County residents who utilize the Caridad Clinic.

Upon completion of the analysis of the pre-assessment data, a second recruitment process occurred to invite participants of the clinic to attend the educational program about drowning prevention. These flyers, prepared in both English and Spanish, were once again posted at the clinic. A total of 90 participants were recruited for this program. Participants in the educational intervention program were given a $10.00 gift card as a token of appreciation for their participation in the program.

Proposed Budget

The budget for this project encompasses all expenses required and is detailed in a graph in Appendix K.

Project Timeline

This was a four-phase interventional educational project that was anticipated to take approximately seven months to complete. Appendix J offers a specific month-by-month timeline.

Data Analysis

Data were analyzed using the latest version of Statistical Package for Social Science (SPSS). A t-test, an inferential statistical procedure used to determine whether the means of two groups are significantly different, was utilized. If the sample means are far enough apart, the t-test will yield a significant difference, allowing the researcher to conclude that the two groups do not have the same mean (Fain, 2009).

Chapter Summary

The purpose of this project was to assess parents/caretakers' knowledge base concerning childhood drowning prevention and to develop, implement, and evaluate an educational program that will assist parents and/or caretakers in acquiring childhood drowning knowledge. This chapter provided the methodology, project design, setting, data collection, sampling methods, inclusion/exclusion criteria, and project implementation that were used in this project. There were no risks for participants, but the benefit of the project can potentially save a child's life and decrease the devastating childhood drowning rates in Palm Beach County, Florida.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The purpose of this project was to raise awareness of childhood drowning prevention in parents/caretakers of Palm Beach County, Florida, and to develop an educational preventative program aimed at educating parents/caretakers in Palm Beach County about drowning prevention measures. The rates of childhood drowning and near-drowning are at a staggering high rate not only in Palm Beach County, but also throughout the entire state of Florida. Reducing the number of child drownings may be achievable through education of the public. This chapter provides an overview about data obtained from a small segment of Palm Beach County residents.

Objectives

The objectives of this project were to:

1. Assess the risk factors associated with childhood drowning and parents/caretakers' knowledge base on childhood drowning prevention.
2. Design an educational program based on the results of the parental knowledge assessment.
3. Implement an educational program for parents/caretakers in selected area of Palm Beach County.
4. Evaluate the effectiveness of the educational program using a pre-test and post-test tool.
5. Analyze test results.

Project Questions

These objectives were achieved through responses from the following project questions:

1. What are the current attitudes and knowledge among parents and caretakers regarding drowning prevention of children ages six-months to five-years old in Palm Beach County?

2. Will the delivery of a culturally sensitive drowning prevention education to Palm Beach County residents reduce the risks of childhood drowning?

3. Will there be a significant difference in the pre- and post-test scores of Palm Beach County parents who attend a drowning prevention program?

Discussion of Phase One

The objectives of Phase One were met by executing several steps. During this phase, IRB approval was obtained from Barry University, and access to the participants was received from the Caridad Clinic in Palm Beach County. The recruitment flyers in English and Spanish were posted at the Caridad Clinic.

Discussion of Phase Two

The objectives of Phase Two were as follows. First, the phase strived to assess the first 30 volunteers' knowledge about childhood drowning incidents, their knowledge about CPR procedures, and their knowledge about measures that could prevent drowning incidents. The second objective of Phase Two was to develop an educational program to address the educational needs of Palm Beach County residents regarding childhood drowning incidents and about measures to prevent such incidents. The first objective of

Phase Two was achieved by performing a statistical analysis from the response obtained on the pre-assessment questionnaires completed by the 30 volunteers. These volunteers were parents or caretakers of 38 children. The second objective of Phase Two was achieved by creating an educational program based on the data analysis from the questionnaires', the Palm Beach County Water Coalition educational program, and the latest literature on drowning prevention. A total of 30 participants who met the inclusion criteria agreed to provide pre-assessment data by completing the pre-assessment survey.

Descriptive Statistical Results from the Pre-Assessment

The statistical analysis of the knowledge questionnaires, which fulfilled the first objective of Phase Two, revealed the following: 30 individuals (parents/caretakers) who met the criteria to qualify as volunteer for this phase of the project were accepted to participate. The majority of the participants did not know CPR (n = 16, 53%). More than half of the 38 children were male (n = 20, 53%), and less than half (n = 18, 47%) were female. The ages of the 38 children ranged from less than a year old (7.5 months old) to 6 years old (M = 3.15, SD = 1.79). Most of the 38 children were exposed to a nearby body of water, (n = 22, 58%), some of them played near a body of water on a regular basis (n = 11, 29%), and the rest played near a body of water on a less than regular basis (sometimes) (n = 11, 29%). The majority of the 38 children could not swim (n = 34, 89%). None of the children were good or expert swimmers, and those who did have some kind of swimming knowledge were at the level of beginners (n = 8, 21%). The vast majority of the children (n = 37, 97%) could not save themselves if they were to fall in a body of water (swimming pool, pond, etc.). The project revealed that only a small portion of the children under the participants had taken any kind of swimming

lessons (n = 5, 13%); a large number of the children had not taken any kind of swimming lesson (n = 33, 87%).

Some of the parents/caretakers who participated in this project had a swimming pool at their residence (n = 7, 23%), of which n = 6, 20% did have any type of safety measures (fence, alarms, pool covers, or safety nets) around their swimming pool. Some of the participants lived in a community with a swimming pool (n = 10, 33%); all 10 community swimming pools had a fence around them. Many of the 30 participants lived within proximity of a body of water (n = 19, 63%). The types of bodies of water the 19 participants lived near were as follows: a pond (n = 2, 6.5%), a canal or ditch (n = 12, 40%), a swimming pool (n = 3, 10%), and the ocean (n = 2, 6.5%). Most of the 30 participating parents/caretakers (n = 19, 63%) had a child/children who could open a sliding door. Out of 38 children, the majority could open a sliding door (n = 23, 60%); further, a high number of children were exposed to some type of body of water and were able to open a sliding door (n = 17, 45%).

Thirty volunteers (parents and caretakers) were recruited to assess their knowledge about childhood drowning incidents and their knowledge about CPR. With the help of a pre-assessment tool, it was discovered that the majority of parents/caretakers living near a body of water in Palm Beach County were lacking knowledge about CPR and childhood drowning preventative measures (n = 16; 53%). It was also identified that the majority of the children of respondents interviewed could not swim (n = 34; 89%); however, respondents stated that these children play near the water regularly (n = 11; 29%) or sometimes (n = 11; 29%). Moreover, respondents stated that virtually all of their kids could not save themselves if they fell in the water (n = 37; 97%).

Based on the above listed statistics, the educational needs of the community regarding knowledge about children drowning incidents and about measures to prevent such incidents were identified. The investigator prepared an educational program, which was presented to the individuals who volunteered for Phase Three of this project.

Discussion of Phase Three

The objectives of Phase Three were to administer a pre-test to 60 qualified volunteers, to implement an educational program (Appendix N) to the 60 qualified volunteers, to administer a post-test to the 60 qualified volunteers, to have the 60 volunteers evaluate the program, and to provide each of the 60 qualified volunteers with a $10.00 Wal-Mart gift card as an expression of gratitude for their participation.

Steps Taken to Meet the Objectives of Phase Three

Step One - Recruit Volunteers. The first step taken to meet the objectives of Phase Three was to recruit volunteers. To accomplish this, recruitment flyers in English and Spanish were placed at various sites of the Caridad Clinic. For this phase of the

project, a total of 60 volunteers were needed. Once 60 qualified volunteers were identified and accepted (n = 60), the DNP student assembled them into small groups in a room at the Caridad Clinic.

Step Two - Demographic Questionnaires Given. Each of the 60 qualified volunteers were first asked to complete a written demographic questionnaire, which contained questions with multiple choice answers in order to learn each participant's age, gender, educational level, ethnic background, race, and relationship with the child. This data was significant in describing the population surveyed. The volunteers were instructed to not write any identifying information on the demographic questionnaires or on any of the other questionnaires so that all information obtained could remain anonymous. Each participant was asked to mark each of their questionnaires with a four-digit number in the right upper corner of their paper work that only they would know. Immediately after each participant completed the demographic questionnaire, they were asked to place the questionnaire in a box that was located in the front of the room.

Step Three - Written Pre-Test Administered. Upon completion of the demographic survey, a written pre-test, which consisted of multiple choice questions, was administered to determine volunteers' knowledge about childhood drowning and prevention prior to the educational program. Once each volunteer completed the pre-test, they were asked to put the same four digit code on the top right corner of each exam and place it in a separate box also located in the front of the room.

Step Four - Educational Program Implemented. After the pre-assessment educational survey was completed and the forms were placed in the appropriate box in the front of the room, the educational intervention program began. A PowerPoint

presentation (Appendix O) was used as an educational tool by the investigator, which included visual aids to help the participants enrich their knowledge about childhood drowning and preventive measures. Upon completion of the educational program, the participants were given an opportunity to ask questions about the materials presented and to clarify any concerns they have had.

Step Five - Written Post-test Administered. A post-test was administered to participants upon completion of the educational program. The participants were instructed to place the same four-digit number in the top right corner of the post-test as previously done on the pre-test. They were reminded not to place their names on the form. The participants were then instructed to place completed post-test questionnaires in front of the room, labeled as post-test.

Step Six – Program Evaluation Handed Out. Upon completion of the post-test, a program evaluation was given to each participant. They were asked to complete it and placed it in a box that was labeled program evaluation.

Step Seven – Handed-Out Gift Cards. As each volunteer deposited the completed program evaluation form in the indicated box, the DNP student awarded each participant a $10.00 Wal-Mart gift card as a token of appreciation for their participation. They were informed if they did not want to complete any of the tests they would still receive the gift card.

Characteristics of the Participants of the Educational Program

Demographic Questionnaires Statistics

The statistical analysis of the demographic questionnaires (n = 60) revealed the following results. The specific age of the 60 volunteers who participated in this phase of

the project was not solicited in order to encourage their participation. Instead, participants were categorized by age groups, and the following is the resulting age groups of the participants: the majority of the participants were between 26 and 35 years old, followed by 22% of participants between 36 and 45 years old, and 18% 46 years old or older. Only 10% of participants were 25 years old or younger. Most of the 60 volunteers were females (n = 52, 87%), and the minority (n = 8, 13%) were males.

The relationship that each of the 60 volunteers had with a child/children between the age of 6 months and 6 years old was as follows: mothers, n = 42, 70%; fathers, n = 6, 10%; and caretakers, n = 7, 12%, with the remaining volunteers having another type of relationship (n = 5, 8%). The breakdown of the level of education of the 60 volunteers was as follows. Several had an educational level between 1st grade and 6th grade (n = 18, 30%). A large group had an educational level between 7th grade and 12th grade (n = 25, 42%). Several had college or university level of education (n = 17, 28%). None of the volunteers had post-graduate level of education. The breakdown of the ethnicity/ race of the 60 volunteers was as follows: Caucasians n = 9, 15%; Hispanic, n = 47, 78%; and other, n = 4, 7%. This other category included one African-American, two Asian, and one corresponding to other race.

Table 1

Demographic Characteristics of the Sample (n = 60)

Characteristics	n	%
Age of participants		
18-25 years old	6	10
26-35 years old	30	50
36-45 years old	13	22
46 years old or older	11	18
Gender of participants		
Female	52	87
Male	8	13
Type of relationship with the child		
Mother	42	70
Father	6	10
Caretaker	7	12
Other	5	8
Level of education		
1st grade to 6th grade	18	30
7th grade to 12th grade	25	42
College or university	17	28
Race/ethnicity		
Caucasian	9	15
Hispanic	47	78
Other	4	7

Pre-Test and Post-Test Statistics

The statistical results of the pre-test were compared to the statistical results of the post-test (n = 60 for both statistical analyses). At first glance, the results show significant improvement in the area of knowledge about childhood drowning, its causes, and measures to prevent the incident from happening by the majority of the 60 volunteers.

The aforementioned improvement appears to be directly attributable to the educational program presented to the 60 volunteers by the DNP student after the pre-test but before the post-test. These results were evaluated statistically using a Wilcoxon-Sign Rank test. The statistical comparison of volunteers who selected the correct responses on the pre-test versus volunteers who selected the correct responses on the post-test is listed in the following paragraph and also is exhibited graphically following the narrative section reflecting all possible answers.

On the number one reason for children drowning, on the pre-test, 20% (n = 12) of the volunteers answered this question correctly by choosing the statement that said it was because "there was a lapse in the supervision of the children**."** However, on the post-test, 85% (n = 51) chose that answer, for a net improvement of 39 volunteers who learned what is the correct answer. For the question about the "required number of inches of water for a child to drown," 47% (n = 28) answered this question correctly on the pre-test by choosing the statement that said it was "2 inches of water." However, on the post-test, 92% (n = 55) chose that answer, for a net improvement of 27 volunteers. For the question, "where should a parent/caretaker be in order to best supervise a 3-years old child around water," on the pre-test, 35% (n = 21) answered this question correctly by choosing the statement that said to "always be close enough to touch the child**."** However, on the post-test 85% (n = 51) chose that answer, for a net improvement of 30 volunteers.

For the question, "what age should one leave a child alone in the bathtub," on the pre-test, 73% (n = 44) answered this question correctly by choosing the statement that said at "approximately the age of 6 years old." However, on the post-test, 80% (n = 48)

chose that answer, for a net improvement of 4 volunteers. The question asking "what is the number of children and teenagers who died in the U.S. in the last 3 years" had 58% (n = 35) answer this question correctly by choosing the choice that said "more than 3,000." However, on the post-test 72% (n = 43) chose that answer, for a net improvement of 8 volunteers. On the pre-test, 57% (n = 34) correctly answered "where is the first place to look for a child when missing?" by choosing the statement "outside in the pool or area with bodies of water." However, on the post-test, 97% (n = 58) chose that answer, for a net improvement of 24 volunteers. For the question "what is the best supervision form when child/children are either around or in a body of water," on the pre-test, 22% (n = 13) answered this question correctly by choosing the statement that said "always be within arm's reach of the children." However, on the post-test, 65% (n = 39) chose that answer, for a net improvement of 26 volunteers.

