

The JOURNAL

of the New York State Nurses Association

Fall/Winter 2001, Volume 32, Number 2

Editorial.....	3
<i>by Naomi E. Ervin, RN, PhD, APRN, BC, FAAN and Naomi E. Penney, PhD, MPH, RN</i>	
Identification of Risk Factors & Effective Intervention Strategies Corresponding to the Major Causes of Childhood Death from Injury	4
<i>by Jeanne Marie Rubsam, RNC, MC, CPNP</i>	
The Nurse Clinician Ass Research Participant Recruiter: Experience from a Longitudinal Intervention Study	9
<i>by Diane Morrison-Beedy, PhD, RNC, WHNP, Teri Aronowitz, MSN, RNCS, FNP, Judy Dyne, MSN, RNCS, ANP, Lucy Mkandawire, BSN, RN, Christine Murphy, BSN, RN, and Josie Martin, BS</i>	
Assessing Successful Entry into Nurse Practitioner Practice: A Literature Review	14
<i>by Ellen R. Rich, PhD, RN, CS, FNP, Mary E. Jorden, RN, MS, FNP, and Catherine J. Taylor, RN, MS, FNP</i>	
Promoting Adjustment Among Women With Breast Cancer and Their Partners: A Program of Research	19
<i>by Carol Noll Hoskins, PhD, RN, FAAN</i>	
What's New in the Nursing Literature	24
Book Review	26
<i>by Warren Hawkes, MLS</i>	
Tracing the Development of Critical Thinking in Baccalaureate Nursing Students	27
<i>by Nora L'Eplattenier, PhD, CS, NPP, HNC</i>	

President: Robert V. Piemonte, EdD, RN, CAE, FAAN, New York
President-Elect: Lolita Compas, MA, RN, CEN, New York
Vice President: Sister Theresa Graf, EdD, FNP, RN, South Hempstead
Secretary: Lorna Stewart, MS, RNC, Brooklyn
Treasurer: Elizabeth A. Mahoney, EdD, RN, Latham

Directors at Large

Joan Cumberbatch, MS, BSN, RN, Brooklyn
Virginia Duffy, PhD, RN, CS, NP, Hilton
Edward Goldberg, MA, RN, Crompond
Ronald Inskip, BS, RNC, White Plains
Theresa Marvelli, MA, RNC, Brooklyn
Ellen Mitchell, MA, BSN, RNC, Staten Island
Lorna Samuels, BSN, RNC, Brooklyn
Ann Tahaney, RN, CEN, Brentwood

The Journal of the New York State Nurses Association Editorial Board

Sonia Baker, PhD, RN Family Nurse Practitioner Freeport, NY	Phyllis Lisanti, PhD, RN New York, NY
Sharon Bidwell-Cerone, PhD, RN, CS-PNP Pediatric Nurse Practitioner Rochester, NY	Gail Malloy, PhD, RN Psychotherapist Floral Park, NY
Barbara Jaffin Cohen, EdD, RN Professor & Director Division of Nursing College of Mount Saint Vincent Riverdale, NY	Naomi E. Penney, PhD, MPH, RN Consultant Health Services Development Associates Syracuse, NY
Suzanne S. Dickerson, DNS, RN Clinical Associate Professor The University at Buffalo-SUNY Buffalo, NY	Jane Tuttle, PhD, RN Assistant Professor University of Rochester School of Nursing Rochester, NY
Naomi Ervin, PhD, APRN, BC, FAAN Assistant Dean Wayne State University Detroit, MI	Deborah Witt Sherman, PhD, RN, ANP, CS Assistant Professor New York University New York, NY
Rona Levin, PhD, RN Professor Emeritus Felician College Lodi, NJ	

Martha L. Orr, MN, RN, CAE, *Executive Director*
Anne Schott, *Managing Editor*
Genie Abrams, *Associate Editor*
Kerri Posson, *Art & Production Coordinator*

The Journal of the New York State Nurses Association is peer reviewed and published biannually by the New York State Nurses Association. ISSN# 0028-7644. Editorial and general offices located at 11 Cornell Road, Latham, NY 12110. Telephone: 518-782-9400. Fax: 518-782-9533. E-mail: info@nysna.org. Annual subscription: no cost for NYSNA members; non-members: \$30.00.

The Journal of the New York State Nurses Association is indexed in the Cumulative Index to Nursing, Allied Health Literature, and the International Nursing Index. It is searchable in CD-ROM and online versions of these databases available from a variety of vendors including SilverPlatter, BRS Information Services, DIALOG Services, and The National Library of Medicine's MEDLINE system. It is available in microform from Bell & Howell Information and Learning, Ann Arbor, Michigan. Acceptance of advertising does not mean endorsement by The New York State Nurses Association of the product advertised, the advertisers, or the claims made. Similarly, rejection does not necessarily imply that a product offered for advertising is without merit, or that the manufacturer lacks integrity.

© 2001 The New York State Nurses Association

Editorial

This issue of the *Journal* contains a variety of useful articles. Since knowledge provides nurses with the ability to continue to improve practice, all knowledge is useful at some level. Knowledge for practice is based on experience, tradition, intuition, common sense, untested theory, and research (Burrows & McLeish, 1995). In a meta-analysis of research-based nursing interventions and patient outcomes, Heater, Becker, & Olson (1988) found that 72% of patients who received research-based nursing care had 28% better outcomes compared with patients receiving routine nursing care. There are two general ways in which research is used: instrumental utilization and conceptual utilization (Caplan & Rich, 1975). Most of us are familiar with instrumental utilization, which is the specific way in which knowledge is used for decision-making. Conceptual utilization refers to the influence of one or more research studies on a decision maker's thinking about an issue without putting the information to any specific, documental use. For example, when confronted with an unfamiliar clinical problem, the nurse will often make use of knowledge about a similar problem or a general area of knowledge in order to decide how to deal with the situation at hand. Theoretically, the more formal and informal education a nurse has, the more general knowledge to draw upon in unfamiliar situations.

A very specific use of knowledge is direct application. Most nurses are part of a healthcare system that provides in-service education meant to be applied in practice to a specific patient population under specific conditions. Many healthcare systems also provide the opportunity for nurses to attend continuing education offerings away from the practice site. Continuing education programs provide a mixture of knowledge and skills both directly applicable in practice and general knowledge. The mixture of articles in this issue is more akin to the continuing education model of knowledge and skills.

The article by Jeanne Marie Rubsam on risk factors and intervention strategies to prevent childhood death from injury is an excellent article addressing both in-service and a broader educational focus. Individual nurses may put the knowledge directly into practice by teaching about the use of seatbelts, helmets and child safety seats. The article also adds to general knowledge about the leading causes of death and injury among children in the U.S.

Dianne Morrison-Beedy and her colleagues present a practical and general knowledge piece for nurses to use. The idea of the nurse as a recruiter of research participants provides a great deal of food for thought about the generalization of nursing skills to other areas. Nurses who have established their own businesses know how transferable their skills and knowledge are to other areas of work.

The literature review on successful entry into nurse practitioner (NP) practice by Ellen R. Rich and colleagues gives us general knowledge about the topic as well as knowledge about how to improve NP programs and hints about how practice environments may be supportive of entry into practice for NPs. Perhaps a supportive practice environment for NPs would also translate into support for other new graduates. Nurse administrators, health administrators, and other nurses may apply this knowledge when hiring and working with new nurse practitioner graduates.

Carol Hoskins' article on promoting adjustment among women with breast cancer provides the reader with both theoretical and practical information. The importance of continued research to refine nursing interventions is very apparent in the findings reported by Hoskins. Nurses may apply the findings in general ways when working with patients in care settings.

The program evaluation to trace the development of critical thinking in baccalaureate nursing students raises some provocative questions on critical thinking and its measurement in nursing education. The article provides general knowledge that is applicable to any nurse involved in educating others. Using a variety of teaching methods and engaging student nurses as active participants in the learning process may influence their critical thinking skills.

Naomi Ervin, PhD, APRN, BC, FAAN
Naomi E. Penney, PhD, MPH, RN
Guest Editors

Burrows, D. E., & McLeish, K. (1995). A model for research-based practice. *Journal of Clinical Nursing*, 4, 243-247.
Caplan, N., & Rich, R. F. (1975). *The use of social science knowledge in policy decisions at the national level*. Ann Arbor, MI: Institute for Social Research, The University of Michigan.
Heater, B. S., Becker, A. M., & Olson, R. K. (1988). Nursing interventions and patients outcomes: A meta-analysis of studies. *Nursing Research*, 37, 303-307.

Identification of Risk Factors and Effective Intervention Strategies Corresponding to the Major Causes of Childhood Death from Injury

Jeanne Marie Rubsam, RNC, MS, CPNP

ABSTRACT

Despite the dawn of a new millennium, unintentional injuries continue to be the leading cause of death in children greater than one year of age in the United States. This review outlines major risk factors that play a role in predicting injury, major causes of injury, and types of interventions successful in reducing childhood injury. This article describes community and national level intervention strategies that have been successful in reducing childhood injury.

Despite the dawn of a new millennium, unintentional injuries continue to be the leading cause of death in children greater than one year of age in the United States. Statistics show that more children die from injuries each year than from all other leading causes of childhood death combined (Rivara, Grossman & Cummings, 1997). There are approximately 70,000 deaths from unintentional injury in this country each year (National Center for Injury Prevention and Control, 1999f). In 1996, 6300 of these deaths were in children ages 14 and under. If we add to this figure the number of children who were killed by homicide and suicide, or intentional deaths, this number would greatly increase. More alarming is the fact that each year, of those children who survive their injury, nearly 120,000 become permanently handicapped. Overall, one out of every four children will sustain an injury that is serious enough to

require medical attention in the United States this year (National Safe Kids Campaign, Childhood Injury, 1999b).

The cost of caring for injured children is enormous. It is estimated that as a nation we will spend billions of dollars each year caring for them. These costs include direct medical care costs and rehabilitation costs as well as lost wages of the individual and productivity losses to the nation. These numbers do not even begin to take into account the greatest cost of all — the suffering that patients and families face as their lives drastically change forever (National Center for Injury Prevention and Control, 1999b).

Injuries are frequently thought of as “accidents” or random events that we have no control over. Parents may describe their injured child as “accident prone.” After years of studying injuries, we have found that like diseases, injuries do not occur randomly. They are pre-

dictable and therefore preventable. Scientists have used the same methods to study injuries as they have used to prevent diseases. These methods have included describing the problem through surveillance, studying what puts people at risk for injury, and designing and evaluating intervention strategies that target these risk factors (National Center for Injury Prevention and Control, 1999b).

Effective intervention strategies can fall under one of two categories. First, persons at risk can be persuaded to change their behaviors voluntarily. This is known as active intervention. When a person wears a safety belt in the car after attending a safety lecture, an active intervention has taken place. Individuals can also be required by law or administrative rule to change their behavior or environment. When parents place their child in a car seat while riding in a car because they know it is the law, an intervention strategy has been implemented.

Jeanne Marie Rubsam, RNC, MS, CPNP is a pediatric trauma nurse coordinator at Babies & Children's Hospital of New York, New York Presbyterian Hospital, New York, NY.

Finally, effective intervention strategies can also be achieved through the design of safer products or environments. In these situations, individuals are automatically protected from injury risks without active participation on their part. This is known as passive intervention. Passive intervention strategies are more effective than active intervention strategies, since they do not require participants to perform an action to be successful. Presetting hot water heaters to 120 degrees or placing airbags in cars are examples of passive intervention strategies (Rivara, Grossman, & Cummings, 1997; Stylianos & Eichelberger, 1993). A combination of both active and passive injury prevention strategies will help reduce the morbidity and mortality associated with injuries.

Risk Factors

Age, gender, socioeconomic status, and race all play an important role in predicting types of injuries and who is at greatest risk to be injured (National Safe Kids Campaign, 1999c). Fatalities during early childhood reflect various aspects of physical and mental development of the child (Crawley-Coha, 2000). Exposure to potential hazards is also a predictive factor. Children age four and under are at greatest risk for unintentional injury-related death.

Parents' perceptions of their child's abilities are often unrealistic. Younger children by their nature are curious and their inability to recognize hazards frequently leads to injuries. Toddlers who are learning to walk, run, and explore their environment can fall down a flight of stairs the moment their mothers turn their backs. Unsupervised children frequently run into the middle of the street to retrieve a ball and are hit by cars. Children tumble out of open windows because they are curious to see what is outside. This young age group accounts for 46% of injury related deaths (National Safe Kids Campaign, 1999c).

Gender also plays a part in predicting injury patterns. At virtually all ages and for all causes of injury, males have a higher risk of injury and death than females. Males have been found to have greater exposure to activities that result in injury and are known for patterns of increased risk taking. (National Safe Kids Campaign, 1999c).

Poverty is also a predictor of injury. Unintentional injuries occur more frequently to poor children compared to children from families of greater economic means. "Children from low income families are twice as likely to die in motor vehicle crashes, four times as likely to drown and five times more likely to die in fires" (Durkin, Laraque, Lubman, & Barlow, 1999). Common factors affecting low-income children that will increase a child's injury risk significantly include single parent households, lack of education, young maternal age, and multiple siblings. These children often live in hazardous environments that will increase their risk of injury. These hazards include overcrowded and poor quality housing, proximity of homes to busy streets, lack of safe recre-

ational facilities, and inadequate childcare and/or supervision. Families frequently have little money to purchase safety devices for their families, including smoke detectors, bicycle helmets, infant and child safety seats, and stair gates (National Safe Kids Campaign, 1999c).

Finally, race also plays a part in increasing the risk for unintentional injuries, though it does appear that living in impoverished environments is more of a factor than ethnicity itself. Minority children have higher poverty rates than white children and, therefore, have higher disproportionate death and injury rates related to poverty. Native American children have the highest unintentional injury death rate in the United States. Black children have the second highest rate, while Hispanic children have an unintentional injury death rate equal to non-Hispanic children. Unfortunately, within all three of these minority groups, 40%-45% of the children between 1-14 years of age are living in poverty (National Safe Kids Campaign, 1999c).

Where a child lives also plays a role in predicting risk of death from unintentional injury. Children living in rural areas are at significantly greater risk of death than children living in urban areas. Remote areas frequently lack organized systems of trauma care. Medical personnel are faced with long response and transport times. The closest hospital is often several hours away. Children in remote areas are especially at risk for drowning, motor vehicle crashes, unintentional firearm injuries, residential fires, and agricultural work injuries. Inner city children are at greater risk for sustaining severe, nonfatal injuries, possibly due to better access to care with many hospitals and trauma centers located in close proximity. Finally, unintentional injuries and deaths are more likely to occur in the evening hours, especially during May-August. During this time children are out of school and often unsupervised (National Safe Kids Campaign, 1999c).

Types of Injuries

Motor vehicle injuries are the leading cause of death in children greater than one year of age. This statistic includes children as occupants of motor vehicles, as pedestrians struck by motor vehicles, and as bicyclists struck by motor vehicles. Thus, the motor vehicle has been correctly nicknamed "the predator of the child" (National Center for Injury Prevention & Control, 1999a). Approximately 24% of child traffic deaths involve alcohol, an ever-increasing problem (Quinlan, Brewer, Sheet, & Dellinger, 2000).

Airway obstruction injury, which includes suffocation, choking, and strangulation, is the leading cause of death before the first birthday. The second leading cause of death in children ages 1 to 9 is drowning, followed by fire and burns. The second leading cause of death in children ages 10 to 14 years is firearm/homicide, followed by drowning. (Table 1) (National Center for Injury Prevention & Control, 1999e).

Table 1 *Leading Cause of Injury Death By Age Group-1996*

	Age Group			
Rank	<1 yr.	1-4 yrs.	5-9 yrs.	10-14 yrs.
1	Suffocation	Motor Vehicle Traffic	Motor Vehicle Traffic	Motor Vehicle Traffic
2	Other Homicide	Drowning	Drowning	Firearm/Homicide
3	Motor Vehicle Traffic	Fire/Burn	Fire/Burn	Drowning

Adapted from National Center for Injury Prevention and Control. (1999). "Ten Leading Causes of Injury Death by Age Group- 1996."

This article focuses on the major causes of childhood death from injury, including motor vehicle crashes and pedestrians and bicyclists struck by cars. It also presents examples of effective intervention strategies at both community and national levels.

Motor Vehicle Crashes

In 1996, 1,800 child occupants age 14 and under died in motor vehicle crashes. Children 4 years and under accounted for more than a third of these deaths. Most motor vehicle crashes occur within 25 miles of home, usually on roads with posted speed limits of 40 mph or less. Recent increases in speed limits have resulted in increased motor vehicle occupant fatalities (National Safe Kids Campaign, 1999d).

Alcohol related motor vehicle fatalities are a contributing factor to this enormous problem. It is estimated that alcohol impaired driving claims an average of 463 lives of child passengers ages 14 and under each year. Nearly two thirds of fatally injured children were passengers in the same vehicle as an alcohol-impaired driver. Many of these child passengers were found to be unrestrained (Li, 2000).

Research has shown that riding unrestrained is the greatest risk factor for death among child occupants of motor vehicles. In 1997, 63% of children killed as motor vehicle occupants were without safety restraints at the time of the collision. Currently all 50 states have child safety seat laws and 49 states have seat belt laws. The terms of these laws vary widely among the states. Studies have proven that child safety seats are very effective when used and installed correctly. Current recommendations state that children be placed in safety seats until 8 years of age or 80 pounds. At this point they can be properly restrained in a safety belt. The safest place for a child less than 13 years to ride is in the center of the back seat of the car. Airbags, which were first introduced in the early 1980s, when combined with lap/shoulder safety belts, are another very effective method for reducing injuries (National Safe Kids Campaign, 1999d).

