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Increasing the Use of Booster Seats: A Community-Based Research Project

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Abstract

The aim of this project was to increase booster seat usage and knowledge of booster seat safety by implementing population-based interventions in the community. To aid in accomplishing the goal, the nursing students utilized the performance of an educational puppet show, educational handouts, and aggregate height and age screening as the interventions. Pre and post tests data were obtained. As a result, there was an increase of the aggregates' desire to be in a booster seat. Nurses who take more action in a leadership role by implementing interventions based on the educational needs of the community increased booster seat awareness.

The purpose of this project was to gain entry and assess a community that utilizes or should utilize booster seats. This was accomplished by applying a Health Planning Model to improve the health of the aggregate and application of the nursing process to a larger scale within a systems framework. The goal was to work with the community to increase booster seat usage among the chosen aggregate, children 4 to 8 years old who attended local Young Men's Christian Association (YMCA) after school programs. The nursing students completed population based interventions and then evaluated the expected outcomes. To aid in accomplishing the goal, the nursing students utilized the performance of an educational puppet show, educational handouts, and aggregate height and age screening as the interventions. This paper thoroughly discusses the planning, implementation, and evaluation process of the health planning project, the Booster Seat Challenge.

The Booster Seat Challenge was feasible through cooperation with several organizations including the Old Dominion University (ODU) School of Nursing, Consortium for Infant and Child Health (CINCH), the American Trauma Society (ATS), and the YMCA. The ATS is a nonprofit organization established in 1968 dedicated to trauma prevention and quality trauma care (ATS, 2009). The ATS awarded a grant to CINCH for this project to purchase booster seats in the amount of \$625, refer to Appendix A for the grant information.

The Health Planning Model utilized to guide this project was the Health Belief Model (HBM). The HBM is a psychosocial approach used to explain the health related behaviors seen during the interventions. The HBM introduced in the 1950s by psychologist Rosenstock, Hochbaum, Leventhal, and Kegeles is a conceptual framework that incorporates four different variables: perceived susceptibility, perceived seriousness, perceived benefits, and perceived barriers (Morton, 2008). These barriers influence the actions of the children and their parents. Some parents may believe that using a car seat takes too much time, requires too much effort, and/or is too costly to obtain. According to research, the highest likelihood of action occurs when the perceived threat is high and the perceived benefits outweigh the barriers (Pelican, Gagnayre, Sandrin-Berthon, & Aujoulat, 2006).

Assessment

Car crashes kill more children 4 to 8 year olds than any other cause of death (Winston, Kallan, Elliott, Xie, & Durbin, 2007). Seat belts save lives, but if the child does not fit properly in the seat belt then it will not protect the child during a vehicle accident. If children are prematurely placed in a shoulder and lap belt, their risk increases by more than threefold (Medoff-Copper & Tulman, 2007). Booster seats are made for older children whose bodies are too large for safety seats but are too small to use adult seat belts. In an accident, a child who is too small for a seat belt can slip out from the belt and sustain spinal cord injuries. Children can also sustain injury from the lap portion of the seat belt if not fit properly. Internal organ damage and internal bleeding could occur if the lap belt is positioned over the stomach. A shoulder belt worn under the arm can break ribs, while placing it behind the back can cause head trauma during an accident when the child is thrashed forward. These injuries together are also known as seat belt syndrome. The syndrome is preventable if children are properly fit in booster seats (Durbin et al., 2003).

In Virginia, the law requires children under 8 years old to be placed in a child safety seat (Gilbert, 2007). However, the National Highway Traffic Safety Administration (NHTSA) recommends children ages 4 to 8, over 40 pounds and less than four feet nine inches to be placed in a booster seat (National Highway Traffic Safety Administration, 2008).

General Orientation of the Aggregate

A focus on aggregates as patients is an important characteristic of community health nursing practice. Aggregates are groups of persons who have one or more shared personal or environmental characteristics (Maurer & Smith, 2005). For this paper, the aggregate is defined as any child living in the Hampton Roads area that is required by the Virginia law to use booster seats. Hampton Roads is a culturally diverse area that contains seven scattered cities. There are approximately 1.6 million people in Hampton Roads and 32.6% are children between the ages of 4 to 8 (U.S. Census Bureau, 2007).

The aggregate was chosen based on their at-risk characteristics. Because the aggregate falls in between the function of car seats and seat belts, too often their vehicle safety goes unnoticed. During one recently released NHTSA study conducted in 2003 only 85% of parents and caregivers had heard of booster seats, and of those 60% said they used them at some time with their children. In addition, only 21% of children ages 4 to 8 were occasionally riding in a booster seat while traveling in a vehicle (NHTSA, 2008). These statistics demonstrate the need for intervention and support the choice of aggregate.

