KNOWLEDGE AND ATTITUDES OF BALL STATE UNIVERSITY PRE-SERVICE ELEMENTARY EDUCATION TEACHERS TOWARD EMERGENCY CARE IN THE SCHOOL SETTING

A THESIS

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE

MASTER OF SCIENCE

BY

TIFFANY L. BROWN JACKSON

CHAIRPERSON - JEFFERY K. CLARK, HSD

BALL STATE UNIVERSITY

MUNCIE, INDIANA

DECEMBER 2009
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DECEMBER 2009
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Lastly, I would like to thank God, because with Him, all things are possible!
ABSTRACT

THESIS: Knowledge and attitudes of Ball State University pre-service elementary education teachers toward emergency care in the school setting

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Unintentional injuries are the leading cause of death for children aged 5-19. Twenty-two million children are injured each year and approximately one quarter of these injuries occur on school premises. Schools must provide nursing services to children who attend school, but ratios of registered nurses to students is higher than the 1:750 recommended ratio. Current school teachers believe pre-service teachers should be trained in emergency care in teacher training programs. Yet, no research has been conducted to evaluate pre-service teachers’ knowledge and attitudes toward emergency care. The purpose of the study was to investigate pre-service teachers’ knowledge of and attitude toward emergency care in the school setting. A cross sectional group-comparison survey design was used. A 40-item questionnaire was administered to pre-service elementary teachers at Ball State University located in Muncie, IN. The questionnaire consisted of questions from “Emergencies in the school setting: Are public school teachers adequately trained to respond?” and Urban public school teachers’ attitudes and perceptions of the effectiveness of CPR and automated external defibrillators. Sub-group comparisons were made using bivariate
and multivariate analyses of similar demographic, attitude, and knowledge questions. Findings indicated that pre-service teachers have a positive attitude toward emergency care, low levels of knowledge about emergency care, and a low level of willingness to provide emergency care in schools. In addition, when comparing pre-service teachers who had received emergency care training to those who did not, a statistically significant difference was found in their knowledge about emergency care. Emergency care training has limited influence on pre-service teachers’ attitudes and willingness to provide care.
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The focus of the current trends in health promotion and disease prevention is on reducing risks of cardiovascular disease, physical inactivity, and tobacco use. Often, much less is said about prevention and reduction of injuries (Brener, Burstein et al., 2001). Together, accidental and unintentional injuries are a leading cause of death of Americans regardless of age, race, sex, and economic status (Centers for Disease Control and Prevention [CDC], 2001a). Additionally, injuries that do not result in death are experienced by many individuals each year, but may result in emergency room, clinic, and physician visits. These injuries cost Americans billions of dollars each year (Danseco, Miller, & Spicer, 2000).

Injuries occur to 22 million children in the United States each year (Danseco, Miller, & Spicer, 2000). An estimated 80% of elementary-aged school children will seek treatment from school personnel with injury-related complaints in a two-year timeframe (Danseco, Miller, & Spicer, 2000). Most injuries (intentional or unintentional), illness, and premature death among children can be traced to health behaviors established in childhood (Kolbe, 1990). Because of underreporting of school related injuries, the cause and prevention strategies of school injuries have not been assessed. Furthermore, no
comprehensive guidelines for school administrators or teachers have been developed or implemented focusing on the problem of injuries occurring at school.

Guidelines have been established focusing on various components of health education instruction (Allensworth & Kolbe, 1987; American School Health Association [ASHA], 1998; Barrios, Sleet, & Mercy, 2003; Indiana State Board of Education, 2007; Small et al., 2001; Joint Committee on National Health Education Standards [JCNHES], 2007; United States Department of Health and Human Services [USDHHS], 2000). These guidelines have been established to be implemented at the national, state, district, and school levels focusing on the physical, mental, social, and spiritual health of each student.

Health education has been taught by teachers in schools at all grade levels. The total hours of instruction declines following the fifth grade (Kann, Brener, & Wechsler, 2007). Therefore, health education instruction during teacher training programs should be examined. If pre-service teachers are inadequately trained in emergency care during teacher training programs, the students they teach are less likely to be interested in emergency care (Blomquist, 1986). Instead, pre-service teachers should be role models for students regarding emergency care in the school setting.

Emergency care provided by school health personnel is common in the school setting. Nearly all (99%) of middle schools and high schools provided first aid services including assistance for severe allergic reactions, choking, and serious unintentional injuries (Kann, Brener, & Wechsler, 2007). Nonetheless, only 35.7% of schools had a registered nurse present full-time to provide these services (Kann, Brener, & Wechsler,
Likewise, only 45.1% of schools met the one nurse to 750 student ratio recommended by the government (Kann, Brenner & Wechsler, 2007).

Students often perceive their teachers as role models who provide a source of influence for behaviors, namely health behaviors (Blomquist, 1986). With both parents oftentimes working outside of the household, many students spend more hours per day with their teachers than with their own parents (English & Duke, 1995). Many times, children and adolescents are instilled with attitudes and behaviors at the elementary level that will influence their health for the rest of their life (English & Duke, 1995). If the teacher is a prominent role model during this crucial stage of development, then it is the teachers who must attain positive attitudes and knowledge toward emergency care and promote safety of their students (USDHHS, 2003).