Effective motor vehicle occupant intervention strategies need to focus on teaching families the importance of using car seats and seat belts when riding in a car. The role of airbags in reducing injuries and deaths to motor vehicle occupants must also be explained, while acknowledging those at risk for airbag injuries, particularly infants in rear facing car seats in the front passenger seat. The National Safe

Kids Campaign estimates that 80% of children who are placed in child safety seats are placed incorrectly, thereby decreasing their effectiveness. This national campaign and other traffic safety groups have been instrumental in educating healthcare providers, safety groups, and law enforcement personnel on the proper use of child safety seats. Using this knowledge, these groups assist in instructing and educating families with this difficult task at "safety seat check ups."

Car manufacturers must continue to research and develop safer cars for both drivers and passengers. Law enforcement personnel must be encouraged to vigorously enforce occupant protection laws throughout the states. School children must be taught to buckle up on every ride since they help "remind" their parents to do the same. Improved roads and roadway design will increase highway safety for all motor vehicle occupants. Finally, there must continue to be more stringent laws to penalize motorists who continue to drink and drive.

Pedestrian Injuries

Pedestrian related death continues to be another major cause of motor vehicle related deaths. Children are particularly vulnerable to this type of injury because they are frequently exposed to traffic threats that exceed their cognitive abilities. Parents often overestimate their child's pedestrian skills. Children ages 5 to 9 years are at greatest risk for pedestrian death and injury, since most children are not capable of crossing the street alone until they are 10 years old. Streets with high traffic volume, numerous parked vehicles, higher posted speed limits, and absence of divided highways cause most pedestrian injuries. Neighborhoods with few alternative play spaces such as parks and playgrounds also experience an increase in the number of pedestrian related deaths because the street becomes the playground (National Center for Statistics and Analysis, 1996).

Recently the number of young children run over in the driveway by a car in reverse has increased. Effective pedestrian intervention strategies include better road design, including walkways, curbs, crosswalks and pedestrian islands in the center of busy highways. Longer walk signals at traffic lights and barriers in between pedestrian and motor vehicle traffic may further decrease the number of injuries (National Center for Injury Prevention and Control, 1999c). Other strategies in-

clude formal education programs to increase children's pedestrian skills training and the renewal of safe parks and playgrounds for children to play in (Durkin et. al, 1999). Organized sports and after school and summer activities also keep children from using busy roadways as their makeshift playground.

Bicycle Injuries

Bicycles are associated with more childhood injuries than any other consumer product except the automobile (National Safe Kids Campaign, 1999a). More than 70% of children ages 5 to 14 years ride bicycles. In 1997, 225 children age 14 and under died in bicycle related crashes. Motor vehicles were responsible for more than 200 of these deaths. Studies show that children are more likely to die from bicycle crashes from May to August, between 3 p.m. and 6 p.m. Fatalities are often associated with the bicyclist's behavior: riding against the flow of traffic, running a stop sign, or riding into a street without stopping (National Safe Kids Campaign, 1999a).

Head injury is the leading cause of death in bicyclists. Bicycle helmets are the only way to prevent head injuries from occurring. Studies have shown that wearing a helmet will reduce the risk of serious head injury by 85% (Rivara, Grossman, & Cummings, 1997). Nonhelmeted riders are 14 times more likely to be involved in a fatal crash than helmeted riders. Helmet usage among children ages 5 to 14 years is estimated to be 25%. Helmet usage among teen riders is close to zero. Intervention strategies must focus on increasing bicycle helmet usage, through school wide education programs, legislation that mandates bicycle helmet usage and distribution programs to make helmets more affordable and accessible to minority children (National Center for Injury Prevention and Control, 1999d). As of December 2001, only 19 states and 83 local governments had enacted a form of bicycle helmet legislation (Bicycle Helmet Safety Institute, 2001). Most of these laws pertain to child and adolescent riders only (Table 2).

Intervention Strategies

A Community Model

Many small communities throughout the country have addressed the problem of motor vehicle traffic-related injuries based upon their community's needs. In the fall of 1988, Harlem Hospital Center in New York City recognized that a large number of severe traffic-related injuries were occurring to local school-

Table 2 *States with Mandatory Bicycle Helmet Laws*

Jurisdiction	Ages	Effective Date
New Jersey	Under 14	July 1, 1992
Georgia	Under 16	July 1, 1993
Connecticut	Under 16	October 1, 1993
Oregon	Under 16	October 1, 1993
Tennessee	Under 12	January 1, 1994
New York	Under 14	June 1, 1994
California	Under 18	June 1, 1994
Massachusetts	Under 13	January 1, 1994
Pennsylvania	Under 12	March 31, 1995
Alabama	Under 16	September 19, 1995
Maryland	Under 16	October 1, 1995
Delaware	Under 16	April 1, 1996
West Virginia	Under 15	June 7, 1996
Rhode Island	Under 16	July 1, 1996 (revised 1998)
Florida	Under 16	January 1, 1997
Maine	Under 16	Fall, 1999
Hawaii	Under 16	January 1, 2001
North Carolina	Under 11	October 1, 2001
Louisiana	Under 12	March 1, 2002

From: National Highway Traffic Safety Administration, State Legislative Fact Sheet, January 1998.

Bicycle Helmet Safety Institute: Mandatory Helmet Laws: A Summary, April, 2001.

age children. Hospital discharge and death certificates showed that traffic injuries were the second leading cause of childhood injuries in the Harlem community. Similar to national statistics, peak incidence occurred during the summer months and afternoon hours. Peak ages were as follows: Motor vehicle occupant injury was 12 to 16 years, pedestrians struck were 6 to 10 years, and bicyclists struck were 9 to 15 years. With support from Harlem Hospital, local community leaders, local community groups, and city agencies, an injury prevention program for the Harlem community was created. The program was housed at Harlem Hospital Center with direct links to the surrounding community. Today, it continues to be an active resource for other injury prevention programs nationwide.

Since its beginning in 1988, this initiative has implemented five important programs that have contributed to making Harlem a safer community. The first program the construction of new playgrounds and improvement of existing playgrounds so the children had a safe place to play. Second, the program held community wide bicycle safety clinics that included free helmet distribution and formed bicycle clubs for the children. Next, program leaders implemented a school and community based traffic safety education program that included classroom education and pedestrian skills practice in a simulated traffic environment. This project, known as Safety City, has been replicated in all five boroughs of New York City today. The program also brought theatrical safety performances for the children into the local community. Finally, the program introduced supervised recreational and artistic activities, including little league, and dance and art classes for the community children. The combined results of these five intervention strategies resulted in a 45% decrease in traffic injuries among school-aged children in Harlem during a seven-year period (Durkin, et al, 1999).

A National Model

National injury prevention programs have also been very successful in raising public awareness and reducing the number of childhood injuries and deaths. The National Safe Kids Campaign is one of the most well-known national prevention organizations. It is the first national organization dedicated solely to the prevention of unintentional childhood injuries. The campaign believes that unintentional injuries can be prevented through education. As a national organization, it has been successful in bringing together corporations, government agencies, and the health & safety community to address and work to eliminate the problem of childhood injury and death. Since creation of the National Safe Kids Campaign in 1988, the unintentional injury death rate among children age 14 and under has declined 33% (National Safe Kids Campaign, 2001e). There are currently 300 state and local Safe Kids coalitions in all 50 states, The District of Columbia and Puerto Rico (National Safe Kids Campaign, 2001f).

In 1995 the National Safe Kids Campaign received 3.3 million dollars to be used to distribute free child safety seats to low income, underserved, and culturally diverse families nationwide. Statistically, racial and ethnic minority groups have been found to have lower child safety seat usage than whites (Colon, 1992). Parents of lower socio-economic status also demonstrated a limited understanding of child safety and frequently underestimated the risk of injury to their children. Fortunately we do know that child safety seats, when correctly installed and used, reduce the risk of fatal injury by as much as 71% for infants and 59% for toddlers (Cruz & Mickalide, 2000).

In an effort to improve these statistics in minority communities the National Safe Kids Campaign coordinated a national car safety seat distribution program that included an intense educational component for families. The money for this project was received as part of a settlement agreement between the U.S. Department of Transportation and the General Motors Corporation. It was to be a four-year program that included four phases of distribution. At completion, the National Safe Kids Campaign expected to distribute nearly 100,000 free child safety seats to minority families nationwide.

During the four-year program, distribution sites were identified in communities nationwide. These sites included churches, hospitals, health departments, Head Start Programs, community health centers, and police and fire departments. Each site had an identified distribution coordinator. The National Safe Kids Campaign trained workers at each site on the proper use of child safety seats. Workers were then expected to educate community members taking part in the distribution program. Eligible community members wanting to receive a free seat were required to attend a training class. Each distribution site received videos demonstrating the proper use of the seats, manufacturer's instructions, educational brochures, and a supply of free seats. Videos and brochures were distributed in English and Spanish. Families who received free seats were also able to participate in "hands-on" demonstrations at the various distribution sites.

At the completion of the 4-year project, this national intervention program proved to be very successful. Nearly 100,000 seats were distributed. Approximately 98.3% of the child safety seats were distributed to low income, minority families. Of the recipients, 82% were participating in a public assistance program and 20% of the recipient mothers were less than 20 years old (Cruz & Mickalide, 2000).

Providing free safety seats nationwide to families that could otherwise not afford them was a major step in helping reduce childhood death and injury rates from motor vehicle crashes. Preliminary follow-up data from the distribution sites has revealed that 14 child safety

seats provided through this program have saved children from serious injury and death during motor vehicle crashes (Cruz & Mickalide, 2000).

Conclusion

Motor vehicle injuries are the leading cause of death in children ages 1 to 14 in the United States. These fatalities include occupants of motor vehicles, pedestrians struck by motor vehicles, and bicyclists struck by motor vehicles. The mortality rate from injury is highest among young children, males, minorities, and the poor.

Injury prevention is a science that must combine active and passive prevention strategies to be successful. Local communities are in

a unique position to design prevention strategies that will best target their identified problems. What will be successful in an urban community is very different than what will be successful in a rural community. Local communities must rally state and local agencies behind the cause of injury prevention. The collective voice of national campaigns will attract public awareness and federal commitment to injury prevention legislation and funding. National groups must continuously work with government agencies and corporations to identify new intervention strategies that will save millions of lives. Finally, health care workers should be vigilant in spreading the safety message to all patients and families that they encounter. Together, we can help decrease, and one day eliminate, the incidence of death from childhood injury.

REFERENCES

- Bicycle Helmet Safety Institute (2001, December). *Mandatory helmet laws, A summary*. (BHSIDOC #513). Arlington VA: Author
- Colon I. (1992). Race, belief in destiny and seat belt usage: A pilot study. *American Journal of Public Health, 82*, 875-877.
- Crawley-Coha, T. (2000). *Prevention strategies for unintentional childhood injuries*. Boston: American Pediatric Surgical Nurses Association.
- Cruz T., & Mickalide, A. (2000). The National Safe Kids Campaign child safety seat distribution program: A strategy for reaching low income, underserved and culturally diverse populations. *Health Promotion Practice, 1*, 148-158.
- Durkin, M., Laraque, D., Lubman, I., & Barlow, B. (1999). Epidemiology and prevention of traffic injuries to urban children and adolescents. *Pediatrics, 103*, 1273-1274.
- Li, G. (2000). Child injuries and fatalities from alcohol related motor vehicle crashes. *Journal of the American Medical Association, 283*, 2291-2292.
- National Center for Injury Prevention and Control (1999a). *Childhood Injury Fact Sheet*. [Brochure] Atlanta, GA: Centers for Disease Control and Prevention.
- National Center for Injury Prevention and Control (1999b). *National Center for Injury Prevention and Control Fact Sheet*. [Brochure] Atlanta, GA: Centers for Disease Control and Prevention.
- National Center for Injury Prevention and Control. (1999c). *Pedestrian Deaths & Injuries Fact Sheet*. [Brochure]. Atlanta, GA: Centers For Disease Control and Prevention.
- National Center for Injury Prevention and Control. (1999d). *Preventing Bicycle Related Head Injuries*. [Brochure]. Atlanta, GA: Centers For Disease Control and Prevention.
- National Center for Injury Prevention and Control. (1999e). *Ten Leading Causes of Death Tables, 1996*. [Brochure]. Atlanta, GA.: Centers for Disease Control and Prevention.
- National Center for Injury Prevention and Control. (1999f). *Unintentional Injuries in the United States*. [Brochure]. Atlanta, GA: Center for Disease Control and Prevention.
- National Center for Statistics and Analysis. (1996). *Traffic Safety Facts 1996: Pedestrians*. [Brochure]. Washington, DC: National Highway Traffic Safety Administration.
- National Safe Kids Campaign. (1999a). *Bicycle Injury Fact Sheet*. [Brochure]. Washington, DC: Author.
- National Safe Kids Campaign. (1999b). *Childhood Injury Fact Sheet*. [Brochure] Washington DC: Author.
- National Safe Kids Campaign. (1999c). *Children at Risk Fact Sheet*. [Brochure] Washington, DC: Author.
- National Safe Kids Campaign. (1999d). *Motor Vehicle Occupant Injury Fact Sheet*. [Brochure]. Washington, DC: Author.
- National Safe Kids Campaign. (1999e). *The National Safe Kids Campaign Fact Sheet*. [Brochure]. Washington, DC: Author.
- National Safe Kids Campaign. (2001f). *Trends in Unintentional Childhood Injury Prevention Since the Launch of the NSKC Fact Sheet*. [Brochure]. Washington, DC: Author.
- Quinlan, K., Brewer, R., Sheet, D., & Dellinger, A. (2000). Characteristics of child passenger deaths and injuries involving drinking drivers. *Journal of the American Medical Association, 283*, 2249-2252.
- Rivara, F., Grossman, D., & Cummings, P. (1997). Injury prevention. *New England Journal of Medicine, 337*, 543-547.
- Stylianou, S., & Eichelberger, M. R. (1993). Pediatric trauma: Prevention strategies. *Pediatric Clinics of North America, 40*, 1359-1368.

The Nurse Clinician As Research Participant Recruiter: Experience from a Longitudinal Intervention Study

Dianne Morrison-Beedy, PhD, RNC, WHNP

Teri Aronowitz, MSN, RNCS, FNP

Judy Dyne, MSN, RNCS, ANP

Lucy Mkandawire, BSN, RN

Christine Murphy, BSN, RN

Josie Martin, BS

ABSTRACT

One of the most critical phases involved in carrying out a research project is participant recruitment. Recruitment into clinical trials and health programs is a primary public health challenge, particularly among adolescents. Special skills and abilities are needed to successfully recruit participants from this developmental age group. This paper describes the similarities found between the recruitment process developed for a randomized controlled trial with adolescents and the steps of the nursing process, and demonstrates that knowledge of the nursing process can assist in successfully recruiting individuals for a research study. Even without research training, clinical nurses can play a significant role in research studies because of their skills and experiences with the nursing process. Thus, nurse scientists and clinicians can work together successfully to conduct research studies and health projects that involve challenging recruitment efforts.

The growth of the nursing profession has been enhanced through nursing research (Polit & Hungler, 1978). Conducting research studies enables nurses to advance ideas, build theories, and develop nursing as a science. One of the most critical phases involved in carrying out a research project is participant recruitment. The ability to effectively recruit participants has a major impact on the timely completion of the study and its ultimate success (Taylor, Harden & McFarland, 2000).

Recruitment into clinical trials and health programs is a primary public health challenge, particularly among low-income and multi-ethnic populations (Berman, Grosser, & Gritz,

1998; Flaskerud & Nyamathi, 2000). Moreover, adolescents have proved an exceptionally challenging age group to recruit. In fact, one study suggested that in order to attain the numbers needed for a study, four times that number of adolescent participants had to be recruited (Reisch, Tosi, & Thurston, 1999). Adolescents tend to be more difficult to recruit than other groups, possibly because acquiring a sense of autonomy is a developmental milestone for this age group and rebelling against perceived authority is common (Erikson, 1968). They may elect not to participate if they view the recruiters as being one-sided or authoritarian (Reisch, Tosi,

& Thurston, 1999), so it is important to establish rapport with the potential recruit during initial interactions (Taylor, Harden & McFarland, 2000). The research nurse recruiter can also apply the common vernacular and colloquial language in her recruitment procedures (Morrison-Beedy, Carey, Aronowitz, Mkandawire, & Dyne, 2002), which adds to the credibility of the team members as they approach potential participants.

Although it has been found that adolescents reach decisions regarding research participation in ways similar to adults (Weithorn & Scherer, 1994), particular attention should be given to developmentally appropriate strat-

Dianne Morrison-Beedy is an associate professor at the University of Rochester, School of Nursing, New York; Teri Aronowitz is an assistant professor at the University of Rochester School of Nursing; Judy Dyne is an instructor at Syracuse University School of Nursing; Lucy Mkandawire, a graduate student at Syracuse University School of Nursing; Christine Murphy, a graduate student at Syracuse University School of Nursing; and Josie Martin, a nursing student at Syracuse University School of Nursing.

Feedback from focus groups helped produce a relevant logo and the project description that was used in the recruitment posters.

egies for recruitment and consent. In addition to being mindful of the young women's developmental milestones, it is important to target clinical sites that provide age-specific care. Most states have enacted statutes that give adolescents the right to seek sexual health care without parental consent (Rew, Taylor-Seehafer, & Thomas, 2000). Healthcare clinics that provide such specialized adolescent services afford researchers the opportunity to have contact with adolescents in an environment in which the potential participants are comfortable.

Nurses possess skills and abilities including therapeutic communication, psychosocial assessment and interviewing skills, plus an understanding of a well-defined process that are useful in recruiting adolescents for research studies (Martin, 1994). The nursing process, which forms a basic foundation for nursing practice, is known to be effective in client care and interactions (Doenges, Moorhouse, & Burley, 2000). The five steps identified in the nursing process are assessment, diagnosis, planning, implementation and evaluation. During the assessment phase, the nurse gathers information about the client. Next, the nurse analyzes these data to identify the needs of the client. The plan that the nurse develops from the identified needs is then implemented and evaluated. The nursing process is not a linear progression but rather a spiral process which is progressive and continuous (Doenges, Moorhouse, & Burley, 2000). The steps of the nursing process, if applied correctly, can also serve as a guide to nursing research, specifically during participant recruitment.