Literature Review

Motor vehicle accidents are the leading cause of injury and death among children ages 4 to 8 years of age (Ebel, Koepsell, Bennett, & Rivara, 2003a). A contributing cause of injury in children in this age group is due to the premature graduation to adult seatbelts or the improper use of a booster seat. This improper or non-use of child restraint seats can cause serious injuries called seatbelt syndrome. This syndrome includes life-threatening spinal and abdominal injuries. This is mainly attributed to the misplacement of the lap belt on the abdomen and the shoulder belt's placement near the neck (Ebel et al., 2003a). The purpose of a booster seat is to raise the child up on the vehicle seat to allow both belt portions to fit properly. Its shallow bottom cushions also allow the child's knees to bend comfortably which encourages the child to sit up straight with his back against the vehicle seat (Durbin et al., 2003). As a result, many states have adopted a booster seat law, which has also increased the appropriate use of restraint in children ages 4 to 7 (Winston et al., 2007).

Reasons for using booster seats, as identified by parents, include safety of the child in the case of an accident, protection from injury during sudden stops, prevention of the child from distracting the driver, and for comfort and better viewing of the outside for the child (Medoff-Cooper & Tulman 2007). Many parents refrain from using a booster seat because they believe their child is too big to use it. Some have not heard of booster seats, while others identified child resistance because of embarrassment or discomfort as a barrier against using booster seats (Ebel et al., 2003a). Due to an inconsistent delivery of information about child booster seats, many parents do not know about booster seats or when it is safe to move a child to a lap shoulder belt (Ebel et al., 2003a). Other reasons for not using booster seats include the seat taking up too much space in the car and too much consumption of time and effort to properly install it in the car. When transferring the seat to another vehicle, parents often complain of it being too difficult to move and install. Many mothers believed that the installation was too complicated and had doubts as to whether the seat was installed correctly (Medoff-Cooper & Tulman, 2007).

It has been found effective to implement an educational program that focuses on educating both children and parents regarding the proper use of booster seats. Strategies deemed beneficial in such an education program include those that are simple to understand, use repetition, and materials that involve both the parent and child. These strategies also educate correct safety seat requirements based on age, height, weight, safe transition from one seat to another, and awareness of risks and injuries (Snowdon et al., 2008).

Diagnosis

The nursing diagnosis provides both the label and the action of describing the aggregate's functional problems. Its purpose is to identify problems and combine the information gathered during the nursing assessment.

It also gives direction to both nursing goals and their interventions (Craven & Hirnle, 2007). Some problems that have been identified are ineffective health maintenance, knowledge deficit, caregiver role strain, risk for injury, and health seeking behaviors. These problems have been formulated into actual nursing diagnoses in which measurable outcomes and planned interventions have been structured (see Appendix B).

Given these nursing diagnoses, the first priority would be ineffective health maintenance (Carpenito-Moyet, 2006, p. 197).

Outcome Identification

The Health Belief Model is a framework for motivating people to take positive health actions by using the desire to avoid a negative health consequence as its motivation. For example, child injury or death from a vehicle crash is a negative health consequence, and the desire to avoid child injuries can be used to motivate the use of booster seats among children. Avoiding a negative health consequence is a key element of the health belief model and can be used to develop health education strategies (Bastable, 2008). Appendix C illustrates the interacting components of the health belief model and the subcomponents' involvements.

Because the ineffective health maintenance is precipitated by the lack of education the first goal would be that by the end of a training event, parents will be able to state: any child under 8 years old must be in a booster seat in Virginia, and children too large for a car seat should be in a booster seat until 8 years old. In addition, parents and children will be able to identify and describe negative consequences that will result if a booster seat is not utilized. The ultimate goal of the project will be that parents will initiate an active role in their child's health maintenance.

Planning

The planning phase of the nursing process addressed the nursing diagnoses identified during the assessment phase last semester. The group focused the interventions based on the needs of the aggregate to improve their health status and to prevent motor vehicle injuries (Craven & Hirnle, 2007).

The interventions consisted of a creative learning strategy that allowed the children freedom of expression while stimulating learning through play. Because children love to pretend and engage in dramatic characterizations, the use of puppets to communicate booster seat information was adopted (Epstein, Stevens, McKeever, Baruchel, & Jones, 2008). Appendix D summarizes the specific measurable objectives relating to each domain of the project.

Interventions

Primary Prevention

The puppet show performances were based upon the aggregates' need for primary prevention in regards to education on booster seat safety. In order to promote health, certain factors need to be assessed that may influence the ability to become healthy. These factors include the possibility of child injuries due to unsafe habits or actions, family life and family education, and community resources available. During the performances the children were educated on the Virginia booster seat law, and also on the injuries that could be sustained without proper use of a booster seat and prevention of such injuries. Caregivers were included in the education process by having the child take home handouts that identified not only the law, but also whether their child may need to be in a booster seat. Refer to Appendix E for the Booster Seat Challenge caregiver handout.

Secondary Prevention

Secondary prevention involves early diagnosis and prompt treatment of the health issue.

Identifying and detecting harm in its earliest stage so that complications do not occur is the purpose of secondary prevention (Allender & Spradley, 2005).

