Outcomes Of An Educational Program On The Knowledge Level Of Shaken Baby Syndrome Among Adolescent Babysitters

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Mississippi University for Women

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OUTCOMES OF AN EDUCATIONAL PROGRAM ON THE KNOWLEDGE LEVEL OF SHAKEN BABY SYNDROME AMONG ADOLESCENT BABYSITTERS

by

MICKEY WHITE PARKS

A Thesis
Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Nursing in the Division of Nursing Mississippi University for Women

COLUMBUS, MISSISSIPPI

August 1998
Outcomes of an Educational Program on the Knowledge Level of Shaken Baby Syndrome Among Adolescent Babysitters

by

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Abstract

Shaken baby syndrome is a form of child abuse that exhibits no external sign of injury. A recent study by Starling, Holden, and Jenny (1995) indicated that approximately 30% of the perpetrators were nonparental child caregivers. The purpose of this study was to determine if there were differences in the knowledge level of shaken baby syndrome among adolescent babysitters before and after an educational intervention. The nursing theory, Modeling and Role-Modeling, was used to guide this study. Data were collected from a convenience and network sample consisting of 21 adolescents aged 12 to 17 years who reside in suburban north central Alabama. Participants answered the Shaken Baby Syndrome Questionnaire as a pretest. An educational intervention was provided on shaken baby syndrome and development of infants and toddlers. The Shaken Baby Syndrome Questionnaire was utilized as a posttest 3 weeks later. Data analysis was based on three categories in the Shaken Baby Syndrome Questionnaire: knowledge of shaken baby syndrome, areas of
concern regarding shaken baby syndrome, and development of the infant and toddler. Data analysis included t test, frequency distributions, and measures of central tendency. Data revealed an improvement in general knowledge of shaken baby syndrome and a decrease in incorrect responses in areas of concern. Participants did not decrease the number of incorrect responses to the question dealing with developmental issues. Findings from this study suggested that general knowledge was statistically significant (p = .006) with educational intervention. Advanced practice nurses may use the results of this study to guide educational programs directed toward adolescent babysitters, day-care workers, and parents. Further research with a larger, more diverse sample is indicated.
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Many people provided support and encouragement throughout this research effort. I would like to take this opportunity to thank each one.

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And to my father who died 10 years before the culmination of my educational endeavors, I would like to say “I love you,” and thank you for believing.
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Child abuse is a pervasive form of injury inflicted on the smallest victims. Over 3 million abused and neglected children were reported to child protective service agencies in the United States in 1997. Of these substantiated cases, approximately 1,185 died as a result of the abuse of neglect (National Committee to Prevent Child Abuse, 1997). Physical abuse is the most frequent cause of head injury in infants accounting for 64% of all head injuries in children younger than 1 year of age (Billmire & Myers, 1985). A form of child abuse recently recognized in which the child exhibits no external signs of injury has been termed shaken baby syndrome (Coody, Brown, Montgomery, Flynn, & Yetman, 1994). No accurate information was identified which provides the actual number each year for victims of shaken baby syndrome. Therefore, statistics regarding shaken baby syndrome are not known. Shaken baby syndrome, a form of abuse, in the past was misdiagnosed because of the limitations of
diagnostic equipment. Another reason for misdiagnosing is subtle presentation of symptoms, which include feeding problems, irritability, and fatigue. Inaccurate information provided by the caregiver of victim regarding the nature of the injury often leads to misdiagnosis of the syndrome. An inaccurate diagnosis may result in the potential death or permanent disability of the child. Subsequent injury to the child may result in severe, even fatal injuries, because the caretaker may continue to shake the child.

Establishment of the Problem

Shaken baby syndrome was first described in 1972 by Caffey and was then called whiplash shaken infant syndrome due to the vigorous shaking of the infant’s head back and forth producing whiplash type injuries. The infant’s neck is not strong enough to control the head during the shaking, and the forceful movement of the head causes the brain to bounce off the skull wall. The resulting consequences of intracranial bleeding and intraocular hemorrhage make up the full definition of shaken baby syndrome. The intracranial bleeding can result in death or permanent neurologic disability, and intraocular hemorrhage can result in blindness. Data collection by
State agencies has been initiated because more health care providers are now familiar with the presentation of victims with shaken baby syndrome. In addition, diagnostic tests, such as computerized tomography (CT) and magnetic resonance imagery (MRI), better identify the intracranial abnormalities which occur in abuse (Showers, 1992).

The familiarity with the presentation of symptoms as well as the advances in radiography have enabled researchers to look at long-term outcomes of the victims of shaken baby syndrome. Duhaime, Christian, Moss, and Seidl (1996) examined the outcomes of 14 survivors of the syndrome. Duhaime, Christian, Moss, and Seidl (1996) examined the outcomes of 14 survivors of the syndrome. The survivors' disabilities at the time the study was conducted ranged from severely retarded and blind with seizure disorders to learning disabled. One half of the survivors in the study were severely disabled. The average age of the victims at the time of injury was 6.4 months. Caffey (1972) speculated that many children entering school and found to have learning disabilities could be survivors of shaken baby syndrome.

Perpetrators of shaken baby syndrome are usually male and usually the biological father of the victim (Starling,
Holden, & Jenny, 1995). Approximately 30% of the perpetrators were identified as babysitters. The latter finding is especially significant due to the number of parents working outside the home and the increased need for nonparental child care. The identification of the perpetrator and the relationship to the victim are valuable information in the prevention of shaken baby syndrome. Incidents of shaken baby syndrome were identified in the Southeastern United States in 1997 and 1998. In Birmingham, Alabama, a 3-month-old infant, pronounced dead on arrival at a hospital, was the victim of shaken baby syndrome by a stepparent (Meadows & Walsh, 1997). Lafayette, Louisiana, highlighted four episodes of shaken baby syndrome in a supplement to the local paper in early 1998. Alleged perpetrators ranged from young biological parents to nonparental child care providers (Turk, 1998). Very recently, a case of shaken baby syndrome made national news when an 8-month-old infant was shaken by an 18-year-old nonparental child care provider. The child care provider was found guilty of manslaughter (Salvatore, 1997).

A review of literature identified no research that focused on prevention efforts. Starling et al. (1995)
stated a recommendation that prevention efforts should be expanded since the majority of preventive efforts target young expectant single mothers. Babysitters accounted for a large number of assailants in shaken baby syndrome. Thirty percent of the perpetrators identified were babysitters. Of the identified assailants, 3.9% were male babysitters and 17.3% were female babysitters. One recommendation of the study was the use of babysitter education as a focus of prevention, especially because of the numerous two-parent working homes and the need for nonparental child care. Babysitters, therefore, should also be included in the prevention efforts as a form of primary prevention since these babysitters may someday become parents. Many perpetrators report no intention of harming the child, rather that the shaking was done in an effort to calm the crying baby, or because of caretaker frustration with the crying. The perpetrators also report no prior knowledge that shaking an infant could result in serious injury or any type of injury (Showers, 1992). Educational efforts to increase knowledge level could lead to prevention of some cases of this syndrome.
Significance to Nursing

The nurse practitioner should have an instrumental role in the different levels of prevention in relation to shaken baby syndrome. Primary prevention for the nurse practitioner may include education of child care providers in the community setting. If education occurs prior to the identification of a problem, the occurrence of the syndrome may be prevented. Focusing on babysitter education in the adolescent population may aid in prevention of shaken baby syndrome when adolescents later become parents.

The nurse practitioner should be more involved in research efforts, which could lead to potential treatment modalities and prevention of the syndrome. The outcome of this research should be expanded in further studies. Continued research which emphasizes an intervention based on prevention and outcomes of prevention should be pursued.

Education regarding shaken baby syndrome and prevention should be included in the curricula in schools of nursing. The increased awareness of the syndrome would allow for more expedient recognition of incidences of shaken baby syndrome, and perhaps individuals and groups
at risk for engaging in the maladaptive behavior. This research has added to the body of nursing knowledge regarding a discrete aspect of child abuse.

**Conceptual Framework**

Modeling and Role-Modeling developed by Erickson, Tomlin, and Swain (1983) was the conceptual framework utilized to guide this study. The theory was developed by synthesizing the works of Erik Erikson, Jean Piaget, George Engel, and Hans Selye who individually looked at psychological, cognitive, and biological levels of development (Erickson et al., 1983).

The concept of Modeling is defined as the process used by the nurse to develop a picture of the client’s unique world (Erickson et al., 1983). Modeling occurs by gathering information based on the individual’s or group’s model of the world. A model of the world is based on perceptions of life, situations, communication modalities, feelings, actions, and reactions (Erickson et al., 1983). For the purpose of this research, modeling occurred through data collection in the form of a pretest and a posttest, conducted with a group of adolescents who babysit. No expectations regarding prior knowledge of the syndrome were verbalized, and the testing occurred in an
informal setting to decrease adolescent apprehension regarding testing. Role-modeling was accomplished when the nurse utilized data obtained during the modeling process to guide the educational intervention. Once modeling of the client’s world occurred (knowledge level), the educational intervention was implemented in an attempt to role model a healthier and more comprehensive world for the client, one in which shaken baby syndrome can be averted.

An Adaptation Potential Assessment Model (APAM) was incorporated into Modeling and Role-Modeling and was included in the prevention aspect of the research. Erickson et al. (1983) synthesized the work of Selye’s adaptation syndrome and Engel’s response to stressors in an effort to identify a person’s ability to cope based on mobilization of internal resources known as self-care resources. Three states were developed in the model as they relate to coping, which are identified as arousal, equilibrium, and impoverishment. Arousal is a stress state, which will either activate the person’s ability to cope adaptively or maladaptively, based on individual equilibrium. The lack of any type of coping skills is the state known as impoverishment. Equilibrium is the
nonstress state of the APAM and involves both adaptive and maladaptive coping. Tips on handling the stressors associated with child care, particularly when the child cries, were incorporated so that the adolescent babysitters can draw on adaptive coping resources to maintain equilibrium, as opposed to engaging in the maladaptive behavior of shaking.