Studies focusing on knowledge of and attitudes toward emergency care in the school setting reveal many teachers believe an emergency care course should be mandatory during teacher training (Compton, Sworr, Dunne, Welche, & Zalenski, 2003; Gagliardi, Neighbors, Spears, Byrd, & Snarr, 1994). There are no comprehensive guidelines to provide emergency care in teacher training programs. Each of the 50 states were required by No Child Left Behind (NCLB) legislation to provide innovative programs, which may have included cardiopulmonary resuscitation for teachers (United States Department of Education [USDOE], 2002). The exact number of states requiring cardiopulmonary resuscitation for teachers is not known, however, it was estimated approximately half (n=24) of states provided funding for cardiopulmonary resuscitation training and first aid training (n=26) for school teachers (CDC, 2007). Limited empirical
data on the status of emergency care training required by university teacher preparation programs are available. Moreover, the knowledge and attitudes of pre-service teachers toward emergency care have not been studied.

**Statement of the Problem**

The problem of this study was to examine pre-service teachers’ knowledge of and attitudes toward emergency care in the school setting.

**Purpose of the Study**

Pre-service teachers’ knowledge and positive attitudes toward emergency care could be affecting the attitudes and knowledge of their students regarding emergency care. Furthermore, teachers’ indifferent attitude and knowledge of emergency care could be placing the students at risk for further injury if a situation needing emergency care were to arise.

The likelihood of injuries in the school setting is evident. School health services are often limited due to the many roles a school nurse fills. Therefore, teachers should be adequately trained in emergency care. However, not all teachers have a positive attitude and knowledge of emergency care (Gagliardi et al., 1994).

Previous research has focused on layperson and current school teachers’ knowledge of and attitudes toward emergency care (Anonymous, 2003; Axelsson, 2001; Casper, Murphy, 2000; Compton, et al., 2003; Gagliardi, et al., 1994; Quan, 2003; &
Swor et al., 2003), but has not focused on pre-service teachers’ knowledge of and attitudes toward emergency care.

The data obtained from this study could be utilized in several ways. First, the information could be useful for faculty and staff responsible for creating health education curriculum for pre-service teachers. Secondly, pre-service teachers should become more aware of how their health behaviors can and do influence the priorities of their students in all aspect of their lives. Knowing the knowledge and attitudes of pre-service teachers could promote the development of one comprehensive guideline at the school, district, state, and federal level entailing emergency care in the school setting and result in positive trends in attitudes of future students and teachers regarding emergency care in the school setting.

Information obtained from this study can be used by decision makers in many ways. Decision makers, including nurses, school administrators, and school board members, can have support focusing on the likelihood of emergency care events occurring in the school setting. They could prepare policies for when these events occur, and implement ways to evaluate how situations were handled. Understanding the knowledge base and attitudes of the future teachers working in their schools could affect how they approach further training, workshops, and professional development related to emergency care. Furthermore, decision makers in healthcare and academic settings can have a detailed source of information to use when considering implementation of an emergency care program as part of pre-service teacher training programs.
Need for the Study

The leading cause of death and disability in the United States for persons aged 1-44 is accidental and unintentional injuries (Heron et al., 2009). Specifically, unintentional injuries are the leading cause of death for school-aged children aged 5-19. Twenty-two million children are injured each year (Danseco, Miller, & Spicer, 2000) and approximately one quarter of these injuries occur on school premises. Nearly all schools provide emergency care services, however, not all schools have staff certified to provide emergency care (Kann, Brener, & Wechsler, 2007). Likewise, less than half of schools had a registered nurse present to provide services and when registered nurses are present, their numbers exceed the 1:750 ratio.recommendation from the United States Department of Health and Human Services (Kann, Brener, & Wechsler, 2007).

Providing emergency care has been perceived to be the responsibility of the school nurse. However, with a shortage of school nurses and a ratio of school nurses exceeding the 1:750 ratio established, it cannot be guaranteed that personnel adequately trained in emergency care are ready and available to respond. Additionally, some school nurses believe the responsibility of basic emergency care should partly belong to the teacher (Libbus et al., 2003). Teachers are present in all classroom settings, hence would be the first respondent in the event of an injury. Furthermore, teachers serve as role models for students, and their attitudes toward and knowledge of emergency care can affect students’ knowledge and attitudes. If hypotheses are supported by data collected during this study, teacher training programs could implement emergency care courses for
pre-service teachers during their training programs to enhance positive attitudes and knowledge of emergency care.

Delimitations

The study was delimited to the following:

1. The participants surveyed were 115 pre-service teachers enrolled in Health Science (HSC) 350, Elementary School Health Program, at Ball State University during the Spring Semester 2005.

2. The instrument used was a 40-item questionnaire modified from Gagliardi and colleagues (1994) and Compton and colleagues (2003). Gagliardi and colleagues measured current school teachers’ knowledge of and attitudes toward emergency care in the school setting, and Compton and colleagues measured attitudes and perceptions of the effectiveness of CPR in the school setting.