We implemented a longitudinal randomized controlled trial (RCT) that extended to adolescents a previously tested, gender-specific intervention for adult women (Carey et al., 1997, 2000). Following approval by the Institutional Review Board of the university and agreement by the clinical site, we recruited young women ages 15 to 19 years from a reproductive health care clinic. Our research team noted that the skills acquired from clinical nurs-

ing practice were not only effective, but also critical to successful recruitment. The purpose of this paper is to describe the recruitment process developed by our team and to demonstrate the similarities between the skills used by nurse clinicians and those used by research nurse recruiters in a research study.

Recruitment Process

Focus groups composed of adolescent females were initially conducted to elicit information on how best to recruit and retain adolescents in a longitudinal study and served as the initial assessment step in the recruitment process (Morrison-Beedy et al., 2002). Based on their feedback, we developed a culturally and developmentally relevant logo and a description of the project that was used in recruitment posters. These posters announced a "Health Improvement Project" for teens [note the HIP acronym] (Carey et al., 1997, 2000) and described the four weekly small group sessions, available refreshments, and compensation for their participation.

The principal investigator and research associate visited the recruitment site to assess the environment. From this visit we were able to determine where the flyers should be posted (e.g., front entrance, waiting rooms, examining rooms, and bathrooms) and the logistics of the recruitment process. The recruitment site offered a special session one day a week specifically for teen clients, who were seen on a first-come first-served basis. Since large numbers of teens came to the clinic for this session, this day was selected as the timeframe in which the teens would be recruited.

Visiting the site beforehand and gaining an understanding of the clinic's standard operation and procedures helped us plan our recruitment process around the site's schedule. It is imperative for successful recruitment not to interfere with the routine of the setting and to establish rapport with the clinic staff. Adhering to the clinic's routine shows respect for the members of the clinic staff and their clients, which ultimately helps to ensure sup-

port for the research team's recruitment efforts. Moreover, becoming familiar with the clinic procedures helped the recruiters develop a plan for most successfully approaching the young women.

After assessing the site environment, the principal investigator identified clinically competent nurses to participate in recruitment and developed the protocol for carrying out the process. A decision was made also to involve both undergraduate and graduate nursing students in the recruitment process as a way of introducing them to nursing research. Using recruiters who were *not* employed by the recruitment site helped to minimize any impression of coercion potential participants may have had. A written protocol for recruitment was developed and used in order to maintain the consistency and integrity of the study. This protocol also helped maintain consistency during the changes in recruitment team membership that occurred because of schedule changes during the study. Each individual involved in recruitment was required to undergo orientation, sign a confidentiality statement, and complete a National Institute of Health computer-based training module in research ethics and protection of human subjects (<http://helix.nih.gov:8001/ohsr/newcbt/>).

Our recruitment took place in two phases. The first phase involved initial contact with potential participants; the second phase was the full consent/assent process and initial pretest assessment. Different personnel were used as phase I recruiters and phase II recruiters/assessors. More assessors were needed because of the greater amount of time required in phase II of recruitment; conversely, phase I recruiters needed to screen larger numbers of young women to determine initial project eligibility. During this early stage of the research project, our team became increasingly aware of the similarities between the nursing process and the recruitment process and the advantages that nurses skilled in the nursing process (e.g., clinical practitioners) bring to the recruitment procedure.

Phase I: Initial Contact and Screening

The initial contact and screening for meeting the inclusion criteria (phase I) took place in the waiting room after the young women had registered for clinic services. As a potential participant walked into the room, the nurse recruiter began the participant assessment process by evaluating whether the person seemed relatively outgoing or reserved. This observation preceded a needs identification, in which the nurse determined how to approach the young woman in an attempt to establish rapport before discussing her willingness to participate in the study. If the nurse recruiter assessed the young woman as outgoing, the recruiter would plan to take an active approach in her initial contact with the woman. Assessment findings indicating an outgoing persona included open body language, direct eye contact, and communication with others. The recruiter would implement an active approach by including the use of physical contact, such as extending the hand, eye contact, moderate voice level and closer physical proximity.

In contrast, if the young woman was assessed to be more reserved, the nurse recruiter would use a less direct approach. Indicators of a reserved woman included a quiet demeanor, closed body language, and preference not to sit in close proximity to other clients. In this case, the nurse would not make physical contact or force eye contact. She would speak softly, maintain a greater physical distance, and extend her hand when ending the interaction rather than at the beginning. Evaluating a participant's response to the recruiter's approach allowed the nurse to judge the effectiveness of her initial recruitment approach and determine her need to continue or sever the relationship. Conducting this initial, brief assessment of the adolescent's demeanor was the first step in fostering a trusting relationship with the research team, which ultimately influenced the decision to participate in the study.

The nurse also observed whether the potential participant arrived at the clinic alone or with others. The make-up of a group of adolescents was an important determinant of the approach the recruiter would use, since the group may unduly influence an individual's decision about the study. If approached in a group, an adolescent is more likely to succumb to peer pressure from group members about whether to participate (McLaughlin, Irby, & Langman, 1994), which takes away her real freedom of choice. We noted that occasionally when a young woman expressed interest or disinterest in the study, she later returned to us with a change of heart after having discussed participation with her group of friends. Similar issues arose when a young woman came to the clinic with her boyfriend. Consent was more likely if we included the boyfriend in the general discussion of the project, but it was required that all phase II consents take place with the young woman individually to assure that we maintained her privacy.

After making these initial assessment observations and planning how to approach the young woman, the nurse recruiter introduced herself as a member of the project, identifying her affiliation with the

sponsoring agency. To establish the credibility of the research project, all research team members wore a nametag with the project logo, the same one used on the posters and flyers announcing the project. Team members also paid attention to how they dressed. Specifically, professional yet casual attire assisted in establishing credibility without making the recruiters look like authority figures. Credibility and cultural sensitivity were further established by having a multicultural recruitment team. Potential participants also shared with us their level of comfort with the project because it took place in a healthcare setting that they trusted and with which they were familiar.

Part of establishing a trusting relationship with the potential participants involved mingling and conversing about everyday events outside the project to establish rapport. The nurse recruiter interacted respectfully with the young women and others in the environment (e.g., clinic staff, children), taking into consideration their level of comfort and openness. Once the nurse recruiter began talking specifically about the project, she reinforced that the young women are the experts about health issues related to adolescent females. She encouraged them to participate in the project, emphasizing that their input was critical. Validating and appreciating their knowledge and experiences also served to establish a partnership between the young women and the research team. The nurse also fostered a good relationship with those around her by talking with young mothers about their children who had accompanied them to the clinic. Playing with the children while their mothers filled out paperwork also helped to establish a good relationship, provided the mother indicated her approval.

We found an extra pair of hands were invaluable to many teens at the site with young children.

If initial contact with the young woman led to continued interest in the project, specific screening questions were asked to assess her eligibility to participate in the study. Because these questions were personal, the nurse recruiter took the potential participant to a more private area of the waiting room. In order to evaluate eligibility, the nurse recruiter had to briefly question each young woman about her sexual activity. To facilitate privacy for the young woman within the constraints of the physical environment, the nurse recruiter had simply worded screening questions on a clipboard to which she pointed and softly stated. These questions were set up so that the adolescent could answer in a yes or no format. This attention to privacy put the young women

at ease and facilitated obtaining more truthful responses. The nurse recruiter assessed the nonverbal as well as the verbal cues of each woman. If the potential participant appeared uncertain about any of the screening questions, the nurse recruiter clarified the information.

A challenge in recruiting adolescents is the need to develop age-appropriate recruitment strategies, taking into account the time constraints imposed by a clinical setting and the teens' daily activities. For instance, teens have many conflicting interests, including after school activities, work schedules, and social lives. In an effort to overcome these obstacles to participation, the nurse recruiter

*An initial brief assessment
of the adolescent's
demeanor was the first
step in fostering
a trusting relationship
with the research team.*

brainstormed with the teens to find alternatives that could facilitate their participation in the project. These ideas included providing child-care services, transportation assistance, and flexible time scheduling of intervention sessions.

Some young women were accompanied to the clinic by a parent or guardian. Recognizing the need to put parents at ease, the nurse recruiter asked the potential participant if she would like the nurse to talk to the parent or guardian about the project. Keeping in mind her legal right to seek sexual health care without parental consent in the state of New York and to maintain her privacy, the nurse recruiter informed the young woman that the screening criteria need not be discussed with parents, guardian, or partner. Part of our phase II package did include a parental information letter discussing the project. Each participant was encouraged to give this informational letter to her parents and discuss with them her participation in the project.

Phase II: Informed Consent and Pretest Assessment

After the young woman had verbally indicated she desired to know more about the project and had met the basic screening criteria, her name was given to the clinic staff so she could be paged when it was time for her appointment. She was then escorted upstairs and introduced to a second nurse recruiter responsible for informed consent and the initial pretest assessment. This second recruiter established rapport with the participant by greeting her warmly, introducing her to other research team members, and discussing what would occur in phase II of recruitment. The young woman was then taken into a private room where she was made comfortable before the process of informed consent began. We had identified specific recruitment rooms, which were child-proofed for safety and had toys available for any young woman who had children accompanying her to phase II of the consent process.

The process of informed consent included a detailed explanation of the project. The study involved a pretest assessment conducted that day, four 2-hour weekly intervention sessions, followed by two posttest assessments conducted one and three months following the intervention. Risks of participating in the study (e.g., answering questions about sensitive topics) and benefits (e.g., learning more about

improving one's health) were discussed. This information, which was contained in a manual that included graphs, charts and brief written material, was presented and discussed with potential participants in a clear, concise, and standardized format. The manual incorporated responses to various client concerns that could be selected to develop an individualized approach to the consent process. We added a detailed calendar of the time commitment required for the project to provide all information needed to make a fully informed consent. During this process the nurse recruiter frequently assessed the young woman to ensure that she understood the project requirements and was still willing to participate, and answered her questions.

A research team member completed a form to document participant contact information, including the phone numbers and addresses that could be used to communicate with participants regarding session times and dates. When contacting a participant, the research team member did not divulge any information about the participant's health care to whoever answered the phone. The young woman was reassured of this confidentiality during the consent process. Another method we used for maintaining confidentiality was a self-generated identification code on the questionnaire (Dilorio, Soet, Van Marter, Woodring, & Dudley, 2000). This ID code eliminated the need to include a name on the questionnaires, thus increasing participant confidentiality and maintaining privacy.

After the woman had agreed to participate in the study and signed the consent form, the nurse recruiter gave the participant an overview of the questionnaire and then left her alone in the room to complete it privately. The questionnaires took on average, 20 minutes to complete. The nurse informed the participant that she was available outside the room to answer any questions, and she checked on the young woman several times to make sure she understood everything.

If the young woman was paged to be seen by her healthcare provider while she was completing the pre-assessment questionnaire, she was instructed to place her unfinished paperwork in a color-coded envelope and take out a color-coded index card that matched the color of the envelope. She then sealed the envelope, taking the index card with her. After her appointment she returned the index card to the nurse recruiter, who gave her the sealed envelope so she could complete the

questionnaire. After completing the questionnaire, the participant placed it in a box, which was later taken to the main study office and kept under lock and key. These steps were carried out to maintain confidentiality and ensure the privacy of the participant.

In the final step of the recruitment process, the young woman was introduced to the other research team members, particularly those who would be contacting her by phone about the start-up of the intervention. This allowed the participant to become acquainted with all the team members she would be meeting throughout the project and provided continuity in her relationship with the research team.

Discussion

Phase I of our RCT recruitment involved making initial contact, building rapport, and establishing credibility with a potential participant. Phase II focused on providing the potential participant with all the necessary information about the study so that she was fully informed prior to consenting, as well as ensuring her privacy and confidentiality. We found that in order to successfully carry out the responsibilities required for both phases, the nurse recruiter used clinical skills through following the steps of the nursing process.

Nursing practice is based on a systematic assessment of the client in order to gather information needed to develop a nursing care plan. Similarly in the recruitment phase of our research project our protocol served as the assessment framework that enabled the nurse recruiter to identify the needs of the potential participant.

From the recruitment assessment data, the nurse prioritized the needs of the potential participant just as she would use health assessment data to determine her approach to the client in a clinical setting. In clinical practice, once the client's needs have been identified the nurse develops a plan of care. The same was true during recruitment. The nurse developed her plan of approach to the young woman in phase I after assessing her demeanor and in phase II after assessing her level of understanding of the project.

In clinical practice, the plan of care is followed by implementation. In the recruitment process, implementation also followed the development of the plan. The nursing interventions that were planned and carried out during the recruitment process included therapeutic communication, providing information, and maintaining privacy and confidentiality.

The process of evaluation is ongoing in a clinical setting, which ensures that clients' needs are met during each phase of the nursing process. During recruitment for a research study, the nurse recruiter also continually evaluates her "plan of care," i.e., how to assess and approach potential participants. During phase I of recruitment, evaluation took place on initial contact with the young woman and may have led to changes in the nurse's approach to the potential participant. During phase II, evaluation took place during the informed consent process and may have led to further explanation about the project to ensure that the participant was fully informed, or that specific client concerns about her ability to participate in the project (e.g., child care concerns, need for transportation) were identified.

Conclusion

The recruitment phase of a research study is critical to the success of any project. Skilled participant recruiters are required to put the clients at ease and to present sufficient information for the potential participants to make an informed decision about taking part in the research study. A nurse recruiter who utilizes her clinical nursing skills

and applies her knowledge of the nursing process to recruitment efforts can enhance productive recruitment in a research study. Even without formal training in research, professional nurses possess many abilities that can be an asset in the recruitment process for clinical research projects in nursing and other health studies. Therefore, collaboration between clinicians and researchers in the field can provide mutual benefits. Nurses can gain more diverse opportunities in clinical practice as well as some experience in research activities. Researchers, meanwhile, can benefit from the clinical expertise that practicing nurses possess and achieve better recruitment results. Ultimately, both groups working together can advance the nursing profession through improved research and evidence-based practice.

Acknowledgments

Funding to support this study was made available to Dr. Dianne Morrison-Beedy from the National Institute of Nursing Research, Motivational HIV Prevention Intervention for Young Women (K01-NR00152).

REFERENCES

- Berman, B.A., Grosser, S.C., & Gritz, E.R. (1998). Recruitment to a school-based adult smoking-cessation program: Does gender and race/ethnicity make a difference? *Journal of Cancer Education* 13, 220-225.
- Carey, M.P., Braaten, L.S., Maisto, S.A., Gleason, J.R., Forsyth, A.D., Durant, L.E., & Jaworski, B.C. (2000). Using information, motivational enhancement, and skills training to reduce the risk of HIV infection for low-income urban women: A second randomized clinical trial. *Health Psychology* 19, 3-11.
- Carey, M.P., Maisto, S.A., Kalichman, S.C., Forsyth, A.D., Wright, E.M., & Johnson, B.T. (1997). Enhancing motivation to reduce the risk of HIV infection for economically disadvantaged urban women. *Journal of Consulting and Clinical Psychology*, 65, 531-541.
- Dilorio, C., Soet, J., VanMarter, D., Woodring, T.M., & Dudley, W.N. (2000). An evaluation of a self-generated identification code. *Research in Nursing & Health* 23, 167-174.
- Doenges, M.E., Moorhouse, M.F., & Burley, J.T. (2000). *Application of the nursing process and nursing diagnosis* (3rd Ed.). Philadelphia: Davis Co., 1-11.
- Erikson, E.H. (1968). *Identity: Youth and crisis*. New York: Norton.
- Flaskerud, J.H. & Nyamathi, A.M. (2000). Attaining gender and ethnic diversity in health intervention research: Cultural responsiveness versus resource provision. *Advances in Nursing Science* 22, 1-15.
- Martin, P.A. (1994). Responsibilities when a patient is a research subject. *Applied Nursing Research* 7, 158-161.
- McLaughlin, M.W., Irby, M.A., & Langman, J. (1994). *Urban sanctuaries: Neighborhood organizations in the lives and futures of inner-city youth*. San Francisco: Jossey-Bass Inc.
- Morrison-Beedy, D., Carey, M.P., Aronowitz, T., Mkadawire, L., & Dyne, J. (2002). Adolescents' input on the development of an HIV-risk reduction intervention. *Journal of Association of Nurses in AIDS Care*.
- Polit, D., & Hungler, B. (1978). *Nursing research: Principles & methods*. New York: Lippincott Co. 1-15.
- Rew, L., Taylor-Seehafer, M., & Thomas, N. (2000). Without parental consent: Conducting research with homeless adolescents. *Journal of the Society of Pediatric Nursing* 5, 131-138.
- Riesch, S.K., Tosi, C.B., & Thurston, C.A. (1999). Accessing young adolescents and their families for research. *Image: Journal of Nursing Scholarship* 31, 323-326.
- Taylor Harden, J., & McFarland, G. (2000). Avoiding gender and minority barriers to NIH funding. *Journal of Nursing Scholarship* 32, 83-86.
- Weithorn, L.A., & Scherer, D.G. (1994). Children's involvement in research participation decisions: Psychological considerations. In M.A. Grodin & L.H. Glanz (Eds.) *Children as research subjects: Science, ethics, and law*, 39-55. New York: Oxford University Press.

Assessing Successful Entry into Nurse Practitioner Practice: A Literature Review

Ellen R. Rich, PhD, RN, CS, FNP
Mary E. Jorden, RN, MS, FNP
Catherine J. Taylor, RN, MS, FNP

ABSTRACT

Nurse practitioners (NPs) have been the subjects of many studies focused on role performance, cost effectiveness, and acceptance in clinical practice. As part of a study to compare successful entry of NP program graduates from various backgrounds into NP practice, a review of the literature was performed. This literature review focuses on research studies that examine successful entry into NP practice by seasoned registered nurses as well as by non-nurse college graduates who have no prior nursing experience. The topical areas that emerged from the literature were educational background and experience as a registered nurse, socialization into practice, transition into NP practice, and evaluation measures of successful NP practice. The results of the literature review revealed the need for further work on assessment of successful entry into NP practice.