A lack of available resources that would aid in maladaptive coping is referred to as impoverishment. Education allowed the individual to acknowledge shaken baby syndrome and the associated triggers, thereby preventing impoverishment because coping resources were no longer deficient.

Assumptions

This study was based on the following assumptions:

1. Adolescents are capable of learning.
2. Learning is a phenomenon which is measurable.
3. Role-modeling of healthy behaviors can promote adaptive coping.

Purpose of the Study

The purpose of the study was to determine if the knowledge level of shaken baby syndrome in an adolescent
population could be increased utilizing an educational intervention. Information obtained in this study can be used in the primary care setting by health care providers as a basis for planning community education programs aimed at prevention of shaken baby syndrome.

Statement of the Problem

Identification of victims of shaken baby syndrome is now possible through use of radiographic technology; however, identification of potential perpetrators is difficult. Prevention of shaken baby syndrome is the only way to decrease the number of victims.

Knowledge of shaken baby syndrome and the associated triggers for shaking a baby are known to be important in the prevention of shaken baby syndrome. Increasing the knowledge level of babysitters could lead to primary prevention of the syndrome. No research was identified in the literature that addressed the relationship between increased knowledge of the shaken baby syndrome and prevention of the adolescent population as perpetrators. Therefore, the problem which was addressed in this study was ascertaining the knowledge level of shaken baby syndrome among adolescents who babysit.
Research Questions

The research questions for this study were:

1. What is the general knowledge level of shaken baby syndrome among adolescent babysitters prior to an educational intervention?

2. What is the general knowledge level of shaken baby syndrome among adolescent babysitters after an educational intervention?

3. What is the knowledge level of shaken baby syndrome in areas of concern among adolescent babysitters prior to an educational intervention?

4. What is the knowledge level of shaken baby syndrome in areas of concern among adolescent babysitters after an educational intervention?

5. What is the knowledge level of the development of infants and toddlers among adolescent babysitters prior an educational intervention?

6. What is the knowledge level of the development of infants and toddlers among adolescent babysitters after an educational intervention?

Hypothesis

The hypothesis identified for this study was the following: There will be no difference in adolescent
babysitters’ knowledge of shaken baby syndrome before and after an educational intervention.

Definition of Terms

The following terms have been defined, both theoretically and operationally, for this research:

**General knowledge level:** "acquaintance with facts, truths, or principles, as from study or investigation" (Random House Dictionary of the English Language, 1996, p. 1064) as related to the concept of shaken baby syndrome. **Operationally:** ascertainment of awareness of facts about shaken baby syndrome obtained from items 3 and 9, and total scores on the Shaken Baby Syndrome Questionnaire constructed for this study.

**Shaken baby syndrome:** "... involves vigorous manual shaking of infants who are being held by the extremities or the shoulders, with whip-lash induced intracranial and intraocular bleeding, but with no external signs of head trauma" (Coody et al., 1994, p. 50). **Operationally:** shaking of the infant with such force that injury, permanent disability, or death results.

**Adolescent babysitters:** "persons presently in the transitional period between puberty and adulthood in human development terminating legally when at the age of

Educational intervention: “act or process of imparting or acquiring general knowledge; act or process of acquiring particular knowledge or skills; the result produced by instruction, training or study” (Webster’s American Family Dictionary, 1998, p. 300). Operationally: teaching plan that focuses on shaken baby syndrome which was geared toward adolescent babysitters. The plan included a lecture, videotape, and question-and-answer period.

Areas of concern: aspects of the Shaken Baby Syndrome Questionnaire that may indicate a potential for maladaptive coping with frustrating situations while babysitting. Operationally: ascertainment of specific knowledge of shaken baby syndrome obtained from items 1, 2, 4, 5, 7, and 8 and total scores on the Shaken Baby Syndrome Questionnaire constructed for this study.
Development: “to go through a natural process of growth, differentiation or evolution” *(Merriam Webster Dictionary, 1994, p. 213).* Operationally: ascertainment of knowledge of development on infants and toddlers obtained from item 6 and total scores on the Shaken Baby Syndrome Questionnaire constructed for this study.

Summary

Current research regarding shaken baby syndrome and the phenomena of prevention and education were discussed in this chapter. The current study is clearly linked to the present research which focused on the need for prevention at early levels. Chapter III describes the research design. Data analysis and outcomes of the current study are presented in Chapter IV. Findings and conclusions are addressed in Chapter V with attention to implications for future research and the impact on nursing.
Chapter II
Review of the Literature

Shaken baby syndrome accounts for a form of child abuse that is often difficult to address due to the lack of presenting external injuries. The hallmark of the syndrome is ocular hemorrhage or intracranial hemorrhages that are seen only with the aid of computerized tomography (CT). The perpetrators of the abuse, usually male, frequently report no intent to harm the child. A review of literature identified diagnosis of shaken baby syndrome as a consequence of shaking alone, long-term effects of survivors of the syndrome, usual perpetrators, intervention of education as a strategy for prevention, and teaching strategies that were most effective.

Controversy surrounds the ability to injure a child from shaking alone. Gilliland and Folberg (1996) conducted research in an effort to ascertain whether an infant could receive fatal or severe injury from shaking alone. This study was conducted in response to a review of previous research that indicated shaking alone was a questionable
cause of severe or fatal injury. The problem statement was "is shaking without direct head trauma sufficient to inflict lethal injury on an infant" (Gilliland & Folberg, 1996, p. 114). The independent variable was shaking alone, and the dependent variable was fatal injury. In order to define deaths, criteria were established including "finger marks or rib fractures; subdural and/or subarachnoid hemorrhage; and a history of vigorous shaking" (Gilliland & Folberg, 1996, p. 114). For a death to meet the definition of shaking death, there had to be an absence of skull or scalp injuries and the presence of two or more of the aforementioned criteria. Gilliland and Folberg (1996) utilized a prospective, postmortem design. Eighty cases were identified as a subset from a previous study involving 169 child deaths.

Instrumentation included data compilation to give actual numbers to types of ocular hemorrhages discovered. The same data related to ocular hemorrhage was subjected to further statistical scrutiny utilizing the Greenfield, Robins, and Yates-corrected for chi-squares. The chi-square test evaluated the significance of the data in relation to the cause and type of ocular hemorrhage. The Yates-corrected tests the validity of the scores achieved
with the chi square. A probability ranking also was determined and reported. The Greenfield, Robins determined relative risk and established confidence limits within 95%.

The researchers found of the 80 cases examined, 9 (11.3%) met the definition of death by shaking alone; 30 (37.5%) met the criteria of death by shaking and impact trauma; and 40 (57.3%) died as a result of impact injuries without meeting two of the established criteria. Gilliland and Folberg (1996) further determined types of ocular hemorrhages in relation to the methods of death. Shaking or shaking with blunt trauma produced more injuries to the eye than with impact injuries alone. The relative risk was the greatest for retinal and peripheral retinal hemorrhages and was high for posterior scleral hemorrhages. The researchers concluded that ocular hemorrhages were good indicators of child abuse and recommended routine ophthalmoscopic examinations be conducted to screen for these injuries while the child is still alive.

Gilliland and Folberg’s (1996) study was important to the current research as it supported the theory that shaking alone can cause severe, even fatal, injuries to an
infant. Although the number of victims who died from shaking alone were relatively small, these deaths do support the theory that child abuse can occur without visible means of injury. Prevention can occur only with intervention into the abuse process prior to the onset or with identification of signs such as ocular hemorrhage without other external trauma or reported accidents.

Shaken baby syndrome as discussed previously was linked to death of the victims; however, Duhaime et al. (1996) conducted research to examine the long-term outcomes of the survivors. The problem identified by the researchers was the lack of information regarding the consequences of these survivors, particularly those who had not presented with the most severe of symptoms. The independent variable was the severity of inflicted injury; the dependent variable was the consequences of the injury for the infant.

The research was a nonprobability, retrospective case study utilizing a sample of convenience based on chart audit. The initial case selection was based on predetermined eligibility criteria for the years of 1978 to 1988. Duhaime et al. (1996) reviewed the records of 84 patients aged 2 years and under who had been given the
diagnosis of shaking-impact syndrome after a single hospital admission. By looking at radiographic evidence and associated injuries, these children were deemed victims of inflicted head injury.

From the initial review of 84 cases, 62 survivors were identified for further evaluation. These survivors were classified into categories by age, gender, type of intracranial hemorrhage, presence of retinal hemorrhage, chief complaint on admission, how the injury was sustained by reports from the caregiver, any associated injuries, and level of consciousness on admission (Duhaime et al., 1996).

A telephone survey was designed by the investigators for use with the caregiver of these survivors. Participation in this portion of the study was voluntary. Information requested was present medical condition, functional ability, educational abilities, and social information of the survivor. Attempts were made to validate the information obtained through medical records that contained follow-up information. The researchers also developed a tool to measure long-term consequences of the shaken baby syndrome.
Categories similar to the Glasgow Outcome Score were employed to organize and rank the data. This scale was designed for use with adults; therefore, the rankings were accomplished according to the age appropriateness of the item in relation to the child (Duhaime et al., 1996). The categories ranked from good outcome to vegetative outcome, with a total of four categories identified.