For the question that asked "whether swimming lessons protect a child from drowning," 30% (n = 18) answered this question correctly on the pre-test by choosing "No." However, on the post-test, 67% (n = 40) chose that answer, for a net improvement of 22 volunteers. For the question on "whether constant supervision is enough to protect a child from drowning," 37% (n = 22) answered this question correctly on the pre-test by choosing "No." However, on the post-test, 65% (n = 39) chose that answer, for a net improvement of 17 volunteers. The question on "whether pool owners without young children need to install protective barriers" resulted in 75% (n = 45) answered this question correctly on the pre-test by choosing the answer that said "Yes." However, on the post-test, 95% (n = 57) chose that answer, for a net improvement of 12 volunteers. When asked "whether a child/children could start to drown within seconds of coming into

contact with water," on the pre-test, 93% (n = 56) answered this question correctly by choosing the answer that said "Yes." However, on the post-test, 98% (n = 59) chose that answer, for a net improvement of 3 volunteers.

For the true-or-false statement, "Most pool related drowning or near-drowning occur in the child's own pool," 80% (n = 48) answered this question correctly on the pre-test by choosing "True." However, on the post-test, 93% (n = 56) chose that answer, for a net improvement of 8 volunteers. For the true-or-false statement, "There are many things homeowners can do to help ensure water safety," 90% (n = 54) answered this question correctly on the pre-test by choosing "True." However, on the post-test, 100% (n = 60) chose that answer, for a net improvement of 4 volunteers. For the question that asked, "what is the age of children that are most likely to drown in a pool," 65% (n = 39) answered this question correctly on the pre-test by choosing the answer that said 0 to 4 years old. However, on the post-test, 98% (n = 59) chose that answer, for a net improvement of 20 volunteers. For the question that asked, "what is the gender of children under the age of five years old that are most likely to drown in a pool," on the pre-test, 38% (n = 23) answered this question correctly by choosing "Male." However, on the post-test, 92% (n = 55) chose that answer, for a net improvement of 32 volunteers. For the question that asked "what is the most appropriate type of adult supervision for children under age of five years old playing in or around the pool," on the pre-test, 50% (n = 30) answered this question correctly by choosing the answer that said "stay within arm's reach of the child." However, on the post-test, 68% (n = 41) chose that answer, for a net improvement of 11 volunteers.

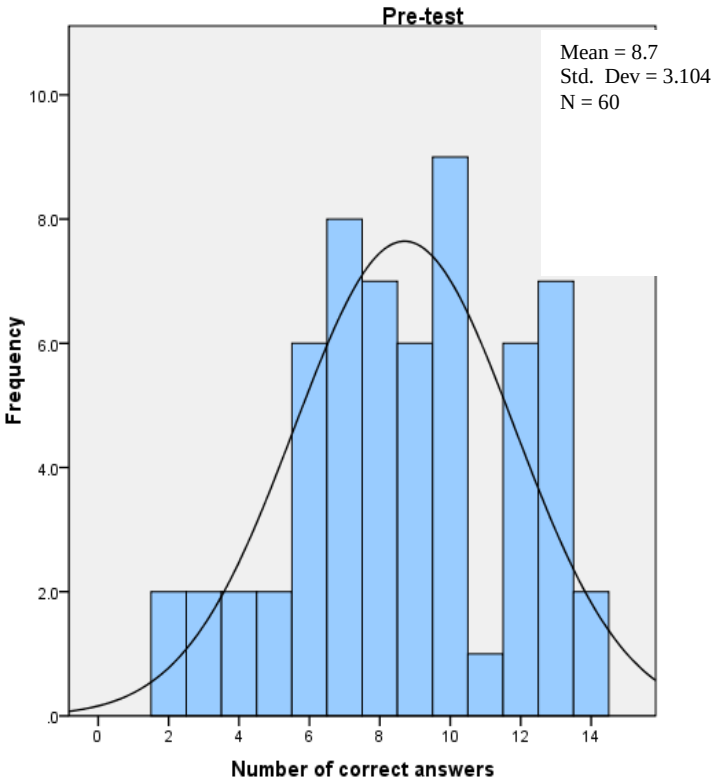

Figure 2. Itemized responses to questionnaire by pre- and post-test.

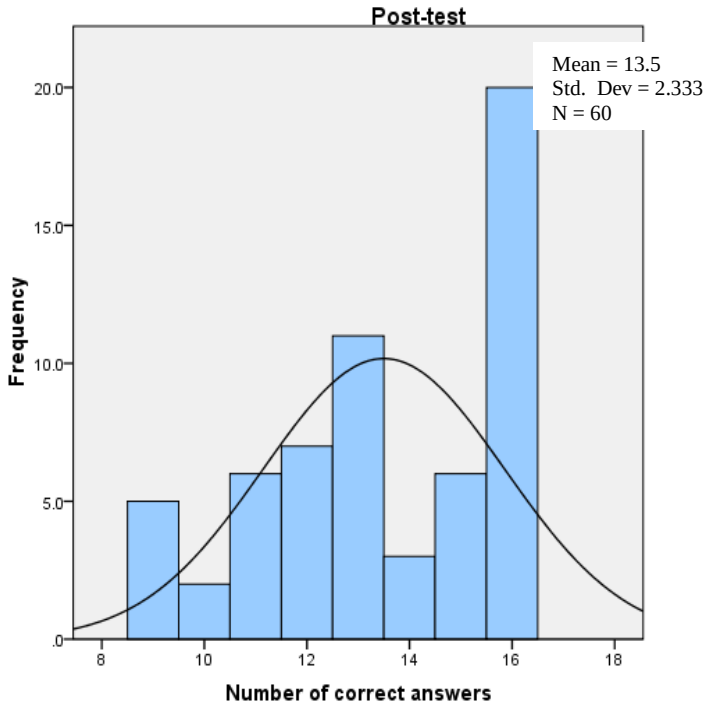

Figure 3. Characteristics of the participants of the educational program pre-test.

The purpose of the histograms is the give an idea about the distribution of the number of correct answers pre- and post-test. In the pre-test, a high frequency of respondents answered either 7 to 10 questions correctly or 12 to 13 questions correctly, while in the post-test, most respondents answered all 16 questions correctly. For all 60 respondents, the smallest number of correct answers by a respondent in the pre-test was 2, while in the post-test, all respondents answered at least 9 questions correctly. The mean number of correct answers increased from 8.7 in the pre-test to 13.5 in the post-test. The dispersion of the number of correct responses was also different between pre-test and post-test, as observed by the range and standard deviation calculated in both instances. In the pre-test, the number of correct responses ranged from 2 to 14, and the standard deviation was calculated to be 3.104; while in the post-test, the range was much narrower (from 9 to 16) and the standard deviation smaller (SD = 2.333). These findings not only

indicate that the number of correct responses was higher in the post-test as compared to the pre-test, but also that in the post-test, most responses were concentrated around the higher values observed.

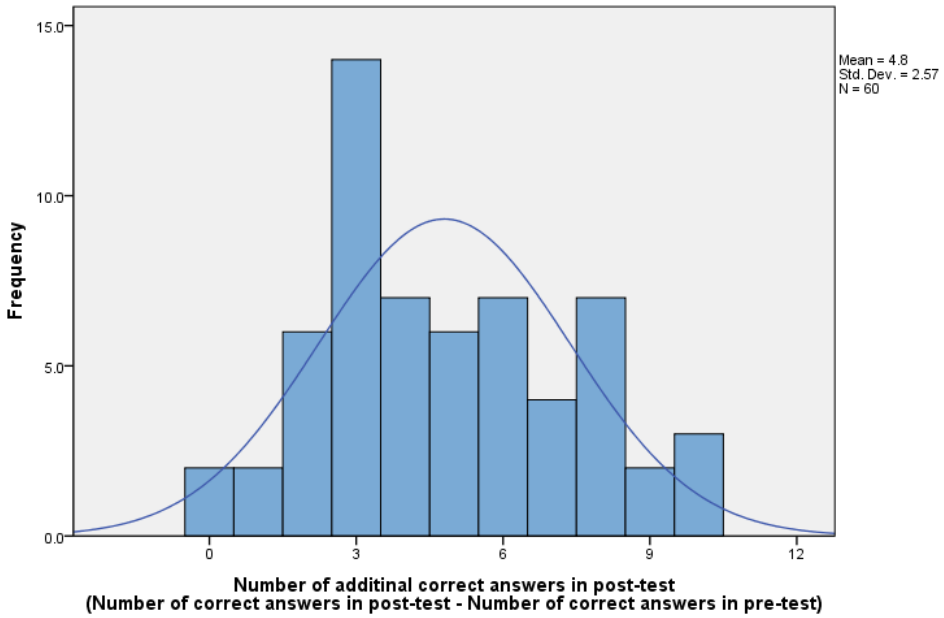

Figure 4. Pre- and post- test comparison.

When compared to the number of correct answers in the pre-test, the greatest number of respondents correctly answered three additional questions in the post-test. Two respondents exhibited no additional correct answers in the post-test compared to their scores in the pre-test. This finding may be due to their scores being already high in the pre-test (12 and 13 points, respectively). The largest increase from pre-test scores was observed in three cases, with respondents that answered an additional 10 questions correctly during post-test. On average, respondents answered 4.8 (±2.57) additional questions correctly in their post-test than in their pre-test.

Discussion of Phase Four

Wilcoxon-Sign Rank Test

A Wilcoxon-Sign Rank test was performed to determine if the educational program was indeed effective at helping the participants improve their knowledge about childhood drowning, its causes, and measures to prevent incidents from occurring. For the sample size of the project (n = 60), a Shapiro-Wilk test of normality (Sig. = 0.022) indicated that the differences in scores are not normally distributed in the sample. Therefore, the Wilcoxon-Sign Rank test was performed.

The Wilcoxon-Sign Rank test is a non-parametric statistical hypothesis test used when comparing two related samples, matched samples, or repeated measurements on a single sample to assess whether their population mean ranks differ (i.e., it is a paired difference test). It can be used as an alternative to the paired student's *t*-test, *t*-test for matched pairs, or the *t*-test for dependent samples when the population cannot be assumed to be normally distributed (Lowry, 2006).

Descriptive Statistics

The difference in total number of correct answers between the pre-test and the post-test were computed (Figure 3). The following is a tabular display of such summary (Figure 4): Number of correct answers in pre- and post-test and calculated difference in scores for each participant. (n = 60) in order to score the pre- and post-tests, participants were given a point for each correct answer, allowing for a maximum of 16 possible points. The difference in scores was obtained by subtracting the pre-test score of each participant from his/her score post-test score (Table 3). The differences in scores were plotted in a histogram (Fig. 5).

Table 2

Distribution of Difference of Scores on Pre-Test and Post-Test

Participant Number	Number of Correct Answers on Pre-test	Number of Correct Answers on Post-test	Difference (post-test - pre-test)	Participant Number	Number of Correct Answers on Pre-test	Number of Correct Answers on Post-Test	Difference (post-test - pre-test)
1	7	13	6	31	10	16	6
2	9	13	4	32	13	13	0
3	7	9	2	33	8	11	3
4	11	16	5	34	9	11	2
5	13	16	3	35	5	10	5
6	8	16	8	36	12	14	2
7	8	16	8	37	7	13	6
8	7	14	7	38	10	16	6
9	10	16	6	39	10	14	4
10	13	16	3	40	6	12	6
11	13	16	3	41	3	11	8
12	13	16	3	42	2	12	10
13	12	16	4	43	2	12	10
14	9	16	7	44	4	13	9
15	13	16	3	45	7	9	2
16	7	16	9	46	9	12	3
17	9	16	7	47	6	9	3
18	8	16	8	48	6	9	3
19	13	16	3	49	6	10	4
20	12	15	3	50	14	15	1
21	14	16	2	51	12	13	1
22	10	15	5	52	10	13	3
23	8	16	8	53	10	15	5
24	12	16	4	54	9	15	6
25	7	11	4	55	6	13	7
26	4	12	8	56	8	12	4
27	5	13	8	57	3	13	10
28	10	15	5	58	7	9	2
29	10	13	3	59	6	11	5
30	12	12	0	60	8	11	3

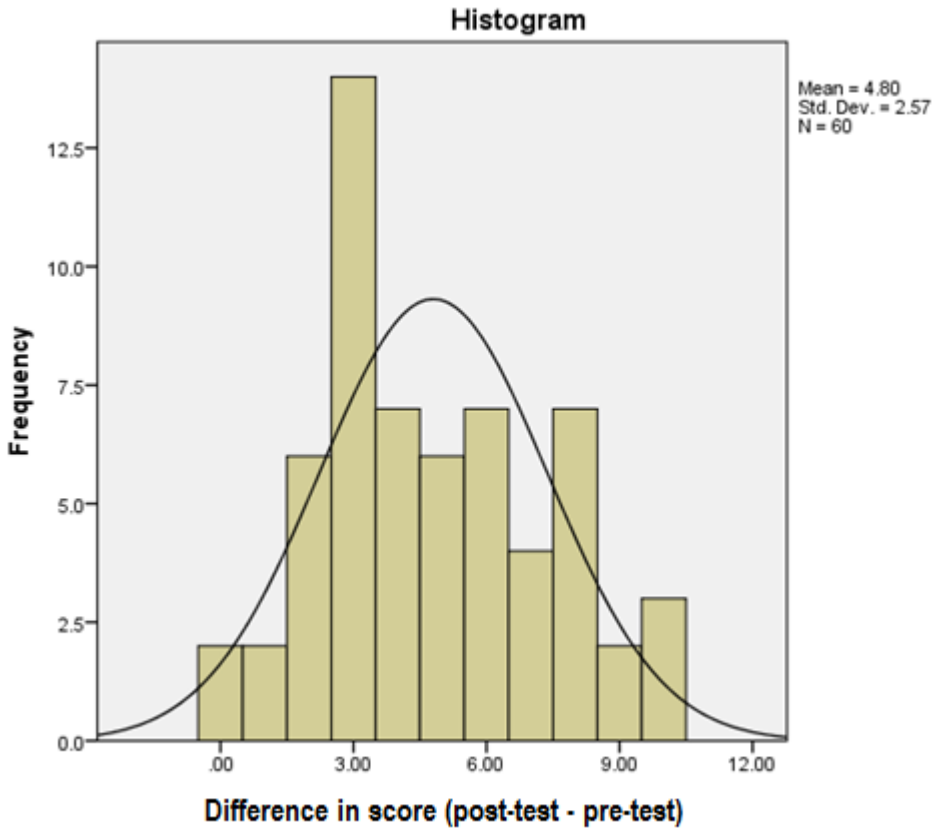

Figure 5. Difference in pre-test and post-test scores.