Nurse practitioners (NPs) have become important players in today's healthcare system. In the 1960s, the NP role was created to provide primary care to patients in underserved areas of the United States. In order to fill the vacancy, nurses pursued advanced education to assume this new role. Generally, registered nurses (RNs) are required to obtain a master's degree in nursing and have at least one year of RN experience before entering into a master's program; however, NP students currently come from a variety of educational backgrounds. Several programs admit students into graduate study without prior nursing experience. These indi-

viduals each have a baccalaureate in a field other than nursing and are required to complete a program that incorporates a bachelor's in nursing with immediate continuation into a master's level NP program. Within nursing, there are pervasive, strong biases against these non-nurse college graduates (non-traditional NP students) entering NP practice. A major concern is whether novice or inexperienced RNs are as able to successfully enter advanced practice as NPs (Rich & Rodriguez, 2001).

This literature review is a first step of a larger research project comparing success in entry into NP practice by seasoned RNs ver-

sus non-nurse college graduates. In order to operationalize successful entry into NP practice, a review of the literature was conducted. Factors such as educational preparation, number of years as a practicing RN, experience, and socialization into the NP role were examined. The existence of a specific transition period that could influence the successful entry into NP practice was also explored. Further, this literature review sought to identify tools used in previous research to measure successful entry into NP practice. Databases used included CINAHL, Medline, Health Reference Center Academic, and Lexis-Nexis.

Mary E. Jorden is an OB/GYN nurse practitioner at University Women's Center in Charlotte, North Carolina; Ellen R. Rich is assistant professor, Department of Nursing, New York Institute of Technology, and family nurse practitioner, Planned Parenthood, Hudson Peconic; and Catherine J. Taylor, RN, MS, FNP, practices internal medicine in Reno, Nevada.

Educational Backgrounds and Prior Nursing Experience

Educational background and prior experience as a RN are two factors investigated in the literature as having an effect on success in graduate programs and entry into NP practice. In the literature, non-nurse college graduate NP students are considered as the inexperienced group, with traditionally prepared RNs denoted as experienced. The majority of studies used performance within the graduate NP program as the independent variable; only one looked at the effect of educational background and prior RN experience on NP skills in practice.

Smith and Shoffner (1991) concentrated on a comparison of nurse practitioner students from traditional nursing and non-traditional backgrounds. The traditional students had an average of eight and a half years of experience as registered nurses, and the non-traditional students had no previous nursing experience. Non-traditional students had undergraduate degrees in fields other than nursing. They took accelerated undergraduate nursing courses before entering the master's nursing program with the traditional students. Ninety-one academic records were reviewed, and in an analysis of grade point averages (GPAs) at graduation from the master's portion, it was found that GPA for traditional students averaged 3.61 and for non-traditional students, 3.68. The authors concluded that these GPAs were "almost identical" (Smith & Shoffner, 1991, p. 50), but no statistical analysis regarding significance was presented.

A similar study (Munro & Krauss, 1985) performed at the Yale University School of Nursing examined traditional and non-traditional graduate nursing students. The non-traditional students entered the program with a bachelor's degree in a field other than nursing. The first year incorporated undergraduate nursing education; the second and third years were spent with the traditional master's students in an advanced practice specialty. The authors compared theoretical and clinical grades of the traditional and non-traditional students during the two years of the specialty programs. The sample included 98 non-traditional students (non-nurse college graduates), 272 students with a BSN and prior nursing experience, and 65 RNs who each had a baccalaureate in another discipline and an associate degree or diploma in nursing. Grade point averages (both clinical and theoretical grades) of these three groups were evaluated after one and two years of graduate study using analysis of variance. It was determined that all three groups had similar grade point averages with no significant difference between these groups.

This work by Munro and Krauss (1985) does have limits. It examined only one institution and was not randomized. There was also no manipulation of independent variables. There was, however, a large enough sample size that the information could be considered credible and the findings agree with the previously mentioned study by Smith and Shoffner (1991).

Sime, Corcoran, and Libera (1983) also compared traditional and non-traditional students in regard to success in graduate nursing study. Grade point averages of these two groups were compared, and there was no significant difference in academic performance between these two groups ($p=.56$). The results are refutable due to the fact that the authors did not specify how many years of RN experience each group had, and the sample sizes of the groups being compared were not balanced. The participants included 37 graduate students, 30 with a bachelor's degree in nursing and 7 with a non-nursing degree. The study, therefore, merely distinguishes between BSN and students with a bachelor's degree in another discipline in regards to graduate study.

The findings from these three investigations are consistent and show no academic difference between traditional and non-traditional students in master's level advanced practice nursing programs. A limitation of these studies is that they examine these groups within the graduate program of study only by comparing grade point averages. There is no analysis whether these groups differ as they enter into practice and begin their role as professional NPs. These studies also neglect to include passing rates on national certification exams.

One study (Hawkins & Thibodeau, 1994) did examine educational level and experience of NPs in practice. Practicing NPs from a variety of educational and professional backgrounds were surveyed about their level of confidence in their skills and knowledge. Two self-report scales, an Attitudes and Values Scale and a Confidence in NP Skills Scale, were developed for use in the study. The Attitudes and Values Scale was designed to measure nursing versus medical orientation by NPs. The Confidence in Skills Scale, more applicable to assessment of successful entry into NP practice, examines level of confidence in NP practice skills and knowledge. Both instruments were assessed for face validity. The Confidence in Skills Scale was assessed for content validity by 17 nurse practitioner experts. A factor analysis was performed for this scale, resulting in three factors accounting for 71% of the variance (Thibodeau & Hawkins, 1994).

Four hundred eighty two nationally certified NPs participated in the study; they had an average of 18 years experience as RNs, and 9 years experience as NPs (Hawkins & Thibodeau). One half of the participants were master's prepared, 45% had received certificates, and the rest were trained on the job or had come from other backgrounds. The authors did not indicate whether participants were traditionally or non-traditionally-prepared NPs. The results of the study indicated that the NPs had a high level of confidence in their skills and knowledge ($p < .0021$) and there was no relationship between confidence and "educational preparation as a nurse, years of nursing experience, NP preparation, and years as a nurse practitioner" (p. 529). As evidenced in the research, prior experience, education and years in NP practice do not seem to affect the level of confidence of NPs. While the above study did examine practicing NPs, a gap remains in the research. Much of the research has focused on self-report by the NP, which gives a biased look at NP performance. More quantitative and qualitative studies need to be conducted that look at NP competence and differentiating between NPs with no RN experience and those with previous RN experience.

Socialization into Practice

The concept of socialization into practice was found in the literature to be important in establishing an identity as an NP and facilitating successful integration into the role of the professional NP. Two research studies (Hupcey, 1990; Lurie, 1981) investigated socialization during graduate school as a key component of successful entry into NP practice.

Hupcey (1990) examined the socialization of nurse practitioner students in various master's level programs in regard to how they meet the role expectations of an NP. Questionnaires (Spearman-Brown reliability coefficient of .96) were mailed to students of 15 different NP programs during their final semester. The students were surveyed "to determine if they are being adequately socialized into the role of a master's-prepared nurse practitioner and to identify factors within the socialization process which might influence their future roles of nurse practitioners" (p. 196). The researchers asked in-depth questions re-

The first year of work experience is very important in order to expand the knowledge base established during master's education.

garding nursing experience, undergraduate and graduate education, and role expectations in NP practice. The results of the investigation indicate that “nurse practitioner students are not being adequately socialized into the role of a master’s-prepared nurse practitioner during their graduate educational experience” (p. 200). The author recommended that graduate programs evaluate their curriculum in order to assure that students are receiving adequate training and preparation for their new roles as NPs.

Lurie’s (1981) research focused on NPs before, during, and after graduation from a master’s level program. The researcher used self-report data, interviews, and observations to determine if professional socialization occurs during the training program or at the work setting. The participants of the study were interviewed at six months and one year after graduation. A comparison group of nurses was also interviewed to determine if the socialization process was unique to nurse practitioner roles. The instruments used included 12 activity and attitude scales, interviews using structured and open-ended questions, and an activity checklist to be completed during the internship phase. The 12 scales were developed from the literature related to nurse practitioner activities and attitudes. Cronbach’s alpha was calculated for each of the 12 scales; Alpha coefficients ranged from .41 – .88. Factor analysis showed no underlying groupings within the 12 scales. The activity checklist was developed from a clinic experience checklist used by NP faculty. No psychometric assessment was noted for the activity checklist.

Lurie (1981) found that socialization into NP practice is a two-part process that involves both the formal educational program and the work setting. The author stressed that socialization which is acquired through education is “the most important determinant of role content”(p. 46) and can be considered the building block for the development of further socialization. Socialization is an ongoing process that begins in school but continues in the work setting and is affected by changes in autonomy and experience in practice.

Transition into NP Practice

The transition from student to professional NP is an important and difficult adjustment to make and may affect successful entry into practice. Several researchers have determined that there is an actual transition period that new graduates undergo as they enter into NP practice and develop their role as professionals (Brown & Olshansky, 1997; Lukacs, 1982). Another study (Shah, Bruttomesso, Sullivan, & Lattanzio, 1997) examined the role performance of novice practitioners as they move from school to the first year of practice as an NP.

In the qualitative study by Brown and Olshansky, a theoretical model entitled “From Limbo to Legitimacy” was presented. The model, derived through grounded theory, described the professional development of the NP during the first year following graduation. Thirty-five new NP graduates were interviewed for the study. The participants identified the first six months as an NP as a time of being in limbo. During this transition period, the beginning practitioner felt uncertain and anxious, and tried to make sense of this new role. By the end of the first year of practice the new NP felt as if “they had established a clear sense of themselves as NPs and functioned relatively smoothly in their advanced practice” (Brown & Olshansky, p. 48).

A quantitative investigation by Lukacs (1982) also surveyed NPs regarding their transition into practice. In this retrospective study, questionnaires were distributed to 135 NPs with a mean work experience as an NP of 3.7 years. The questionnaires were given to participants of a continuing education conference in 1980. A period of adjustment was indicated by 86.7% of the NPs in this study. These results indicated an average adjustment period of 5.9 months. These results may be subject to error, as the respondents had been in practice for a number of years and may not have clearly recalled their entry into practice. Although the Lukacs (1982) study was performed long before the Brown and Olshansky (1997) project, and fewer NP role models or peer supports existed, the results of both studies were consistent. Perhaps “un-

certainty about diagnosis and treatment” and “fear of missing something,” the most common concerns of Lukacs’ participants during the first six months of practice (p.23), transcend time and are minimally or unaffected by external role models or peer support.

The first year of work experience is very important in order to expand on the knowledge base that was established during master’s education. It is during this first year that many of the skills and the knowledge gained during graduate education are practiced and reinforced (Brown and Olshansky, 1997; Lukacs, 1982). The NPs in the Brown & Olshansky study described this period of adjustment as difficult and stated that they often felt like imposters or were “faking it” (p. 49). The NPs also explained that they have “considerable difficulty ‘feeling real’” (Brown & Olshansky, p. 50).

During this adjustment period many of the NPs reported finding it difficult to make the transition from that of an experienced RN to a novice NP. The new role as an NP is one in which there is more autonomy and advanced decision making. These results may indicate that prior nursing experience may not necessarily be an important component of successful entry into practice (Brown & Olshansky, 1997; Lukacs, 1982).

It is difficult to compare the results of these studies because of the difference in study participants. Those in Brown and Olshansky’s (1997) study were new graduates, while Lukacs’s (1982) participants had been working for several years. The two groups were at different levels in their careers and may have had different perspectives of their first jobs. No distinction was made between educational backgrounds (traditional versus non-traditional) of the students in regards to transition into practice.

Shah, Bruttomesso, Sullivan, and Lattanzio (1997) examined role performance of acute-care NPs as they moved from student to novice practitioner. Questionnaires were given to the novice NPs, their collaborating physicians, and nursing colleagues with whom they had direct contact. The NPs were evaluated on various aspects of their role performance

in the clinical setting as students and after they began working as NPs. The results show that the NPs became increasingly confident in the new role as they enter into and progress in practice. Evaluation by nursing and medical colleagues was quite positive. The results of the study are limited in that there was no mention of how many students were included in the survey.

Evaluation Measures for Successful NP Practice

In order to determine what defines successful entry into NP practice, there needs to be a way to measure competence of the NP in practice. Identifying role performance in practice and role expectations by the NP and other colleagues is essential to successful practice. Utilization of NPs is dependent on overall acceptance and understanding of the NP role. Two studies (Baer et al. 1999; Thibodeau & Hawkins, 1989) have presented various methods of evaluating the NP in practice.

Baer and colleagues (1999) and Thibodeau and Hawkins (1989) developed instruments to measure nurse practitioner role performance. Baer and colleagues looked at NPs' competence in practice. Patients were asked to assess competence of the NP by answering questions regarding the NP's ability to perform certain roles such as being patient advocate, educating patients, coordinating services, and providing direct care. This tool may be useful in combination with other measures in order to evaluate competence of the NP in practice, but is measuring competence only from the patient's perspective.

Thibodeau and Hawkins (1989) surveyed NPs to identify attitudes and knowledge that contribute to role performance. "Information about the relationship between attitudes and values and the self-assessments of nurse practitioners is useful since it helps to explain and understand role performance" (Thibodeau & Hawkins, p. 51). An instrument developed by Thibodeau and Hawkins measured NPs level of confidence regarding their skills and knowledge. The self-assessment scale included 65 questions for NPs to rate (on a scale of 1-6) their level of confidence about certain skills and knowledge related to the NP role. Questions for the scale were developed from an analysis of course objectives from several NP programs and from a review of the literature. Face validity was determined using a sample population of NPs similar to those who would be used in the study. A panel of expert NPs was used in order to determine content validity. The Self-Assessment scale was tested for reliability ($r = +0.868$) using the test-retest method. The instrument relied on self-report from the NP, and is, therefore, not the most appropriate tool evaluating NP competence in practice. The instruments could, however, be used in combination with other assessment tools or by physicians or other NPs to evaluate coworkers.

State of the Science

Defining successful entry into nurse practitioner practice is difficult based on the current literature. The consistent finding in most of

the research is that role performance improves as the nurse practitioner gains knowledge and experience. Knowledge and experience develop both in school and at the work setting as the nurse practitioner sharpens his or her skills over time during practice.

The transition period of a new nurse practitioner entering practice is a recurrent theme in the research. Several studies (Brown & Olshansky, 1997; Lukacs, 1982; Lurie, 1981; Shah et al., 1997) describe a transition period after graduation and into the first job as a nurse practitioner. The studies differ slightly in the length of the adjustment period or do not mention a time frame. Studies focusing on this topic could be further developed to distinguish the factors that affect the transition period.

Many of the research studies found in the literature were performed in the 1970s when the advanced practice nurses were becoming more popular. Some of the literature (Lukacs, 1982; Lurie, 1981; Thibodeau & Hawkins, 1989) addressing nurse practitioners in school is dated, therefore, may not be accurate in measuring today's students. School curricula and role expectations change every year.

With the exception of the studies by Shah et al. (1997) and Baer et al. (1999), the dominant data collection method was some sort of self-report by the NPs. While self-perception of practice skills and NP role are quite important, sole use of this methodology is limited. Feedback from physician and other colleagues can supplement self-report and lend more power to these investigations.

Existing tools for measurement of successful entry into NP practice are predominantly quantitative. Qualitative data would help insure that quantitative instruments do not miss important questions regarding the experience of successful entry into NP practice, whether from the self-report or colleague experiential perspective. Only one study (Brown & Olshansky, 1997) discussed in this review of literature used qualitative research to collect data from the participants.

Little research has focused on successful entry into NP practice. Hupcey (1990) identifies five predominant categories of nurse practitioner research. They are acceptance of the NP, cost analysis of NPs and other providers, outcomes of health problems treated by NPs, prescribing practices of NPs, and the influence of clinical settings on NP practice. Research on these topical areas has understandably been necessitated by the basic survival needs of the NP profession. A majority of these studies focus on NPs who have been practicing nurses for five or more years before entering the master's level program to become an NP. However, thousands of new NPs graduate annually, and must transition into successful NP practice. How do we determine if and when they reach that goal?

Additionally, few articles chronicle the NP who has not worked as a nurse prior to entry into an NP program. Those that have compared non-nurse college graduates with seasoned RNs limited their comparisons to grade point averages within specific NP programs. The connection between GPA and subsequent successful NP practice was not established. The question of whether non-traditional NP graduates transition to successful practitioners differently than seasoned RNs

Thousands of new NPs graduate annually and must transition into successful NP practice. How do we determine if and when they reach that goal?

remains unanswered. Most of the research has focused on one type of nurse practitioner or students from a particular program and evaluated the nurse practitioner at a specific stage in his or her practice. By involving participants from a variety of backgrounds, studies that measures successful entry into practice could more likely have findings that could be generalized.

In addition to differences regarding the type of students educated, NP programs vary in length, approach, specialty, and content. If successful entry into NP practice can be operationalized, attainment of educational goals can be measured and different types of NP programs can be comparatively investigated and refined as needed.