Instrumentation included the Glasgow Outcome Score, although modified, to look at differences between the 62 survivors and the successfully located survivors. The use of the mean and a general compilation of trends were used due to the low number of available respondents.

Variables such as age, gender, history, presenting complaint, presence of intracranial hemorrhage, presence of retinal hemorrhage, skull fracture, and presence of associated injuries were not included in the analysis due to the small sample size and confidentiality issues. Based on the variables and the respondents' answers, the sample population was thought to have little variance from the total 62 survivors.

The average age of the sample at the time of injury was 6.4 months of age with a mean age of 9 years old for the child at the time of the study. The findings were
presented in terms of numbers of cases that fit trends established during the course of the study. The trends identified were based on the presence of severe injury at the time of the initial hospitalization. All five of the children who came to the hospital exhibiting unresponsiveness were found to be severely impaired. The six children who required intubation have severe to moderate disabilities. Children who presented with seizures had varying outcomes; one having a good outcome, one having a moderate outcome, and three having a severe outcome. There were six survivors who presented with apnea: one with a good outcome, one with a moderate outcome, and four with a severe outcome. Computerized tomography (CT) findings indicated that survivors with . . . diffuse hypodensity with a loss of gray-white differentiation or unilateral hemispheric hypodensity suffered with severe disability . . . bilateral diffuse hypodensity became vegetative or blind, nonverbal, and wheelchair bound . . . and those with focal hypodensity or contusion had either a good outcome, moderate disability or are severely disabled. (p. 295)

Six of the seven children with severe/vegetative outcomes were 6 months old or less at the time of the injury. Three of the five with good outcomes were older than 6 months at the time of the inflicted injury (Duhaime et al., 1996).
The researchers indicated the need for more studies of shaken baby syndrome since the mortality rate with young children who received inflicted head injury was very high. Of the 84 cases initially identified for the study the mortality rate was 26%. One respondent caregiver reported that the child had died of related injuries after discharge from the hospital. Again, the paucity of data regarding the long-term consequences of the survivors was a concern. The researchers recommended continued prospective studies of inflicted head injured infants.

The data ascertained in the study by Duhaime et al. (1996) was helpful for educative purposes, as this researcher educated babysitters about shaken baby syndrome. These caregivers were made aware of the long-term consequences of an impulsive act of shaking and how these consequences affect the lives of the survivors.

A study by Starling, Holden, and Jenny (1995) examined the relationship of the perpetrator to the victim in an effort to recommend prevention. Starling et al. (1995) sought to identify child abusers, specifically those who produced head trauma with their relationship to the victims. The problem was a lack of research addressing the relationship of perpetrators to victims with the
belief that prevention requires the identification of potential perpetrators. The research question was the following: What is the relationship of abusers to victims of abusive head trauma?

The select variables included the relationship of the perpetrator to the victim and the occurrence of serious head injury. The researchers used abusive head trauma instead of shaken baby syndrome because it was possible that victims may also have experienced impact trauma along with being shaken. The subjects were selected by the following criteria: a person 24 months of age or younger, who had radiologic evidence of intracranial bleeds, with retinal hemorrhages or associated injuries. Associated injuries consisted of healing fractures, most commonly rib or skull fractures, unexplained bruising of nonambulatory infants, and unusual patterns of injury such as ear bruising. Perpetrators were categorized as either caregivers who admitted to the abuse, persons convicted in a court of law, persons charged who had not been convicted at the time of the child’s hospitalization, or caregivers who gave police or medical evaluators information with many discrepancies that did not account for the injury.
The researchers used a nonexperimental, descriptive study design. The convenience sample was obtained from a review of all cases of child abuse admitted to a single hospital from 1983 to 1994. The review was done through chart audit. All cases had been reported to a child protection team at the one hospital site, and all cases had been reported to law enforcement and child protective agencies.

Instrumentation included data compilation of victims according to established criteria: what constituted a victim of abusive head trauma, data concerning the perpetrators, relationship to the victim, and demographic data, such as age and gender of both victims and perpetrators. Data were also collected on the relationship between the perpetrator and the victim. The data were analyzed using chi square and the t test and measures of central tendency excluding the mode.

Starling et al. (1995) found 151 cases that met the established criteria. Findings of the study indicated that victims ranged in age from 3 weeks to 24 months, with the average age of 6.6 months. Sixty (39.7%) were girls and 91 (60.3%) were boys. The average age of the survivors was 6.1 months, with the average age of fatal injuries
occurring at 8 months. The researchers discovered significant difference in death rate by gender.

The researchers were able to determine the gender and the relationship of the perpetrator in 127 cases and indicated that 87 (68.5%) were male and 40 (31.5%) were female. Thirty-seven percent of the male assailants were the biological father, 20.5% were the mothers' boyfriends, 3.9% were male babysitters, and 3.1% were stepfathers. The biologic mothers accounted for 12.6%, and female babysitters represented 17.3%. There were no gender differences in the assailants in cases where the victims died.

Starling et al. (1995) hypothesized that male children were abused more often due to the preponderance of male abusers, based on the assumption that males more often abused males. After using chi-square analysis, no evidence was found to support this hypothesis.

The researchers concluded that male perpetrators outnumbered female perpetrators by a 2.2:1 ratio, with biological fathers being the most common male assailant. Male victims accounted for 60.3% of the total cases. The researchers reported that although male perpetrators and
male victims were the most common, women abused male children in equal number with male assailants.

Starling et al. (1995) also reported a large number of babysitter assailants. Approximately 30% of the babysitters included in the study had been charged or convicted. Based on the large percentage found in this study and the increasing need to employ babysitters as more parents work outside the home, the researchers recommended a focus on babysitter education for the prevention of abusive head trauma. Babysitter education for prevention was the focus of this study.

Recommendations for prevention were directed at babysitter training courses or school programs with a focus on prevention tips and dealing with stress.

Starling et al.'s (1995) research was instrumental in determining the structure of this research. A focus on babysitter education allowed for primary prevention in the community, as the educational effort targeted adolescents aged 12 to 17 years who were babysitters.

Since educational efforts are stressed as a means for prevention, a brief review of the literature concerning the outcomes of an educational based prevention model for adolescents was identified. Marshall et al. (1996)
conducted a study to determine the effectiveness of a child abuse prevention teaching module on parenting attitudes of adolescents. The independent variable was the educational module, and the dependent variable was changes in parenting attitudes. The research questions were as follows:

What are the overall parenting attitudes of high school students? In comparison with previous data, are attitude scores consistent and stable or variable and flexible? What percentage of high school students score low on multiple scales? Is this percentage stable or variable compared to previous samples studied? What is the effect of a child abuse prevention unit on students’ parenting attitudes scores? What is the effect of a child abuse prevention unit on the scores of students scoring low initially? (Marshall et al., 1996, p. 111)

The study was a nonprobability, quasi-experimental design utilizing a pretest, educational intervention, and a posttest. The sample in this study included adolescents between the ages of 13 and 19 years (N = 585) who were currently enrolled in four different public schools in a single city. The students were participating in a health education class as part of the required school system curricula. Participant involvement in the educational intervention was mandatory because the child abuse prevention unit was included in the course curricula;
however, participation in the pretest and posttest conducted by the researchers was optional.

The educational component included an overview of child abuse, developmental stages of children, positive parenting techniques, and information regarding how to deal with anger. The Adult-Adolescent Parenting Inventory was administered as the pretest and posttest in order to measure attitudes in relation to developmental expectations of children, such as empathy, punishment, and role reversal. The Adult-Adolescent Parenting Inventory scores are higher for less abusive, nurturing attitudes, and lower for more abusive attitudes.

The mean age of the subjects was 15 years. Fifty-eight percent of the sample were black, 49% were white, and 3% were of another race. Data analysis was conducted using the Adult-Adolescent Parenting Inventory scores with a computer program designed for that purpose.

A secondary analysis was completed to assess scores among individual groups and between groups. Paired t tests were analyzed for changes in parenting attitudes. Pretest scores from the experimental and control groups were compared prior to the educational intervention to determine variability. Statistical analysis indicated
there was no significant difference in test scores between the control and experimental groups; however, trending within the sample leaned toward a positive effect. Subjects who were considered low scorers initially either improved in scoring, or left the study. Recommendations were made to develop other types of instructional programs and continue educational efforts on child abuse prevention because scores did increase between the pretest and posttest.

Although the educational intervention did not significantly alter the statistics between the control and experimental groups in the study, there was evidence that the intervention did increase the scores in the experimental group. Marshall et al. (1996) utilized a teaching strategy similar to the one designed by this researcher with the conclusion that educational efforts do provide benefit to the recipient. Primary prevention was a focus of the study because the researchers looked at adolescent populations with no identified problem related to participating in child abuse. This method of prevention would be considered a nursing primary care intervention.

Another method of educating adolescents was developed by Censullo (1994) to improve responsiveness in adolescent
parents in relationship to the infant. The problem statements were the following: “Did interaction coaching result in an increase in the level of responsiveness between adolescent parents and their infants?” and “Was there an increase in parental self-confidence or self-esteem scorers after interaction coaching intervention?” (Censullo, 1994, p. 326). The independent variable was interaction coaching, and the dependent variables were the level of parental response to the infant and changes in parental self-esteem and self-confidence.