The interventions occurred at three local YMCA after school programs: Norfolk/Blocker, Virginia Beach Hilltop, and Effingham Portsmouth. The interventions consisted of an educational puppet show performance and a screening of the aggregate in order to determine their eligibility for a booster seat. The Booster Seat Challenge had an ODU Monarch Lion stand up poster board as a screening device which measured the height of the child as above or below 4 feet 9 inches according to the lion's raised paw. This was then documented along with the age of each child. Children whose height and age were consistent with the criteria set forth in the Virginia state law for booster seat use were instructed that they may need to ride in a booster seat. This information was highlighted on their handout and the information was to be brought home to the caregiver.

Through the assistance of CINCH and the grant that was acquired to provide booster seats to low income children, an early detection program was established that identified children in need of booster seats. Because of the generosity of the grant, over 35 children in need were provided with a booster seat during the course of this intervention.

Tertiary Prevention

Tertiary prevention consists of the development of long term care, family education, and health promotion programs (Allender & Spradley, 2005). Resources that were provided to educate the aggregate and their families took the form of booster seat safety pamphlets, educational coloring books, and the aforementioned handout designed to educate the caregivers. Other resources provided were booster seats to children in need, as well as a demonstration of how the booster seat should properly fit the child. Actual treatments of the problem through these resources were the key components of tertiary prevention.

Evaluation

Plan and Process

The plan for the evaluation used a pretest-posttest comparison design to determine the effectiveness of the interventions. The outcomes for the objectives listed in Appendix F were evaluated based on the increase of children desiring to use a booster seat. The expected outcome was to see an increase in the desire to use a booster seat. Pretest data were collected at each intervention prior to providing any educational material to the children. Posttest data was collected after the puppet show and after an educational discussion. Group members counted the children's hands to gather the pretest and posttest data.

The data in Appendix F represents the quantitative data or numerical information collected. The group also collected qualitative data, which were non-numerical data or categorical information. The qualitative data was obtained through short question and answer sessions after each puppet show and from personal interactions between the nursing students and the children. Information received from personal interactions was discussed among group members and then documented.

From the short question and answer sessions, it was evident that most of the children understood that one of the consequences of an improperly fitted seatbelt was seatbelt syndrome, as illustrated during the puppet show. The children's ability to describe seatbelt syndrome varied in accuracy, which was expected from the younger children because abstract thinking is still developing (Hockenberry & Wilson, 2007). Numerous responses indicated that the puppet show was effective in educating the children. Appendix G summarizes exact quotes taken from various children after the puppet performance.

Although the puppet show was effective as an educational tool, it also served as entertainment for the children. The puppet show received positive feedback from the YMCA staff and the children attending the interventions. The educational puppet show was very beneficial and served as the best medium for teaching the aggregate. Appendix H summarizes quotes and actions expressed by the aggregate after the puppet show.

Implications

This intervention emphasized the importance of the educational role of a community health nurse. The lack of public knowledge regarding certain laws and public health issues adds great risk for injury to children and others in the community. As health care providers who have the most contact with patients in the community, nurses need to lead the way in fulfilling the educational needs of the children, parents, and educators regarding the importance of an injury prevention lifestyle. Financial needs can be addressed by providing coupons or directing the community to other resources that can provide booster seat at discounted prices. Some ways in which nurses may be able to do this is by providing the public with resources, and encouraging active participation within the community by promoting more participation in health promotion programs and activities (Maurer & Smith, 2005).

Conclusion

The HBM was chosen as the foundational framework for this project. Its psychosocial approach was used to explain the health related behaviors seen during the booster seat interventions and helped narrow the goals for this project. Because the likelihood of action occurs when the perceived threat is high and the perceived benefits outweigh the barriers, the group focused on preventable injuries that could be sustained during a motor vehicle accident, seat belt syndrome. The chosen method used to deliver the educational teaching was puppetry. Puppetry was chosen for a number of different reasons: (a) children ages 4 through 8 typically have a short interest span of about 20 minutes and the use of puppets help to hold their attention, (b) puppets offer a fun and enjoyable environment in which children feel free to ask questions, and (c) imagination and dramatic play are essential to the exploring world of children.

In addition to the HBM, the nursing process was also utilized in this paper. The goals addressed the intervention on three different levels: cognitive, affective, and behavioral. The intervention phase incorporated primary, secondary, and tertiary prevention strategies to promote health and to prevent motor vehicle injuries by utilizing booster seats. Because primary prevention can identify high risk factors and help to reduce or eliminate those risks, the puppet performance was critical to this project. Lastly, the evaluation phase examined the quantitative and qualitative data obtained during the interventions. It helped to identify cultural differences, barriers or limitations, and recommendations for others who may chose to work with such an aggregate.

The overall goals of community health nursing are to increase quality years of healthy living, eliminate health disparities, and to prevent health related illness or injuries. By educating the aggregate and their caregivers on the use of booster seats, this community health project promoted self-reliance and the ability to function independently.