REFERENCES

- Baer, L. C., Baldwin, K. A., Sisk, R. J., Watts, P., Grinslade, M. S., Brockschmidt, B., Dinger, M. K., Marion, L. N., & McCubbin, J. (1999). Development of an instrument to measure community acceptance of nurse practitioners and physician assistants. *Journal of Nursing Measurement, 7*(1), 63-77.
- Brown, M. A., & Olshansky, E. F. (1997). From limbo to legitimacy: A theoretical model of the transition to the primary care nurse practitioner role. *Nursing Research, 46*(1), 46-51.
- Hawkins, J. W., & Thibodeau, J. A. (1994). 25+ and going strong: Nurse practitioners and nursing practice. *Journal of the American Academy of Nurse Practitioners, 6*(11), 525-531.
- Hupcey, J. E. (1990). The socialization process of master's-level nurse practitioner students. *Journal of Nursing Education, 29*(5), 196-201.
- Lukacs, J. L. (1982). Factors in nurse practitioner role adjustment. *Nurse Practitioner, 7*(3), 21,23,50.
- Lurie, E. E. (1981). Nurse practitioners: Issues in professional socialization. *Journal of Health and Social Behavior, 22*(3), 31-48.
- Munro, B. H., & Krauss, J. B. (1985). The success of non-BSNs in graduate nursing programs. *Journal of Nursing Education, 24*(5), 192-196.
- Rich, E. R. & Rodriguez, L. (2001). *A qualitative study of perceptions regarding the non-nurse college graduate nurse practitioner*. Manuscript in preparation.
- Shah, H. S., Bruttomesso, K. A., Sullivan, D. T., & Lattanzio, J. (1997). An evaluation of the role and practices of the acute-care nurse practitioner. *AACN Clinical Issues, 8*(1), 147-155.
- Sime, A. M., Corcoran, S. A., & Libera, M. B. (1983). BSN vs. non-BSN students and success in graduate study. *Journal of Nursing Education, 22*(5), 190-194.
- Smith, P. L., & Shoffner, D. H. (1991). Non-nurse college graduates: A new resource for future nurse practitioners. *Nurse Practitioner, 16*(1), 49,50,53.
- Thibodeau, J. A., & Hawkins, J. W. (1994). Moving toward a nursing model in advanced practice. *Western Journal of Nursing Research, 16* (2), 205-218.
- Thibodeau, J. A. & Hawkins, J. W. (1989). Nurse practitioners: Factors affecting role performance. *Nurse Practitioner, 14*(12), 47, 50-52.

INFORMATION FOR AUTHORS

Journal of the New York State Nurses Association

11 Cornell Road, Latham, New York 12110

Phone: 518-782-9400, Ext. 275

Managing Editor: Anne Schott

Editorial Policy

The *Journal of the New York State Nurses Association*, a biannual, peer-reviewed publication, welcomes submission of scholarly papers, research studies, brief reports of clinical or educational innovations, and articles of opinion on subjects important to registered nurses.

The *Journal* is especially receptive to the work of new authors. Manuscripts of up to 20 pages, including tables and references, will be considered.

All manuscripts should be original, unpublished work not being reviewed elsewhere.

Manuscript Preparation

The *Journal* follows the guidelines of the *Publication Manual of the American Psychological Association*, Fifth Edition, 2001. Please consult this APA manual for appropriate style, detailed information on formats for different types of manuscripts, and the presentation of references, tables, and figures.

Submit an original and three copies of the manuscript, typed on 8½ X 11 paper, double spaced, using margins of at least 1¼ inches. Include an abstract of the article (approximately 50 - 150 words).

Include a title page with the name and credentials of all authors as they should appear in the *Journal*. Also include all authors' primary professional affiliation. For example: *Mary Jones, MSN, RN. Jones is a clinical nurse specialist in oncology at University Hospital in Hometown, NY.*

Permissions

Authors are responsible for requesting any permissions needed for the use of copyrighted material such as tables, charts, forms, and figures. Letters of permission should be submitted with the manuscript.

Editing

The editors reserve the right to edit all manuscripts to comply with style and space requirements. Edited copy is submitted to the authors for approval.

Checklist for Authors

- ✓ Four copies of article, double spaced.
- ✓ Copies of tables, figures, and reference list included in all four copies.
- ✓ Full name, credentials, and institutional affiliation provided for all authors.
- ✓ Abstract of article
- ✓ Written permission to reproduce any previously published material.
- ✓ Indicate name of author to whom correspondence should be addressed; include phone and fax numbers, and e-mail address.
- ✓ If you wish your manuscript returned, include a stamped, self-addressed envelope.

Promoting Adjustment Among Women With Breast Cancer and Their Partners: A Program of Research

Carol Noll Hoskins, PhD, RN, FAAN

ABSTRACT

A three-phase program of research consisted of: (1) data collection at eight data points across one year on predictors and outcomes of adjustment among 128 women diagnosed with breast cancer and 121 partners; (2) development of phase-specific interventions: standardized education by videotape (SE), and telephone counseling (TC); and (3) a pilot study among 12 patient-partner pairs. Four phases were identified: diagnostic, post-surgical, adjuvant therapy, and ongoing recovery. Needs were categorized as those related to: (1) physical well-being, (2) emotional well-being; (3) support; and (4) the healthcare system.

In the pilot study, each group consisted of 4 patient-partner pairs, randomly assigned to one of four groups. At each of the four phases, all groups received the currently accepted disease management (DM).

• Group 1: DM • Group 2: DM+SE • Group 3: DM+TC • Group 4: DM+SE+TC

Measures of outcomes validated in the longitudinal study were administered. The feasibility of a confirmatory randomized clinical trial was demonstrated. Preliminary evidence indicates the importance of research-based, phase-specific educational and counseling interventions that have a positive effect on adjustment among both patients and their families.

The statistics from the American Cancer Society continue to support the importance of breast cancer as a major health issue. Breast cancer is expected to remain the most common cancer in women, second to lung cancer, with estimates for the number of new cases in the United States for the year 2001 as 193,700: 192,200 for women and 1,500 for men (American Cancer Society, 2001). Mortality estimates show a small decline, with estimates of 40,200 in the year 2001. The basis for the decrease since 1994 has been attributed to early detection and improved treatments (Parker, Tong, Bolden, & Wingo, 1997). Although more than 90% of women survive the disease, it is often with a sense of uncer-

tainty about their future, which in turn, affects adjustment.

While current surgical procedures for breast cancer are substantially less disfiguring than in previous years, and adjuvant therapy has been refined to allow better control of side effects, the treatment of breast cancer is not limited to medical management of a physical disease. Equally important are the psychological, informational, and support needs of the patient and her family, which extend well beyond the first weeks following surgery. As unmet needs in any phase of the breast cancer experience may be carried over into subsequent phases, the protection of physical and emotional well-being, and pro-

vision of social support must be expeditiously implemented to maximize the adjustment process. To address these issues, a three-phase program of research was planned that included: (a) a descriptive longitudinal study to obtain data across a one-year period on predictors of adjustment among women diagnosed with breast cancer and their partners; (b) development of research-based interventions to promote the adjustment process; and (c) a pilot study to evaluate the feasibility of a randomized clinical trial to evaluate the effectiveness of the interventions. Approval for the research was obtained from the New York University Committee on Activities Involving Human Subjects.

Carol Noll Hoskins is a professor of nursing at New York University, School of Education, Division of Nursing, New York, N.Y.

Phase 1: Adjustment among women with breast cancer and their partners

The phase one descriptive, longitudinal study was designed to examine the effect of marital support and support from other adults on the emotional and physical adjustment of women with breast cancer and their partners (Hoskins, 1990-1994). The ability to function in usual roles and satisfaction with health care also were evaluated as predictors of adjustment. Data were obtained postsurgically at 7 to 10 days, 1 month, 2 months, 3 months, 6 months, and 1 year. The longitudinal design permitted the study of two different types of hypotheses: The relations between predictors and outcomes of adjustment at each phase, considered separately, and predictors from one time period to the adjustment outcomes at subsequent time periods.

Four hypotheses and one research question were examined.

1. Less support in the marital relationship is related to more symptoms of emotional and physical maladjustment.
2. More support from adults other than the partner and from extended family is related to fewer symptoms of emotional and physical maladjustment.
3. More satisfaction with health care is related to a perception of better overall health status and more psychological well-being.
4. Difficulty in performing life roles as a result of illness is related to more emotional and physical symptoms.

The research question was: Do emotional and physical adjustment vary by breast conserving vs non-breast conserving surgical groups and by positive versus negative node status groups?

A sample of 128 women and 121 partners met criteria for participation in the study: (a) a first diagnosis of cancer; (b) a male heterosexual partner willing to participate, and (c) less than 10% of missing data at the conclusion of the study. At each of eight data collection points, the respondents completed four standardized inventories: The Partner Relationship Inventory (Hoskins, 1988); the Psychosocial Adjustment to Illness Scale (Derogatis, 1983); the Profile of Adaptation to Life Clinical Scale (Ellsworth, 1981); the Self-Rated Health Subscale of the Multilevel Assessment Instrument (Lawton, Moss, Fulcomer, & Kleban, 1982). A measure of current treatment and side effects to treatment (Hoskins, 1990) was completed by telephone interview with the investigator.

Because it was difficult to obtain data at the two initial times, i.e., initial contact, and prior to definitive diagnosis, the analyses were performed on the data from the six data points stated previously. The hypotheses were tested first for relationships between individual predictors and outcome variables at each time point. Second, the hypotheses were tested for relationships between the entire predictor set at each data collection point and the outcome set at the immediately subsequent point. Third, each hypothesis was evaluated in a canonical analysis that drew predictor variables from the 7- to 10-day post-surgery time and outcome variables from both the 6-months and 1-year points. The research question was examined by repeated measures analyses of variance.

Emotional adjustment could be predicted by marital support (perceived satisfaction with the partner's response to emotional and inter-

action needs) and by support from other adults (Hoskins et al., 1996a; Hoskins, et al., 1996b). The relationships were significant at each time point, across subsequent times, and predicting from the 7- to 10-day post-surgical phase to both the 6-month and 1 year end points. Physical adjustment was not predicted by support, but satisfaction with health care was predictive of overall health status. The ability to function in routine vocational, domestic, and social roles was significantly related to emotional and physical adjustment at all points with few exceptions.

There was a significant difference in changes over time in physical symptoms between surgical groups and in overall health between node status groups. Women with positive nodes perceived their health status as lower at all times and had more psychological distress than women with negative nodes. Women and their partners experienced similar and yet different distress across the breast cancer experience, i.e., women feared the side effects of treatment, and partners experienced anxiety about managing the home and caring for children. In some cases, partner adjustment was not as positive as that of patients.

Four phases of emotional and physical adjustment were identified for both patients and partners: *diagnostic, post-surgical, adjuvant therapy, and ongoing recovery*. The specific needs associated with each phase were determined for each group. At each of the four phases that emerged as critical markers in the adjustment process, social support and role performance were identified as key factors that promoted both physical and emotional adjustment. Needs were categorized as those related to: (a) *physical well-being*, (b) *emotional well-being*, (c) *support*, and (d) the *healthcare system*. The variation in intensity of needs in the four categories as well as how needs varied between patients and partners were documented across the four phases of the

adjustment process (Hoskins & Haber, 2000; Hoskins, 1995).

The findings indicated the enormous importance of education for making treatment-related and other decisions, developing skills for self-care, developing effective communication, and seeking support to promote physical and mental health over time. Both quantitative and qualitative data were collected. The qualitative data were collected by telephone interviews at each of the six data collection times when the investigator completed the Breast Cancer Treatment Related Index, a measure of current medical status, side effects, and effectiveness of strategies to relieve them (Hoskins, 1990). The principal investigator applied qualitative methods to identify themes for each of the six data collection times and a research fellow verified the themes by also listening to the taped interviews.

*At each critical phase
social support and
role performance were
key factors that promoted
both physical and
emotional adjustment.*

Phase II: Journey to recovery: For women with breast cancer and their partners - A four part standardized educational videotape series.

Because a variety of adverse psychological and social factors impinged upon the women who were diagnosed and treated for breast cancer and their partners, it was evident that state-of-the-art treatment for the illness needed to include educational and counseling interventions that addressed and ameliorated the substantial stressors involved both with

*Women with breast cancer and their partners can be regarded
as being at high risk for a situational crisis.*

the illness and its treatment (please see above). However, little was known from the literature about which modes of educational and counseling interventions would be most effective and for which categories of patients and family members, nor were the phase-specific needs of patients and families reported.

Using the extensive data base from the preliminary study, a series of four phase-specific, 30-minute videotapes was developed to provide a standardized research-based educational intervention for both patients and partners (Hoskins & Haber, 1997). The instructional videos, titled *Journey To Recovery: For Women with Breast Cancer and their Partners*, are designed to help women and men cope with the severe stress of the breast cancer experience. In the four-tape series, couples are guided through each phase of the disease and its treatment. Tape 1 helps couples cope with the *diagnosis*. Tape 2 walks couples through *recovery from surgery*. Tape 3 addresses the issues of *adjuvant therapy* - radiation, chemotherapy and/or hormone treatment. Tape 4 emphasizes the importance of the *ongoing recovery* process. The content of each videotape has a mental health focus and is organized under three main topics: (a) information required for making key treatment decisions, caring for self, and coping with the emotional impact of breast cancer; (b) methods and resources needed for developing a network of medical, informational, and supportive services; and (c) skills related to enhancing communication, managing stress, and developing a support system.

Many visuals are incorporated to convey the reality of the illness, yet are attuned to the emotional mindset of each patient and partner watching and learning. The many important points of each program are reinforced through effective real couple scenarios, visual effects, dynamic graphics, illustrations, and simple animation. Over the course of the four tapes, viewers learn from interviews with a breast surgeon, a medical oncologist, two couples who participated in the initial research, and health care professionals.

As a set, the videotapes provide a standardized research-based educational inter-

vention program that can be used in a wide variety of treatment settings and followed by an opportunity to raise individual concerns with a clinical nurse oncologist, physician, or breast service coordinator.

Phase III: Breast cancer: education, counseling, and adjustment — A pilot study for a randomized clinical trial

Phase III consisted of an initial pilot study to test the feasibility of a confirmatory randomized clinical trial. The four interventions formed a complementary approach to disease management of breast cancer at each of the four phases identified in Phase I.

The crisis intervention model developed by Morely, Messick, and Aguilera (1967), combined with the stress-coping model by Lazarus (1984), provided the theoretical framework for the intervention components. According to the crisis intervention model, the degree and character of psychosocial distress experienced by breast cancer patients and their partners depend on their specific perceptions of the meaning of the stressful situation, previous exposure to similar stress, adaptiveness of their coping mechanisms, and adequacy of support systems (Aguilera, 1998; Capone, Good, Westie, & Jacobson, 1980; Parad & Parad, 1990).

Crises frequently result from lack of balancing factors that maximize adjustment as attempts are made to return to a state of equilibrium following a stressful event (Aguilera, 1998). Women diagnosed with breast cancer and their partners can be regarded as being at high risk for a situational crisis. The focus of the model is on crisis prevention by maximizing physical adjustment and emotional adjustment, role performance, perceived social support, and overall health status.

Consistent with this approach, informational interventions help patients see how they can assume an active role in treatment and maintaining control (Cohen & Lazarus, 1979). Four essential types of information maximize adjustment: (a) the nature of the disease and the medical reasons for initiating specific treatments; (b) the potential medical

procedures; (c) the expected side effects; and (d) the strategies that can be used to cope with upcoming threats (Cohen & Lazarus, 1979; Derdarian, 1987a; 1987b; 1989; Hoskins & Haber, 1997).

Interventions

All groups received the currently accepted *disease management (DM)* of breast cancer.

- The first group received *DM* and the *structured education by videotape (SE)* produced in Phase II.
- A second group received *DM* and *telephone counseling (TC)*.
- A third group received *DM + SE + TC*.

Structured education by videotape (SE)

The *SE* component of the intervention consists of the four phase-specific videotapes. As noted, the content of each videotape was organized under three topics: (a) health relevant information; (b) skills training; and (c) psychosocial support. The interventions were conducted by a research fellow at each of the four phases: diagnostic, post-surgical, adjuvant therapy, and ongoing recovery. The fellow was trained to administer the intervention, including the pre-tests and post-tests, the evaluation form for the intervention, and a battery of instruments for evaluating emotional and physical adjustment and perceived support.

Telephone counseling (TC)

The 30-minute phase-specific *TC* is an individualized intervention designed to enhance the client's belief that the counselor will be able to help, a necessity if treatment goals are to be accomplished in a short time (Bellack & Small, 1965). The telephone counseling intervention consists of the four individual phase-specific *TC* sessions for each patient and partner. A second research fellow trained in individualized telephone counseling approaches conducted the sessions. The fellow also was trained to administer the evaluation form for the intervention and the battery of instruments for evaluating social support and various dimensions of adjustment. The setting for the

intervention was the home. A telephone audiotape player was used to record each session for supervision and validation.

Structured education + Telephone counseling (SE+TC)

The third component of the intervention combined in entirety the structured education with the brief telephone counseling. The sessions were conducted by a third research fellow trained to administer the intervention, the pre-tests and post-tests, the evaluation forms, and the battery of instruments for evaluating social support and adjustment.

Prior to the accrual of patients and partners for the pilot study, (a) a *Standardized Education and Telephone Counseling Training Manual* was developed as a guide for all aspects of the protocols; (b) the SE and TC interventions were validated; (c) research fellows were trained in the intervention components; (d) evaluation forms for obtaining data on process variables were constructed; and (e) pre-tests and post-tests for the structured education were developed.

The required non-probability sample of 12 patient-partner pairs was accrued, 4 pairs for each of the three intervention components. As noted, the intervention components were administered at each of the four phases identified in the preliminary study, e.g., diagnosis, postsurgery, adjuvant therapy, and ongoing recovery (Hoskins, 1990-1994).

The feasibility of a confirmatory clinical trial was demonstrated by the pilot study, thus providing support for examining the unique contribution of phase-specific SE and TC to the ongoing process of adjustment among patients and the partner identified as the person most intimately involved in the events related to the illness and treatment. The strengths of the proposed clinical trial included: A theoretical approach that was well delineated, interventions that were research-based and phase-specific, outcomes that were well conceptualized and operationalized by valid and reliable measures, and inclusion of primary partners in interventions and assessment of adjustment. The high retention rates of patient-partner pairs achieved in the preliminary study were duplicated in the pilot study. Data were obtained and used for estimation of sample size and power for the clinical trial; and issues relevant to data collection and management were identified and addressed.

Discussion

Implications for Clinical Practice

Investigations of the effects of illness on the family, and specifically the partner, have emerged only in the last several decades. Differences in the impact of chronic illness on patients and partners have rarely been studied. Until recently, psychological support for cancer patients and their families focused on terminal care and bereavement (Fawzy & Fawzy, 1994). Today, support has expanded in the direction of helping people to cope effectively with the diagnosis and treatment of cancer. Since breast cancer affects one in eight women in the United States within a broad age range, the effect on families, particularly those most closely involved in the events associated with its diagnosis and treatment, is critical. Since the crisis of cancer automatically draws attention to the needs of the patient, it is not surprising that the spouse, or partner, may be left to cope with the demands of the illness with little or no support (Lewis, Woods, Hough, & Bensley, 1989; Wilson & Morse, 1991).