Censullo (1994) conducted a small pilot study which involved a pretest, posttest design with convenience sampling. A total of 12 adolescents were included in the study. Nine of the subjects were mothers, 3 were fathers. The study was conducted at a single institution in a northeastern state. The Dyadic Mutuality Code and the Interaction Coaching for Adolescent Parents intervention were used. Interaction Coaching for Adolescent Parents was an interventional model developed by the researcher as a means of early intervention with teenage parents and their infants. Self-esteem and self-confidence are purported to increase with successful mastery of sensitive responses from adolescent parents to infants. Immediate feedback was
provided by the coach in an effort to increase the feeling of self-esteem, self-confidence, and parental effectiveness. Censullo (1994) conducted the intervention in three sessions. Session one involved the introduction of the intervention, presentation of the study, child growth and development, and observation of parental interactions with their infants. Session two dealt with the subtle nonverbal communication delivered by the baby to the parents and cues for the parents on how to interpret the communication. Interaction from the group was elicited through open-ended questions regarding the infant’s behavior and parental response. Session three built on acknowledgment of successful interactions. The Dyadic Mutuality Code was also developed by the researcher which contained the following items: mutual attention, turn taking, maternal sensitive responsiveness, infant clarity of cues, and maternal pauses. Scores were given to each item based on the coach’s observation, and the items were then totaled. The summed total score available was 12. Responses of scores less than 9 were considered significantly low.

Self-esteem was measured with the Self-Esteem Scale, which is a 10-item Likert scale. The summed score
represented a global rating of self-esteem. Confidence was measured by modifying the Parental Self-Efficacy Scale, a Likert scale.

Results of testing indicated significant increases in self-esteem ($t = 9.49, p < .001$) and no significant changes in parental self-confidence. Responsiveness tests were subjected to the McNemar’s test of change and were reported as significant ($\chi^2 = 5.1, p < .05$).

Censullo’s (1994) study reflected an aspect of the teaching design that was incorporated in the current research. A group designed sample was utilized in both studies. Censullo (1994) pointed out the effectiveness of this design in terms of intervention and peer support.

Educational intervention and retention of information were the focus of a study conducted by Gibson (1995). The purpose of the study was the development of a patient education module that enhanced discharge teaching information retention. The independent variable was 50% overlearning, and the dependent variable was the extent of retention of information as measured by a posttest.

Overlearning was operationalized as an additional 10 minutes of instruction in the same material. The problem
concerned the possibility of increased retention of information about feeding infants with an overlearning strategy as opposed to providing no change in information dissemination. The research hypothesis indicated that the experimental group would retain a significantly greater amount of information than the control group.

A prospective experimental design was utilized that included a control group and experimental group with randomization. The study took place in one metropolitan hospital. Participation was voluntary. Randomization controlled for extraneous variables. A sample size of 40 women from the postpartum unit was used, with 20 for each group.

A researcher-designed questionnaire, the Infant Feeding Questionnaire, was administered as the pretest and posttest. There were 24 questions on the test that included multiple-choice and true-false. After completion of the pretest, the mothers were educated as a group and given posttest 1. The experimental group then watched a 10-minute video; the control group did not. Two weeks later both groups were given posttest 2.

The t test indicated a significant difference on posttest 2 between the experimental and control groups
(t = 2.33, p = < .001) with the experimental group retaining more information than the control group. Pearson's product moment correlation was conducted and demonstrated a correlation between retention and years of education with the subjects. Analysis of variance was computed and indicated no significant differences in testing based on culture.

Gibson (1995) concluded that overlearning may be useful in a variety of patient settings. The concept of overlearning can also be useful in community education settings which was the focus of the current research. The technique of providing additional instruction outside what is generally provided in babysitter education classes, specifically about shaking a baby, could be done by the nurse practitioner as a community project. The cited study indicates a positive result with the overlearning technique.

A final educationally focused prevention modality looked at ways to improve safety counseling by health care providers, specifically doctors to parents. Anticipatory guidance for injury prevention was known to be an integral part of health care provider education. Hansen, Wong, and Young (1996) questioned the use of preexisting safety
surveys on the efficacy of safety teaching. The purpose of the study was to determine if practitioner safety counseling improved with the use of the Framingham Safety Surveys. The problem identified was the lack of available information to support the use of the Framingham Safety survey. The informal research hypothesis was an improvement in injury prevention counseling, which would be accomplished utilizing the safety surveys.

A nonrandomized study was conducted in which eight items from the Framingham Safety Survey were determined to be target questions. These target questions were followed through use of parent survey questionnaires in which these items were answered. A copy of the questionnaire was placed on the patient record. Audits of practitioner education regarding inappropriate answers to high-risk questions were gathered from patient records. The study spanned two 4-week intervals and was conducted in one city, at a hospital-based clinic and a private practice clinic. The testing included a baseline period and an intervention period; however, information collected each time used the safety survey trigger questions.

Checklists for 312 cases were completed during the baseline interval and 168 during the intervention
interval. The questionnaires included demographic information which revealed mother most often accompanied the child, median age of the parent was 27 years, most typical family size was two children, and the majority of the parents in the sample had attended college.

Statistical analyses were accomplished utilizing the student t test, chi-square, and linear regression. There were no significant statistical differences between types of providers. Safety issues discussed were compared for both test intervals and indicated that an average of 3.78 items were discussed during the baseline interval, and 3.75 items were discussed during the intervention interval. Counseling did not correlate with identified safety risk behaviors according to the safety surveys completed by the parents.

Hansen et al. (1996) concluded that measures need to be taken to improve health care, provider safety counseling, and injury prevention. The researchers suggest further studies which utilized the Framingham Safety Survey. Educational efforts for the current research are directed at adolescents; however, information should be utilized in education of health care providers. Although the presence of the survey did not trigger adequate
response from health care providers, further use of methods such as these with child abuse prevention and recognition, as well as other child safety issues, should be employed.

Summary

Literature review revealed many recent studies that addressed the problem of shaken baby syndrome. The first study focused on the feasibility of shaking alone causing injury or death to infants and young children. Research in this study indicated that fatal consequences occurred when a child was shaken. A second study examined long-term outcomes of shaken baby syndrome calling attention to the severity of injury associated with shaking and the costs of such care, both emotional and financial, for the victim and the caregiver. A final study concentrated on the perpetrator. The results of the research indicated that the perpetrator is usually the biological father of the infant or child; however, the study also reported that nonparental caregivers perpetrated the event in over 30% of the cases studied. Prevention, in the form of education directed toward babysitters, was a recommendation of the study.
Teaching or educational interventions were the focus of other research studies reviewed by the current researcher. In all studies reviewed, education was seen as most beneficial to the participants. Educational interventions which took place in classrooms or other group settings provided positive significant outcomes.
Chapter III
The Method

The purpose of this study was to determine if the knowledge level of shaken baby syndrome in an adolescent population could be increased utilizing an educational intervention. Information obtained in this study should be used in the primary care setting by health care providers as a basis for planning community education programs aimed at the prevention of shaken baby syndrome. Research methods used, design, population, sample, setting, instrumentation, data collection, and data analysis methods are described in this chapter.

Design of the Study

A pre-experimental design utilizing a pretest, educational intervention, and posttest was selected for use in this study. This type of design does not involve the use of randomization or control groups, or measures to compensate for the lack of these factors. The aim of the study was to test the differences between group scores by
identifying the knowledge level of factors associated with shaken baby syndrome among adolescents before an educational intervention and after the intervention.

The independent variable was an educational program focusing on shaken baby syndrome. Knowledge level of shaken baby syndrome among adolescents who babysat was the dependent variable. Potential intervening variables included the participants' ability to understand the questions asked in the pretest and posttest, size of the class receiving the educational intervention, location, and environment in which the group received the intervention and testing, and media influence related to one nationally publicized episode of shaken baby syndrome. Control variables were age of subjects and geographic location. Subjects were adolescents between the ages of 12 and 17 years who resided in north central suburban Alabama.

Setting, Population, and Sample

The setting for the study was the home of one of the participants in suburban north central Alabama. The home is situated in a middle- to upper-middle income subdivision near a major metropolitan area.
The target population for this study was all adolescents between the ages of 12 and 17 years who resided within a north central suburban Alabama area and who agreed to participate in the study. The sample consisted of adolescents who received parental permission, agreed verbally and in writing to participate in the study. Convenience sampling was used to obtain a study population which involved the use of adolescents known to the researcher as well as acquaintances of these adolescents who were recruited by prospective study participants. The final sample size consisted of 17 girls and 4 boys.

Methods of Data Collection

Data collection methods are described in this section. Particular attention is paid to instrumentation and methods of collecting and recording data relevant to the topic of study.

Instrumentation. Instruments utilized include a pretest and posttest that was researcher-designed and named the Shaken Baby Syndrome Questionnaire (see Appendix A). The questionnaire was written in scenario form with nine multiple-choice questions and one visual analogue response. Questionnaire development centered around
options available to babysitters in difficult and frustrating situations, general knowledge of child abuse, and developmental issues of infants and toddlers. Elements of all areas were included in each question; however, for the purposes of scoring, six questions were identified as questions of concern. Responses to these questions indicated decision-making skills in frustrating situations. Two questions were identified as general knowledge of abuse and one question directly related to child development.

The visual analogue involved a scenario in which the adolescent was to score patience level on the analogue ranging from not patient to very patient. The test was piloted with a group of adolescents not involved in the study. One adjustment was made in the wording of a response since the pilot testing revealed misunderstanding in relation to the verbage. Face validity was established since “on the face” the tool measured the factors of knowledge of shaken baby syndrome through trigger questions, knowledge of shaken baby syndrome through general knowledge questions, and knowledge of infant and toddler development with utilization of developmental
questions. Again, each area was addressed within the context of each individual scenario.