3. Content validity of the modified instrument was established using a jury of experts.

4. The dependent variables of the study were pre-service teachers’ knowledge of emergency care, attitudes toward emergency care, and willingness to perform emergency care.

5. Data were collected from April 19, 2005 through April 21, 2005.

6. Data were analyzed using bivariate and multivariate statistics.
Limitations

The study was limited by:

1. Subjects were not randomly selected. Instead, they were selected based on their enrollment in the course HSC 350, Elementary School Health Program during the Spring semester 2005.
2. The influence of HSC 350 course content over students’ knowledge and attitudes toward emergency care was not controlled.
3. Knowledge and attitudes toward emergency care could have been affected by variables which were not assessed in this study.

Assumptions

The study was based upon the following assumptions:

1. Participants answered questions honestly and to the best of their ability.
2. The pre-service teachers had an adequate understanding of their duties and obligations as a teacher at the time of data collection.
3. The subjects’ responses on all tests and measurements were truthful.

Research Questions

1. To what extent have pre-service teachers received prior training in emergency care?
2. To what extent are pre-service teachers knowledgeable of emergency care protocols?
3. To what extent are pre-service teachers confident in their ability to provide emergency care in the school setting?

4. To what extent are pre-service teachers willing to act in an emergency situation?

Null Hypotheses

1. There is no significant difference in the knowledge of emergency care in the school setting between pre-service teachers with emergency care training and those without emergency care training.

2. There is no significant difference in attitudes toward emergency care in the school setting between pre-service teachers with emergency care training and those without emergency care training.

3. There is no significant difference between pre-service teachers with emergency care training and those without emergency care training in confidence/willingness in providing emergency care.

Definition of Terms

Automated External Defibrillator (AED) An AED is used to analyze and advise whether a heart rhythm should be shocked.

Cardiopulmonary Resuscitation (CPR) Mixture of rescue breathing and chest compressions for a victim who is neither breathing nor circulating blood

Emergency Care Immediate care of injury or illness, including CPR, AED use, and/or first aid, to prevent further injury or death.
First Aid  Initial care provided to a minor injury

Injury  Physical damage (including cuts, sprains, fractures) to a person’s body, causing the body to seek homeostasis.

Pre-service teacher  One who has declared education as a major, currently seeking a bachelor’s degree from Ball State University during the Spring Semester 2005 and teacher certification in the State of Indiana from the Indiana Professional Standards Board upon graduation.
Chapter Two

REVIEW OF RELATED LITERATURE

Introduction

A review of literature related to emergency care and elementary educators is presented in this chapter. For organizational purposes, the chapter is arranged into the following topics: (a) epidemiology and treatment of childhood injuries (b) health promotion and prevention laws, guidelines, and policies; (c) teacher training and education, (d) attitude and perception toward emergency care, (e) importance of emergency care in schools, and (f) summary.

Epidemiology and Treatment of Childhood Injuries

Epidemiology of Childhood Injuries

Previous research has been conducted to identify the definition and epidemiology of injuries. An injury is an “unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical injury or from the absence of such essentials as heat or oxygen” (United States Department of Health and Human Services, 2000, p. 15-55). Intentional injuries are purposeful, while unintentional injuries are accidental (CDC, 2001b). Common causes of unintentional injuries include
motor vehicle accidents, drowning, poisoning, fires and burns, falls, sport related injuries, firearm related injuries, choking, suffocation, and animal bites (CDC, 2001b; Di Scala, Gallagher, & Schneps, 1997).

Causes and outcomes of childhood injuries in schools have been studied. Di Scala and colleagues (1997) analyzed data related to the causes and outcomes of injuries to children between the ages of 5 and 18 in the school setting. Data were collected from nurse coordinators at hospitals in 30 states, Canada, and Puerto Rico as a part of the National Pediatric Trauma Registry (NPTR) from October 1988 to October 1995. Nearly 50,000 (n=49,540) cases were reported. Cases were excluded that included children younger than five years old or older than 18 years old, those that involved transportation to or from school, and those reported by a Canadian hospital. As a result, a sample of 1,558 cases was examined in the study.

The researchers analyzed demographic data in addition to injury circumstance data (Di Scala et al., 1997). The majority of the injuries reported were unintentional injuries caused by falls, sports, or other means (n=1,398, 89.7%). There were nine times more unintentional injuries (n=1,398, 89.7%) than intentional/violence related injuries (n=160, 10.3%) in schools (Di Scala et al., 1997). Overall, males (n=1,147; 73.6%) accounted for three times as many injuries than females (n=405, 20.6%).

Of the unintentional injuries requiring hospitalization, falls (n=665, 43.0%), sport activities (n=524, 34.0%), and assaults (n=120, 10.0%) were the primary causes (Di Scala et al., 1997). The average hospital stay was 3.5 days, and most children (n=1,223,
77.0%) were admitted to the hospital for less than three days. Nearly half of the children injured in schools (n=680, 43.6%) developed physical limitations as a result of their injuries.