It is critical for nurses to be knowledgeable about educational and counseling interventions that have a positive effect on physical and emotional adjustment, the ability to perform one's usual roles, and the perception of accessible psychosocial support, thereby reducing the

risk for crisis. Viewed from the perspective of the crisis intervention model, such interventions are designed to prevent or correct an imbalance between the perception of the problem (i.e., the degree of hopelessness versus optimism associated with their diagnosis of breast cancer), their available repertoire of coping skills (i.e., reducing stress by selected activities, and communicating thoughts and feelings to others), and their constellation of situational supports (i.e., accessing community resources such as support groups).

Registered nurses (RNs) and advanced practice registered nurses (APRNs), who either specialize in oncology or work with breast cancer patients and their partners in broader clinical practice settings, need to explore where and how to incorporate educational and counseling interventions in their practice (Hoskins & Haber, 1998). Even though the demands and effects of the illness are unique for each partner during the diagnosis-treatment process, research findings suggest certain universally characteristic needs for information, coping skills development, and psychosocial support at each phase (Hoskins & Haber, 2000). For example, during the diagnostic phase, explanations of treatment options and procedures are basic to decision making. At the adjuvant therapy phase, if couples are guided in the pros and cons of various adjuvant therapy drugs, they can knowledgeably make choices, anticipate the nature and duration of side effects, and more effectively plan on how to manage symptoms.

The implications for nursing interventions (Hoskins & Haber, 2000) are:

- Understand more about the needs of breast cancer patients and their partners at each phase of adjustment.
- Ask the patient whom she considers her partner or the person closest to her; her husband or domestic partner, mother, or close friend.
- Obtain appropriate current treatment guidelines covering surgical options, reconstruction, and adjuvant therapy. In the United States these may be obtained from the National Comprehensive Cancer Network and American Cancer Society (1999).
- Conduct comprehensive assessments of both patient and partner, their physical and psychological well-being, social support, and how they relate to the health care system.
- Acknowledge differences between a patient and her partner. Each may feel differently, for example, about when and how to look at the incision for the first time.
- Encourage couples to recognize these differences when making decisions regarding both immediate and long-range needs. The nurse can ask questions that clarify what the patient needs ("How do you think it would be most comfortable for you to view the incision? Alone? With your partner? With the surgeon present?") The nurse can also ask what her partner needs ("Have you thought about how you'll feel most comfortable seeing her incision?")
- Select interventions that are responsive to both patients and partners at each phase:
 - information available through videotapes, printed materials, and the Internet
 - counseling (individual or group therapy; telephone sessions)
 - stress management classes
 - referral to community resources (support groups, information hotlines)
- Identify for referral to individual, group, or family therapy patients and partners who are demonstrating severe affective distress, impaired functioning, or both.
- Evaluate clinical outcomes for patients and partners.

- Stress the importance of long-term follow-up through breast self-exams, mammograms, scans (which may include scintigraphy, computer tomography, or magnetic resonance imaging), and surgeon and oncologist visits.

Implications for Research

Ideally, all healthcare interventions should be subjected to objective testing for their effect on desired outcomes. Thus, it is the responsibility of investigators who develop educational and counseling interventions to examine their effect on adjustment outcomes among women afflicted with breast cancer, as well as their partners. Randomized clinical trials are the accepted standard for testing the relative effectiveness of different types of interventions on carefully selected measures of outcomes that have demonstrated levels of validity and reliability. Further, well-designed interventions must take into account the variation in needs of patients and families over the identified time periods comprising the diagnostic and treatment process, and as they differ between family members. The findings of such comprehensive studies will provide the basis for implementation of evidence-based, standardized intervention protocols that have an excellent potential for enhancing a positive adjustment, both physical and emotional.

Conclusions

Interventions need to be research-based and tailored to address the phase-specific needs of each partner. For example, information relevant to health care, communication that is open and honest, and

marital support are predictive of psychological well-being for both patients and partners throughout the breast cancer experience. However, additional support for the partner outside the relationship, i.e., support from extended family members, is equally important (Hoskins, et al, 1996b).

As noted by Mast (2000), "Evidence-based practice (EBP) has been a priority and part of the ONS Strategic Plan since 1997. It is a term oncology nurses are hearing and reading about with increasing frequency. The importance of basing practice decisions on research is not a new idea, but trends in managed healthcare delivery are now making it imperative for practicing nurses to develop ways to deliver care that are based on the best available evidence. The goal of EBP is to use this evidence to guide interventions that will benefit the patient, enhance quality and outcomes of care and be cost effective."

Acknowledgements

Many individuals have contributed to the success of this program of research and need to be acknowledged. Some served as doctoral fellows and have since earned their PhD. Some are faculty members, either at NYU or at other universities, and some have served as consultants. These individuals include Sonia Baker, PhD, RN; Marilyn Bookbinder, PhD, RN; Jean Steelman Bohlander, PhD, RN; Wendy Budin, PhD, RN; Fran Cartwright-Alcarese, MSN; David Ekstrom, PhD, RN; Judith Haber, PhD, RN; Cynthia Knauer, MSN; Mildred Kowalski, MA; Greg Maislin, MA; Lisa Moss; Deborah Sherman, PhD, RN. Finally, the couples who gave generously of their time and the surgeons who served as referral surgeons have our sincere gratitude.

REFERENCES

- Aguilera, D.C. (1998). *Crisis intervention: Theory and methodology* (8th ed.). St. Louis: C.V. Mosby.
- American Cancer Society. (2001). Cancer statistics 2001. *CA: A cancer journal for clinicians*, 51(1), 2-4.
- Bellack, L., & Small, L. (1965). *Emergency psychotherapy and brief psychotherapy*. New York: Grunem& Stratton, Inc.
- Capone, M.A., Good, R.S., Westie, K.S., & Jacobson, A.F. (1980). Psychosocial rehabilitation of gynecologic oncology patients. *Archives of Physical Medicine and Rehabilitation*, 61, 128-132.
- Cohen F., & Lazarus, R.C. (1979). Coping with the stress of illness. In: G.C. Stone, F. Cohen, & N.E. Nadler (Eds.), *Health Psychology*, 247-254. San Francisco: Jossey-Bass.
- Derdarian, A.K. (1989). Effects of information on recently diagnosed cancer patients' and spouses' satisfaction with care. *Cancer Nursing*, 12 (5), 285-292.
- Derdarian, A.K. (1987a). Informational needs of recently diagnosed cancer patients. Part I: A theoretical framework. *Cancer Nursing*, 10 (2), 107-115.
- Derdarian, A.K. (1987b). Informational needs of recently diagnosed cancer patients. Part II: Method and description. *Cancer Nursing*, 10 (5), 285-292.
- Derogatis, L. (1983). *The Psychosocial Adjustment to Illness Scale*. Towson, MD: Clinical Psychometric Research.
- Ellsworth, R. (1981). *Profile of Adaptation to Life Clinical Scale*. Palo Alto, CA: Consulting Psychologists Press.
- Fawzy, F.I., & Fawzy, N.W. (1994). A structured psychoeducational intervention for cancer patients. *General Hospital Psychiatry*, 16, 149-192.
- Hoskins, C.N. (1988). *The Partner Relationship Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Hoskins, C.N. (1990-1994). Patterns of Adjustment among Women with Breast Cancer and Their Partners (funded by the Walter Langer Foundation).
- Hoskins, C.N. (1990). *The Breast Cancer Treatment Recovery Index* (unpublished scale from a study of adjustment among women with breast cancer and their spouses, funded by the Walter Langer Foundation, 1990-1994).
- Hoskins, C.N. (1995). Adjustment to breast cancer in couples. *Psychological Reports*, 77, 435-454.
- Hoskins, C.N., Baker, S., Bohlander, J., Bookbinder, M., Budin, W., Ekstrom, D., Knauer, C., Maislin, G., & Sherman, D. (1996a). Social support and patterns of adjustment to breast cancer. *Journal of Scholarly Inquiry for Nursing Practice*, 10 (2), 99-123.
- Hoskins, C.N., Baker, S., Bohlander, J., Bookbinder, M., Budin, W., Ekstrom, D., Knauer, C., Maislin, G., & Sherman, D. (1996b). Adjustment among spouses of women with breast cancer. *Journal of Psychosocial Oncology*, 14 (1), 41-69.
- Hoskins, C.N., & Haber, J. (1997). *Journey to Recovery: For Women with Breast Cancer and Their Partners*. A four-part videotape series filmed by Euro Pacific Video and Film Productions, Inc. Princeton, NJ: Films for the Humanities and Sciences.
- Hoskins, C.N., & Haber, J. (1998). RNs help breast cancer patients and partners alike. *The Nursing Spectrum*, 10 (2), 11.
- Hoskins, C.N., & Haber, J. (2000). Adjusting to breast cancer. *American Journal of Nursing*, 100 (4), 26-33.
- Lawton, M.P., Moss, M.S., Fulcomer, M., & Kleban, M.H. (1982). A research and service oriented Multilevel Assessment Instrument. *Journal of Gerontology*, 37, 91-99.
- Lazarus, R., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lewis, F.M., Woods, N.F., Hough, E.E., & Bensley, L.S. (1989). The family's functioning with chronic illness in the mother: The spouse's perspective. *Social Science and Medicine*, 29, 1261-1269.
- Mast, M. (2000). Evidence-based practice. What it is, what it isn't. *ONS News*, 15, (6)1-5.
- Morely, W.E., Messick, J.M., & Aguilera, D.C. (1967). Crisis: paradigms of intervention. *Journal of Psychiatric Nursing*, 5, 537.
- National Comprehensive Cancer Network (NCCN) & American Cancer Society (ACS) (1999). *Breast Cancer Treatment Guidelines for Patients*, 1-38. Author.
- Parad, H.J., & Parad, L.G. (1990). Crisis intervention: An introductory overview. In: H.J. Parad & L.G. Parad (Eds.), *Crisis intervention: The practitioner's sourcebook for brief therapy* (pp. 1-66). Milwaukee, WI: Family Service America.
- Parker, S.L., Tong, T., Bolden, S., & Wingo, P.A. (1997). Cancer statistics. *CA: A cancer journal for clinicians*, 47, 5-27.
- Wilson, S., & Morse, J. (1991). Living with a wife undergoing chemotherapy. *Image: Journal of Nursing Scholarship*, 23, 78-84.

WHAT'S NEW IN THE

Nursing Research

Fry, S.T., & Duffy, M.E. (2001). The development and psychometric evaluation of the Ethical Issues Scale. *Journal of Nursing Scholarship, 33*, (3), 273-277.

This research was formulated to study the properties of the Ethical Issues Scale (EIS), including its development, psychometric evaluation, and use in clinical practice settings with registered nurses in active practice. The psychometric analysis of the EIS included item analysis and internal consistency reliability by means of Cronbach's alpha. The EIS was tested with a sample of 2,090 registered nurses working in the New England area. The sample was randomly divided into approximate halves. Half of the sample findings were used to validate the component structure, while the other half were used to derive the underlying components. Based on the statistical analysis, findings indicate that the psychometric properties of the EIS are internally consistent and valid. Reliability and validity evidence from this sample indicates that the EIS is an appropriate tool for ethics research.

Mims, B. (2001). The challenges in recruiting African American subjects and entry strategies used in Northeast Ohio. *The ABNF Journal, 12* (5), 101-104.

The paper discusses the importance of engaging African Americans (AA) in research. It describes the challenges faced by the AA researcher in recruiting mothers and adolescent daughter dyads (n=20 dyads) with and without a child, for a community based communication intervention project. The challenges included: distrust of the researcher and the research process; rejection by the mother or daughter; and dismissing the benefits of the communication intervention. Additional challenges included reluctance by school counselors to assist in the recruitment efforts, gaining entry into the AA community, and extended time required to build trust with community leaders. Recommendations include developing partnerships between research universities and AA communities; use of Afrocentric recruitment materials and creative outreach strategies; inclusion of AA on the research team; and sharing project results with the community.

Health Policy

Brush, B.L., & Capezuti, E. (2001). Historical analysis of siderail use in American hospitals. *Journal of Nursing Scholarship, 33*, (4), 381-385.

The authors of this social, historical research study explore siderail use in the 20th century in American hospitals, including social, economic, and legal influences on siderail usage. The findings indicate that use of siderails in American hospitals is based upon untested concerns of law and medicine rather than on empirically based outcomes. Siderail use became integral to nursing practice as nurses assumed responsibility in institutional settings. Based on reports of adverse events associated with siderail use, new federal guidelines are limiting their use in hospital and nursing homes in the United States. Alternatives to siderail use will be based on new norms among hospital administrators, insurers, attorneys, regulators, patients, families, and healthcare providers.

Tumulty, G. (2001). Professional development of nursing in Saudi Arabia. *Journal of Nursing Scholarship, 13* (3), 285-290.

The author, a nursing expert from the U.S., went to Saudi Arabia after the Gulf War under the auspices of the U.S.-Arabian Joint Economic Commission in order to determine how to improve the nursing profession there. The aims of her visit were to evaluate the existent nursing system and to determine what is needed to improve nursing care in the country. A comprehensive needs assessment was conducted in 1996 using direct observation, interviews, and review of Ministry of Health documents. Data were collected about six factors: a.) key organizational and managerial activities, b.) the external environment, c.) the social system, d.) employees, e.) nursing services, and f.) formal organiza-

tional arrangements. The results showed a young system of nursing struggling to meet the needs of a growing population. The most pressing need is establishment of uniform standards of nursing across the country because currently there is no licensure of individuals, accreditation of health care facilities, or consistent educational programs. Cultural factors interfere with attracting native candidates to the profession, and discourage foreign nurses from being viable long term solutions to the country's nursing needs. The author reported that progress was being made in developing university based programs, and recommended that nursing assume a deputy minister level within the Ministry of Health hierarchy.

Hoffman, C., Schoen, C., Rowland, D., & Davis, K. (2001). Gaps in health coverage among working-age Americans and the consequences. *Journal of Health Care for the Poor and Underserved, 12* (3), 272-289.

This article examines health coverage and access to care among working-age adults using the Kaiser/Commonwealth 1997 National Survey of Health Insurance. One in three (52 million) working-age adults were either uninsured at the time of the survey or had a gap in their health coverage in the past two years. Compared with the elderly, working-age adults had greater problems paying their medical bills and gaining access to care and were less satisfied with their health insurance. The most common reason for not having health insurance was that people could not afford it even when employers shared the cost. Half the uninsured adults had a problem either paying their medical bills or getting health care in the last year. Adults with recent gaps in coverage were two to three times as likely as adults with continuous coverage to have postponed care, had difficulty with or not received needed care, and to have not filled a prescription because of cost in the year before the survey. Research has demonstrated that non-adherence to medical regimens can result in greater adverse outcomes for patients. Nurses who care for patients with gaps in health insurance coverage or no insurance need to be knowledgeable about resources to assist individuals and families to maintain care during difficult economic times.

Transcultural Nursing

Rew, L.; Thomas, N.; Horner, S.; Resnick, M.D., & Beuhring, T. (2001). Correlates of recent suicide attempts in a triethnic group of adolescents. *Journal of Nursing Scholarship, 33*(4), 361-367.

The authors set out to discover variables that explain suicide attempts among three ethnic sets of adolescents: Caucasians, Hispanic Latinas, and African-Americans. Secondary analysis was conducted on an existent data set of self-reported suicide attempts within a group of 10,059 7th, 9th and 11th grade Connecticut adolescents. Bivariate, multivariate, and logistic regression procedures determined that suicide attempts were significantly more frequent among Hispanic Latina girls (19.3%) than in any other ethnic-gender group. Significant statistical relationships were found between recent suicide attempts and the following life experiences: a.) family suicide attempts, b.) friend suicide attempts, c.) sexual abuse, d.) physical abuse, and e.) environmental stress. The findings supported a "resilience" theoretical model, and suggested the development and testing of culturally sensitive preventive interventions.

Drevdahl, D., Taylor, J.Y., & Phillips, D.A. (2001). Race and ethnicity as variables in nursing research, 1952-2000. *Nursing Research, 50* (5), 305-313.

In this critical review of several decades of original research articles published in *Nursing Research*, the authors provide background for federal initiatives to reduce health disparities based on race and ethnicity. The sampling frame included 337 English language articles describing human characteristics that were published in 1952, 1955, and every five years thereafter. Race and ethnic variables were mentioned in 167 of these. Despite a wide variety of terms and phrases, only five (3%) of the 167 studies actually explained racial or ethnic variables. Many studies intermix racial and ethnic labels. Over the almost five

NURSING LITERATURE

decades studied, the percentage of research reports that referred to racial or ethnic characteristics has increased fairly steadily. However, the trends for studies to include primarily "African American" and "Hispanic" people have been relatively flat. Important theoretical, political and sociological points are raised about the problems inherent in racial and ethnic labeling. The authors conclude that nurse researchers who employ racial/ethnic categories in their investigations must avoid reinforcing biological differences and the often unintended consequences of pathologizing particular racial or ethnic groups.

Nursing Administration

Coonan, P. (2001). Is there a future for middle management in nursing in the changing health care system? *Nursing Leadership Forum*, 5 (4), 108-115 and Kennedy, T. (2001). Reinventing middle managers in nursing for a future in the changing health care system. *Nursing Leadership Forum*, 5 (4), 109-112.

These companion articles, labeled Point/Counterpoint, present two opposing views about the future of middle managers in nursing. Coonan, a vice president for nursing and patient services, believes there is such a future and is expanding their ranks in his facility to face the daily challenges of quality, cost-effective care for the future. Kennedy, a nursing school associate dean, believes that the traditional role of middle managers has become obsolete, based on changing infrastructures of healthcare institutions. The middle manager position should be retooled, reinvented or be a tradeoff to a position that reflects and supports the changes in the healthcare system. The rationales for these views and the discussions of a number of issues relevant to them will be of interest to nurses who are interested in nursing management.