A demographic data sheet (see Appendix B) was developed by the current researcher following established demographic data sheet guidelines, which were also pilot-tested for content and clarity. Demographics selected included age, sex, race, grade, current enrollment in babysitter education classes, past enrollment in babysitter education classes, presence of younger siblings in adolescent babysitter's family, affirmative or negative confirmation of babysitting experience, frequency of babysitting, and age of the children who were babysat by the adolescent.

A researcher-developed educational intervention followed the pretest (see Appendix C). The intervention described shaken baby syndrome and identified triggering behaviors displayed by infants that were reported to precede known incidents of shaken baby. A video was shown entitled, Crying . . . What Can I Do? (Showers, 1995), which addressed caregiver responses that would decrease babysitter frustration and increase adaptive coping skills. Reminder cards with hints for babysitters were given to participants (see Appendix D). A question-and-
answer period followed the intervention to allow for interactional learning.

**Procedures.** The study was approved by the Committee on Use of Human Subjects in Experimentation at Mississippi University for Women (see Appendix E) prior to initiation. Parental or guardian permission was obtained since the subjects were minors (see Appendix F). Participant permission was also obtained through written consent (see Appendix G). In order to better test the knowledge level, the study was introduced as a babysitter intervention and no specific mention was made of shaken baby syndrome. All participants had written consent from the legal parent or guardian. Participants were aware that participation in the study was voluntary. Confidentiality was maintained with guidelines for protection of sensitive material, which included the following:

1. Participants' names were not included on the demographic data sheet or questionnaire.

2. Consent forms were locked in a safe place which only the researcher could access.

3. Data and consent forms were shredded at the end of the study year.
The testing and educational intervention occurred in an informal setting in the same location. The interval time between the pretest and educational intervention, and posttest was designated at 3 weeks to decrease the likelihood of attrition.

**Data Analysis**

The use of frequency distributions and measures of central tendency was utilized for the demographic data portion of the study. Statistical analysis of the pretest and posttest was accomplished through use of the t test. The t test was used to detect differences in the group mean scores before and after the intervention. The level of significance was set at .05 for all measures primarily due to the small sample size.

**Summary**

In summary, a descriptive pre-experimental research design was employed to ascertain differences in the knowledge level of shaken baby syndrome in adolescent babysitters as determined by scores on the pretest and posttest of the Shaken Baby Syndrome Questionnaire. The sample consisted of 21 adolescents between the ages of 12 and 17 years who reside in north central suburban Alabama.
A researcher-designed questionnaire was utilized. The Shaken Baby Syndrome Questionnaire addressed shaken baby syndrome and the development of infants and toddlers. A researcher-designed demographic data sheet was also utilized in the study. An educational intervention that utilized preexisting shaken baby syndrome prevention materials, as well as data regarding development of children gathered by the researcher, was provided to all participants. A t test method of statistical analysis was utilized to test the hypothesis and answer the research questions.
The purpose of this research was to determine if the knowledge level of shaken baby syndrome in an adolescent population could be increased utilizing an educational intervention. The research utilized in the study was one group pretest-posttest design. Data were collected based on the scoring of a researcher-designed pretest and a posttest. The subjects were adolescents between the ages of 12 and 17 years from north central Alabama, and the sample was one of convenience obtained through networking. Data were analyzed using descriptive statistics and the paired t test. A description of the sample and data analysis findings will be presented in this chapter.

Description of the Sample

The sample consisted of adolescents (N = 21) ranging in age from 12 to 17 years who reside in north central suburban Alabama. The subjects were selected utilizing convenience sampling. Each participant and legal parent or
guardian signed a consent form prior to the initiation of the research. Testing occurred at the first meeting followed by an educational intervention, both of which focused on aspects of shaken baby syndrome and development issues of the infant and toddler. The participants also completed a demographic data sheet prior to the testing period.

Following the intervention, time was allotted for questions and answers or general discussion. The participants agreed to return in 3 weeks to take the posttest. A date and time were established, and all the original participants returned to complete the testing. The final sample consisted of the same 21 adolescents (N = 21) initially tested. Seventeen were female (81%) and 4 were male (19%).

Age of the participants also was obtained. The mean age of the sample was 15.05 (SD = 1.66). Distribution of the sample by age is presented in Table 1.
Table 1

Demographics of Age by Frequency and Percent

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td>13</td>
<td>4</td>
<td>19.0</td>
</tr>
<tr>
<td>14</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>15</td>
<td>4</td>
<td>19.0</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>17</td>
<td>6</td>
<td>28.6</td>
</tr>
</tbody>
</table>

Note. \(N = 21\).

Demographic data by race also were solicited. Eighteen (85.7%) were Caucasian, and 3 (14.3%) were African American. The demographic survey also ascertained which school grade the participants were in. Distribution of participants by grade may be seen in Table 2.
Table 2
Demographics of Educational Level by Frequency and Percent

<table>
<thead>
<tr>
<th>Educational level</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>19.0</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
<td>19.0</td>
</tr>
</tbody>
</table>

Note. N = 21.

Questions on the demographic data sheet pertaining to babysitter preparation classes revealed that one (4.8%) subject was presently participating in babysitter preparation classes, and 20 (95.2%) were not presently enrolled in babysitter preparation classes. Two (9.5%) of the participants indicated past involvement in babysitter preparation classes, while 19 (90.5%) reported no past participation in babysitter preparation classes. Thirteen (61.9%) participants reported having younger siblings, and
8 (38.1%) reported no younger siblings. Questions pertaining to actual babysitting showed that 14 (66.7%) babysat, and 7 (33.3%) did not participate in babysitting. None (0%) of the male participants reported babysitting. When given choices regarding frequency of babysitting to include more than once a week, once a week, or other, 15 (71.4%) responded to the other selection, 4 (19.0%) selected once a week, and 2 (9.5%) chose more than once a week. Participants were asked the ages of the children for whom they most often babysat. Because some participants sat with more than one child, this question was subdivided for analytical purposes into Age 1 for the first age written in and Age 2 for the second age written in. The mean for Age 1 was 19.07 months, and the median was 11.50 months, and the mean and median for Age 2 were 45.00 months and 36.00 months (see Table 3).
### Table 3

**Demographics of Babysitting Information by Frequency and Percent**

<table>
<thead>
<tr>
<th>Variable</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current babysitter preparation classes&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>4.8</td>
</tr>
<tr>
<td>No</td>
<td>20</td>
<td>95.2</td>
</tr>
<tr>
<td>Past babysitter preparation classes&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
<td>9.5</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>90.5</td>
</tr>
<tr>
<td>Younger siblings&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>61.9</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>38.1</td>
</tr>
<tr>
<td>Babysit&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14</td>
<td>66.7</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>33.3</td>
</tr>
<tr>
<td>Frequency of babysitting&lt;sup&gt;e&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than once/week</td>
<td>2</td>
<td>9.5</td>
</tr>
<tr>
<td>One time a week</td>
<td>4</td>
<td>19.0</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>71.4</td>
</tr>
<tr>
<td>Age 1 in months&lt;sup&gt;f&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-6</td>
<td>3</td>
<td>21.3</td>
</tr>
<tr>
<td>7-12</td>
<td>6</td>
<td>42.6</td>
</tr>
<tr>
<td>13-18</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>19-24</td>
<td>3</td>
<td>21.3</td>
</tr>
<tr>
<td>25-30</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Over 31</td>
<td>2</td>
<td>14.2</td>
</tr>
</tbody>
</table>

*(table continues)*
TABLE 3 (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 2 in months&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-6</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>7-12</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>13-18</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>19-24</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>25-30</td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>Over 31</td>
<td>6</td>
<td>60.0</td>
</tr>
</tbody>
</table>

Note. Age 1 are ages listed first in response to the question regarding ages of children most often sat with. Age 2 are ages listed as a second response to the same question.

<sup>a</sup>n = 21. <sup>b</sup>n = 21. <sup>c</sup>n = 21. <sup>d</sup>n = 21. <sup>e</sup>n = 21. <sup>f</sup>n = 14. <sup>g</sup>n = 10.

Findings Related to the Research Questions and Hypothesis

The Shaken Baby Syndrome Questionnaire results were utilized to answer the research questions and address the hypothesis. The Shaken Baby Syndrome Questionnaire was subdivided for analytical purposes with two questions identified as general knowledge questions, six questions identified as questions of concern, and one question identified as developmental question. A visual analogue scale completed the questionnaire. The nine multiple-
choice questions were scored based on the percentage of incorrect responses per category at each testing interval.

The first two research questions related to general knowledge of shaken baby syndrome and were as follows:

1. What is the general knowledge of shaken baby syndrome among adolescent babysitters prior to an educational intervention?

2. What is the general knowledge of shaken baby syndrome among adolescent babysitters after an educational intervention?

The absolute range for correct general knowledge responses was 0 to 100. The pretest mean for incorrect general knowledge responses was 52.86, and the posttest mean was 11.90, indicating an improvement in general knowledge. The next pair of research questions related to areas of concern with shaken baby syndrome and were as follows:

1. What is the knowledge level of shaken baby syndrome in areas of concern among adolescent babysitters prior to an educational intervention?

2. What is the knowledge level of shaken baby syndrome in areas of concern among adolescent babysitters after an educational intervention?
The pretest mean for incorrect responses in areas of concern was 11.95 (absolute range 0 to 100), and the posttest mean was 3.95. The final pair of research questions were as follows:

1. What is the knowledge level of development of infants and toddlers among adolescent babysitters prior to an educational intervention?

2. What is the knowledge level of development of infants and toddlers among adolescent babysitters after an educational intervention?

Pretest and posttest means for this portion of the questionnaire were 71.43 (absolute range of 0-100) and 76.19, respectively, indicating a slight increase in knowledge level related to child development.