As shown in the histogram above, the mean score for all 60 participants in the pre-test was 8.7 (±3.104), and the mean score in the post-test increased to 13.5 (±2.333). The negative mean rank is less than the positive mean rank, indicating that the post-test scores are likely higher than the pre-test scores.

Table 3

Descriptive Statistics of Childhood Drowning Prevention Pre-Test and Post-Test (n=60)

Measures	Mean	Standard Deviation	Range
Pre-Test	8.7	3.104	12
Post-Test	13.5	2.333	7

Final Analysis

The results of the Wilcoxon-Sign Rank test revealed that the main purpose of this project, which was to raise awareness of childhood drowning prevention in parents/caretakers of Palm Beach County, Florida and to develop a preventative program that would aid in reducing the number of deaths caused by this type of accident, have been met for this project sample in Palm Beach County. The educational goals of the intervention were assessed, the evaluation indicated an improvement between the pre- and post-tests, the overall trend suggested the educational program was effective for the selected sample.

Program Evaluation

The 60 parents/caretakers who volunteered to participate in this project were given a document to evaluate the program and the DNP student. The evaluation forms had seven statements. The participants were asked to rate the following statements with choices (1-5) strongly disagree, disagree, maybe, agree, or strongly agree: (a) At the beginning of the presentation, the presenter gave me a clear idea of what the presentation was going to be about and what outcomes were to be achieved; (b) The objectives of the presentation were clearly achieved; (c) I am more aware about water safety/drowning prevention issues; (d) I have learned new preventive measures to prevent drowning and water related incidents; (e) The information provided will be useful to me in creating a safe environment for children around any body of water; (f) The presenter appeared to be knowledgeable about the main topic of the presentation; and (g) I felt the presenter was interested in informing me about children drowning.

The average rating from the participants ranged from 4.72 to 4.77, with the presenter's overall rating average being 4.75.

Strengths and Limitations of the Project

Some of the strengths identified from this project included increased knowledge and awareness of childhood drowning, near-drowning, and preventative measures by the participants as evidenced by the results of the post-test analysis. The tool used to conduct this project was translated by a certified Spanish translator, which adds to the reliability of the project. Another strength acknowledged was that the drowning prevention classes were offered in participants native language, which add to the understanding of material presented in class.

One of the limitations of this project was that the program was conducted in Spanish and English, eliminating the participation of Creole-speaking individuals, which forms a large portion of the population in Palm Beach County. Therefore, the findings of this project cannot be generalized based on the use of limited cultural groups. Another limitation identified in this project was that about 30 to 45 minutes into the presentation, participants seemed pressed for time; perhaps a shorter class highlighting main points would be beneficial for future project. An additional limitation of the project was the last question (#17) on the pre- and post-test was not worded properly or participants were unable to comprehend the question; therefore, they did not answer this question. For future studies, the investigator recommends that a "train the trainer" session be held using culturally competent nurses who are Spanish and Creole certified interpreters. This strategy will encourage the inclusion of Creole-speaking participants in future studies. The investigator would also consider giving a group post-test versus individual post-test

to ensure a higher level of understanding or better comprehension of test questions and responses. In retrospect, the investigator believes that it would be beneficial to design an educational program catered to parents and caretakers who are unable to read and write. At the time this project was conducted, the investigator was a novice researcher.

Implications for Practice

Nurses are entrusted with many roles. There are times when it seems overwhelming to accomplish what is expected; nonetheless, the great impact that nurses have on the lives of many when they serve as an advocate, an educator, and a researcher cannot be underscored. Knowledge is empowerment; it influences the way one thinks; hence, the way one behaves. Studies conducted by Rahman et al. (2008), Bugeja and Franklin (2005), Yang et al., (2007), and Lilier et al. (1993) have suggested how so many young lives can be saved by simply disseminating educational programs about drowning prevention in the communities.

Prior to implementing this project, the investigator believed that there was a need for innovative ways to deliver the message about childhood drowning prevention, but after reviewing the above studies and completing the project, it was discovered that what was needed was simply educating parents and caretakers about childhood drowning and preventative measures. The literature seemed to suggest that a lack of understanding is the major underlying factor that affects childhood drowning prevention.

This project's results support the need for educational programs about this topic. Parents and caretakers who volunteered in this project demonstrated increased knowledge about childhood drowning and preventative measures. Prevention is key to cultivating a healthy society, and as advanced practice nurses, it is important to advocate for the most

vulnerable in our society. According to the Florida Department of Health (2010), the state of Florida overwhelmingly has the highest unintentional drowning rate in the nation for the 1-4-year-old age group, with a drowning rate of 7.29 per 100,000 people. The same report also stated that Florida also had the highest number of drownings and rate in the nation for the 1-14 age group, with a drowning rate of 2.67 per 100,000 people.

Our society needs to be informed not only of the danger of being surrounded by bodies of water but also of the hope that exists when safety measures are put in place. The advance practice nurse essential states that all "DNP graduates are expected to demonstrate refined assessment skills based practice on the application of biophysical, psychological, behavioral, sociopolitical, cultural, economic, and nursing science as appropriate in their area of specialization." Advance practice nurses are constantly educating their patients and the public and providing them with resources to help them improve their current well-being. This project has validated that the DNP can make a tremendous impact in safeguarding or improving the health of our community through educational programs. Educating our community is a commitment that every advanced practice nurse should adhere to, and doing so raises the standard of care.

Healthcare Outcomes

Pender et al. (2006) declared that outcome of care should continually be assessed to identify the most effective approaches for health promotion. This claim was evidenced by the findings of this project. The researcher was able to identify childhood drowning prevention problems, implement an educational program, and evaluate the outcome. Parents and caretakers demonstrated an increase in knowledge and awareness of

childhood drowning prevention and safety measures implementation. The post-test results revealed that education works.

As health care providers and leaders, it is our hope that with the dissemination of more educational programs in our communities and more involvement of community members there will be a dramatic decrease in the number of childhood drowning incidents. The DNP essential of Clinical Prevention and Population Health for Improving the Nation's Health suggests that through good preventative measures, great health care outcomes can be achieved. This project has emphasized the importance of childhood drowning preventive measures to reduce drowning incidents involving children. Parents and caretakers were encouraged to learn CPR, have their children learn how to swim at an early age, and provide constant supervision of children around bodies of water.

Healthcare Delivery

At the end of this project, the author discovered that not much is required to educate the public on healthcare issues. All that is needed is the educator, a classroom, and willing participants. It might be time for state boards to require community service in addition to the mandatory Continuing Education Unit (CEUs) needed for licensure renewal. Requiring some CEUs and community service hours would develop nurses' and advanced practice nurses' awareness of problems that exist in our community and encourage them to get involved in finding solution to these problems. This effort would strengthen our presence as well as increase health care promotion and disease prevention through educating our communities.

According to Pender et al. (2006), nurse scientists need to learn how to measure economic outcomes and implement studies to evaluate the cost of health-promotion and risk-reduction interventions. One of the ways in which the advanced registered nurse practitioners (ARNPs) can contribute to health promotion to the community is by designing educational brochures and/or flyers on drowning prevention and then disseminating them through either local churches or clinics. Another way of promoting childhood drowning prevention is by collaborating with other healthcare members and conducting health fair especially in low-income neighborhood where parents and caretakers can be educated on childhood drowning statistics and ways to prevent such tragedies. This tactic is a low-cost method of sharing information in our society, which will in the long run save millions of dollars in the healthcare industry by assisting in the prevention of drowning or complications associated with near death drowning. There would be no cost to require nurses to do 24 hours of community service over a two-year period along with the required CEUs; implementing this standard could only have a positive effect on any community.

The DNP essential of Interprofessional Collaboration for Improving Patient and Population Health Outcome stated that health care professionals need to function as a collaborative team in order to accomplish the IOM mandate for safe, timely, effective, efficient, equitable, and patient-centered care in today's multifaceted environment. The results of this project demonstrated that our community has a knowledge deficit when it comes to childhood drowning preventative measures; nonetheless, this project also showed that with the implementation of childhood drowning educational program, the

community's knowledge base was improved as evidenced by the pre-test and post-test that were administered to the participants.

Healthcare Policy

The findings from this project should influence health care policy. Nurses and health care professionals need to understand drowning prevention and the cultural attitudes that accompany this problem. Findings from this project have shown that education as preventative measures can increase safety for children and the need for culturally sensitive education to reach the residents of Palm Beach County. Nurses are naturally trained to create an environment of trust, which is instrumental in conducting research studies.

As an advanced practice nurse, the author believes that enacting a law that makes it mandatory for parents to attend childhood drowning prevention classes would be beneficial to all and would contribute to decreasing the incidents of childhood drowning and the economic burden it places on our nation. The DNP essential Health Care Policy for Advocacy in Health Care states that health care providers need established policies by which health care providers are bound in their daily operations. Based on the findings of this project, the need was identified for the involvement of health care professionals in lobbying for the enactment of laws that would enforce childhood drowning prevention measures. The DNP as an educator is very instrumental in alerting the public about such laws and designing, implementing, and disseminating educational programs in our communities that will assist in reducing the rate of childhood drowning. Participants from low socioeconomic status and diverse cultural backgrounds were treated equally

with compassion, dignity, and respect throughout this project, adhering to Barry's University core commitment of inclusive community.

Pender's theoretical framework was utilized for this project because it provided an opportunity to assess parents' and caretakers' baseline knowledge about drowning prevention, their cultural beliefs, and backgrounds. Furthermore, Pender's theoretical framework provided a tool that was useful to investigate any barriers that would prevent parents/caretakers from leaning childhood safety.

Pender's HPM guided this project. Pender described health as a positive dynamic state, not merely the absence of disease. This model is structured around education and prevention. Pender (2006) stated that health promotion should be the proffered method for health care rather than just trying to avoid illness and focusing all energies on detection and maintenance. The HPM describes the multi-dimensional nature of persons as they interact within their environment to pursue health. It focuses on the following areas: individualized characteristics and experiences, behavior-specific cognition and affect, and behavioral outcomes.

Pender's theoretical Health Promotion Model consists of three conjectures: individual characteristics and experiences, behavior-specific cognition and affect, and behavioral outcome. Throughout this drowning prevention project, the investigator identified and addressed the participants' psychosocial and sociocultural beliefs to gain understanding of their thought process and knowledge base concerning childhood drowning. The investigator was also able to gather information on how participants' cultural beliefs influenced the way they supervised their children around bodies of water.

Pender defines perceived barriers to action as perceptions concerning the unavailability, inconvenience, expense, difficulty, or time-consuming nature of a particular action. The perceived barriers lead us to ask the following question: What are some of the barriers that are preventing parents and caretakers from properly supervising their children? Could it be the inconvenience of watching the children? Could it be the expense of putting a fence around the pool or installing safety devices? Or could it be the time constraint that takes parents/caretakers away from their daily chores?

Pender (2006) kindly reminds us that when readiness to act is low and barriers are high, action is unlikely to occur. If we continue to ignore the severity of childhood drowning in our community, then children will continue to experience death or new drowning episodes that can easily be avoided.

The Health Promotion Model identifies interpesronal influences as cognitions concerning the behaviors, beliefs, or attitudes of others. One of the greatest areas of concerns that arose in this project was the factors that would influence parents and caretakers to leave a child in a bathtub to be supervised by an older sibling less than 10 years old. Is this acceptable when we know that a 10-year-old is in the developmental stage of learning to apply skills and developing their value and beliefs system? During this developmental stage is a struggle to move from childhood to adolescent, so why are parents and caretakers making such a deadly decision?

According to Pender's Health Promotion Model, commitment to plan of action initiates a behavioral event, but commitment alone without associated strategies often results in "good intentions" but failure to perform a valued health behavior. Throughout this drowning prevention project, the investigator strongly encouraged parents and

caretakers to commit to at least one of the following goals that could save their child's life: placing an alarm on the door that leads to a body water, building a fence around the pool, emptying an inflatable pool after use, attending drowning prevention classes, learning CPR, and having a competent adult supervise the children when they are swimming or when they are near a body of water.

In the Health Promotion Model, health-promoting behavior is the end point or action outcome. Pender eloquently tells us that health-promoting behavior, particularly when integrated into a healthy lifestyle that pervades all aspects of living, results in improved health, enhanced functional ability, and better quality of life at all stages of development. Findings from this project demonstrated that drowning prevention educational program is a great tool to assist in alerting the public about drowning and near drowning and its effect on our families, our community at large, and the healthcare industry. This project also provided a means of encouraging parents and caretakers to implement safety precautions and to practice health-promoting behaviors that will positively impact our society. Health-promoting behaviors should result in improved health, enhanced functional ability, and better quality of life at all stages of development. These benefits were evident by the results of the implemented drowning prevention program.