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Biographical Sketch

This group was formed in August 2008 during a community health nursing course at Old Dominion University School of Nursing. In collaboration with a local community out reach program, the group set out to increase the awareness of booster seat usage among children between the ages of 4 to 8. Over the past year, we were able to distribute 37 booster seats to children of a low socio economic status, increase the awareness of the new Virginia Booster Seat law, and implement a new style of learning through puppetry.

Appendix A



Virginia Division

P.O. Box 191 Verona, Virginia 24482-0191
540-448-3959
VAATS@ntelos.net

Injury Prevention Restricted Grant Opportunity

The American Trauma Society is a non-profit organization dedicated to injury prevention and quality trauma care. Its efforts began in 1968, and today unite the entire trauma constituency. The Virginia Division carries on these same commitments on a local level. Currently there are restricted funds available to be used to support injury prevention programs within the state of Virginia. These funds must be used for the program specifically, and cannot be used for administrative costs, such as phone, electric, etc.

Background Information on ATS:

National and State Legislative Advocacy

ATS monitors federal and state legislation and administrative programs that impact EMS and injury control, and offer advocacy support materials for legislative initiatives.

Injury Prevention Programs

Community and in-school programs, on such topics as home safety, elder safety, bystander care, and driver safety.

Traumaroo Safety Series

Children's injury prevention programs featuring animated safety mascot Troo, the Traumaroo. Covers Playground / Bicycle Safety, Staying Friends / Conflict Resolution, Home Safety, and Playing It Safe.

Trauma Survivor Network

A support program for persons touched by trauma so they can recover and regain their lives.

2nd Trauma

An innovative, research-based program trains hospital and pre-hospital personnel to skillfully address the needs of families and friends of trauma victims, with U.S. Deputy Surgeon General Dr. Kenneth Moritsugu as a leading advisor.

ATS Program Partners:

The Advisory Board / Washington, DC
General

Johns Hopkins Center for Injury Research and Policy
Office of Homeland Security
Administration

U.S. Dept. of Health and Human Services
National Highway Traffic Safety Administration
Administration

Office of the U.S. Surgeon

U.S. Dept. of Transportation
Federal Highway Admini-

Center for Disease Control
Health Resources Service

**ATS Virginia Division
2008 Restricted Grant Application Form**

All Sections must be completed to be considered for grant. If you have any questions, need assistance, or would like this form electronically, please contact Michelle Pomphrey at 434-243-4858

1. Name of Organization: Eastern Virginia Medical School (EVMS)
Lead Department / Agency: Consortium for Infant and Child
Health (CICNH); EVMS is fiscal agent
for CINCH

Contact Person's Name: Audree Hughes (EVMS); Taegen L. McGowan (CINCH)

Address: P.O. Box
1980

City: Norfolk State: VA

Zip: 23501

Phone: Audree Hughes (757) 446-6026; Taegen McGowan (757) 668-
6495

Fax: Audree Hughes (757) 446-6019; Taegen McGowan (757) 668-
6475

E-Mail: Audree Hughes: hughesas@evms.edu; Taegen McGowan:
mcgowatl@evms.edu

2. Describe the reasons your organization should be selected to receive this funding (include need and benefits to the organization / community:

The Consortium for Infant and Child Health (CINCH) is a community partnership to promote health and prevent disease among all children in Hampton Roads. The lead agency and fiscal agent for CINCH is Eastern Virginia Medical School. CINCH was established in 1993 as a demonstration project by the Centers for Disease Control and Prevention to determine if community coalitions were an effective agent to change health behavior related to childhood immunizations. Fifteen years later, with over 400 members, CINCH is the region's premier childhood health advocacy organization. CINCH is made up of several work groups that focus on different topic areas to address many child health disparities including asthma, perinatal health, obesity prevention, injury prevention, access to healthcare, health insurance, children with special health care needs, and reducing risk factors for health conditions for low income children.

For several years, Old Dominion University (ODU) School of Nursing has collaborated with CINCH as part of their yearlong community health curriculum requirement for the students. One of the areas of concentration in this partnership involves injury prevention of children through the Injury Prevention Work Group (IPWG). The goal of the IPWG is to promote childhood safety awareness and behavior to reduce unintentional injury, disability, and death. This group has focused on topics such as water safety, child passenger safety, poison prevention and playground safety.

Funding would allow CINCH to partner with the Old Dominion University (ODU) School of Nursing students to implement a *Booster Seat Challenge* program to local preschool and afterschool child care facilities. It will provide valuable education and experience to the nursing students by allowing them to carry out a community health program to those children most in need. Specifically, funds will only be used to purchase booster seats and printing materials for certificates.