Nursing Education

Daley, B. (2001) "Learning in clinical nursing practice." *Holistic Nursing Practice*, 16 (1), 43-54.

This qualitative study may be of interest to nurses who ask, as the author did, "How does clinical nursing practice facilitate learning?" Forty nurses who practiced in hospitals, home care agencies or long term care facilities were interviewed. Although the nurses described cases from different settings, what they learned appeared to arise from nurse-client relationships and were remarkably similar. They reported that clinical practice facilitated their professional and personal growth by developing self respect; learning to be hopeful about clients and about life itself; learning to balance the desire to help with the need to control; learning how to develop mutually supportive relationships with clients; understanding the concept of vulnerability, which leads to understanding and acceptance of people and of themselves; acceptance of loss and grief; and, finally, learning how to be patient and persistent. The author suggested that nurses in staff development and continuing education provide a link between continuing education and personal growth, and consider continuing education programs such as "action learning" in which participants learn by working together on a project or problem.

Nursing Practice

Kimble, L.P., Dunbar, S.B., McGuire, D.B., De, A., & Fazio, S. (2001). Cardiac instrument development in a low-literacy population: the revised Chest Discomfort Diary. *Heart & Lung: Journal of Acute & Critical Care*, 30 (4), 312-320.

Since it is important for nurses to care for individuals from all populations, modified assessment approaches are needed to accurately measure chest pain. The purpose of this study was to pilot test a self-administered chest pain questionnaire, a revised version of the Chest Discomfort Diary (CDD-R), in a sample of patients with chronic angina selected from a population known to have low literacy. Descriptions of the location, character and precipitants of

chest pain were consistent with clinical descriptions of "typical angina." The CDD-R adequately measured multiple characteristics of anginal chest pain.

Banasik, J. L., & Emerson, R. J. (2001). Effect of lateral positions on tissue oxygenation in the critically ill. *Heart & Lung: Journal of Acute & Critical Care*, 30 (4), 269-276.

Nurses must consider the value of position changes when caring for critically ill patients. The purpose of this study was to assess the effect of lateral positions on tissue oxygenation in critically ill patients. The sample included 12 adult patients. The findings suggest that lateral positioning of critically ill patients who are hypoxemic or have low cardiac output does not further endanger tissue oxygenation. Evaluation of individual patient responses to position changes in the clinical setting is encouraged until further studies using more heterogeneous populations can provide more definitive guidance.

Lotzkar, M., & Bottorff, J. L. (2001). An observational study of the development of a nurse-patient relationship. *Clinical Nursing Research*, 10 (3), 275-294.

This article reports on a secondary ethological analysis of videotaped data collected as part of a larger study. The second author, employing the use of two wall-mounted, remotely controlled and monitored video cameras, collected the data. In this report of one nurse-patient relationship, the patient was a 45 year old man with carcinoma of the tongue with lymphatic involvement. The average length of a nurse-patient interaction in this study was 2 minutes; the nurse spent approximately 53 minutes with the patient in each 12-hour shift. The findings illustrate the importance of patient continuity, even when time constraints limit the amount of contact between patient and nurse. Furthermore, the findings support and extend previous studies of the development of a relationship. The importance of trust in fostering patient independence and adherence to nursing suggestions is demonstrated in this account. When assignments are made for continuity of care, whether in the hospital or in the community, the nurse-patient relationship can be facilitated and, thus, be more effective in addressing complex patient care needs.

Halstead, M., & Hull, M. (2001). Struggling with paradoxes: The process of spiritual development in women with cancer. *Oncology Nursing Forum*, 28 (10), 1534-1544.

Using an exploratory, qualitative study, the authors examine the spiritual development of women with cancer within five years of initial therapy. The sample consisted of 10 Caucasian women ages 45-70 who were outpatients in the mid-central and southwestern United States. These women were within 5 years of initial treatment for breast or ovarian cancer or non-Hodgkin's lymphoma. The researchers used two semi-structured interviews with Symbolic Interactionism as the frame of reference and Grounded Theory Methodology. Findings indicated that the women struggled with the paradoxes in three phases of their process consisting of Deciphering the Meaning of Cancer for Me, Realizing Human Limitations, and Learning to Live with Uncertainty. Finding meaning was the process of integrating the previous experience of order and the present sense of disorder into a more mature model of reality. This involved attempting to maintain coherence using old and new ways. Accepting the human limitations involved asking difficult questions and letting go of some control over their lives. Learning to live with uncertainty involved redefining the meaning of the experience, identifying spiritual growth, reintegrating by reconnecting with life, and reshifting priorities as well as facing the possibility of recurrence. With the diagnosis of cancer, spiritual growth occurs over time and is not necessarily related to age. The spiritual experience is individualized and developmental in nature.

Book Review

Warren G. Hawkes, MLS

Lewis, Marjorie Gulla & Barker, Sylvia M. (2001). *The Sinai nurse: The history of nursing at the Mount Sinai Hospital, New York, New York, 1852-2000*. West Kennebunk, ME: Phoenix Publishing.

Rosenberg (1987) in his treatise on the development of America's hospital system talks about the period of 1850-1920 as "a new healing order." Mt. Sinai Hospital was created within the framework of this new order. In 1852 the hospital was founded as the Jews Hospital, a facility that would help address the growing health needs of the increasing number of Jewish immigrants into the New York area. The hospital started with 45 beds. In the mid 1860s the hospital was re-named Mt. Sinai Hospital. Within less than a decade the hospital was relocated to a new facility nearly three times the size. But Lewis and Barker's book is not about the hospital; it is about the nurses, trained and untrained, and their interrelationship with the development of the hospital. Through a series of 10 short chapters, the authors cover the nearly 150-year history of Mt. Sinai. Chapters 1 and 2 cover the period from 1852 to 1903 with a focus on the beginning of the hospital and the creation of the school of nursing, and the initial movement away from the use of untrained nurses and volunteers to a trained nurse staff. Chapter 3 discusses another significant relocation of the hospital to a new uptown site and the creation of a freestanding school of nursing with its own nurses' residence. The "Greener Years," Chapter 4, focuses on the tenure of Elizabeth Greener from 1915-1934, her effect on

the nursing school curriculum, and the evolving role of nurses within the institution. Chapters 5 and 6 review activities for the pre-war, war, and immediate post-war period with an emphasis on Grace Warman, Director of Nursing, 1935-1962. It was an era of curriculum enhancement, war-related shortages of personnel and supplies, and rapid changes in technology, coupled with facility growth. The years 1956 through 1994 are covered by Chapters 7-9 and describe a period of considerable growth for the institution and specialized unit-based services as well as increases in the nursing staff. With this growth also came personnel shortages and labor union activities. The final chapter is written by the current vice-president for nursing and addresses the rapidly changing nursing and healthcare environment of the late 1990s and the shift into the new millennium. A series of appendices provide detailed bibliographical source material, as well as historical information on significant contributions of the graduates of the Mt. Sinai Hospital School of Nursing. This text provides interesting reading on the history of a New York-based institution, its nursing staff and school, and how their changes parallel changes at the national level. What is even more important is to note the role that individuals can play in shaping an institution, a profession, and healthcare delivery.

Rosenberg, C. E. (1987). *The care of strangers: The rise of America's hospital system*. New York: Basic Books

Hawkes is director of the NYSNA library.

CALL FOR PAPERS

The editorial board of the *Journal of the New York State Nurses Association* is seeking papers for publication in 2002.

Fall/Winter 2002: Nursing Research

Focusing on such topics as research utilization, the role of RNs in data collection, how staff nurses can critique a research article, evidence based practice, etc.

Deadline: September 3, 2002

All manuscripts are subject to the peer review process. For author's guidelines, see page 18, www.nysna.org or call 1-800-724-NYRN, Ext. 275.

Send manuscripts to:

The Journal of the New York State Nurses Association
11 Cornell Road, Latham, NY, 12110 or by e-mail: anne.schott@nysna.org

Tracing the Development of Critical Thinking in Baccalaureate Nursing Students

Nora L'Eplattenier, PhD, RN, CS, NPP, HNC

ABSTRACT

A repeated measures design was used to trace 83 baccalaureate students' critical thinking (CT) ability as they progressed in a nursing program. CT was assessed with the Watson-Glaser Critical Thinking Appraisal at four strategic junctures in the curriculum; program entry, mid junior year, beginning of senior year, and program exit. Sixty students (Group One) had been in the program when the study began and were not pretested. Group Two (N=23) was tested at all four junctures. The sample was racially and culturally diverse, predominantly female, and a majority had prior college. Over time, scores tended not to improve, and they were below published norms. Findings are discussed from the perspectives of what constitutes CT in nursing and its measurement, the cultural context of its assessment, and the nature of nursing education and its influence on CT.

In today's rapidly evolving healthcare environment, critical thinking is essential for professional nursing practice and quality client care (Barter, Graves, Phoon, & Corder, 1995; Jacobs, Ott, Sullivan, Ulrich, & Short, 1997; Oermann, 1994). Therefore, contemporary nursing curriculum must be able to lay a foundation of critical thinking.

The purpose of this pilot project was to trace the development of undergraduate students' critical thinking ability during their course of study in a baccalaureate nursing program in an inner-city, private university in the Northeast. The intended use of the data was for program evaluation and partial satisfaction of the National League for Nursing (1992) critical thinking outcome criterion.

What is Critical Thinking?

Definitions of critical thinking describe it as a purposeful, two-dimensional, goal-directed process that is context bound. The cognitive dimension consists of reflective, reasoned thinking, and the affective dimension consists of an inquisitive spirit and open-mindedness toward divergent perspectives (Jacobs et al; 1997; Kintgen-Andrews, 1991; Miller & Babcock, 1996; Norris, 1985; Pless & Clayton, 1993). Watson and Glaser (1980) defined critical thinking as a composite of (1) attitudes of inquiry that involve an ability to recognize the existence of problems and an acceptance of the general need for evidence in support of what is asserted to be true; (2)

knowledge of the nature of valid inferences, abstractions, and generalizations in which the weight or accuracy of different kinds of evidence are logically determined; and (3) skills in employing the above-mentioned attitudes and knowledge. The critical thinker aims to understand phenomena in order to reach a reasoned conclusion, solve a problem, and/or make a decision.

The way in which nurses solve problems and make decisions is derived from their assumptions, knowledge, and experience (Benner, Tanner, & Chesla, 1992; Bethune & Jackling, 1997; Miller & Babcock, 1996; Pless & Clayton, 1993; Tanner, 1993). Critical thinking is integral to the nursing process and to

Nora L'Eplattenier is associate professor at Long Island University, Brooklyn Campus, Brooklyn, New York.

diagnostic and clinical reasoning. Kataoka-Yahiro and Saylor (1994) proposed a model that addresses the structure and process of critical thinking in nursing. The structure includes the essential elements of knowledge, experience, clinical competence, standards, and an inquiring attitude. Without these essential elements, one cannot advance to higher levels of reasoning.

Becoming a mature, critical thinker requires time, structured practice, and feedback (Benner et al., 1992; Goldberger, Clinchy, Belenky, & Tarule, 1987; Jacobs et al., 1997; Tanner, 1993). Critical thinking skill develops in tandem with intellectual and ethical development. According to Perry (1970), individuals first think dualistically, then relativistically, and finally, with commitment. For the *dualistic* thinker, answers to questions are either right or wrong, and authority is always right. The *relativistic* thinker recognizes the diversity of others' perspectives and realizes that alternative and conflicting solutions to complex problems exist. The mature critical thinker examines and weighs alternatives and then makes a *commitment* by choosing actions and beliefs.

Measuring Critical Thinking

In this study, the Watson-Glaser Critical Thinking Appraisal (WGCTA) (Watson & Glaser, 1980) was chosen to measure students' critical thinking ability, because it is valid and reliable and the most widely-used tool to measure critical thinking in nursing. It measures the five reasoning skills that comprise the cognitive dimension of critical thinking: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. The 80-item tool includes problems, statements, and interpretations of data similar to those that people encounter daily at work, in the classroom, or in the media (Watson & Glaser, 1980). Thus, the WGCTA is an objective measurement of general reflective, reasoning ability but does not address the affective dimension of critical inquiry.

Previously published research demonstrates mixed results regarding the impact of nursing education on generic critical thinking (Bauwens & Gerhard, 1987; Berger, 1984; Gross, Takazawa, & Rose, 1987; Kintgen-Andrews, 1988; Miller, 1992; Vaughan-Wrobel, O'Sullivan, & Smith, 1997).

Studies that examined the relationship between critical thinking and clinical judgment demonstrated, at best, that there is a weak, positive correlation between critical thinking and clinical judgment (Brooks & Shepherd, 1990; Shin, 1998) and that clinical experience may impact clinical judgment (Sullivan, 1987).

The mixed findings in nursing research on education and critical thinking and clinical judgment and critical thinking may be related to the fact that the majority of research relies on WGCTA scores, and the WGCTA may be an inappropriate measure of critical thinking in nursing. Furthermore, it is possible that the complex nature of critical thinking in nursing may not lend itself to objective measurement (Pless & Clayton, 1993; Videbeck, 1997a, 1997b).

Method

A repeated measures design was used to test 83 BSN students' critical thinking ability at four strategic junctures in a professional nursing program. The junctures were selected because faculty expected that students' knowledge base, reasoning skills, and/or clinical experience and competence might be significantly augmented at these times. Students also were taking courses in the liberal arts and sciences while they were taking nursing courses.

Time 1: prior to taking nursing courses.

Time 2: at the beginning of the second semester of the second year of the curriculum, following completion of the first medical-surgical nursing and pathophysiology courses.

Time 3: at the beginning of the first semester of the third (and last) year in the nursing program, following completion of the second medical-surgical nursing and pathophysiology courses.

Time 4: at the completion of the nursing program.

Procedure

In Fall 1993, the WGCTA was administered to all nursing students at the Time 1 and Time 2 junctures. Sixty students who were already in the nursing program when the project began (Group One) were not tested at the Time 1 juncture. Twenty three entering students (Group Two) were pretested. Thus, they were tested at all four junctures. The WGCTA was administered to students on orientation day and in selected classes by faculty and staff who were trained to administer the test as described in the manual (Watson & Glaser, 1980). All tests were manually scored by a trained staff member.

Instrument

The WGCTA, forms A and B, were alternately administered: Form A at times 1 and 3 and Form B at times 2 and 4. Scores are reported as the total number of correct items (0-80), with higher scores indicating greater critical thinking performance. Watson and Glaser (1980) reported split-half reliability coefficients from .69 to .85 and a .73 correlation between two administrations of the test that reflected stability responses over time. Alternate form (forms A and B) reliability was reported at .75. Construct validity was determined by use of the test in instructional settings designed to improve critical thinking and by comparison with other mental ability and comprehensive tests (Watson & Glaser, 1980).

Sample

Four students were eliminated from the study because they did not take the WGCTA at selected testing times. Thus data were incomplete. There were 77 females and 6 males. Students ranged in age from 22 to 51 years with an average age of 30.5. Approximately 58% of the students were Black, 22% Caucasian, 16% Hispanic, and 5% Asian. Thirty nine percent (39%) spoke English as a second language, and 81% had prior college education. Group One subjects, on average, were older (32 vs. 29 years), had a greater proportion of females (95% vs. 87%), a larger percentage of subjects who spoke English as a second language, and more prior college (85% vs. 70%) than subjects in Group Two.

Data Analysis

Descriptive statistics were computed for the total sample at each time point so that scores could be compared with previously published norms. Descriptive statistics were also computed for each study cohort to determine whether and how they differed in the development of critical thinking skills through their course of study. T-tests were used to determine if the groups' mean scores differed at the testing points in the curriculum. Trend analyses were computed for the total sample and for each cohort using multivariate analysis of variance (MANOVA) to identify if and how scores changed as students progressed through nursing course work. Scores were further examined to determine if students with below-average scores exhibited improvement in critical thinking skills over time.

Table 1 Means of Raw Scores on WGCTA for Students at Various Educational Levels

Level of Education	Mean	SD	N
High School Grade			
Ninth	42.6	8.7	1676
Tenth	45.8	9.7	1950
Eleventh	48.1	9.9	1844
Twelfth	48.5	9.9	1636
College			
Community	51.9	9.6	388
Freshman/4 year	53.8	9.2	824
Upper division/4 year	59.2	8.4	417
BSN Students			
South	56.0	7.3	266
West	56.4	9.1	182
Midwest	59.8	7.5	203

(Watson & Glaser, 1980)

Table 2 Means of Raw Scores on WGCTA for Current Sample

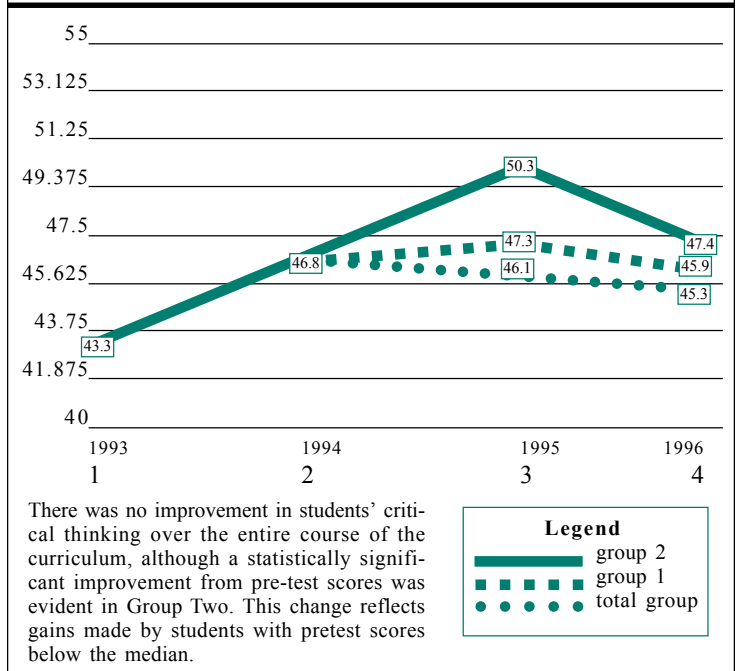
	Mean	SD	N
Group One	45.3	8.7	60
Group Two	47.4	11.9	23

Findings

Normative data demonstrate that WGCTA scores consistently improve with high school and college education (Table 1). The students' scores in this study (Table 2) were somewhat lower than published norms. They did not change as students progressed through the curriculum, $F(81,2) = 1.07, p = .35$ (see Table 3). Since pretest baseline scores are not available for Group One, we cannot say whether both groups had similar scores before taking any nursing courses, but there were not significant differences between groups in time 2 or time 4 (respectively, $F(82,1) = .153, p = .70$ and $F(81,1) = 0.784, p = .38$). That is, both groups had similar critical thinking scores after the first medical-surgical and pathophysiology courses and when they completed the nursing program.