Age and gender affect the epidemiology of childhood injuries. Approximately four million school children and adolescents are injured at school per year (Danseco Miller, & Spicer, 2000). It has been estimated that nearly one of four injuries to children and adolescents occur on school property (Danseco et al., 2000; Schiedt et al., 1995; & Sheps & Evans, 1987). Danseco and colleagues (2000) conducted a retrospective study using data collected in the National Health Interview Survey (NHIS) from 1987 to 1994. The *International Classification of Diseases, 9th Revision* (1980) was used to define diagnoses. This definition included “fractures, lacerations, sprains, contusions, burns, poisoning, and impairments caused by unintentional and violent incidents” (Danseco et al., 2000, p. 2). A total of 3,073 injuries reported in the NHIS were included in the study. Danseco and colleagues (2000) found males had a nonfatal injury rate of 30 per 100,000 and were more likely to be injured than females, who had a nonfatal injury rate of 20 per 100,000.

The epidemiology of childhood injuries has also been studied. Scheidt and colleagues (1995) collected epidemiological data on childhood injuries, through the use of a multistage probability sampling design survey. Nearly 48,000 (n=47,485) households with a reported injury completed the interview; the response rate was 95% (Scheidt et al., 1995). Each household with children that completed the survey was selected to complete the Child Health Supplement sample (n=17,110). The Child Health
Supplement summarized data related to social and economic conditions, acute and chronic conditions, activity limitations, restrictions, and physician contact information. The closest adult to each child was asked to specify whether the child had experienced an injury in the previous 12 months, and the cause, location, and consequences of the injury.

A total of 2,773 injuries were reported for 2,335 of the 17,110 children included in the survey (Scheidt et al., 1995). Scheidt and colleagues (1995) have identified an overall injury rate of 27 injuries per 100 students. Adolescents between 14 and 17 experienced a higher rate of injury (38.7%) compared to other age groups. Nearly two out of three children with multiple injuries were male (n=233, 67.0%). Boys between the ages of 13 and 17 were nearly two times more likely to be injured than girls (95%, CI=1.54, 2.21). Overall, boys had a significantly higher risk of injury (risk ratio [RR] =1.52, 95%, CI=1.37, 1.68). When the results of this study were extrapolated to the United States population, more than 16 million children and adolescents were projected to experience an injury in a one year period. One in five (19.0%) of the injuries in this study reportedly took place on school grounds.

Using data collected in the Child Health Supplement, Scheidt and colleagues’ (1995) concluded injuries requiring medical attention occur in at least 25% of children annually. One of three injuries was serious enough to warrant surgery, bed restrictions, and loss of school or normal activity for one day or more. Scheidt and colleagues (1995) also concluded potential injury reduction and prevention could occur by identifying risk factors, environmental and psychosocial determinants, and other factors.
Additional epidemiological data has been noted (Sheps & Evans, 1987). The Vancouver (British Columbia) Health Department and the Vancouver School Board assessed the quality of data reported by schools on accident report forms. A total of 3,033 injury reports were extracted from school files. Nearly all (n=3,009) reports were included in the study. Sheps and Evans (1987) revealed about three (n=2.82) injuries reported per 100 students. In elementary school, the injury rate was 2.85 per 100 students. Playgrounds accounted for the most school injuries, and falls were the most common cause of injury. In secondary schools, 2.7 injuries were reported per 100 students. Sports related areas accounted for the highest rate of injuries, and falls were the most common cause of injury. Sheps and Evans (1987) concluded the school should understand the relationship between students’ behavior and the school. Understanding the relationship between schools and students could enhance injury prevention.

_Treatment of School Injuries_

Injury is the most common health problem treated by school health personnel (CDC, 2001b; USDHHS, 2001). School health services have had a vital role in treating children with injuries and this role has changed with the development of effective treatment strategies (Allensworth & Kolbe, 1987). Treatment of childhood injuries may be provided by teachers, school health personnel, and medical providers.

Nearly one in three (35.7%) schools had a full-time nurse, defined as a school nurse who works more than 30 hours per week (Kann et al., 2007). Common duties (performed in more than 95% of schools) of school nurses included administration of first
aid, medication, and CPR (Kann et al., 2007). Approximately half (45.1%) of schools met the one nurse to 750 student ratio suggested (Kann et al., 2007).

Most (80%) elementary school children have visited the school nurse with an injury related complaint (Kann, et al., 2007). However, not all children who needed medical attention received it. Sixteen percent (n=250) of children who sustain serious injuries, including fractures to the extremities and penetrating wounds, are sent home rather to a medical care provider (Di Scala, Gallagher, & Schneps, 1997). In the clinical setting, injuries account for 5.5 million children aged 5-14 who visit hospital emergency rooms annually—equivalent to 145.7 per 1,000 persons (USDHHS, 2001). One out of three injuries to children requires surgery, bed restriction, or loss of school time or normal activity for one day or more (Scheidt et al., 1995).