The DNP student, with the use of the HPM, was able to assess baseline drowning prevention knowledge, design and implement an educational tool, review and analyze results of the program using statistical analysis, and make recommendations for future research studies. The results of this project revealed that education does play an

important role in impacting a large number of people in increasing their drowning prevention knowledge and maintaining a secure of well-being.

Future Research

The DNP student recommends that this project be replicated to include a larger and more diverse population, such as targeting populations that are exposed to or are near to the ocean and larger rural areas as well as urban areas throughout the state of Florida in order to continue to raise awareness about childhood drowning prevention. More quantitative studies should be conducted on drowning prevention. Another recommendation is that future studies should be aimed to target ethnic groups in their native languages.

Summary

In the state of Florida, childhood drowning and near-drowning incidents occur throughout the year, especially during the summer months. The effects on the quality of life of drowning survivors and their caretakers can be detrimental and ongoing. Children who are survivors of near-drowning incidents can have lifelong neurological and psychological trauma. Thus, prevention is the key. Through further research studies and educational programs, safety will be promoted and prevention achieved. Regrettably, unless educational programs on drowning and near-drowning preventive measures are disseminated, these incidents will continue to destroy innocent families. The results of the post-test that was administered in the course of this investigative project reflected that after being educated about ways to prevent drowning incidents; more parents became aware of risks of drowning and how to implement preventative measures in the lives of our children. Ideally, a formal classroom presentation is what is warranted; however,

instead of doing nothing about it, a health care professional could talk to the parents or care takers while they conduct the activities that take place prior to a doctor actually examining a child.

The knowledge acquired from the drowning prevention program will not only save lives but will also contribute to the reduction of the astronomical economic burden placed on insurance agencies and the government when these deadly drowning incidents occur. In conclusion, it is time to take every opportunity to educate parents and caretakers on how to prevent childhood drowning because the effects of such incidents are devastating and sadly preventable.

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APPENDIX A

IRB APPROVAL

BARRY UNIVERSITY

OFFICE OF THE PROVOST
INSTITUTIONAL REVIEW BOARD

[redacted]

Research with Human Subjects
Protocol Review

Date:	August 5, 2013
Protocol Number:	13801
Title:	Childhood Drowning Prevention in Palm Beach County
Approval Date:	7/30/13
Name:	Ms. Maria Pontier-Elias
Address:	[redacted]
Sponsor:	Dr. Jessie Colin Barry University School of Nursing

Dear Ms. Pontier-Elias:

On behalf of the Barry University Institutional Review Board (IRB), I have verified that the specific changes requested by the IRB have been made. Therefore, I have granted final approval for this study as exempt from further review.

As principal investigator of this protocol, it is your responsibility to make sure that this study is conducted as approved by the IRB. Any modifications to the protocol or consent form, initiated by you or by the sponsor, will require prior approval, which you may request by completing a protocol modification form.

It is a condition of this approval that you report promptly to the IRB any serious, unanticipated adverse events experienced by participants in the course of this research, whether or not they are directly related to the study protocol. These adverse events include, but may not be limited to, any experience that is fatal or immediately life-threatening, is permanently disabling, requires (or prolongs) inpatient hospitalization, or is a congenital anomaly cancer or overdose.

The approval granted expires on July 31, 2014. Should you wish to maintain this protocol in an active status beyond that date, you will need to provide the IRB with and IRB Application for Continuing Review (Progress Report) summarizing study results to date.

If you have questions about these procedures, or need any additional assistance from the IRB, please call the IRB point of contact, Mrs. Barbara Cook at [redacted] or send an e-mail to [redacted] Finally, please review your professional liability insurance to make sure your coverage includes the activities in this study.

Sincerely,

Sarah Lewis, PhD
Vice Chair, Institutional Review Board
[redacted]

Cc: Dr. Jessie Colin

Note: Note: The investigator will be solely responsible and strictly accountable for any deviation from or failure to follow the research protocol as approved and will hold Barry University harmless from all claims against it arising from said deviation or failure.

APPENDIX B

PERMISSION LETTER

June 12, 2013

Carmen Nieves, Caridad Clinic Director

Caridad Center
[redacted]

My name is Maria Pontier-Elias, a doctoral student at Barry University, Division of Nursing. I am conducting a research project on childhood drowning prevention in Palm beach County. The purpose of the project is to raise awareness of childhood drowning and/or near drowning incidents in Palm Beach County and to develop a preventative program that may reduce the number of deaths caused by this type of accident using evidenced-based research. Therefore, I am asking for your permission to post flyers on walls in and around The Caradid Clinic, since it is a major clinic that services the people of Palm Beach County.I will be posting 2 sets of posters at different times. The first will be a flyer seeking 30 volunteer to fill out a pre assessment questionnaire the purpose of which is to learn the knowledge of clinic attendees regarding childhood drowning and prevention. I will need to have a table in the lobby area where there is a high flow of clinic attendees. This will allow them to ask questions and about the project. Those who choose to provide information will be provided with a clip board, a cover letter explaining the project, the questionnaire, a pencil and an envelope in which to place the completed questionnaire. Upon completion of the questionnaire they will place it in the envelope and place it in the collection box on the table. Once I achieve the 30 questionnaires needed, which should take no more than a week, this data collection process will close. Upon completion of the analysis of this information and the development of the educational program which should take no more than 2 weeks, I will then post a a second flyer seeking volunteers to participate in the educational intervention program about drowning prevention. A total of 90 volunteers will be needed to attend the class.

There are no known economic, legal, physical, psychological, or social risks to the participants in any of the two phases of data collection of this project. As you know, Childhood drowning is on the rise in the state of Florida. While there are no direct benefits to the participants, the information gathered and the educational program provided, will educate the participants about drowning prevention measure. The project is anonymous so no information gathered will be connected to individual participants.

I thank you in advance for your consideration in conduction this most important project at the Caridad Clinic. If you agree, please sign below acknowledging your agreement to allow the posting and to conduct the educational program. If you have any questions or concerns, please contact me at [redacted] or by email at [redacted]

[redacted] or my Project supervisor, Dr. Jessie M. Colin, at [redacted]

Voluntary Permission to Post Flyers

I, _____ acknowledge that I have been informed of the nature and purpose of this project Being conducted by Maria Pontier-Elias a DNP student at Barry University, college of Health Sciences, Division of Nursing. I give my permission to post two sets of flyers and to conduct an educational intervention program about drowning prevention upon receiving IRB approval from Barry University.

_____ _____

Signature of Authorizing Official Date

APPENDIX C

DROWNING PREVENTION PROJECT FLYER

PRE-ASESSMENT SPANISH AND ENGLISH

DROWNING PREVENTION CLASS

HELP ME!!!

Are you a parent/caretaker of a child 6 months to 5 years old?

If yes we need your help to understand your knowledge about drowning accident rate in Palm Beach County.

DID YOU KNOW?

- It takes only seconds for a drowning to occur?
- Children in Palm Beach County have high exposure to bodies of water

LETS JOIN FORCES AND SAVE OUR CHILDREN

WHEN:
WHERE:
CONTACT:

Participants will receive a GIFT CARD at the end of class!

Clase de orientacion Para Preventir Ahogamiento

AUXILIO!!!

Eres Padre o madre, o cuidas un o una menor de 6 meses a 5 años de edad?

Si la repuesta es si necesitamos su ayuda para entender sus conocimientos sobre accidentes de ahogamiento en el condado Palm Beach

Sabia usted?

- En pocos segundo una persona puede ahogarse
- En el Condado Palm Beach los niños y niñas estan expuestos a muchas acumulacion de aguas.

Unamos esfuerzos para salvar nuestros niños y niñas

Cuando:
Donde:
Contacto:

Habra un regalo cada participante! Class de Orientation Para Prevenir Ahogamientos

APPENDIX D

DROWNING PREVENTION PROJECT FLYER

RECRUITEMENT FLYER SPANISH AND ENGLISH

DROWNING PREVENTION CLASS

HELP ME!!!

Are you 18 y/o or older and a parent/caretaker of a child 6 months to 5 years old?

If yes we need your help to understand your knowledge about drowning accident rate in Palm Beach County.

DID YOU KNOW?

- It takes only seconds for a drowning to occur?
- Children in Palm Beach County have high exposure to bodies of water

LETS JOIN FORCES AND SAVE OUR CHILDREN

WHEN:
WHERE:
CONTACT:

Participants will receive a $10 Walmart GIFT CARD at the end of a class which will last about hour!

Clase de orientacion Para Preventir Ahogamiento

AUXILIO!!!

Eres mayor de 18 anos o mas, y Padre o madre, o cuidas un o una menor de 6 meses a 5 años de edad?

Si la repuesta es si necesitamos su ayuda para entender sus conocimientos sobre accidentes de ahogamiento en el condado Palm Beach

Sabia usted?

- En pocos segundo una persona puede ahogarse?
- El Condado Palm Beach niños y niñas estan expuestos a muchas acumulacion de aguas?

Unamos esfuerzos para salvar nuestros niños y niñas

Cuando:
Donde:
Contacto:

Habra un regalo de un certificado de $10 de Walmart para cada participante de la clase la cual durara 1 hora

APPENDIX E

BARRY UNIVERSITY

COVER LETTER FOR VOLUNTEERS FOR PRE-ASSESSMENT

Dear Research Participant:

Your participation in a research project is requested. I am conducting a project on childhood drowning prevention for the purpose of raising awareness about childhood drowning and/or near drowning incidents in Palm Beach County. The project is being conducted by Maria Pontier-Elias, a student in the Graduate Nursing Department at Barry University, and it is seeking information that will be useful in the field of Nursing. The purpose of this project is to raise awareness and develop a preventative program that may reduce the number of deaths caused by this type of accident. To determine the knowledge needed for this program I am conducting a pre-assessment, this information will be used in conjunction with the Drowning Prevention Coalition in Palm Beach County to prepare an educational program. By volunteering you will be helping in providing information for preparation of the educational program. A total of 30 participants will be needed. A pre-assessment questionnaire will be utilized. This project will utilize inclusion and exclusion criteria to determine your eligibility. Inclusion:
Parents and/ or caretakers must be able to read and write English or Spanish.
Parents and/ or caretakers must have a child or care for a child of ages 6 months to 5 years old.
Parents and/or caretakers must be 18 years old or older.
Parents/caretakers must be a Florida resident.
Exclusion: parents and caretakers who do not meet inclusion criteria and if the parents and/or caretaker had a child who has previously drowned or near drowned.

If you decide and qualify to participate in this project, you will be asked to do the following: Answer the questions on the pre-assessment questionnaire. The questionnaire is estimated to take no more than 10 minutes to complete.

Your consent to be a project participant is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the project, there will be no adverse effects.

There are no risks of involvement in this project. You can skip any questions you do not want to answer. There are no direct benefits to you for participating in this project; however, the benefit of the project can potentially save a child's life and decrease the devastating childhood drowning rates in Palm Beach County.

At the completion of this pre-assessment an analysis will be conducted to prepare an educational program.

Your participation will be on a voluntary basis, all information you provide is anonymous, that is, no names or other identifiers will be collected. The questionnaire will be anonymous and kept locked in a file.

By completing the questionnaire, you are acknowledging that you meet the inclusion criteria and that you voluntarily agree to participate in the project.

If you have any questions or concerns regarding the project or your participation in the project, you may contact me, Maria Pontier-Elias by phone at [redacted] or by email at [redacted]. You may also contact my supervisor Dr. Jessie M. Colin at [redacted] or by email at [redacted] of the Institutional Review Board point of contact, Barbara Cook, by phone at [redacted] or by email at [redacted].

Thank you for volunteering to participate in this project.

Sincerely,

Maria Pontier-Elias

APPENDIX E

BARRY UNIVERSITY

COVER LETTER FOR VOLUNTEERS PRE-ASSESSMENT (SPANISH)

Apreciado Participante en Estudio Investigativo:

Su participación en un proyecto de estudio investigativo se solicita. Estoy conduciendo un estudio investigativo sobre la prevención de ahogamiento de niños y niñas con el objetivó de crear consciencia sobre este tipo de accidente en el Condado Palm Beach. El proyecto está siendo conducido por Maria Pontier-Elias, una estudiante en el Programa de Postgrados del Departamento de Enfermeria de la Universidad Barry, y está buscando encontrar información que sea útil en el campo de Enfermería.

El propósito de este proyecto es crear consciencia y establecer un programa preventivo que pueda ayudar a reducir el número de muertes por este tipo de accidentes. Para determinar los conocimientos que se necesitan para este programa, estoy conduciendo una pre-evaluación, esta información será usada en conjunto con la Coalición de Prevención de Ahogamientos del Condado Palm Beach para preparar un programa educacional. Al brindarse como voluntario usted estaría ayudando proveyendo información para la preparación del programa educacional. Un total de 30 participantes serán necesitados. Un cuestionario de pre-evaluación será utilizado. Este proyecto utilizara criterios de inclusión y exclusión para determinar la elegibilidad de usted.
Inclusión:
Padres y/o cuidadores de niños o niñas que puedan leer y escribir Ingles o Español.
Padres y/o cuidadores de por lo menos un niño o niña que tenga la edad de 6 meses a 5 años de edad.
Padres y/o cuidadores de niños o niñas que los padres y/o cuidadores de niños o niñas tengan la edad de 18 años o más.
Padres y/o cuidadores de niños o niñas que sean residentes el estado de la Florida.
Exclusión: No podrán participar padres y/o cuidadores de niños o niñas que no reúnan los criterios de inclusión ni aquellos padres y/o cuidadores de niños o niñas que hayan tenido un niño o niña que fue víctima fallecida o no por ahogamiento.

Si usted cualifica y decides participar en este proyecto, se le pedirá hacer lo siguiente: Contestar las preguntas de un examen de pre-evaluación. Se estima que contestar el cuestionario no deberá tomar mas de 10 minutos.