The need to increase booster seat use in the community is great. Injuries sustained during a motor vehicle collision can be greatly reduced when a child is properly restrained. However, according to the Partners for child passenger safety fact and trend report, 2005, only 27% of 4 to 8 year-old US children travel in booster seats. In their September 2007 report, it was noted that only an estimated 43% of Virginia's booster age children rode in booster seats in 2006. This number may be inflated as it only accounts for parents who were insured with State Farm Insurance. Several of the low-income, high risk area community members may not be insured and therefore not included in this figure. In addition, the Virginia Department of Health (VDH) 2006 Unintentional Injury report states that 1 in 10 families with children age 4 – 6 reported their child only used a seat belt when travelling.

3. Describe your organization's implementation of past or current injury prevention and / or educational programs and the success of implementing other programs. What type of programs does your organization have in place to educate the community in injury prevention?:

CINCH has been involved in several injury prevention programs since 2003, the genesis of the Injury Prevention Work Group (IPWG). In 2004, with funds from the Virginia Department of Health (VDH) members of the IPWG hosted "Beach Safety Day". The focus was on many components of safety, including water safety and drowning prevention through partnerships with Sentara Health System, Coast Guard Auxiliary, Red Cross, Virginia Beach Life Saving Service, Virginia Beach Police – Marine Safety Patrol, Virginia Beach Fire Department, American Cancer Society, Melanoma Foundation, United States Coast Guard, and other organizations. Educational materials and demonstrations on general water safety were given to thousands of Virginia Beach Boardwalk patrons.

From 2004 – 2006, the IPWG members and ODU nursing students developed and implemented playground safety projects in this region. Students worked to develop a data collection tool to capture the number and type of potential playground hazardous. Data was collected and analyzed, and results were shared with area parks and recreation staff.

In 2006, all members of the IPWG were trained on car seat installation and inspections. Throughout the year this group held several car seat checks throughout the region (ex: Babies 'R' Us parking lot, women's resource centers, etc.) that proved to be very successful.

In 2007, again with funds from VDH, IPWG members partnered with the Virginia Poison Center and researchers from EVMS to increase community knowledge of the new Poison Center hotline phone number. Print media and hotline number stickers were distributed to over 30,000 parents through local area day care centers. Additionally, through utilization of the American Association of Poison Control Centers' *Spike Poison Prevention Adventure Video* and Curriculum, children ages 3 – 4 in 100 local day care centers were provided an interactive method to learn about the dangers of poisons.

In 2007, IPWG members collaborated with a number of ODU nursing students on several injury prevention community projects. First, with funds from VDH's Bike Smart Virginia Bicycle Helmet Mini Grant, ODU nursing students, staff and faculty joined the already planned "Health Kids Day" held at the YMCA in Suffolk to set up a bicycle safety event. Another smaller bicycle safety event was set up at the Effingham YMCA in Portsmouth. This enabled them to reach low-income children who attended the children's day care during their spring break. The bicycle safety events consisted of three stations: 1) Children were fitted with helmets provided by the grant monies and shown how to wear them; 2) Bicycle safety rules of the road were discussed with the children and families; 3) Children were given the opportunity to ride bicycles they had brought to the event in a demonstration course where there was a need to stop at signs and look for oncoming cars. Second, after completing a ½ training session on child passenger safety, ODU nursing students worked with members of the IPWG to set up educational sessions on car seat and booster seat safety for parents within WIC clinics. Of note, the students voiced a concern that several parents were unaware that by law, Virginia children must ride in a booster seat up to age 8. Lastly, as a follow up to playground safety projects from 2004 – 2006, a group of ODU nursing students prepared a playground safety module that was presented to area PTA groups. The module consisted of a presentation that gave 12 clear steps for a parent to assess a local playground for hazards that could potentially cause harm to children.

Injury Prevention Work Group members are continuing to implement a sticker project which was started in 2007. A flyer and sticker was created by members to include information on where to find the best local information about car seat and booster seats. For example, where to find local car seat check points, helpful installation tips, recall notices, etc. The sticker is a supplement with the flyer that includes a direct website link and hotline phone number to the region's children's hospital, The Children's Hospital of The Kings Daughters (CHKD) that will provide this type of helpful information. Parents are to place this sticker on their child's car or booster seat for easy reference to access help when they need it. Distribution of the flyers and stickers continues in 2008.

4. Describe in detail the specific program you wish the grant monies to be applied: In partnership with the ODU nursing students and the local YMCAs, a special booster seat program will be implemented. Children up to age 8 (or 4'9" tall and between 40- 80 lbs.) are required by law in Virginia to be in a booster seat. Depending on height and weight, recommendations could also include children through age 11. Student nurses will partner with area preschool and afterschool programs at YMCA sites within South Hampton Roads to a onetime 30 minute program for kids, which would include education and a *Booster Seat Challenge*. The student nurses would have the child go through a series of steps, utilizing a safety belt test, to see if the child could be in a car safely without a booster. For those children who do not pass the safety belt test, but don't have a booster, they will be given one at that time. All of the children would receive a certificate that indicates their booster seat status, as well as literature on child passenger safety in motor vehicles.
5. Provide information on your target audience, including your at risk population: The YMCA of South Hampton Roads has 50 licensed sites that provide preschool and afterschool programs to over 3,000 children daily. Approximately 1,600 are children between the ages of 4 – 8 who live in lower socio-economic status (SES) areas, and of those, there are approximately 1,100 children that are at risk 4 year olds.