Several factors affect the epidemiology and treatment of childhood injuries. Injuries, particularly unintentional injuries, are very likely among school aged children in the school setting (Di Scala, et al., 1997). Researchers have noted approximately 25% of injuries to children occur on school property (Danseco et al., 2000; Scheidt et al., 1995; Sheps & Evans, 1987). Most injuries in the school setting occur on playgrounds, at sporting events, or from falling (Di Scala et al., 1997; Sheps & Evans, 1987). More specifically, injuries are more likely to occur to students who are adolescent aged (Scheidt et al., 1995) and male (Danseco et al., 2000; Di Scala et al., 1997; Scheidt et al., 1995).
Laws, Guidelines, and Polices Related to School Health Promotion and Prevention

Numerous laws, guidelines, and policies have been developed to ensure the safety of students, teachers, and ancillary personal in schools, and a safe school environment (USDHHS, 2001). These policies and guidelines have been developed for implementation at the national, state, district, and school levels. Each level must work collaboratively to ensure maximum safety of faculty, staff, students, and others who are a part of the school setting daily (Allensworth & Kolbe, 1987).

Schools have a legal obligation to provide education services in a safe and positive environment (United States Department of Education [USDOE], 2002). The No Child Left Behind Act was passed to provide a safe and drug free school environment by mandating all schools must publicly report safety statistics, including injuries and falls, and implement effective drug and violence prevention programs. The CDC (2007) determined schools are the only public institution with the capability of reaching nearly all children: More than 95% (n=53,000,000) of children ages 5-17 are enrolled in schools. As a result, the safe and positive educational environment is also ensured by the reduction of injuries.

Many documents have been published at the national level to provide guidelines for health education instruction. Healthy People 2010, released by the United States government, focuses on health promotion and disease prevention and provides specific goals and objectives related to health education (USDHHS, 2000). Forty-five goals of Healthy People 2010 focus on injury prevention (Appendix A). Additionally, seven specific objectives within Healthy People 2010 focused on the policy and prevention of
unintentional injuries among children and adolescents. These objectives are outlined in Table 1. Goal number 15-31 particularly related to injuries occurring in the school setting as a result of sports (Di Scala et al., 1997; Sheps & Evans, 1987).

The CDC (2007) released a study entitled “School Health Policies and Programs Study (SHPPS).” This research study provided data for state and local health education professionals to use related to unintentional injury, violence, and suicide prevention policies and programs. Specifically, the document included information related to a social environment that promotes safety; a safe physical environment; health education curriculum and instruction, safe physical education, sports, and recreational activities; health, counseling, psychological, and social services; appropriate responses to crises; involvement of families and communities; and staff development (CDC, 2007).

Table 1

<table>
<thead>
<tr>
<th>Number</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Increase the proportion of persons appropriately counseled about health behaviors.</td>
</tr>
<tr>
<td>15-6</td>
<td>(Developmental) Extend State-level child fatality review of deaths due to external causes for children aged 14 years and under.</td>
</tr>
<tr>
<td>15-15</td>
<td>Reduce deaths caused by motor vehicle crashes.</td>
</tr>
<tr>
<td>15-18</td>
<td>Reduce nonfatal pedestrian injuries on public roads.</td>
</tr>
<tr>
<td>15-24</td>
<td>Increase the number of States and the District of Columbia with laws requiring bicycle helmets for bicycle riders.</td>
</tr>
<tr>
<td>15-29</td>
<td>Reduce drownings.</td>
</tr>
<tr>
<td>15-31</td>
<td>(Developmental) Increase the proportion of public and private schools that require use of appropriate head, face, eye, and mouth protection for students participating in school-sponsored physical activities.</td>
</tr>
</tbody>
</table>
Many findings from the SHPPS study are related to health promotion and injury prevention. First, policies stating that schools or districts should follow national or state health education standards were adopted in most (74.5%) states (Kann et al., 2007). Furthermore, 72.0% of states suggested that schools or districts follow the *National Health Education Standards* specifically. The *National Health Education Standards* were identified by the CDC as a resource for students, teachers, administrators, and other stakeholders to support health enhancing behaviors (Joint Committee on National Health Education Standards [JCNHES], 2007).

The *National Health Education Standards* (JCNHES, 2007) published guidelines, intended to be used by health education professionals to advocate for quality health education in schools, and as a result increase the prevention strategies and safety of schools. In this document, eight health education standards are identified, with specific performance indicators for grades 2, 5, 8, & 12. Many of these standards and performance indicators focus on the prevention of unintentional injuries. A detailed list of standards and performance indicators from the National Health Education Standards related to injury prevention are outlined in Appendix B.

Prevention via education was also assessed in the SHPPS study. There was an inconsistency among health education topics taught to school aged students. Most (86.3%) states, districts, and schools taught only one of 14 health topics of public health concern (Kann et al., 2007). Many of these topics are either directly or indirectly related
to intentional or unintentional injuries among students. These health topics are outlined in Table 2.