Su consentimiento para ser participante en este proyecto es estrictamente de forma voluntaria y si decides declinar participar o si decides retirarse del mismo en cualquier momento durante el proyecto, no habría efectos adversos.

No existen riesgos al tomar parte en este proyecto. Usted puede omitir cualquier pregunta que no quiera contestar. No existen beneficios directos para los participantes de este proyecto, sin embargo, los beneficios obtenidos en este proyecto podrán potencialmente salvar la vida de un niño o niña y disminuir las devastadoras cifras de ahogamiento de niños y niñas en el Condado Palm Beach.

Cuando concluya la pre-evaluación un análisis será preparado para crear un programa educacional.

Su participación será de forma voluntaria, toda la información que nos provea será de forma anónima, eso quiere decir que no se obtendrá su nombre o alguna información que lo pueda identificar. Los cuestionarios serán dado de forma anónima, y serán guardados en un archivo con cerradura.

Al completar los cuestionarios usted da a conocer que usted reúne los criterios de inclusión y que usted voluntariamente da su consentimiento para participar en el proyecto.

Si tienes cualquier pregunta o preocupación sobre el proyecto o su participación en el proyecto, puedes contactarme, Maria Pontier-Elias por teléfono al [redacted] o por correo electrónico en la dirección [redacted]. También puedes contactar mi supervisora Dra. Jessie M. Colin en el teléfono [redacted] o por correo electrónico en la dirección [redacted] del Institutional Review Board, o a Barbara Cook, en el teléfono [redacted] o por correo electrónico en la dirección [redacted].

Gracias por brindarse como voluntario para participar en este proyecto.

Sinceramente,

Maria Pontier-Elias

APPENDIX F

BARRY UNIVERSITY

COVER LETTER FOR VOLUNTEERS FOR RECRUITMENT

Approved by Barry University IRB
Date: AUG - 5 2013
Signature:

Barry University
Cover Letter

Dear Research Participant:

Your participation in a research project is requested. I am conducting a project on childhood drowning prevention for the purpose of raising awareness about childhood drowning and/or near drowning incidents in Palm Beach County. The project is being conducted by Maria Pontier-Elias, a student in the Graduate Nursing Program at Barry University, College of Health Sciences, and Division of Nursing and is seeking information that will be useful in the field of Nursing. The purpose of this project is to raise awareness and institute an educational intervention program about drowning prevention as a preventative program that may reduce the number of deaths caused by this type of accident. A pre-assessment knowledge was conducted to create this program. This educational was prepared and tailored to the Palm Beach County population who utilizes the Caridad clinic. The Drowning Prevention Coalition in Palm Beach County was modified to include the pre-assessment data gathered. By volunteering you will be educated regarding drowning statics, water safety and preventative measures. A total of 60 participants will be needed for this part of the study. This project will utilize inclusion and exclusion criteria to determine your eligibility. **Inclusion:** Parents and/ or caretakers must be able to read and write English or Spanish; Parents and/ or caretakers must have a child or care for a child of ages 6 months to 5 years of age; Parents and/or caretakers must be 18 years old or older; Parents/caretakers must be a Palm Beach County resident in Florida. **Exclusion:** parents and caretakers who do not meet inclusion criteria and parents and/or caretaker who has a child who had previously drowned or experience near drowning.

If you decide and qualify to participate in this project, you will be asked to do the following: Take a pre-test will be given prior to starting the class. You will need to place a unique identifier on the upper right hand corner of the test. The tests will be collected. You will need to remember this identifier since you will need to use this same identifier for the post test. The program will begin, upon completion of the class a post test and a class evaluation form will be given to you. Place the unique identifier on the upper right hand corner of the posttest. A demographic survey will also be conducted amongst the participants. Once all the information is completed a $10.00 Walmart gift card will be given to each participant. The class will take approximately one hour. The completion of the program will take approximately 1 ½ hour. If you choose to drop out of the program or if you choose not complete the forms given to you, you will still be given the $10.00 dollar Walmart gift card.

Your consent to be a project participant is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the project, there will be no adverse effects. There are no risks of involvement in this project. You can skip any questions you do not want to answer. There are no direct benefits to you for participating in this project; however, the benefit of the project decreases the devastating childhood drowning rates in Palm Beach County.

Your participation will be on a voluntary basis, all information you provide is anonymous, that is, no names or other identifiers will be collected. The pre and post test will be anonymous and kept locked in a file cabinet at the investigator's home office for a period of 5 years. After 5 years, all material provided by the participants will be shredded.

By attending the class, and completing the pre and post test and the program evaluation forms, you are acknowledging that you meet the inclusion criteria and that you voluntarily consent to participate in the project.

If you have any questions or concerns regarding the project or your participation in the project, you may contact me, Maria Pontier-Elias by phone at [redacted] or by email at [redacted]
You may also contact my supervisor Dr. Jessie M. Colin at [redacted] or by email at [redacted] of the Institutional Review Board point of contact, Barbara Cook, by phone at [redacted] or by email at [redacted]

Thank you for volunteering to participate in this project.

Sincerely,

Maria Pontier-Elias

Approved by Barry University IRB

Date: AUG - 5 2013

Signature

Barry University
Cover Letter

Apreciado participante en estudio investigativo:

Su participación en un proyecto de estudio investigativo se solicita. Estoy conduciendo un estudio investigativo sobre la prevención de ahogamiento de niños y niñas con el objetivó de crear consciencia sobre este tipo de accidente en el Condado Palm Beach. El proyecto está siendo conducido por Maria Pontier-Elias, una estudiante en el Programa de Postgrados del Departamento de Enfermería de la Universidad Barry, Colegio de Ciencias de la Salud, División de Enfermería, y está buscando encontrar información que sea útil en el campo de Enfermería. El propósito de este proyecto es crear consciencia y establecer un programa educativo de intervención sobre prevención de ahogamientos como programa preventivo que pueda ayudar a reducir el número de muertes por este tipo de accidentes. Una pre-evaluación de conocimientos fue conducida para crear este programa. Este programa educacional ha sido preparado para la población del Condado Palm Beach que utiliza la clínica Caridad. La Coalición de Prevención de Ahogamientos del Condado Palm Beach fue modificada para incluir la información de pre-evaluación obtenida. Al brindarse como voluntario usted será educado sobre estadísticas de ahogamientos, seguridad dentro del agua y medidas preventivas. Un total de 60 participantes serán necesitados para esta parte del estudio. Este proyecto utilizara criterios de inclusión y exclusión para determinar la elegibilidad de usted. **Inclusión** Padres y/o cuidadores de niños o niñas que puedan leer y escribir Ingles o Español; Padres y/o cuidadores de por lo menos un niño o niña que tenga la edad de 6 meses a 5 años de edad; Padres y/o cuidadores de niños o niñas que los padres y/o cuidadores de niños o niñas tengan la edad de 18 anos o mas; Padres y/o cuidadores de niños o niñas que sean residentes del Condado Palm Beach en el estado de la Florida. **Exclusión:** No podrán participar padres y/o cuidadores de niños o niñas que no reúnan los criterios de inclusión ni aquellos padres y/o cuidadores de niños o niñas que hayan tenido un niño o niña que fue víctima fallecida o no por ahogamiento.

Si usted cualifica y decides participar en este proyecto, se le pedirá hacer lo siguiente: Tomar un examen de pre-evaluación que se le dará antes de comenzar la clase. Usted deberá marcar su examen en la esquina derecha de arriba con algún tipo de marca o código. Los exámenes serán colectados. Usted deberá recordar su marca o código con el que usted marque el examen ya que necesitara usar la misma marca o código en el examen que se le dará después de la presentación de la clase. El programa comenzara, y cuando haya concluido la presentación de la clase se le dará un examen para evaluar lo aprendido en la clase, y luego se le dará un formulario para evaluar la clase. El examen que se le dará después de completada la presentación de la clase deberá ser marcado en la esquina derecha de arriba con su código secreto. Se hara un estudio demográfico entre los participantes. Una vez se haya colectado todo un certificado de Walmart con valor de $10.00 se le regalara a cada participante. La clase tendrá una duración de aproximadamente una hora. El programa durara aproximadamente una hora y media. Si usted decides abandonar el programa antes de que este sea completado, o decides no llenar algunos de los formularios que se le darán durante la presentación, usted aun asi recibiría el certificado de Walmart de regalo con valor de $10.00.

Su consentimiento para ser participante en este proyecto es estrictamente de forma voluntaria y si decides declinar participar o si decides retirarse del mismo en cualquier momento durante el

proyecto, no habría efectos adversos. No existen riesgos al tomar parte en este proyecto. Usted puede omitir cualquier pregunta que no quiera contestar. No existen beneficios directos para los participantes de este proyecto, sin embargo, los beneficios obtenidos en este proyecto podrán potencialmente disminuir las devastadoras cifras de ahogamiento de niños y niñas en el Condado Palm Beach.

Su participación será de forma voluntaria, toda la información que nos provea será de forma anónima, eso quiere decir que no se obtendrá su nombre o alguna información que lo pueda identificar. Los exámenes de evaluación dado antes y después de la presentación serán dado de forma anónima, y serán guardados en un archivo con cerradura por un periodo de cinco anos en la oficina de la investigadora. Despue de cinco anos, todos los documentos serán destruidos.

Al asistir a esta clase, y completar los exámenes de evaluación que se darán antes y después de la presentación de la clase, y completar el formulario de evaluación de la clase, usted da a conocer que usted reúne los criterios de inclusión y que usted voluntariamente da su consentimiento para participar en el proyecto.

Si tienes cualquier pregunta o preocupación sobre el proyecto o su participación en el proyecto, puedes contactarme, Maria Pontier-Elias por teléfono al [redacted] o por correo electrónico en la dirección [redacted] También puedes contactar mi supervisora Dra. Jessie M. Colin en el teléfono [redacted] o por correo electrónico en la dirección [redacted] del Institutional Review Board, o a Barbara Cook, en el teléfono [redacted] o por correo electrónico en la dirección [redacted]

Gracias por brindarse como voluntario para participar en este proyecto.

Sinceramente,

Maria Pontier-Elias

APPENDIX G

DEMOGRAPHIC QUESTIONNAIRE

Please circle the answer that best describes who you are.

1. Age
    a. 18-25
    b. 26-35
    c. 36-45
    d. 46- or above

2. Gender
    a. Female
    b. Male

3. Parental relationship with the child
    a. Mom
    b. Dad
    c. Caretaker
    d. Other

4. Educational Background?
    a. 1-6th grade
    b. 7-12th grade
    c. College Level
    d. Master Level
    e. Doctoral Level

5. Race/ethnicity
    a. Caucasian
    b. African-American
    c. Hispanic
    d. Asian
    e. Other _____

DEMOGRAPHIC QUESTIONNAIRE SPANISH VERSION

Por favor marque la respuesta que mejor describe quien es usted.

3. Edad
    e. 18-25años
    f. 26-35años
    g. 36-45años
    h. 46 o mas

4. Es usted
    c. Mujer
    d. Hombre

3.Qué tipo de relación tienes usted con algún niño o niña
    a. Madre
    b. Padre
    c. Cuidadora
    d. Otro tipo

4. Cuál es el nivel de su educación académica?
    a. 1-6th grado
    b. 7-12th grado
    c. Universitario
    d. Maestría
    e. Doctorado

5. Cuál es su raza o ascendencia étnica?
    a. Blanca
    b. Africana
    c. Hispana
    d. Asiática
    e. Otra _____

APPENDIX H

PRE/POST TEST FOR DROWNING PREVENTION IN PALM BEACH COUNTY

1. What is the #1 reason why drowning incidents happen to adults and children?
    a. They can't swim
    b. They Panic
    c. There is a lapse in supervision/swimming alone

2. How many inches of water it takes for a child to drown?
    a. 2 inches
    b. 3 inches
    c. 4 inches
    d. 5 inches

3. Where should you be to supervise a 3-year old child around water?
    a. Always be close enough to see the child
    b. Always be close enough to hear the child
    c. Always be close enough to touch the child

4. At what age can you leave a child alone in the bathtub?
    a. Asyoung as 2 year's old, if you have a special bath seat or ring
    b. 3 years old
    c. Approximately 6 years old

5. How many children and teenagers died from drowning in the United States in the past 3 years?
    a. 500
    b. 1000
    c. More than 3000

6. Where is the first place you look when your child is missing?
    a. The Bedroom
    b. Outside in the pool or area bodies of water
    c. TheKitchen

7. What activities do you use to supervise your child/ren when they are either around or in water?
    a. I watch them through a window
    b. I sit on a chair/chaise lounge outside and watch them
    c. I am in the water with them or I sit on the edge of the pool and watch them

d. I am always within arm's reach of the child/ren

8. Will swimming lessons protect a child from drowning?

a. Yes
b. No

9. Is constant supervision enough to protect a child from drowning?

a. Yes
b. No

10. Do pool owners without young children need to install protective barriers?

a. Yes
b. No

11. Can a child/children start to drown within seconds of coming into contact with water?

a. Yes
b. No

12. Most pool related drowning or near drowning occurs in the child's own pool

a. True
b. False

13. There are many things homeowners can do to help ensure water safety.

a. True
b. False

14. Children of which age do you think are most likely to drown in a pool?

a. 0-4 years old
b. 5-12 years old
c. 13-17 years old
d. Not sure

15. Which gender of children under the age of five is most likely to drown in a pool?

a. Male
b. Female
c. Not sure

16. Which one of the following describes the most appropriate type of adult supervision for children under age of five playing in or around the pool?

a. Stay in visual contact at all times
b. Visually check on the child every 5 minutes
c. Stay poolside
d. Stay in the general vicinity of the water
f. Stay within arm's reach of the child
g. Visually check on the child every 10 minutes
h. Not sure