Size of your service area: As a coalition, CINCH serves children in all areas of Hampton Roads, including rural outlying city/county areas. Hampton Road proper consists of seven (7) major urban and suburban cities. YMCA locations will be chosen that have existing preschool and afterschool programs in lower SES cities.

6. What facilities, resources, staff, and volunteers are currently available to implement the program? CINCH has many and varying resources available through its associations with Old Dominion School of Nursing, the Injury Prevention Work Group coalition members, and local YMCAs to promote booster seat safety. With support from these community members working together and the financial support from the American Trauma Society, this *Booster Seat Challenge* program has the potential to effectively reach and educate hundreds of booster age children and their parents on child passenger safety in motor vehicles.

7. Describe proposed staffing (paid and/or volunteer) by task, current job description, and estimated percentage of time to be allocated to this program: This program will be implemented by volunteers from the IPWG, ODU nursing students and the YMCA staff. Each of the nursing students will be required to attend a 1/2 day child passenger safety presentation presented by partners from the Department of Motor Vehicles (DMV). Depending on the number of sites the student volunteers are able to visit, with each program taking the approximately 30 minutes to complete, it is estimated that 4 – 6 hours of volunteer time would be allotted per volunteer over an 8 month period (September – April).

8. Attach a detailed description (who, what, when, where, and how) of the specific activities for this program

Contact	Organization/Title	Description
Taegen McGowan	CINCH/Assistant Director	ODU Nursing Student Community Mentor
Janet Azar	ODU/Professor	ODU Nursing Student Professor & Project Advisor
Lynn Skeele-Flynn	YMCA/Senior Vice President Program & Leadership Development	Coordinator for nursing students within the YMCA
Nursing Students	ODU School of Nursing/Student	Plan & Implement Program

9. Please provide a budget to include a detailed description / justification of anticipated expenditures for this program.

The major expense in this budget will be the purchase of approximately 100 low back booster seats. The seats will be available at the sites when the program is implemented. Any child who does not currently have a booster seat, but meets the requirements for using one, will be given one at that time. The average price for a low back booster seat is \$25.00. If a lower price is secured when the seats are purchased, a larger quantity will be purchased.

In addition, a certificate will be designed and printed on a light colored sheet of paper, and given to each child who participates in the *Booster Seat Challenge*. Other materials used (ex. educational materials, brochures, etc.) will be free materials available on the web and/or in kind materials donated by CINCH partners. Please see itemized budget below.

Budget Item	Quantity	Price	Total Cost
Booster Seat	100	\$25.00/each	\$2,500.00
Certificate Materials	Paper	\$250.00	\$250.00
TOTAL			\$2,750.00

10. Describe how you would publicize and promote this program: Publicity and promotion of the event will be coordinated by the nursing students, the IPWG members, and the YMCA preschool and afterschool programs. An announcement flyer will be developed by the nursing students with input from CINCH, their Project Advisor and the YMCA coordinator. The flyers will go home with the children to be given to their parents to inform them that this fun and interactive activity will take place at their child's preschool or afterschool program.