Fewer (60.8%) states, districts, and schools require teaching seven of the 14 health topics (Kann et al., 2007). Furthermore, even fewer (<10%) of all states, districts, and schools require teaching of all 14 health topics in elementary school and 40% in secondary schools (Kann et al., 2007).

Table 2

Fourteen Health Topics and Public Health Issues that Affect Morbidity and Mortality of Youth

<table>
<thead>
<tr>
<th>Alcohol- or other drug-use prevention</th>
<th>Nutrition and dietary behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma awareness</td>
<td>Other STD prevention</td>
</tr>
<tr>
<td>Emotional and mental health</td>
<td>Physical activity and fitness</td>
</tr>
<tr>
<td>Foodborne illness prevention</td>
<td>Pregnancy prevention</td>
</tr>
<tr>
<td>HIV prevention</td>
<td>Suicide prevention</td>
</tr>
<tr>
<td>Human sexuality</td>
<td>Tobacco-use prevention</td>
</tr>
<tr>
<td>Injury prevention and safety</td>
<td>Violence prevention</td>
</tr>
</tbody>
</table>

In grades where risky behaviors, including premarital sexual intercourse, smoking, and violence, are more prevalent, schools provide less health education. Overall, health education instruction decreases from kindergarten (35.8%) to 12th grade (8.5%) (Kann et al., 2007). Health education instruction for all grade levels is illustrated in Table 3. The SHPPS also revealed that about two thirds (67.8% of elementary, 67.1% of secondary) of health education instruction in the school setting was conducted by a teacher with a license, endorsement, or certification (Kann et al., 2007). Contrarily, only
13.0% of elementary teachers and 37.2% of secondary teachers had a major, minor, or graduate degree in health education (Kann et al., 2007). As a result, adolescents are receiving less health education instruction.

Table 3

SHPPS Results: Health Education by Grade Level

<table>
<thead>
<tr>
<th>Grade</th>
<th>Required Health Education (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>35.8</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>44.6</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>43.5</td>
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<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>47.7</td>
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<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
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</tr>
<tr>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Many states have identified the need for a documented, planned, and sequenced curriculum in health education from grades kindergarten through 12. As a result states, such as Indiana, have adopted health education standards (Indiana State Board of Education, 2007). These health education standards are based upon National Health Education Standards (JCNHES, 2007) and outline skills students should learn in order to develop health literacy and attain mastery of health education standards.
The Coordinated School Health Program (CSHP) concept was first described by Allensworth and Kolbe (1987) to enhance the complete physical, mental and social well-being in the school environment. The CSHP was based on the concept that health is the “complete physical, mental, and social wellbeing, not merely the absence of disease” (World Health Organization, 2006, p.1). The following components must be present and fully-functioning: comprehensive school health education; physical education; school health services; school nutritional services; school counseling, psychological, and social services; healthy school environment; school-site health promotion for staff; and family and community involvement in schools (Allensworth & Kolbe, 1987; Barrios et al., 2003). With these components effectively working together, students are safer, healthier, and as an end result, learn more.

Relationship between Policy and Prevention

The relationship between effectiveness of policy implementation and emergency care prevention in the school setting has not been directly studied. However, the relationship between smoking policy and adolescent smoking has been studied (Pentz, Brannon, Charlin, MacKinnon, & Flay, 1989). Pentz and colleagues (1989) administered a self-report instrument and used a biochemical measure to assess the effectiveness of smoking policy on adolescent smoking. Students in the seventh grade (n=4,807), teachers (n=104), principals (n=21), and school secretaries (n=23) from 23 schools in Los Angeles and San Diego were included in the study. A 109-item instrument was administered to students to assess their smoking behavior (Pentz et al., 1989). The
instrument measured the number of cigarettes smoked; prevalence rates during their lifetime and previous week; attitudes; and demographics. The biochemical measure included an expired air sample for carbon monoxide to be analyzed. Information on smoking prevention, restrictions related to smoking, and policies was obtained from teachers and administrators, using a 96-item instrument. Lastly, school secretaries were interviewed with a 21-item instrument to assess the extent of which smoking was allowed on school grounds, the length of the policy, violation consequences, and emphasis of the policy.

T-tests were used to analyze the data. All of the 23 schools included in the data collection process had a standard policy banning smoking on school grounds (Pentz et al., 1989). Schools with more policies had lower prevalence rates and amounts of smoking in the past week than school with fewer policies. Likewise, when regression analyses were conducted on each smoking variable, a direct correlation between the extent of emphasis on lower amounts of smoking, as self-reported, was revealed. Neither punishment nor consequences had an effect on smoking rates.

Teacher Training and Education

There has been an inconsistency among teacher training programs across the United States, especially in health education. Many teacher preparation programs lack training in health education and emergency care. Most teachers receive no training in chronic health conditions (Johnson, Lubker, & Fowler, 1988) and health instruction (Lohrman, Gold, & Jubb, 1987) during their pre-service preparation programs.
Researchers who administered a post-graduate survey of 286 teachers showed that 40.2% (n=115) of teachers had not taken a formal health education course (Wiley, 1993). Furthermore, 44.3% (n=126) had only taken one course (Wiley, 1993). In Ohio, 80% (n=40) of colleges and universities require a health education course for elementary education majors (Ubbes, Cottrell, & Ausherman, 1999). This required course was either personal health (n=4) or a health education methods course (n=36). Nearly one in three colleges and universities that offer a health education course require health educators to complete the health education course (n=213, 31.7%) (Kittleson & DeBarr, 1991).