17. If you currently have children under five living at your home and do not have a child-resistant fence separating the pool from the house, please indicate why not. (**Please check all that apply**)

a. Do not think a fence is needed
b. Too expensive
c. Unattractive
d. Stay in the general vicinity of the water
f. Don't believe it would be effective
g. Other (Please describe)_____

PRE/POST TEST FOR DROWNING PREVENTION IN PALM BEACH COUNTY

(SPANISH VERSION)

1. Cuál es la razón #1 por la que incidentes de ahogamiento le ocurren a niños y adultos?

    a. Porque no saben nadar
    b. Les da pánico
    c. Hubo breve descuido en la supervisión/nadan solo

2. Cuantas pulgadas de agua son suficiente para que un niño o niña se ahogue?

    a. 2 pulgadas
    b. 3 pulgadas
    c. 4 pulgadas
    d. 5 pulgadas

3. Qué tipo de supervisión le daría usted a un niño o niña de 3-años de edad que juegue donde hay algún cuerpo de agua?

    a. Siempre estar lo suficientemente cerca para poder ver el niño o niña
    b. Siempre estar lo suficientemente cerca para poder escuchar el niño o niña
    c. Siempre estar lo suficientemente cerca para poder tocar al niño o niña

4. A qué edad se puede dejar a un niño o niña solo o sala en la tina o bañera?

    a. A los 2 años de edad, si se tiene alguna silla especial para sentar al menor
    b. 3 A los 3 años de edad
    c. Aproximadamente a los 6 años de edad

5. Cuantos niños y adolescente han fallecido por ahogamiento en los Estados Unidos en los últimos 3 años?

    a. 500
    b. 1000
    c. Más de 3000

6. Donde es el primer lugar que usted busca cuando su niño o niña se le desaparece?

    a. En su dormitorio
    b. Afuera en la piscina o el área alrededor de cuerpos de agua cercano a la casa
    c. En la cocina

7. Como supervisaría usted su niños o niñas cuando están alrededor o dentro de un cuerpo de agua?

a. Los miraría por una ventana
b. Me sentaría afuera cerca de ellos y los miro
c. Me entraría al agua con ellos, o me sentaría en el borde de la piscina y los miro
d. Siempre estaría a una distancia de los niños/niñas que yo los pueda tocar con mis manos

8. Protegerán las lecciones de natación a un niño o niña de ahogarse?

a. Si
b. No

9. Sera una constante supervisión suficiente para prevenir ahogamiento?

a. Si
b. No

10. Necesitan los dueños de piscina sin niños/niñas instalar barreras de protección preventivas?

a. Si
b. No

11. Podrás un niño o niña empezar a ahogarse en segundos después de entrar en contacto con agua?

a. Si
b. No

12. La mayoría de los ahogamientos o casi ahogamientos ocurren en la piscina del niño o niña.

a. Cierto
b. Falso

13. Existen muchas medidas que los dueños de casas con piscina pueden tomar para asegurarse de que haya seguridad en el agua.

a. Cierto
b. Falso

14. Cuál es el grupo de edad que usted cree que los niños o niñas tienen más posibilidad de ahogarse en piscinas de casas residenciales?

a. 0-4 años
b. 5-12 años
c. 13-17 años
d. No estoy seguro/a

15. Cuál es el género sexual de niños o niñas menor de 5 años de edad que usted cree tienen más posibilidad de ahogarse en una piscina de casa residencial?

a. Varón
b. Hembra
c. No estoy seguro/a

16. Cuál de estas repuestas describe mas apropiadamente el tipo de supervisión de adulto para niños o niñas de menos de 5 años de edad que juegan alrededor de una piscina? (**Por favor seleccione una)**

a. Mantener contacto visual todo el tiempo
b. Visualmente chequear los niños cada 5 minutos
c. Quedarse en los lados de la piscina
d. Quedarse en un área no muy lejos del agua
f. Quedarse a una distancia que pueda tocar con su mano al niño o niña
g. Visualmente chequear los niños cada 10 minutos
h. No estoy seguro/a

17. Si usted actualmente tiene viviendo en su casa niños o niñas menores de 5 años de edad y no tiene verjas o cercas de protección a prueba de niños para separar la piscina de la casa, por favor indique por que no. (**Por favor marque todas las razones que apliquen**)

a. No creo que se necesita una cerca
b. Son muy caras
c. No son atractivas
d. Permanecer en la proximidad general del agua
f. No creo que sean efectivas
g. Otro motivo (Por favor descríbalo) _____

APPENDIX I

PRE-ASSESSMENT KNOWLEDGE OF CARDIOP-PULMONARY RESUSCITATATION

1. Do you know how to perform CPR?

    a. Yes
    b. No

2.Can someone who falls into a body of water survive w/o the use of a floatation device?

    a. Yes
    b. No

3. How old is your child/children?

4. Is your child?

    a. Male
    b. Female

5. How often does your child play near water?

    a. Regularly (once a day)
    b. Not often
    c. Sometimes

6. Can your child swim?

    a. Yes
    b. No

7. If yes, at what level?

    a. Beginner
    b. Good swimmer
    c. Expert swimmer

8. Can your child save themselves if they fall into a body of water w/o the use of floatation devices?

    a. Yes
    b. No

9. Has your child ever participated in formal swimming lessons at an aquatic facility, private swim school, or had private lessons?

    a. Yes
    b. No

10. Do you have an above ground or in ground swimming pool at your house?

    a. Yes
    b. No

11. What safety measures do you have at your house?

    a. Alarm
    b. Fence
    c. Child proof doors
    d. None

12. If you have a fence does your pool fence have a gate that self locks/self latches?

    a. Yes
    b. No

13. Does your pool have an audible alarm that sounds if there is a disturbance in the water?

    a. Yes
    b. No

14. Do you have a safety pool cover or safety pool net?

    a. Yes
    b. No

15. Do you live in a community with a swimming pool?

    a. Yes
    b. No

16. Does your community pool have a fence around it?

    a. Yes
    b. No

17. Do you live near a body of water?

    a. Pond
    b. Ditch or canal
    c. Swimming Pool
    d. The Ocean
    e. None

18. Is your child able to open a door that leads out to the pool area or other bodies of water?

    a. Yes
    b. No

PRE ASSESSMENT KNOWLEDGE OF CARDIOPULMONARY

RESUSCITATATION (SPANISH VERSION)

1. Sabe usted como hacer reanimación cardiopulmonar para reanimar una persona?

    c. Si
    d. No

2. Puede alguien que caiga adentro de un tipo de acumulación de agua (piscina, lago, etc.) sobrevivir sin algún tipo de objeto para flotar?

    c. Si
    d. No

3. Cuál es la edad de su niño(s) o niña(s)?

4. Es su menor?

    c. Varón
    d. Hembra

5. Con que frecuencia su niño o niña juega cerca de algún tipo de acumulación de agua?

    d. Regularmente (una vez al día)
    e. Casi nunca
    f. Alguna vez

6. Puede su niño o niña nadar?

    c. Si
    d. No

7. Si la repuesta es si, a qué nivel?

    d. Está aprendiendo
    e. Muy bien
    f. Experto

8. Pueden sus niños o niñas salir por si solos si se caen dentro acumulación de agua (como piscina, lago, etc.) sin algún tipo de objeto para flotar?

    c. Si
    d. No

9. Ha su niño o niña tomado clases formales de natación en privado o en alguna escuela con piscina o con algún otro acumulación de agua para nadar?

    c. Si
    d. No

10. Tiene usted en su casa una piscina de las que están enterradas en la tierra o de las que son tipo estanque que están sobre la tierra?

c. Si
d. No

11. Si la repuesta es si, qué medida de seguridad tiene usted?

e. Alarma
f. Verja
g. Puerta resistente a ser abierta por niños
h. Nada

12. Si tienes una cerca al rededor de la piscina, tiene la cerca una puerta con cerradura que sire por si sola automáticamente?

c. Yes
d. No

13. Tiene su piscina una alarma de sonido?

c. Si
d. No

14. Tiene su piscina una lona para cubrirla?

c. Si
d. No

15. Hay donde usted vive una piscina de la comunidad?

c. Si
d. No

16. Tiene la piscina de su comunidad verja o cerca a su alrededor?

c. Si
d. No

17. Vive usted cerca a algún tipo de acumulación de agua?

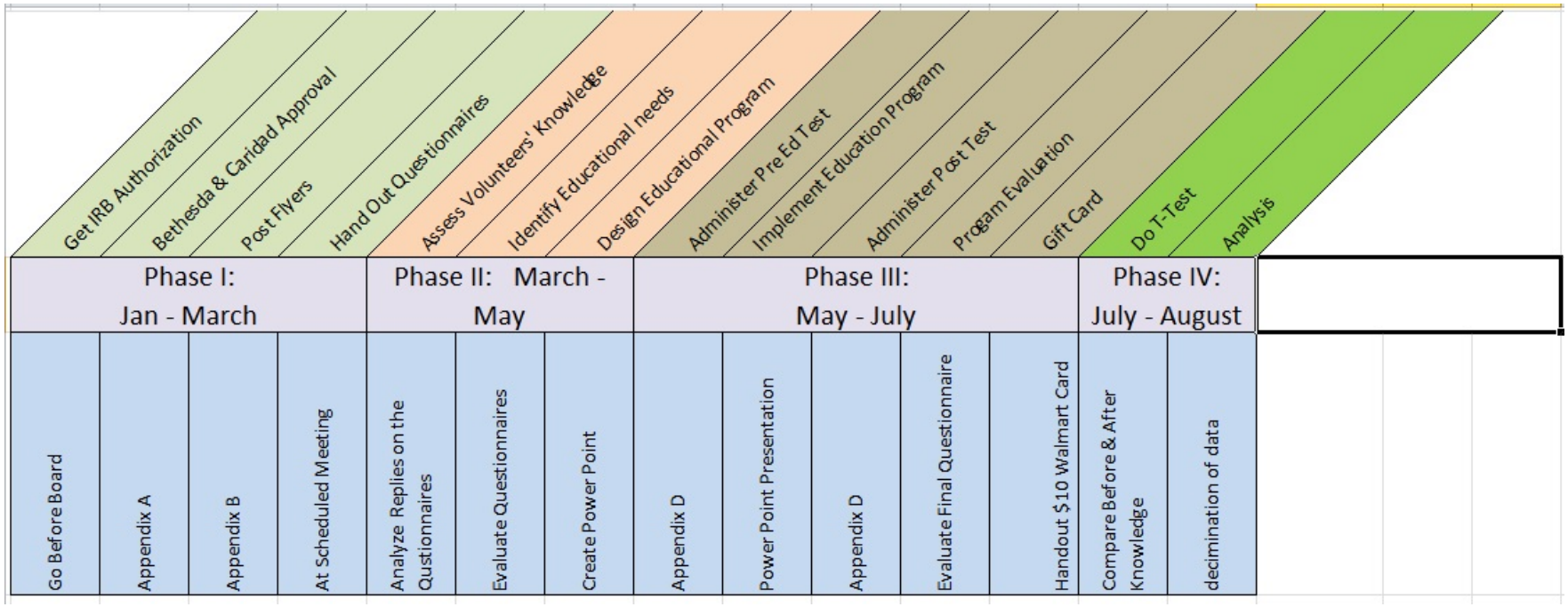
f. Laguna
g. Canal de riesgo o desagüé
h. Piscina
i. El mar
j. Ninguna

18. Es su niño o niña capaz de abrir una puerta de cristal deslizable?

c. Si
d. No

APPENDIX J

TIMELINE


Get IRB Authorization
Bethesda & Caridad Approval
Post Flyers
Hand Out Questionnaires
Assess Volunteers' Knowledge
Identify Educational needs
Design Educational Program
Administer Pre Ed Test
Implement Education Program
Administer Post Test
Progam Evaluation
Gift Card
Do T-Test
Analysis
Phase I: Jan - March
Phase II: March - May
Phase III: May - July
Phase IV: July - August
Go Before Board
Appendix A
Appendix B
At Scheduled Meeting
Analyze Replies on the Qustionnaires
Evaluate Questionnaires
Create Power Point
Appendix D
Power Point Presentation
Appendix D
Evaluate Final Questionnaire
Handout $10 Walmart Card
Compare Before & After Knowledge
decimination of data

APPENDIX K

PROPOSED BUDGET FOR PROJECT

Expenses	$ Amount	Total
Statistician	$50.00/HR X8= $400.OO	$400.00
Editing Cost	$75.00/hr X 4	$300.00
Printing/ paper		$75.00
Ink cartridge	$25.00X4	$100.00
Gift cards	$10.00 X60	$600.00
Snacks for participants		$100.00
Latest version of SPSS		$100.00
Books for adult learners		$100.00

APPENDIX L

PROGRAM EVALUATION

Please rate each of the following statements from 1 to 5.

1 = strongly disagree,
2 = disagree,
3 = maybe,
4 = agree,
5 = strongly agree.

___At the beginning of the presentation, the presenter gave me a clear idea of what the presentation was going to be about and what outcomes were to be achieved.

___The objectives of the presentation were clearly achieved.

___I am now more aware now about water safety/drowning prevention issues.

___I have learned new preventative measures to prevent drowning and water related incidents.

____The information provided will be useful to me in creating a safe environment for my child around the any bodies of water.

___The presenter appeared to be knowledgeable about the main topic of the presentation.

___ I felt the presenter was interested in informing me about children drowning.

PROGRAM EVALUATION (SPANISH VERSION)

Por favor evalué los siguientes comentarios del 1 al 5

1 = estoy altamente en desacuerdo
2 = estoy en desacuerdo
3 = no estoy seguro/a
4 = estoy de acuerdo
5 = estoy altamente de acuerdo.

___Al comienza de la presentación, la presentadora dio una idea clara sobre de que se iba a tratar la presentación y sobre los objetivos que esperaba alcanzar.