Trend analysis suggests that both groups similarly developed critical thinking from the first common testing point (after completion of the first medical-surgical and pathophysiology courses): The mean score for Group One did not change between time 2 (46.8) and time 4 (45.3), $F(57,2) = .89, p = .42$. While Group Two's time 4 mean score (47.4) was higher than the mean pretest score at time 1 (43.3),

Figure 1 Critical Thinking Development for Total Sample and Cohorts



$F(20,3) = 7.3648, p = .002$, it was not higher than the mean score at time 2 (47). In fact, Group Two's mean score actually dropped between time 3 (50.3) and time 4 (47.4), after improving from time 1 (43.3) to time 3 (50.3), a statistically significant quadratic trend, $F(21,2) = 4.8651, p = .02$ (Figure 1 & Table 3).

In an attempt to explain this quadratic trend, we examined individuals' scores over time for students in Group Two. The mean change in Group Two students' scores did not differ significantly from year to year, but those students whose scores improved during the first year of nursing courses ($N = 11; M = 36.8, SD = 7.1$) had substantially lower pretest scores than those whose scores declined ($N = 8; M = 51, SD = 11.5$). However, this improvement did not continue in subsequent years. Notably, the pretest score itself correlated to a declining score after the first year ($r = .76, p = .03$).

Quartile comparisons showed that students whose pretests scores were below the median ($N = 22$) demonstrated a linear improvement ($p = .000$), but this trend was not apparent when pretest scores were eliminated from the analysis. The latter trend was consistent across the entire sample: In fact, while students with scores below the median at time 2 showed no significant improvement over time, scores above the median at time 2 ($M = 53.9$) dropped significantly ($p = .01$) by time 4 ($M = 50.6$).

Table 3 Mean/Standard Deviation/Range of Scores for Total Sample and Cohorts at Each Testing

	Total Sample N=83		Group 1 N=60		Group 2 N=23	
	M(SD)	Range	M(SD)	Range	M(SD)	Range
Time 1	43.3 (10.5)	21-71	—	—	43.3 (10.5)	21-71
Time 2	46.8 (8.7)	19-68	46.8 (9.3)	19-68	47.0 (7.3)	34-58
Time 3	47.3 (9.1)	25-74	46.1 (9.4)	25-74	50.3 (7.5)	36-68
Time 4	45.9 (9.6)	27-72	45.3 (8.7)	33-72	47.4 (11.9)	27-68

On average, critical thinking scores tended not to improve through the nursing curriculum.

Discussion

The aim of this study was to trace students' critical thinking ability as they progressed through a baccalaureate nursing program. The key findings are: (1) on average, scores tended not to improve through the nursing curriculum, i.e. they were essentially the same at all data points; (2) students who showed an improvement from pre-nursing scores after their first year of nursing courses were likely to have had lower pre-test scores and (3) their scores tended not to continue to improve as they progressed further through the curriculum; and (4) overall, this sample's scores were below published norms for other college students including baccalaureate nursing students (Watson & Glaser, 1980).

Of course, generalizations from these findings are limited by the one-school sampling frame as well as the size and selection of the sample. Trends must be interpreted carefully, because the changes may be minor fluctuations. Likewise, the pattern of variability in the changes over each period needs to be explored with a larger sample. These scores represent total scores. It would be useful to examine whether particular subscales are responsible for the relatively low scores and/or the relative lack of improvement over time. If so, these data could have implications for teaching emphases.

The relatively low critical thinking scores, particularly given the number of students with previous college education, would typically have implications for recruitment and/or admission criteria. But the mission of the university from which this sample was drawn is to accept students from all ethnic, socioeconomic, and educational backgrounds who desire a college education and to channel those students with academic deficiencies into remedial programs. Nevertheless, it would seem prudent to include baseline objective assessment of critical thinking skills on admission both for channeling ap-

propriate students into remediation, development, and enrichment programs and for program evaluation as well.

The cultural context of the assessment must also be considered. It may be that dimensions of critical thinking are not merely aspects of intellectual development but also represent cultural differences in how people learn to think about phenomena and solve problems. Shin (1998) used a translated version of the WGCTA to assess Korean nursing students' critical thinking abilities, and their mean scores (ADN - 41.98 and BSN - 47.22) were comparable to the mean pre and post-test scores of the current sample, a culturally diverse group (43.3 and 47.4 respectively). In addition, it is possible that the scores reflect English language skills and thus the WGCTA may not be validly used to evaluate students when English is not the primary language.

Finally, as Kataoka-Yahiro and Saylor (1994) have indicated, critical thinking in nursing is conceptually greater than problem-solving. The critically thinking nurse must use discipline-specific knowledge in context. Hence, the WGCTA may not be a useful measure of the critical thinking skills required to make nursing judgments (diagnoses, care planning, and evaluation).

Published research demonstrates mixed results regarding the impact of nursing education on students' critical thinking abilities over time. Studies that supported a positive relationship between nursing education and students' critical thinking had weak designs, so the results are generalized with caution (Berger, 1984; Gross, Takazawa, & Rose, 1987; Miller, 1992). Those that failed to support a positive relationship between nursing education and critical thinking also had weak designs, and the investigators questioned the validity of the WGCTA as a measure of critical thinking in nursing (Bauwens & Gerhard, 1987; Kintgen-Andrews, 1988; Vaughan-Wrobel et al., 1997). The latter studies did show that the WGCTA may be a useful pre-

dictor of success in nursing education (Bauwens & Gerhard, 1987) and that baccalaureate nursing students improved in making inferences as well as scored significantly higher in overall critical thinking than associate degree students (Kintgen-Andrews, 1988).

What do the scores mean vis-a-vis critical thinking needed for nursing practice? Does nursing education have a weak and inconsistent influence on the development of critical thinking, or actually reduce critical thinking? Does critical thinking matter if it is not related to clinical judgment - the heart and art of nursing practice? Does the WGCTA actually measure what is labeled critical thinking in nursing? The WGCTA is only an objective measure of reflective, reasoning ability, the cognitive dimension of critical thinking. It neither directly measures attitudes of inquiry nor addresses the context of nursing practice. The problem with the measurement of critical thinking in nursing so far is that it generally has conceptualized it as a score on a broad, objective test in concert with course-specific academic achievement (Jacobs et al, 1997; Pless & Clayton, 1993; Videbeck, 1997b). We first have to operationalize and conceptualize critical thinking taking into account (a) women's way of knowing, and (b) expert nurses' use of knowledge articulating critical thinking through clinical judgment. Then the concept can be used as a springboard for expectations of graduates, curriculum and course objectives, educational strategies, terminal program outcomes and their measurement, and nursing research linking education, practice, and client outcomes (Pless & Clayton, 1993; Videbeck, 1997a, 1997b).

The literature clearly indicates that nursing education must focus on the process and not the content of nursing. Students need to be more self-directing in learning the content of nursing, and nurse educators must emphasize *how* to apply the knowledge to clinical decision making. But the lecture remains the most prevalent teaching format in the classroom, despite evidence that supports the use

of varied classroom strategies and collaborative student learning techniques to foster critical thinking (Miller, 1992; Videbeck, 1997a). In nursing programs composed of students from ethnic and gender minorities, who are foreign born, with uneven, unpredictable, and in many cases disadvantaged academic preparation (such as the one from which the current sample was drawn), DeSimone (1994) suggested implementing Integrated Skills Reinforcement. Using course content as the vehicle of exchange, the teacher promotes discussion, collaboration, and co-inquiry among students while simultaneously reinforcing student writing, reading, speaking, and listening skills. According to Kintgen-Andrews (1991), it is not surprising that there is a lack of strong support for the influence of nursing education on generic critical thinking, as familiarity with the knowledge base affects the process of critical thinking, and nursing students are mere novices in this information maze.

Education Strategies to Promote Critical Thinking

Although some educators agree that the majority of college students think at the dualistic level (Bowers & McCarthy, 1993; DeSimone, 1994; Kataoka-Yahiro & Saylor, 1994), others believe that many students begin college with a deep learning approach that ultimately is reduced to surface learning, because courses are poorly organized, laden with content, and characterized by threatening and anxiety-provoking assessment and evaluation methods (Loving, 1993; McKay, 1995). Both perspectives may be true. Nurse educators, therefore, are challenged to: (1) assess students' critical thinking abilities and learning styles before implementing a program of instruction, and (2) design and implement classroom and clinical teaching-learning approaches that facilitate intellectual growth from dualistic to committed thinking and from surface to deeper learning. Teachers must create a conducive learning environment, model critical thinking, and use strategies that foster the application of critical thinking (Case, 1994; DeSimone, 1994; Krichbaum, 1994; Sandor, Clark, Campbell, Rains, & Cascio, 1998; Sedlak, 1997; Snyder, 1993). A conducive learning atmosphere must be interactive, supportive, and safe for students to dialogue, problem-solve, reflect, reason, and question. Teachers must

Teachers must create a conducive learning environment, model critical thinking, and use strategies that foster the application of critical thinking.

clarify concepts, think-out-loud, and walk students through the reasoning skills they will need in order to process the massive amounts of available data and information available to them to provide quality client care. They have to get "inside" students' heads to understand how they think and process information. And they must expose students to a variety of problem-solving styles in the form of experiences with expert bedside/community practitioners and nurse leaders/managers. Teaching-learning strategies that foster students' critical thinking abilities include debate, writing activities, guided design, case study, narrative pedagogy, and testing (Field, 1992; Lashley & Wittstadt, 1993; Nehls, 1995; Pond, Bradshaw, & Turner, 1991; Sandor et al, 1998.)

Conclusion

The outcome of this study indicates no change in students' critical thinking ability as they progressed through a professional nursing program. In the process, however, numerous unanswered questions emerged about critical thinking in nursing and its measurement (especially in a culturally diverse population where English is a second language), the nature of nursing education and its impact on critical thinking, and the link between critical thinking and clinical judgment. These are problems to be addressed and solved in future research. Hickman (1993) has suggested that the problem with critical thinking and nursing is most likely due to the unavailability of appropriate instruments to measure critical thinking. The problem seems to be even more basic. Nursing needs to determine how critical thinking is articulated in the practice of all nurses at all levels from student, to novice, through expert. We need to observe it, feel it, and describe it, and perhaps, then we can discover and implement an appropriate methodology to measure and evaluate it.

Acknowledgements

The author would like to thank JoAnne Bennett, PhD, RN, of the New York City Department of Health Research Division for her assistance in analyzing the data related to this study.

References on page 32.

REFERENCES

- Bartar, M., Graves, J., Phoon, J., & Corder, K. (1995). Changing health care delivery structure: Opportunities for nursing practice and administration. *Nursing Administration Quarterly*, 19 (3), 74-80.
- Bauwens, E. & Gerhard, G. (1987). The use of the Watson-Glaser Critical Thinking Appraisal to predict success in a baccalaureate nursing program. *Journal of Nursing Education*, 26, 278-281.
- Benner, P., Tanner, C., & Chesla, C. (1992). From beginner to expert: Gaining a differentiated clinical world in critical care nursing. *Advances in Nursing Science*, 14 (3), 13-28.
- Berger, M.C. (1984). Critical thinking ability and nursing students. *Journal of Nursing Education*, 23, 306-308.
- Bethune, E. & Jackling, N. (1997). Critical thinking skills: The role of prior experience. *Journal of Advanced Nursing*, 26, 1005-1012.
- Bowers, B. & McCarthy, D. (1993). Developing analytic thinking skills in early undergraduate education. *Journal of Nursing Education*, 32, 107-113.
- Brooks, K.L. & Shepherd, J.M. (1990). The relationship between clinical decision-making skills in nursing and general critical thinking abilities of senior nursing students in four types of nursing programs. *Journal of Nursing Education*, 29, 391-399.
- Case, B. (1994). Walking around the elephant: A critical-thinking strategy for decision making. *The Journal of Continuing Education in Nursing*, 25 (3), 101-109.
- DeSimone, B.B. (1994). Reinforcing communication skills while registered nurses simultaneously learn course content: A response to learning needs. *Journal of Professional Nursing* 10, 164-176.
- Field, E. (1992). Use of debate format to facilitate problem-solving skills and critical thinking. *Journal of Physical Therapy Education*, 6(1), 3-5.
- Goldberger, N.R., Clinchy, B.M., Belenky, M.F., & Tarule, J.M. (1987). Women's way of knowing: On gaining a voice. In P. Shaver & C. Hendrick (Eds.), *Sex and gender: Review of personality and social psychology* (pp. 201-227). Newbury Park, CA: Sage Publications.
- Gross, Y.T., Takazawa, E.S., & Rose, C.L. (1987). Critical thinking and nursing education. *Journal of Nursing Education*, 26, 317-323.
- Hickman, J.S. (1993). A critical assessment of critical thinking in nursing education. *Holistic Nursing Practice*, 7 (3), 36-47.
- Jacobs, P., Ott, B., Sullivan, B., Ulrich, Y., & Short, L. (1997). An approach to defining and operationalizing critical thinking. *Journal of Nursing Education*, 36(1), 19-22.
- Kataoka-Yahiro, M., & Saylor, C. (1994). A critical thinking model for nursing judgment. *Journal of Nursing Education*, 33, 351-356.
- Kintgen-Andrews, J. (1991). Critical thinking and nursing education: Perplexities and insights. *Journal of Nursing Education*, 30, 152-157.
- Kintgen-Andrews, J. (1988). Development of critical thinking: Career ladder PN and AD nursing students, prehealth science freshman, generic baccalaureate nursing students. *Resources in Education*, 24, (1). (ERIC Document No. 297-153).
- Krichbaum, K. (1994). Clinical teaching effectiveness described in relation to learning outcomes of baccalaureate nursing students. *Journal of Nursing Education*, 33, 306-316.
- Lashley, M. & Wittstadt, R. (1993). Writing across the curriculum: An integrated curricular approach to developing critical thinking through writing. *Journal of Nursing Education*, 32, 422-424.
- Loving, G.L. (1993). Competence validation and cognitive flexibility: A theoretical model grounded in nursing education. *Journal of Nursing Education*, 32, 415-421.
- McKay, J. (1995). Developing curriculum for independent learning. *Radiologic Technology*, 66 (2), 113-118.
- Miller, M.A. (1992). Outcomes evaluation: Measuring critical thinking. *Journal of Advanced Nursing*, 17, 1401-1407.
- Miller, M.A. & Babcock, D.E. (1996). *Critical thinking applied to nursing*. St. Louis: Mosby.
- National League for Nursing. (1992). *Criteria for the evaluation of baccalaureate and higher degree programs in nursing*. New York: Author.
- Nehls, N. (1995). Narrative pedagogy: Rethinking nursing education. *Journal of Nursing Education*, 34, 204-210.
- Norris, S. (May, 1985). Synthesis of research on critical thinking. *Educational Leadership*, 40-45.
- Oermann, M.H. (1994). Professional nursing education in the future: Changes and challenges. *JOGNN*, 23 (2), 153-159.
- Perry, W.G. (1970). *Forms of intellectual and ethical development in the college years: A scheme*. New York: Holt, Rinehart, and Winston.
- Pless, B.S. & Clayton, G.M. (1993). Clarifying the concept of critical thinking in nursing. *Journal of Nursing Education*, 32, 425-428.
- Pond, E.F., Bradshaw, M.J., & Turner, S.L. (1991). Teaching strategies for critical thinking. *Nurse Educator*, 16, (6), 18-22.
- Sandor, M.K., Clark, M., Campbell, D., Rains, A.P. & Cascio, R. (1998). Evaluating critical thinking skills in a scenario-based community health course. *Journal of Community Health Nursing*, 15, 21-29.
- Sedlak, C.A. (1997). Critical thinking of beginning baccalaureate nursing students during the first clinical nursing course. *Journal of Nursing Education*, 36, 11-18.
- Shin, K.R. (1998). Critical thinking ability and clinical decision-making skills among senior nursing students in associate degree and baccalaureate programs in Korea. *Journal of Advanced Nursing*, 27, 414-418.
- Snyder, M. (1993). Critical thinking: A foundation for consumer-focused care. *The Journal of Continuing Education in Nursing*, 24, 206-210.
- Sullivan, E.J. (1987). Critical thinking, creativity, clinical performance, and achievement in RN students. *Nurse Educator*, 12 (2), 12-16.
- Tanner, C.A. (1993). More thinking about critical thinking and clinical decision making. *Journal of Nursing Education*, 32, 387.
- Vaughan-Wrobel, B.C., O'Sullivan, P., & Smith, L. (1997). Evaluation critical thinking skills of baccalaureate nursing students. *Journal of Nursing Education*, 36, 485-488.
- Videbeck, S.L. (1997a). Critical thinking: A model. *Journal of Nursing Education*, 36, 23-28.
- Videbeck, S.L. (1997b). Critical thinking: Prevailing practice in baccalaureate schools of nursing. *Journal of Nursing Education*, 36, 5-10.
- Watson, G. & Glaser, E.M. (1980). *Watson-Glaser Critical Thinking Appraisal manual*. San Antonio: The Psychological Corporation.

New York State Nurses Association
11 Cornell Road
Latham, New York 12110-1499