The significance of completing a health education course has been established. Wiley (1993) stated teachers who took one health education course in college were more likely to teach health education in their classroom. The health education course during pre-service teacher training gave the pre-service teachers value, practical skills, and resources to teach health education (Wiley, 1993).

The content of health education courses required for teacher training programs also varies. Although the CSHP is an integral component of the education environment, colleges and universities vary greatly when including content related to CSHPs in the curriculum. Among colleges and universities in Ohio that offer elementary education as a declarable major, researchers found they provided much (62%), some (15%), little (15%), or no (9%) coverage on CSHPs (Ubbes et al., 1999). Similarly, there was inconsistency in coverage of the National Health Education Standards: colleges and universities reported much (22%), some (34%), little (32%), or no (12%) coverage of these national standards (Ubbes et al., 1999). Ubbes and colleagues (1999) concluded that
all teachers responsible for health education instruction, which typically is elementary
education teachers at the elementary level, should be adequately trained in health
education roles. Without health education, there is a lack of understanding of the
relationship between education and health and how to provide education services to
students with different ages and abilities (Ubbes et al., 1999). Goldberg and Governali
(1990) also stated the need for enhancement of health education in teacher preparation
programs. The authors declared preparation programs need to help elementary teachers
develop the background required to deliver health education utilizing models which range
from the separate subject approach to integration with existing areas (Goldberg &

Continuing education has been shown to improve competency among teachers
related to health education. For example, Chen and colleagues (1990) researched the
perceived competency teaching following a health education workshop for teachers. The
workshop improved teachers’ perceived competency in teaching health. However, only a
few (n=75, 26.3%) teachers had ever attended a health education workshop after earning
teacher licensure (Wiley, 1993). In-service teachers did not engage in continuing
education in the health education field, primarily because they did not have the
opportunity (Theis & McAllister, 2001).

Attitude and Perception toward Emergency Care

Knowledge and attitudes toward emergency care have been evaluated in a variety
of settings, but no empirical data has been found related to the school setting. Swor and
colleagues (2003) evaluated self-efficacy in performing and willingness to learn CPR in an elderly population. One in three (n=201) respondents to a mail survey reported they had a medical history of cardiovascular disease and four of ten (n=259) respondents lived with someone with a history of cardiovascular disease, which was positively associated with the persons’ willingness to perform CPR skills. A history of cardiovascular disease was negatively associated with willingness to perform CPR. CPR training had been obtained by 43.6% (n=275) of the respondents; however only 13.7% (n=32) had received such training within the previous five years.

Knowledge and attitudes of emergency care has also been studied outside of the school setting (Axelsson, 2001). A qualitative study of 19 rescuers who provided emergency care found that competence was important in intervention (Axelsson, 2001). Axelsson focused on personal factors related to emergency care in addition to physical factors. Personal factors included courage to confront death and to deal with the victim (Axelsson, 2001). Physical factors that could cause a layperson to hesitate to perform emergency care included presence of vomit, alcohol, risk of infectious disease. Axelsson concluded as context of emergency care training courses, the concept of helping someone, and never making the situation worse should be included.

Current school teachers’ perceptions regarding health education has been studied. Goldberg and Governali (1990) used a cross-sectional survey design using a four point bipolar (necessary... unnecessary) scale. A convenience sample of 144 teachers from three districts in Central New York was used for data collection. Most teachers indicate
health education is effective (63%), worthwhile (84%), relevant (67%), practical (75%),
and informative (78%).

Contrarily, less than half indicate health education is necessary (32%) and exciting (44%) (Goldberg & Governali, 1990). Specific content areas within health education were also studied. Most teachers believe human growth and development (46%); emotional health (63%); nutrition (59%); family life education (63%); alcohol, tobacco, and other drugs (71%); and safety, first aid and survival (59%) are very important in elementary school health education. Furthermore, the majority of teachers believe environmental health (61%); diseases and disorders (56%); consumer health (57%); community health (56%); and healthful lifestyles (47%) are important topics in the health education curriculum. Several factors were identified as having an influence on teaching health education. Time (60%) and personal beliefs about the worth of health education (42%) directly influenced the teaching of health education. Likewise, availability of resources (37%), guidance from the school district (38%), personal experiences in health education (41%), administrative support (34%) and in-service education (36%) were indicated as being important in determining the sources of health education. Goldberg and Governali (1990) concluded that teachers are interested in health education, but they are not properly trained in health education methodology. Health education could more effectively and consistently be taught if elementary teachers were prepared at the pre-service and in-service educational levels.