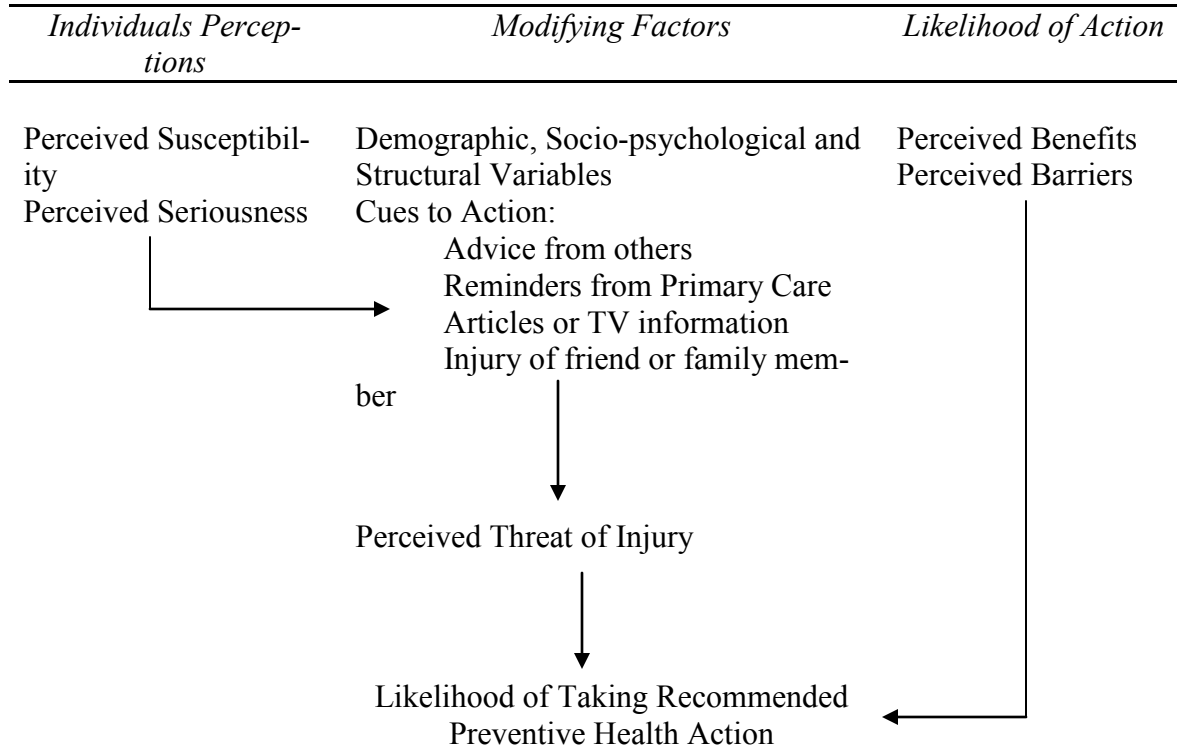
Appendix B

Nursing Diagnoses

Domains	Learning Objectives
Ineffective Health Maintenance	Ineffective health maintenance related to low income secondary to lack of knowledge as evidenced by parents not knowing their children should be in booster seats & failure to use seats
Caregiver Role Strain	Caregiver role strain related to unavailable or unaffordable community resources as evidenced by neglecting child safety care.
Knowledge deficit	Knowledge deficit related to new Virginia booster seat law as evident by lack of integration of booster seats into daily automobile travels
Health Seeking Behavior	Health seeking behavior related to lack of knowledge about booster seat usage as evidenced by parents and children attending information sessions.
Risk for Injury	Risk for injury related to improper placement or not utilizing booster seats.

Appendix C

The Health Belief Model



Note. Arrows shows the direction and flow of interacting components. From *Nurse as educator: Principles of teaching and learning for nursing practice* (3rd ed.), by S. B. Bastable, 2008, Sudbury, MA: Jones and Bartlett. Copyright 2008 by Jones and Bartlett. Adapted with permission.

Appendix D

Domains	Learning Objectives
	<ul style="list-style-type: none"> • The aggregate will state two signs and symptoms of seatbelt syndrome by the end of the performance.
	<ul style="list-style-type: none"> • The aggregate will be able to describe proper positioning of the seatbelt while using a booster seat by the end of the discussion.
Cognitive	<ul style="list-style-type: none"> • The aggregate will be able to summarize the events that lead to the injuries of the puppet by the end of the performance.
	<ul style="list-style-type: none"> • The aggregate will give examples of how to be safe in a vehicle by the end of the day.
Affective	<ul style="list-style-type: none"> • The aggregate will express feelings about having to use a booster seat with vehicle safety by the end of the performance.
	<ul style="list-style-type: none"> • The aggregate will be able to relate a properly fitted booster seat with vehicle safety by the end of the performance.
	<ul style="list-style-type: none"> • The aggregate will show their care takers the Booster Seat Challenge brochure by the end of the day.
Psychomotor	<ul style="list-style-type: none"> • The aggregate will become accustomed to the use of a booster seat by the end of the day.

Appendix E

Booster Seat Newsletter



A New Virginia State Law...

Today your child learned about booster seat safety. Are you familiar with seatbelt syndrome? Your child is, ask him/her!

As a community health awareness effort, the ODU nursing department is visiting local YMCAs to spread the news of the new Virginia law. We "challenged" your child today by assessing their height and age. The results are below.

Booster Seat Challenge

Your child is _____ years old...

Your child is UNDER / OVER 4 feet 9 inches...

According to VA Law, your child MAY / MAY NOT need a booster seat.

This safety lesson was brought to you in partnership with the American Trauma Society, CINCH, and ODU School of Nursing.

**VIRGINIA'S CHILD RESTRAINT DEVICE LAW
(Code of Virginia Article 13 - Section 46.2)**

The major requirements of Virginia's Child Safety Seat Law:

Effective July 1, 2007: Child restraint devices are required for children through the **age of seven (until 8th birthday)**. Safety seats must be properly used and approved by Department of Transportation standards.

Effective July 1, 2007: Rear-facing child restraint devices must be placed in the back seat of a vehicle. In the event the vehicle does not have a back seat, the child restraint device may be placed in the front passenger seat only if the vehicle is either not equipped with a passenger side airbag or the passenger side airbag has been deactivated.

Effective July 1, 2007: Children can no longer ride unrestrained in the rear cargo area of vehicles.