The visual analogue scale was utilized to determine if there were changes in individual perception of patience following an educational intervention. The analogue was connected to a frustrating situation that the adolescent could encounter while babysitting.

The visual analogue scale was graded from 0 for not patient to 10 for very patient. The pretest mean was 7.00, and the posttest mean was 6.95, indicating that there was
essentially no change in level of patience before and after the intervention (see Table 4).

Table 4

Pretest and Posttest Response Errors to Multiple-Choice Questions on Shaken Baby Syndrome Questionnaire and Variation in Visual Analogue Scale on Shaken Baby Syndrome Questionnaire Using Paired Sample Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>General knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>21</td>
<td>42.86</td>
<td>39.64</td>
</tr>
<tr>
<td>Posttest</td>
<td>21</td>
<td>11.90</td>
<td>21.82</td>
</tr>
<tr>
<td>Areas of concern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>21</td>
<td>71.43</td>
<td>46.29</td>
</tr>
<tr>
<td>Posttest</td>
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<td>43.64</td>
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<tr>
<td>Developmental knowledge</td>
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<td></td>
<td></td>
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<tr>
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<td>15.00</td>
</tr>
<tr>
<td>Posttest</td>
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<td>10.34</td>
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<tr>
<td>Visual analogue</td>
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<td></td>
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<tr>
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<tr>
<td>Posttest</td>
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<td>6.95</td>
<td>1.83</td>
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The null hypothesis for the study was the following:

There will be no difference in adolescent babysitters' knowledge of shaken baby syndrome before and after an educational intervention. The null hypothesis was initially rejected based on pretest and posttest means in
all areas included on the Shaken Baby Syndrome Questionnaire.

A paired t test was employed for statistical analysis to determine if differences existed in knowledge level before and after an educational intervention. The Shaken Baby Syndrome Questionnaire was utilized for data collection as a pretest and posttest.

The t test showed that the general knowledge percent error score had a statistically significant pretest to posttest reduction: Pretest: M = 42.86, Posttest: M = 11.91, t(20) = 3.08, p = .006 and p < .05, respectively. Questions of concern, the developmental question, and the visual analogue showed no significant pretest to posttest change, although questions of concern were trending toward a positive reduction in the number of incorrect responses (see Table 5). Per statistical analysis, the null hypothesis was again rejected.
Table 5

Paired t Test of General Knowledge Pretest and Posttest, Areas of Concern Pretest and Posttest, Developmental Knowledge Pretest and Posttest, and Visual Analogue Pretest and Posttest

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p</th>
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</table>

*p < .05.

Limitations

Major limitations of this research endeavor centered on the sample. A small sample size from a restricted geographical location did not allow for generalization to the larger population. The sample was not representative of the population in the study because there were few male participants. The studies on which this research is based indicate that most perpetrators of shaken baby syndrome are the biological fathers. A larger number of male participants, especially those who babysit, would have
provided for closer adherence to the recommendations of the research by Starling et al. (1995). This researcher suspects that a larger sample of males would have captured male babysitters.

The outcome of the study may have been interfered with due to participant knowledge of the researcher on an informal basis. This knowledge may have led to a less serious attitude on the part of the participants.

A more ethnically diverse sample would also allow for more generalization to the population as a whole. The geographic area utilized in the current research has approximately a 3:1 ratio of white to black (County and City Data Books, 1998), while the sample had a 6:1 ratio of white to black.

A limitation in the current research were the tools utilized for data collection. The tools were developed by the current investigator. Pilot testing of both the Shaken Baby Syndrome Questionnaire and the demographic data sheet were done, but not in conjunction with the educational intervention or as part of an educative process. Face validity of the tools was implied.
Summary

The purpose of this study was to determine if differences in knowledge level of shaken baby syndrome existed after an educational intervention as determined by pretest and posttest scores on a researcher-designed questionnaire. Twenty-one adolescents ranging in age from 12 years to 17 years were tested and given the educational intervention. Measures of central tendency, frequency distributions, and the paired t test were employed for statistical analysis of the data.
Chapter V
The Outcomes

Child abuse continues to occur in the youngest members of our society. Shaken baby syndrome is a particular form of child abuse that often presents with no easily recognizable signs. Prevention of shaken baby syndrome should be of utmost importance to our society. At present, most educational programs have targeted young mothers; however, primary prevention of the young should be conducted through the education of caregivers of both sexes. Because this population may someday become parents, adolescents would benefit from an educational program to prevent shaken baby syndrome. Education, health promotion, and prevention are integral aspects of the nurse practitioner role. Efforts which target the prevention of shaken baby syndrome is an important aspect of the nurse practitioner practice. The purpose of this study was to determine whether the knowledge level of shaken baby syndrome in an adolescent population could be increased utilizing an educational intervention as determined by
pretest and posttest scores on a researcher-designed questionnaire. The outcomes of the study are presented in this chapter.

Summary and Discussion of Findings

The target population was adolescents between the ages of 12 and 17 years who resided in north central suburban Alabama. The sample \(N = 21\) consisted of adolescents ranging in age from 12 to 17 years. Both sexes were represented in the sample although not in equal number. Four were male, and the remaining 17 were female. Races identified in the sample included 18 Caucasian adolescents and 3 African-American adolescents. None of the African Americans were male. The racial mix in the area in which the sample was drawn is 3:1 Caucasian to African American (County and City Data Books, 1994), but the sample does not reflect this mix possibly due to the mix in the pocket of Jefferson County in which the sample was drawn. Based on researcher observation, the population mix is 90% Caucasian and 10% or less African American.

Data were collected from a researcher-designed demographic data form and the Shaken Baby Syndrome Questionnaire. Demographic data requested included age, race, sex, grade, past babysitter preparation classes,
current babysitter preparation classes, presence of younger siblings in the babysitter’s home, affirmation or negation of babysitting, frequency of babysitting, and ages of children most commonly babysat. The Shaken Baby Syndrome Questionnaire involved nine multiple-choice questions based on knowledge of different aspects of shaken baby syndrome and infant and toddler development. A visual analogue scale was the 10th item on the questionnaire. The visual analogue was used to determine if participants’ perception of their patience in a frustrating situation changed following education based on dealing with frustrating babysitting situations. Data were analyzed utilizing frequency distribution, measures of central tendency, and the paired t test.

The t test indicated that participant scores in general knowledge of shaken baby syndrome did improve from pretest to posttest. The hypothesis for this study was as follows: There will be no difference in adolescent babysitters’ knowledge of shaken baby syndrome before and after an educational intervention. The null hypothesis was rejected based on the statistical significance (p < .006) of a decrease in incorrect responses on the general
knowledge portion of the Shaken Baby Syndrome Questionnaire.

Analysis of the pretest results indicated that the participants were aware that shaking an infant could be harmful, but did not perceive shaking as the most severe of the abuses listed on the questionnaire. Most participants chose kicking or hitting as the most severe of abuses. Shaking the baby was selected as the second or third in severity. Slapping the baby was perceived as the least abusive. Shaking was not selected as first choice in some instances because the participants reported that they would not shake a baby hard enough to harm the baby. When asked, none of the participants knew how hard a baby would have to be shaken but indicated rather vigorous shaking through use of a demonstration on a pillow.

The posttest, which was a repeat of the Shaken Baby Syndrome Questionnaire pretest, indicated an increased understanding in general information about shaken baby syndrome. A trending toward more awareness in what was termed "areas of concern" was identified. A deficit of knowledge remained, however, in the developmental aspects of infants which indicates that adolescents in the sample
continued to demonstrate incomplete knowledge of normal developmental barriers.

**Relationship to the literature.** The current research used babysitters because of the recommendations of Starling et al. (1995), who determined that many perpetrators of shaken baby syndrome are nonparental child care providers. The current researcher gathered a group of adolescent babysitters for this study in an effort to provide prevention based education for a babysitting sample. The current research did not obtain a full compliment of babysitters because 7 of the 21 adolescents in the sample had not babysat yet.

Starling et al. (1995) also reported that biological fathers were most often perpetrators of shaken baby syndrome. The current research included only 4 males, none of whom claimed to babysit. This is particularly disturbing because of the possibility that male adolescents may potentially become fathers and would benefit from education and experience with infants and toddlers before fatherhood occurs.

A study conducted by Marshall et al. (1995) focused on child abuse prevention. In the current study the outcomes were similar to the Marshall et al. (1995) study
which indicated a positive trend toward increasing knowledge based on educational programs.

**Serendipitous findings.** Following the pretest, participants were given an overview of shaken baby syndrome and asked if there had been any recent episodes of the syndrome in the news. Approximately half of the sample indicated awareness of an incident. One volunteered information that the perpetrator was female. Only one male participant indicated awareness of the incident. No participant could give details of the outcome of the associated trial. Prior knowledge of the incident of shaken baby syndrome may have affected the outcomes of this study.

**Findings Relevant to the Theoretical Framework**

The findings of the current research support the use of Modeling and Role-Modeling by Erickson et al. (1983). Modeling and Role-modeling require the practitioner to obtain information pertinent to the client’s world and way of thinking and provide interventions appropriate for the client. The theory also incorporates an Adaptation Potential Assessment Model which employs coping skills to determine how effectively a client will respond when a
stressor is introduced. For the purposes of this research, modeling involved the educational intervention with information on shaken baby syndrome. Role-Modeling involved the use of a film on frustrating behaviors exhibited by infants or toddlers and adaptive coping responses to the frustrating behaviors. The Adaptation Potential Assessment Model incorporated easily into the research. An example of the incorporation involved a question on the Shaken Baby Syndrome Questionnaire that described a frustrating situation and gave options for coping with the situation. On the pretest, participants chose "jostling the baby up and down" and occasionally selected "letting the baby cry," but reported the selection of the latter as a reluctant choice. Following the educational intervention, the participants did not choose the least appropriate response of "jostling the baby," and selected the remaining options of letting the baby cry, calling an adult, or walking away. The participants displayed adaptive coping skills based on posttest scoring.