___Los objetivos de la presentación fueron claramente logrados.

___Ahora estoy más consciente de los riegos de estar en el agua de las medidas de prevención de ahogamiento.

___He aprendido nuevas medidas de prevención para evitar ahogamientos e accidentes en el agua.

___La información provenida será útil para mí para crear un ambiente seguro para mis niños alrededor de cualquier acumulación de agua.

___La presentadora parecía tener conocimiento sobre el tópico principal de la presentación.

___ Yo percibí que la presentadora estaba interesada en informarme sobre los ahogamientos de niños y niñas.

APPENDIX M

DOCUMENTS TRANSLATION

[redacted]

June 11, 2013

TO WHOM IT MAY CONCERN:

This letter is to inform that I have translated written academic material for my friend, Maria Pontier-Elias from English to Spanish and back from Spanish to English to ensure content reliability.

Sincerely,

Jose A. Batista, Retired Special Agent, United States Treasury

APPENDIX N

EDUCATIONAL PLAN OUTLINE

Title: Childhood Drowning Prevention in Palm Beach County
Prevention is Key….

Description: This is a 45 minutes to 1 hour educational program aimed at raising awareness about childhood drowning prevention, discussion of facts and statistics, simple steps to save lives, water safety (inside and outside) the home, layers of protection, pool safety, swimming lessons, CPR and local resources

Learning Objectives	Contents	Method	References
Learning Goals and Objectives At the completion of each session, the participant will be able to: 1. Have an increased knowledge about drowning prevention. 2. Be aware of drowning statistics and facts. 3. Learn simple steps to save lives. 4. Understand why drowning occurs. 5. Know how many inches of water it takes for a child to drown. 6. Recognize what they could do in an event of a drowning or near drowning. 7. Identify water safety inside and outside their home. 8. Discern the importance of layers of protections 9. Implement pool safety 10. Want to seek swimming lessons for their children 11. Recognized who is at highest risk for	See Below	Instructor led PowerPoint and Printed Materials	1. Brevard County Health Department. (2009). Drowning prevention information. Retrieved from http://www.doh.state.fl.us/chdbrevard/OPI/Drownprev. 2. Centers for Disease Control and Prevention. (2010). Drowning the Reality. Retrieved from http://www.cdc.gov/safechild/drowning/index. 3. Florida Department of Health. (2011). Early childhood drowning prevention. Retrieved from

drowning (gender and age) 12. Understand the importance of knowing CPR 13. Food For Thought 14. Seek local resources for help.			http://www.doh.state.fl.us/DEMO/Injury Prevention/DrownPrevent. 4. Pool Safely (2010) Tips for Safety In and Around Water. Retrieved from http://www.poolsafely.gov/tools/tips-safety 5. Palm Beach County Water Prevention Coalition, (2012-2013) Drowning statistics. Retrieved from http://www.pbcgov.com/drowningprevention/statistics.htm
Introduction	Facts about drowning	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Brevard County Health Department • Center for Disease Control
Objective I: Learn simples steps to save lives	• Staying close • Having proper protective barriers • Practicing water safety measures	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water coalition • Florida Department of Health • Pool safely

Understand why drowning occurs.	• Lack of supervision(distraction) • Water Watchers tag to assign a designated person to watch the child.	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health
Know how many inches of water it takes for a child to drown	• Parents/caretakers given a demonstration (fingers nose to chin)	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water coalition • Florida Department of Health • Florida Department of Health
Recognize what they could do in an event of a drowning or near drowning.	• Call for help • Create a (homemade) flotation device • Start CPR	Instructor-led PowerPoint and Printed Materials	• Palm Beach county Water Coalition • Florida Department of Health • Brevard County Health Department

Identify water safety inside and outside their home.	Where drowning occur inside the home: • Bath tubs • Buckets • Toilets • Kitchen/bath sinks etc.. Where drowning occur outside the home: • Pools (in ground/above ground) • Canals • Ocean • Ponds • Hot Tubs	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health • Brevard County Health department • World Health Organization
Discern the importance of layers of protections	Prevention • Exact cause not known • Activities to lower risks o Healthy weight o Physical activity o Eat fruits and vegetables	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health • Brevard County Health department • World Health Organization • Pool safely

Implement Pool Safety	• Alarms • Gates • Fences • Pool Safety nets • Pool/Spa covers	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health • Brevard County Health department • Pool safely
Want to seek swimming lessons for their children	Can swimming protect your child from drowning? Why is it important for your child to learn how to swim?	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health • Brevard County Health department • Pool safely

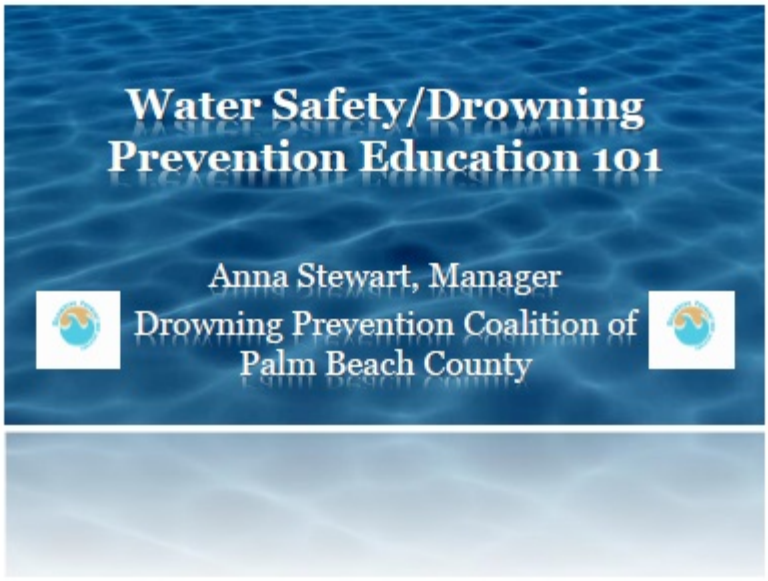
Understand the importance of knowing CPR	Calling 911 should always be first. CPR will greatly increase the chances of survival Seconds are precious when a child stops breathing	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health • Brevard County Health department • Center for Disease Control • Office of Injury Prevention
Recognized who is at highest risk for drowning (gender and age)	• Boys vs. Girls • Age gap	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health • Brevard County Health department • Office of Injury Prevention

13. Food For Thought	• Television is not a "safe" form of babysitting • Having an older sibling who is not a teenager watching the younger sibling • Is it really important to answer the phone while the child is bathing?	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health • Brevard County Health department • Office of Injury Prevention
Seek local resources for help	Palm Beach County Water Coalition American Red Cross Chapter Local Health Department US Army Corps of Engineers Local YMCA's & JCC's	Instructor-led PowerPoint and Printed Materials	• Palm Beach County Water Coalition • Florida Department of Health • Brevard County Health department • Center for Disease Control • Office of Injury Prevention
Resources		Instructor-led PowerPoint and Printed Materials	http://www.doh.state.fl.us/chdbrevard/OPI/Drownprev.html http://www.cdc.gov/safechild/drowning

			http://www.cdc.gov/safechild/Child_Injury_Data.html http://www.drowningprevention.org/safety.asp http://www.childsafetyeuro.org http://www.floridahealth.gov/prevention-safety and wellness/drowning prevention/links.html http://www.doh.state.fl.us/DEMO/Injury Prevention/DrownPrevent.html http://www.pbcgov.com/drowningprevention/statistics.htm http://www.poolsafely.gov/tools/tips-safety-water http://www.WHO.org

APPENDIX O

PALM BEACH WATER COALITION EDUCATIONAL PROGRAM


Water Safety/Drowning Prevention Education 101
Anna Stewart, Manager
Drowning Prevention Coalition of Palm Beach County


Floating Baby
FLOATING BABY STORY

Introduction

- Me
- What does the Coalition do?
- Funders
- Why should we care about water safety and drowning prevention?

Goal & Objectives

Goal:

- For attendees to be knowledgeable about water safety and drowning prevention issues.

After completing this training, attendees should be able to:

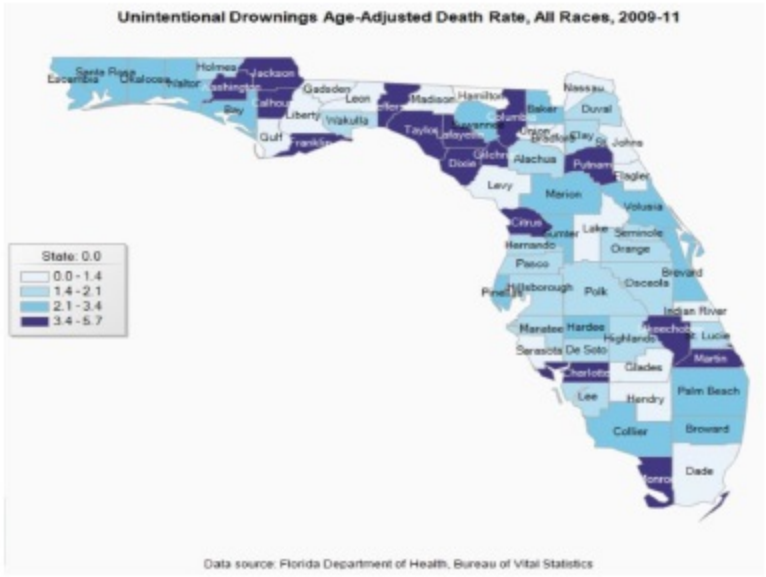
- Discuss water safety issues with others.
- Understand how to get out of a sinking car.
- Who to contact in your area for info?

10 Leading Causes of Injury Death by Age Group, Florida Residents – 2011

	Age Groups										
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Suffocation 82	Drowning 68	MV Traffic 17	MV Traffic 38	MV Traffic 413	Poisoning 658	Poisoning 688	Poisoning 964	Poisoning 696	Fall 2,031	Poisoning 3,136
2	MV Traffic 7	MV Traffic 15	Drowning 5	Firearm 14	Firearm 388	Firearm 419	Firearm 330	MV Traffic 418	Firearm 325	Firearm 478	MV Traffic 2,397
3	Drowning 4	Suffocation 10	Suffocation 4	Suffocation 12	Poisoning 197	MV Traffic 330	MV Traffic 322	Firearm 405	MV Traffic 308	MV Traffic 467	Firearm 2,364
4	Poisoning 3	Struck by, Against 6	Transport, Other 3	Drowning 7	Suffocation 95	Suffocation 116	Suffocation 125	Suffocation 158	Fall 142	Suffocation 382	Fall 2,356
5	Firearm 2	Poisoning 5	Firearm 2	Transport, Other 6	Drowning 39	Cut, Pierce 36	Drowning 54	Fall 116	Suffocation 131	Poisoning 199	Suffocation 1,935
6		Fall 3 (Tied)	Fire, Flame 1 (Tied)	Poisoning 5	Cut, Pierce 22 (Tied)	Drowning 35	Fall 40	Drowning 69	Drowning 68	Drowning 103	Drowning 447
7		Firearm 3 (Tied)	Pedestrian, Other 1 (Tied)	Fire, Flame 2	Transport, Other 22 (Tied)	Fall 15	Cut, Pierce 27	Cut, Pierce 39	Cut, Pierce 30	Fire, Flame 44	Cut, Pierce 169
8		Fire, Flame 3 (Tied)	Pedalcyclist, Other 1 (Tied)	Pedalcyclist, Other 1 (Tied)	Fall 9	Transport, Other 14	Fire, Flame 12 (Tied)	Fire, Flame 21	Fire, Flame 19	Transport, Other 37	Transport, Other 119
9		Oth Natural/ Environment 2	Struck by, Against 1 (Tied)	Struck by, Against 1 (Tied)	Fire, Flame 4	Fire, Flame 6	Transport, Other 12 (Tied)	Transport, Other 20	Transport, Other 12	Oth Natural Environment 16 (Tied)	Fire, Flame 112
10		Two Tied			Two Tied	Pedestrian, Other 4	Pedestrian, Other 7	Oth Natural/ Environment 11	Struck by, Against 10	Pedestrian, Other 16 (Tied)	Oth Natural/ Environment 44

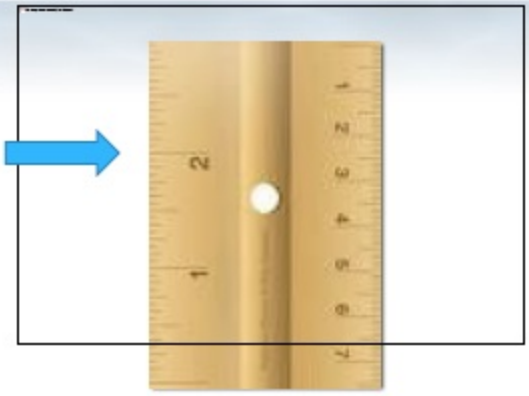
Produced by: Injury Prevention Program, Bureau of Emergency Medical Oversight, Division of Emergency Preparedness & Community Support, Florida Department of Health, Tallahassee, Florida 32399, (850) 245-4440, March 2013
Data Source: Death/Vital Database, Office of Vital Statistics, Florida Department of Health
Data Notes: Injury Underlying Cause of Death, ICD-10 V01-Y36, Y85-Y87, and Y89.

12/11/2015


Unintentional Drownings Age-Adjusted Death Rate, All Races, 2009-11
State: 0.0
0.0 - 1.4
1.4 - 2.1
2.1 - 3.4
3.4 - 5.7
Data source: Florida Department of Health, Bureau of Vital Statistics


What is the #1 Reason Why Drowning Incidents Occur?
WATCH AROUND WATER
WATCH AROUND WATER
WATCH AROUND WATER
WATCH AROUND WATER

How Much Water Does it Take for a Person to Drown?



Fact

You cannot watch a child 24hrs a day, 7 days a week. It's IMPOSSIBLE!!

12/11/2013


Water Safety Inside The Home


Where Can Drowning Incidents
Occur Inside The Home?