The law applies to anyone (i.e. parents, grandparents, babysitters, friends) who provides transportation for a child in any vehicle manufactured after January 1, 1968. Public transportation (taxis, buses), regulation school buses, and farm vehicles are exempted.

The child restraint law is primary enforcement -- no other violation need be committed prior to ticketing for failure to have a child in an approved seat.

A \$50 civil penalty fine is imposed for failure to have a child in a child restraint device. A \$20 civil penalty fine is assessed when persons transporting a child exempted from this law due to medical reasons do not carry a written statement of the exemption. All fines collected go into a special fund to purchase safety seats for low-income families.

There are assistance programs for low-income residents who cannot afford a safety seat. Contact Virginia Department of Health, Division of Injury and Violence Prevention at 1-800-732-8333 for more information.



Attention:

Parent or Guardian

Appendix F

Pre and posttest data

	Norfolk	Virginia Beach: Session 1	Virginia Beach: Session 2	Portsmouth
Pretest				
Participants between 4 to 8 years old	38	48	3	21
4 to 8 year olds using booster seats	13	14	0	14
Posttest				
Number of 4 to 8 year olds that believed they should be in booster seats	18	20	0	10
Evaluation				
Increase in non-booster seat users desire to use a booster seat	5	6	0	-4

Note: The majority of the children in Virginia Beach Session 2 were over the age of 8, therefore skewed data did not represent significant information regarding the intended aggregate.

Appendix F

Intervention evaluation based on quotes from the aggregate

Aggregate Quotes	
	<ul style="list-style-type: none"> Quote: “I don’t need a booster seat but my little sister does.”
	<ul style="list-style-type: none"> Comment: This quote came from an 8 year old girl that was over 4’9”. This illustrated that the message was clear and she realized that although she did not need a booster seat her younger sibling did.
Positive	<ul style="list-style-type: none"> Quote: “ I need a booster seat, I want to be a big boy.” Comment: This illustrated that the message was age appropriate and conveyed a positive message for children ages 4 to 8.
Negative	<ul style="list-style-type: none"> Quote: “Is he going to be alright “ Comment: This young child was worried about the puppet Chris. This shows that the child understood the danger of not wearing his seatbelt and felt compassion for his injuries. Quote: “If I don’t wear a booster seat I can fall out the window and die.” Comment: Although this might be too graphic, it showed that the child was aware of the dangers of riding while unrestrained. Quote: “I don’t need a booster seat, I’m grown.” Comment: This comment came from a child after an instructor was teasing him about being too small. This showed that children were willing to adjust their beliefs based on peers and more importantly their role models. Quote: “Booster seats are for little babies!” Comment: Booster seats are sometimes compared to car seats; this intervention showed that there is a difference.
Culture	<ul style="list-style-type: none"> Quote: “I already ride with just a seatbelt.” Comment: Since the new Virginia booster seat law, some children have already graduated to seatbelts and now having to sit in a booster seat can sometimes feel elementary. Quote: “ I already have a booster seat, but I don’t have one in my dad’s car.” Comment: Sometimes parents can only afford one booster seat and may have to transfer them from car to car. Therefore, the child receives mixed messages and believes that booster seats are not necessary all the time. Quote: “We don’t have booster seats in Mexico, we don’t even have to wear seatbelts.” Comment: Children from other countries are not accustomed to United States standards and may find it difficult to adjust.

Note: Quotes taken from children ages 4 through 8 who attended the Booster Seat Challenge. Negative and culturally sensitive conversations were evaluated and given further teaching.

Appendix H

Aggregate Quotes

Verbal	<ul style="list-style-type: none"> • Quote: “This is the best show ever!” • Comment: This quote came from numerous children who viewed the puppet show. It was a compliment knowing that the intervention was fun. • Quote: “I loved it!” • Comment: This comment illustrates that the puppet show was a success and that the information provided was age appropriate. • Quote: “Are you coming back?” • Comment: Knowing that the children were excited about the puppet show created a great environment to teach. Each child was able to take an active part in the show and take home information about a life saving intervention.
Nonverbal	<ul style="list-style-type: none"> • Quote: “Can I give the nurse a hug?” • Comment: This showed that the children were able to relate with the characters. Allowing the nurse to take on the educator role served two purposes: (a) reinforced the fact that nurses are members of the community that provide unbiased aid to all and (b) nurses are a great source for health and safety information. • Act: During the show the children were intensely watching the performance, not taking their eyes off the puppets. • Act: One little boy did not want to leave the show when another teacher told him his mother was there to pick him up. • Act: During the Booster Seat Challenge the children were anxiously awaiting their turn to stand next to the Monarch Lion. They continuously looked around at each another, trying to watch what the other children were doing next to the lion. They all had huge smiles on their faces. • Act: Numerous children hugged the puppets as they stood in line for the Booster Seat Challenge. Some children even kissed the nurse on the cheek.

Note: These observations took place throughout all the interventions at the YMCA’s in Norfolk, Virginia Beach and Portsmouth.