Questions and potential responses were designed toward possible experiences that might arise while babysitting. The pretest and intervention time was limited
to 35 minutes because the adolescent participants requested this time limitation. The time constraint, although consistent with modeling or entering the client's world, may have had an impact on the statistical results of the intervention. Further research is needed to determine if an intervention of longer than 35 minutes would alter the outcome as an overlearning intervention that Gibson (1995) indicated was a successful technique.

**Implications for Nursing**

Research findings from this study demonstrate the general knowledge of shaken baby syndrome did change with the educational intervention as supported by statistical analysis of the data. However, participants' knowledge of the development of infants and toddlers did not improve despite the intervention containing information on communication of infants and toddlers, attachment to parents, and gross and fine motor abilities. An increased awareness of normal development would provide the babysitter with a better perception of infant and toddler motivation in certain situations, thereby decreasing frustration. Implications for nurse practitioner practice, research, and education may be derived from these findings.
Practice. There was little documented evidence in the literature about prevention efforts by nurse practitioners regarding shaken baby syndrome which indicates the need for education in this area. The nurse practitioner could have an instrumental role in the prevention of shaken baby syndrome. Primary prevention efforts by the nurse practitioner should include education of child care providers and potential parents in their community setting. Focusing on babysitter education in the adolescent population may aid in the prevention of shaken baby syndrome, both during the babysitting years and later when the adolescents become parents. Providing education for both parents on shaken baby syndrome could also help lessen the likelihood of such abuse. This is especially true in light of the results of the study by Starling et al. (1995) which indicated that the majority of the perpetrators were the biological fathers.

The practitioner may see evidence of shaken baby syndrome in the primary care setting manifested by symptoms such as poor feeding, vomiting, irritability, lethargy, and inability of the infant to follow movement during the eye exam. Secondary prevention should be utilized in these cases because education can prevent
further occurrences. Many perpetrators report no intention of harming the child and were not aware of the link between shaking an infant and permanent disability. The nurse practitioner needs to be aware of the signs and symptoms of shaken baby syndrome in order to identify and educate potential perpetrators. When the presenting complaint includes poor feeding, vomiting, lethargy, and irritability, and the eye exam is abnormal, the practitioner must be aware that referral of the infant for further medical studies is mandated. Awareness of all presentations of the syndrome and the ability to ask pertinent, nonjudgmental questions is instrumental in prevention, education, and treatment of shaken baby syndrome.

Research. Previous research regarding shaken baby syndrome has focused on the existence of the syndrome, identification of the perpetrators, outcomes of the victims, and the effects of shaking a baby on the baby’s brain and eyes. These research efforts were conducted by physicians. No research efforts conducted by nurse practitioners related to shaken baby syndrome were identified. Nurse practitioners did write educative articles directed at peers and stated recommendations for
research aimed at prevention of shaken baby syndrome using educative modalities. The current research was, in part, a response to the recommendations.

The results of this study indicate that nurse practitioners are in a unique position to further research endeavors in shaken baby syndrome based on scope of practice and the nursing goal of health promotion and health prevention. Furthermore, the results of this study indicated a need for more research focusing on educational interventions associated with shaken baby syndrome.

Education. Education regarding shaken baby syndrome identification and prevention should be included in curricula in schools of nursing. The increased awareness of the syndrome could allow for more expedient recognition of incidences of shaken baby syndrome. The knowledge could also aid in identification of at-risk individuals who may perpetrate shaken baby syndrome. To enhance preventive aspects, educational efforts should be a part of the high school curricula. The shaken baby curricula could be included in health classes. High school students are potential babysitters and will potentially become parents.
Conclusions

Based on the findings of this descriptive pre-experimental study focused on the knowledge level of shaken baby syndrome among adolescents who babysit, the following conclusions were derived:

1. The general knowledge of shaken baby syndrome demonstrated a statistically significant improvement following an educational intervention (Pretest: $M = 42.86$, Posttest: $M = 11.90$), $t(20) = 3.08$, $p = .006$ and $p < .05$, respectively.

2. The knowledge level of shaken baby syndrome in areas of concern trended toward a more positive outcome following an educational intervention.

3. Knowledge of developmental issues of infants and toddlers requires further educational intervention and focus based on the results of this study.

Recommendations

Based on the findings of this research, recommendations for future research, nursing practice, and nursing education are as follows:

Research

1. Replication of the study utilizing a larger sample size of adolescents.
2. Replication of the study utilizing a more diverse demographic sample for sex and ethnicity.

3. Replication of the study in other areas of the country for comparison.

4. Replication of the study utilizing a quasi-experimental design with control and experimental groups for comparison.

5. Conduction of research designed to involve nurse practitioner knowledge of shaken baby syndrome.

6. Conduction of further research utilizing Modeling and Role-Modeling as the theoretical base.

Practice

1. Inclusion of a standardized educational program for prevention of shaken baby syndrome designed for use in community settings, such as schools, churches, and child caregiver classes.

2. Inclusion of a standardized form in patient records focusing on signs and symptoms of victims of shaken baby syndrome.

Education

1. Inclusion of a standardized educational intervention directed at nurses and nurse practitioners
that focuses on recognition of signs and symptoms of shaken baby syndrome.

2. Inclusion of a standardized educational intervention directed at nurses and nurse practitioners that focuses on recognition of possible warning signs presented by potential perpetrators of this form of maladaptive coping.


APPENDIX A

SHAKEN BABY SYNDROME QUESTIONNAIRE
Shaken Baby Syndrome Questionnaire

1. Five-month-old Matthew has been crying for 30 minutes. You have tried to feed him, but he wouldn’t eat. You checked and changed his diaper. You’ve held and rocked him, and he is still crying. What will you do next? (Select one answer)
   ___ a. Pat him on the back.
   ___ b. Gently shake him.
   ___ c. Try to give him a pacifier.
   ___ d. Leave him alone and let him cry.

2. Three-month-old Sally is quiet. She’s too quiet, and she doesn’t open her eyes when you say her name. What will you do now? (Select one answer)
   ___ a. Pick her up and look at her in better lighting.
   ___ b. Clap your hands or snap your fingers close to her ears.
   ___ c. Check to see if Baby Sally is breathing.
   ___ d. Gently shake her to startle her.

3. Six-month-old Andy is trying your patience. You wish someone would come get him. You wish he could tell you why he is crying. You wish he would stop crying. What is the worst thing you can do with Andy? (Select one)
   ___ a. Slap him with your hand.
   ___ b. Leave Baby Andy in the crib alone.
   ___ c. Shake Baby Andy.
   ___ d. Let Baby Andy cry.
4. Now you are really angry with 8-month-old Susie. You fed her, rocked her, changed her, played with her, and finally after 3 hours, she's asleep. Well, she was asleep until your favorite TV show came on. Now she's crying again. What is the best thing you can do for Baby Susie now, especially since you’re angry? (Choose as many as you think are appropriate.)
   ___ a. Walk away from Baby Susie.
   ___ b. Call your mom, dad, or an older adult to talk about your frustration.
   ___ c. Take a break in another room.
   ___ d. Jostle Susie up and down.

5. You are sitting with 11-month-old Johnny. He was busy laying with blocks in the floor. Little Johnny started crying right after you got on the phone with your friend. He started crying because: (Select all that apply)
   ___ a. He is hungry.
   ___ b. He needs to be changed.
   ___ c. He wants to irritate you.
   ___ d. He doesn’t feel good.

6. Mrs. Smith asked you to sit with Beth. When you arrive Beth begins to cling to her momma and starts to cry. She did not do this the other two times you sat with her. Then you remember that babies are afraid of strangers at (select one)
   ___ a. 3 months old.
   ___ b. 6 months old.
   ___ c. 9 months old.
   ___ d. 12 months old.

7. You are sitting with 7-month-old Paul tonight. As you walk in the door he begins to cry. You can tell he is going to be difficult to sit with. Baby Paul is crying because (select one)
   ___ a. He doesn’t like you.
   ___ b. His momma is leaving.
   ___ c. He always cries at night.
   ___ d. He is hungry.
8. A great play activity that 9-month-old Kyle really likes is (select one)
   ___ a. walking holding your fingers.
   ___ b. tearing down block towers that you build.
   ___ c. being thrown in the air.
   ___ d. playing pick-a-boo.

9. Have you ever heard of babies being injured by (select all that are appropriate)?
   ___ a. Slapping
   ___ b. Hitting
   ___ c. Shaking
   ___ d. Kicking

10. Taylor is 4 months old. She has been crying inconsolable for almost 2 1/2 hours. You fed her, burped her, changed her, rocked her, and sang to her. You tried strolling her around the house in her stroller. Her temperature is normal. You called your mom, and she told you to do everything you’ve already done. When you told your mom you’d tried everything she suggested, she told you to leave the baby in her crib and let her cry. You’re trying really hard to do that. In this situation, how patient are you?

   Not Patient ____________________________ Very Patient

   Place a dot on the line closest to the end that describes your patience.
APPENDIX B

DEMOGRAPHIC DATA FORM
Demographic Data Sheet

Please complete the following form by either filling in the blank with the information requested or by checking (✓) the appropriate selection.