Food for Thought

- Television is not a "safe" form of babysitting. If you're cooking or doing a household chore while a child is watching TV, are you truly supervising them?
- Having an older sibling who is not a teenager or adult watch younger children in and around water - considered a questionable safety practice?
- Is it really that important to go answer the phone while a child is bathing in the bathtub or sink? What about to go grab a towel, shampoo or other bath item?

Inside The Home Utilizing Layers of Protection

Door Knob Cover

Door Lever Locks

Bath/Shower Mat

Door Alarm

Storage Container w/ Lid

Upside Down Bucket

Window Alarm

Toilet Lid Lock

Sliding Chain Lock


Where do Most Drowning Incidents Occur Outside the Home?


Pool Safety
Learn To SWIM!!!!!!


Jordan's Story
Baby Jordan's Heart Breaking Story


Water Watcher Pledge
To help protect children from drowning, I will . . .
Constantly watch the children who are in or near water and keep them within reach.
Give this tag to another adult who agrees to actively watch the children if I need to leave for any reason.
Make sure rescue equipment is easily accessible. Keep telephone and emergency numbers with me.
Latch gates, lock doors, use alarms and create two or more barriers to the pool, spa, or any water.
Once I leave the water, I will make sure a child cannot return without my knowledge.
I'M SAFE!
Drowning is silent and fast. Supervision is your child's best protection.
www.imsafe.com

Pool Safety

- ALWAYS MAINTAIN CONSTANT AND ATTENTIVE ADULT SUPERVISION!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
- Follow general pool rules: no running, no pushing etc...
- Diving should only occur in depths of 9 feet or more.
- Maintain clear view of pool from inside home and remove items that limit visibility.
- Discourage the use of floaties!

- Remove all pool toys, outdoor furniture and external ladders that can be climbed on.
- If a child is missing, always look in the pool or spa first.

Pool Safety

- Keep a phone and rescue devices and first aid supplies near the pool. For example, a shepherds hook is useful.

- Ensure any adult responsible for the children knows the emergency services telephone number and also your address in the event emergency personnel are needed to be called.
- Learn how to perform Cardiopulmonary Resuscitation (CPR).
- Enroll your child(ren) in swimming lessons and yourself if you don't know how to swim!


Pool Safety
Utilizing Layers of Protection
Isolation Fencing
Pool Alarms
Pool Cover
Safety Net
Make Sure Products are Approved by the American Society for Testing and Materials (ASTM)


Pool Safety
Utilizing Layers of Protection
Gate Alarm
Vacuum Lock Safety Wall Fitting
Safety "Buoy"
Above Ground Pool Fencing
Wrist Alarm
Spa Cover
NEW!


How do You Save Someone From Drowning?
Reach or Throw
Don't Go!!!!!

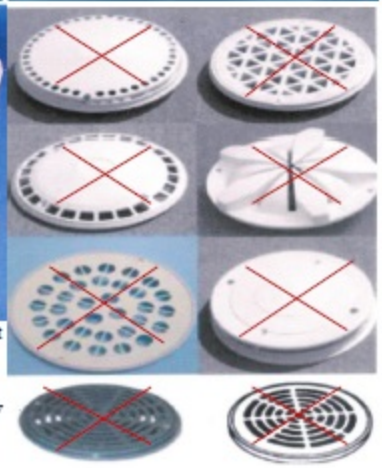
Following Recommendations to Increase Water Safety Measures

- Contact a pool inspector about proper anti-entrapment covers for spa/pool

Good Drains

VGB Approved Drain Covers that Meet the ASME/ANSI A112.19.8-2007 Standard. All public swimming pools & spas required to be in compliance by 12/19/2008

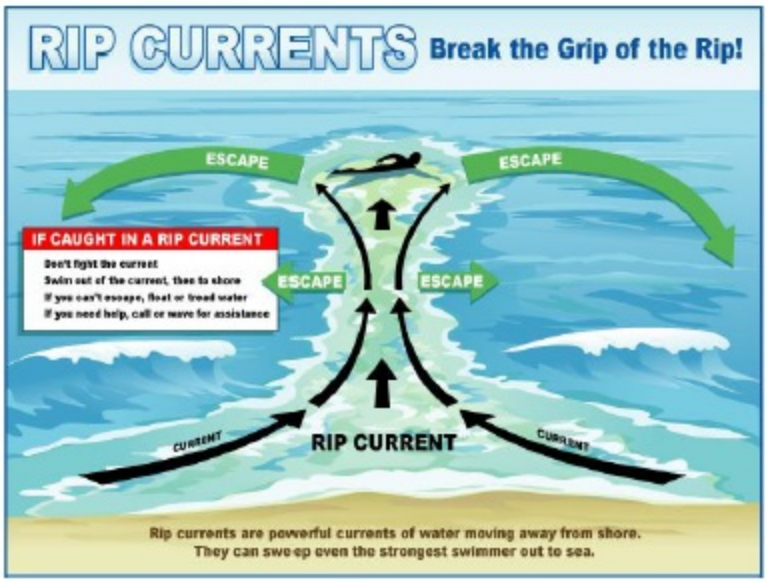
Bad Drains




Canal Safety
Stay Out of
Dirty Water!!
08/18/2010 18:51


Beach Safety
Learn To
SWIM!!!!!!


BEACH WARNING FLAGS
BANDERAS DE ADVERTENCIA EN LA PLAYA
Water Closed to Public
Agua Cerrada al Público
High Hazard
High Surf and/or Strong Currents
Peligro Alto, Resaca Alta y/o Corrientes Fuertes
Medium Hazard
Moderate Surf and/or Currents
Peligro Medio, Resaca Moderada y/o Corrientes Fuertes
Low Hazard
Calm Conditions, Exercise Caution
Peligro Bajo, Condiciones Calmas, Tenga Cuidado
Dangerous Marine Life
Vida Marina Peligrosa
Absence of Flags Does Not Assure Safe Waters
La Ausencia de Banderas No Asegura Aguas Seguras


RIP CURRENTS
Break the Grip of the Rip!
ESCAPE
ESCAPE
IF CAUGHT IN A RIP CURRENT
Don't fight the current
Swim out of the current, then to shore
If you can't escape, float or tread water
If you need help, call or wave for assistance
ESCAPE
ESCAPE
CURRENT
RIP CURRENT
CURRENT
Rip currents are powerful currents of water moving away from shore.
They can sweep even the strongest swimmer out to sea.

Beach Safety

- **Keep Kids Within Arm's Reach & Swim In Front of A Lifeguard!**
  Especially in the sea, but also on land
- **Don't Dive In**
  2/3 of catastrophic neck injuries occur in open water and the sea
- **Knee Deep Is Too Deep**
  Strong winds, waves and currents create dangerous rip currents that can sweep a child out to sea
- **Know Before You Go**
  Know your flags, weather and wave conditions and read any posted signs
- **Look But Don't Touch**
  Call local authorities to help injured or stranded marine life
- **Take Frequent Breaks**
  Every hour take a sun, water or bathroom break

Boating Safety

Boating Safety

- **Be Weather-Wise -** Always check local weather conditions.
- **Use Common Sense -** Operate at a safe speed at all times, be alert at all times, be respectful of buoys and other navigational aids.
- **Designate an Assistant Skipper -**
  Make sure more than only one person on board is familiar with all aspects of your boat's handling, operations, and other boating safety tips. If the primary navigator is injured or incapacitated in any way, it's important to make sure someone else can follow the proper boating safety rules to get everyone else back to shore.
- **Develop a Float Plan -**
  Whether you choose to inform a family member or staff at your local marina, always be sure to let someone else know your float plan. This should include where you're going and how long you're going to be gone. A float plan can include the following information: name, address, and phone number of trip leader; name and phone number of all passengers; boat type and registration information; trip itinerary; and types of communication and signal equipment onboard.

Boating Safety

- **Make Proper Use of Lifejackets -**
  - Make sure they are United States Coast Guard Approved!
  - They fit properly (do the shoulders of the jacket go above the ears?



- **Avoid Alcohol -**
  The probability of being involved in a boating accident doubles when alcohol is involved, and studies have also shown that the affect of alcohol is exacerbated by external effects such as sun and wind.
- **Take a Boating Course -**
  Beginning boaters and experienced experts alike need be familiar with boating safety rules of operation. Boater education requirements vary by state- some require validated completion of at least one boating safety course.
- **Consider a Free Vessel Safety Check -**
  Free Vessel Safety Checks are offered by US Coast Guard. They also offer virtual online safety checks as well.

Cars in Canals How To Get Out!

3rd Leading Cause of Drowning in PBC

- Float time at water's surface can range from 1 minute to several minutes.
- Vehicle will assume an angled nose down position in the water.
- Electric power may stay on for few minutes or not at all.
- If water depth is less than 14', vehicle will usually rest on bottom on all 4 wheels. If more than 14', vehicle will usually land on its roof.

How To Escape A Sinking Vehicle

GET OUT IMMEDIATELY!!

CALLING 911 COULD SLOW DOWN THE ESCAPE PROCESS

How To Escape A Sinking Vehicle

REMEMBER

STAY CALM

Open window(s) or Door(s)

Seatbelt Release

GO!!

Push Seatbelt Release

Open window(s) or Door(s)

GO!!!!!!!

How To Escape A Sinking Vehicle

STAY CALM

- ❑ Assess the situation
- ❑ Slow your breathing

Panicking Wastes Energy And Time

How To Escape A Sinking Vehicle

Open your Window(s) or Door(s)

- Due to water pressure from the outside, opening the door will be difficult or impossible.
- Locate door latch, window crank or electric window switch (electric windows may still work but don't rely on them).
- Have a rescue/escape tool immediately available for breaking out the window.

- Tool should be mounted on the sidewall of the driver's side compartment, attached to key ring or other location that is easily accessible.

How To Escape A Sinking Vehicle

Open your Window(s) or Door(s)

- Smash window using a rescue/escape tool or lower window using crank or switch.

- If you are unable to open the door or window and unable to smash the window, you may have to wait for the vehicle to completely fill with water to equalize the pressure.

How To Escape A Sinking Vehicle

What If There Are Multiple Occupants?

- Once escape route has opened, each occupant should hold hands in a human chain and escape from same route.

- If young children are secured in car seats or by a seatbelt, remember:

PO GO

How To Escape A Sinking Vehicle

PO GO:

1st: **P**ush Seatbelt Release and head to the back of vehicle

2nd: Release child(ren) from their car seat/seatbelt using the seatbelt cutter on the rescue/escape tool

3rd: **O**pen your escape route, and

4th: **GO**, get Out!

How To Escape A Sinking Vehicle

Other Information

- Once you have escaped the vehicle be prepared for the water to be dark and murky.
- Blow bubbles out of your nose to determine which way is to the surface of the water.

How To Escape A Sinking Vehicle

- If car lands upside down in the water:
  a) Don't take off your seatbelt until you have a firm grasp of the door handle.
  b) Once you take off your seatbelt, you must wait until the car fills with water until you can open the door or you can use a rescue/escape tool to punch or smash the window to escape.

How To Escape A Sinking Vehicle

Note of Critical Importance

- Life Hammer type devices and spring-loaded window punches may NOT BE effective on laminated glass. This can make escaping almost impossible using these devices.
- Check w/ your automobile manufacturer to see which type of glass you have in your vehicle and adjust your escape plan accordingly.

How To Escape A Sinking Vehicle

GO!

GET OUT

AS FAST AS YOU CAN

How To Escape A Sinking Vehicle

Actual Footage on how to escape a sinking vehicle!

Finding Drowning Prevention/Water Safety Information In Your Area

Try & Contact:

- Local American Red Cross Chapter
- City/County Parks and Recreation Department
- Local YMCA's & JCC's
- Local Safe Kids Coalition - http://www.safekids.org/coalitions
- Local Health Department (Education Dept)
- US Army Corps of Engineers – Free Stuff
- US Coast Guard Auxiliary – Free Stuff

Use Internet

- Pool Safely – www.poolsafely.gov

12/11/201

THANK YOU

ANNA STEWART
405 PIKE ROAD
WEST PALM BEACH, FL 33411
561-616-7068
ASTEWART@PBCGOV.ORG

RERENCES

- AMERICAN RED CROSS DROWNING PREVENTION
- POOL SAFELY.GOV

VITA

Maria Pontier-Elias, RN, BSN

EDUCATION	DEGREE	DATE	MAJOR
Barry University	DNP	2013	NURSING
Barry University	M.S.N	2013	NURSING
Florida Atlantic University	B.S.N.	2004	NURSING
PB Community College	CERTIFICATE	2005	E.M.T
PB Community College	AS	1999	NURSING
South College	AS	1991	MEDCIAL ASSISTANT

PROFESSIONAL LICENSURE

Florida RN issued 2000.
State of Florida, RN, #9166131
Effective through April 30, 2014

Florida EMT issued 2005
State of Florida, EMT# 510641
Effective through December 1, 2013

CERTIFICATIONS

B.L.S. Expires November 2, 2015
ACLS. Expires September 15, 2015

PROFESSIONAL EXPERIENCE

Position	*Organization*	*Dates*
Registered Nurse	Bethesda Memorial Hospital Boynton Beach, Florida	05/00 - Present

Registered Nurse	ID Consultants Boynton Beach, Florida	11/04 - Present
Registered Nurse	Jesus Jimenez, MD Boynton Beach, Florida	02/06 – 11/08
Registered Nurse Office Manager	Robert Liem, MD West Palm Beach, Florida	03/1999 - 7/2005

HONORS AND AWARDS

2004	Graduated Summa Cum Laude Florida Atlantic University

MEMBERSHIPS IN PROFESSIONAL ORGANZATIONS

2009 - Present	Florida Nurses Association
2009- Present	Nurse Practitioner Council Palm Beach County

Service to the Community

December 2011	Palm Beach County Water Coalition
September 2005	United Way (Hurricane Katrina relief)
October 2009	Volunteer Caridad Clinic