1. What is your sex?  ___ Male  ___ Female

2. What is your age? _________

3. What is your race?
   ___ White or Caucasian
   ___ Black or African American
   ___ Native American or Alaskan
   ___ Asian or Pacific Islander
   ___ Other (Please specify): _________________________

4. What grade are you in?
   ___ 6th  ___ 10th
   ___ 7th  ___ 11th
   ___ 8th  ___ 12th
   ___ 9th

5. Are you currently participating in babysitter preparation classes?
   ___ Yes  ___ No

6. Have you participated in babysitter preparation classes in the past?
   ___ Yes  ___ No

7. Do you have younger siblings?
   ___ Yes  ___ No

8. Do you ever babysit?
   ___ Yes  ___ No

9. How often do you babysit?
   ___ More than once a week
   ___ Once a week
   ___ Other (please specify): _________________________

10. What are the ages of the children you babysit with most frequently? __________
APPENDIX C

EDUCATIONAL PLAN OVERVIEW
Educational Plan Format

During the educational intervention a 7-minute tape provided by the Shaken Baby Syndrome Prevention Association will be shown. The video is entitled "Crying . . . What Should I Do." The film goes over triggers to child care frustration and appropriate responses to this frustration. Each participant will also receive reminder cards that list appropriate responses. The lecture portion of the educational intervention is outlined below:

Educational Plan--Shaken Baby Syndrome

I. Definition
Shaken baby syndrome was first described in the early 1970s by a radiologist named Dr. John Caffey. He had thought for some time that babies brought to the ER with no outward signs of abuse could still be victims of abuse. With the advent of CT scan, and later MRI, Dr. Caffey’s assumptions were proven out. Shaken baby syndrome at its worst can cause death, severe mental retardation, and/or paralysis. Lesser injuries can include blindness, spastic movement, and/or learning disabilities. Some victims have no lasting effects. The injury is a result of an intracranial bleed and introcular bleeds/detachment of nerves. We are now able to diagnose these injuries due to advances in medical technology.

II. Demographics
No figures have been found that reveal the total number of cases of shaken baby syndrome as many states have just begun to collect the data. Shaken baby syndrome is included in the statistics for child abuse. The most common victims are male infants under 12 months of age, and the most common perpetrators are the biological fathers, although mothers and child care workers account for a large portion of perpetrators. One study indicated that over 30% of the perpetrators were child care workers.
III. Etiology

Shaken baby syndrome is the result of shaking a baby with enough force to cause the head to move back and forth with the chin touching the chest and the back of the head touching the upper back. An infant's head is quite heavy in relation to his/her total body weight. There is less cushioning around the brain; therefore, the brain moves about during the shaking.

IV. Infant Toddler Development

A. Less than 2 months: Babies in this age group like to drink formula, sleep, be cuddled, and they communicate by crying.

B. 2 months to 4 months: Babies begin to play by grasping objects placed in the hand, smiling/cooing. He/she can now look at your face if you're in the direct line of vision and can lift his/her head about 45 degrees. Again, babies communicate by crying.

C. 4 to 6 months: Babies in this age group are more active as demonstrated by rolling over, better head control, better ability to sit upright, better ability to follow moving objects with their eyes. These babies are more social, will laugh, are more vocal with baby jargon but continue to voice their desires through crying.

D. 6 to 9 months: These babies sit upright with support, turn when they hear sounds, play by reaching for objects, laugh, and vocalize. They still communicate by crying.

E. 9 months: Babies at this age sit well by themselves, crawl, pull up to standing position, get objects you think are out of their reach, vocalize words, such as "da da" and "ma ma." Crying continues to be the main form of communication.

F. 12 months: Babies will stand, sometimes walk independently, and begin to use simple words (da da and ma ma) correctly. They still cry.
G. 18 months: These babies walk independently, climb, and may start to voice what they want, but crying continues to be a good form of communicating needs.

H. After age 2 the increased vocabulary allows toddlers to ask more directly for their needs/desires to be met; however, if the needs/desires aren’t met as they want them to be, crying is definitely a desired manner of telling you about it.

(Uphold & Graham, 1994)

V. Triggers for Shaking a Baby

A. Crying
B. Caregiver frustration usually related to the baby’s crying

VI. Alternative to Shaking a Baby

A. Feed the baby.
B. Change the baby’s diaper.
C. Offer the baby a pacifier.
D. Rock the baby.
E. Walk the baby.
F. Check the baby’s temperature.

G. After checking all of the above, and if the baby continues to cry, you can leave the baby in the crib and allow him/her to cry. Again, make sure the baby is safe and not ill before doing this. Go into another room, but don’t leave the house.

H. CALL AN ADULT to talk about the baby’s crying, the measures you have taken to comfort the baby, and relate any frustration you are now having.

REMEMBER: The baby is not crying to irritate you. There is no malicious intent in his/her behavior. Don’t take it personally.

VII. Questions and Answers
APPENDIX D

REMINDER CARD
No one likes to listen to a baby or child cry for a long time. It is irritating and frustrating. Some babies cry a lot when they are hungry, wet, tired, or just want company. Some infants cry at certain times of the day or night (usually when you want to sleep or eat). Feeding and changing them may help, but sometimes even that doesn't work.

You may want to take your baby to the doctor to see if a medical reason can be found. Some babies cry because they have "colic." These babies seem to have a hard time settling in to life. Their crying may just be the way they deal with tense feelings. Often you can tell that a baby is "colicky" because he curls up, then straightens out over and over.
When your baby cries, here are some things you can try:

- Feed the baby slowly; burp the baby often.
- Offer the baby a pacifier.
- Check the baby’s diaper and change it, if needed.
- Hold the baby against your chest and walk or rock him.
- Take the baby for a ride in a stroller or car.
- Sing to the baby or play soft music.

Be patient. The baby does not hate you or want to ruin your life. If you have had all you can take, wrap the baby snugly in a soft blanket. Put the baby in a safe place in a quiet, dark room if possible. Close the door and take a break. If possible, have someone else you know you can trust take care of the baby for a while.

No matter how impatient or angry you feel, DO NOT SHAKE THE BABY. HARD SHAKING CAN CAUSE BRAIN DAMAGE, BLINDNESS, HEARING LOSS, LEARNING PROBLEMS, SEIZURE DISORDERS, CEREBRAL PALSY, PARALYSIS OR DEATH. Never hold or pick up a baby when you feel angry. And be sure to TELL EVERYONE WHO TAKES CARE OF YOUR CHILD NEVER TO SHAKE HIM FOR ANY REASON.

Letting the baby cry it out when you have had enough is safer than shaking or punishing the baby. Your baby will outgrow the constant crying. For now, HOLDING AND GENTLE ROCKING TELL THE BABY YOU LOVE HIM AND WANT HIM TO FEEL BETTER.
APPENDIX E

APPROVAL OF THE COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION OF MISSISSIPPI UNIVERSITY FOR WOMEN
Ms. Mickey White Parks  
c/o Graduate Program in Nursing  
Campus

Dear Ms. Parks:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research as submitted.

I wish you much success in your research.

Sincerely,

Susan Kupisch, Ph.D.  
Vice President  
for Academic Affairs

SK: wr

cc: Mr. Jim Davidson  
Dr. Mary Pat Curtis
Dear Parent:

My name is Mickey White Parks, and I am a registered nurse currently pursuing a Master of Science in Nursing degree at Mississippi University for Women. I am conducting a research project with a focus on an educational intervention. The intervention will be conducted during a regularly scheduled organization meeting time and will involve the use of a 10-item questionnaire to ascertain knowledge levels.

I am requesting permission for your adolescent child's participation in this research effort. Participation will include responding on two separate occasions to the 10-item questionnaire and a teaching component that will include a videotape, lecture, and question-and-answer period.

Participation is voluntary. Your adolescent child can refuse to participate in any portion of the study he or she desires. There are no known risks involved with participation. The benefit is increased knowledge. Confidentiality will be maintained as your adolescent child's name will not be used in any portion of the study. The permission slips will be maintained in a locked box that can only be accessed by this investigator.

By returning the signed consent letter, you are acknowledging informed consent regarding this research project, and your adolescent child's potential role. If you have questions, you may contact me at (205) 655-7148 or through the Graduate School of Nursing at Mississippi University for Women.

Sincerely,

Mickey White Parks, RN, BSN
Graduate Student, Mississippi University for Women

Based on the information above regarding the proposed study on an educational intervention,

___ I will allow my adolescent child to participate in this study.
___ I will not allow my adolescent child to participate in this study.

Adolescent Child’s Name:__________________________________________

Parent’s Signature:______________________________________________

Date:________________________________________
APPENDIX G

LETTER OF INFORMED CONSENT
FROM PARTICIPANT
Dear Participant:

My name is Mickey White parks, and I am currently pursuing a Master of Science in Nursing degree at Mississippi University for Women. In partial fulfillment of this degree, I am conducting research focused on an educational intervention.

Your participation will involve answering a 10-item questionnaire on two separate occasions and attending an educational program that will include a lecture, a videotape, and a question-and-answer period.

Participation is voluntary, and you may discontinue participation at any time during the course of the study. Your standing in your club or organization will not be affected if you choose not to participate in this study. Confidentiality will be maintained as your name is not requested on the questionnaire. The permission slips will be kept in a locked box that can be accessed only by this researcher.

By returning the signed consent letter, you are acknowledging informed consent regarding this research project and your potential role in the project.

Sincerely,

Mickey White Parks, RN, BSN
Graduate Student, Mississippi University for Women

Based on the above information,
____ I agree to participate in the study.
____ I do not wish to participate in the study.

Signed: ____________________________ Date