With continually changing legislation at both the federal and state level, the school role related to children’s academic progress has changed dramatically. The
federal mandate known as Public Law 101-476, passed in 2000, mandated students with disabilities be included in the general education setting (USDOE, 2002). Krier (1993) conducted a survey of current school teachers and the status of medically fragile children in their classrooms. Nearly all (91%) of teachers indicated they had contact with a medically fragile child in their classroom (Krier, 1993). Although only 16.3% of teachers had valid and current CPR training (Compton et al., 2003), teachers generally had a positive perception of including children with chronic conditions into their classrooms (Olson, Seidler, Goodman, Gaelic, & Nordgren, 2004). It has also been noted that teacher concerns are far greater than clinical risk of medical emergencies (Olson et al., 2004).

The attitudes of teachers toward health education and emergency care have been studied. In general, attitudes toward health education increased with attendance at health education workshops (Chen et al., 1990). The majority of elementary teachers considered health education necessary (92%) and worthwhile (84%) (Goldberg & Governali, 1990). Furthermore, teachers indicated safety, first aid, and survival were especially important (Goldberg & Governali, 1990).

Goldberg and Governali (1990) identified the goal of health education was self responsibility. Similarly, when teachers were engaged in the delivery of health education instruction, a great deal of ownership and enthusiasm toward health education resulted (Boshee, 1988). Involvement in health education was directly linked to the perceived importance of health education (Goldberg & Governali, 1990).
Summary

A review of the literature showed there are concerns related to emergency care in the school setting. Teachers who are adequately trained and prepared for emergencies of any type are vital to the recovery of victims of injuries that occur within the school setting. Studies have indicated that strengthening all components of the chain of survival can be effective in reducing the amount and severity of injuries. Research supports health education in the school setting, but most teachers do not feel adequately trained in health education. This lack of confidence can be attributed in part to the lack of emphasis regarding health education in pre-service training programs.

Elementary educators should provide health education. It is at the elementary level students develop their attitudes and knowledge toward health behaviors, such as emergency care training. Furthermore, there is evidence suggesting most injuries in the school setting occur among adolescents. However, health education decreases at the high school level. A direct correlation exists between health education and prevention of injuries.

Little research is being conducted on pre-service education teachers and their perceptions of emergencies within the school setting. Assessing the attitudes and perceptions of pre-service education teachers would assist educators at university, state, and national levels when structuring elementary education programs. Furthermore, it is the attitudes and perceptions of elementary educators that will lead to a willingness and positive attitude of students of all ages toward obtaining emergency care certification.
Chapter Three

METHODS & PROCEDURES

Introduction

The problem of this study was to examine pre-service teachers’ knowledge of and attitudes toward emergency care in the school setting. The following sections are discussed in this chapter: (a) design of the study, (b) arrangements for conducting the study, (c) selection of subjects, (d) instrumentation, (e) data collection, and (f) data analysis.

Design of the Study

The design used in this study was a cross sectional survey design. A survey was used to measure knowledge of and attitudes toward emergency care in the school setting among pre-service educators. A cross-sectional survey design was used to (a) fulfill the researcher’s interest in measuring Ball State University pre-service teachers knowledge of and attitudes toward emergency care, (b) to gather data at one point in time during the Spring Semester 2005, and (c) to allow for sub-group comparisons of data.
Arrangements for Conducting the Study

The study was conducted at Ball State University, Muncie, Indiana. Approval of the design and methods used in this study was obtained from the University’s Institutional Review Board (IRB) (Appendix D). An extension was later granted from the University’s Institutional Review Board (IRB) to continue the study (Appendix E). Permission was obtained from three HSC 350: Elementary School Health Program instructors to administer the instrument to students enrolled during the Spring Semester 2005. A total of three sections of HSC 350 were used for data collection.

Selection of Subjects

Students enrolled in HSC 350: Elementary School Health Program during the Spring Semester 2005 composed the non-probability convenience sample used in this study. The subjects were chosen because they were believed to be a representative sample of Ball State University (BSU) pre-service teachers. Specifically, HSC 350: Elementary School Health Program is a requirement for all elementary education majors at Ball State University. HSC 350: Elementary School Health Program serves to teach students the “school’s role in promoting health and preventing disease among preschool and elementary school children… focuses on the school health program (instruction, services, and environment), community resources, and health problems common to school children” (BSU, 2003, p. 354).
Instrumentation

The instrument used in this study was a modification of instruments created by Gagliardi and colleagues (1994) and Compton and colleagues (2003). Gagliardi and colleagues’ (1994) study focused on determining the extent of training and emergency care knowledge of current public school teachers in Midwestern states and to assess injury and illness where the teacher is likely to be the first to respond. Gagliardi was contacted and permission was granted to use a modified instrument (see Appendix F). Gagliardi expressed concern the instrument needed to be modified to reflect the change in standards of emergency care since 1994 (M. Gagliardi, personal communication, November 11, 2003).

Compton and colleagues’ (2003) instrument measured public school teachers’ attitudes and perceptions of the effectiveness of CPR. Dr. Scott Compton from the Department of Emergency Medicine at Wayne State University in Detroit, Michigan was contacted regarding the instrument. Dr. Compton emailed a copy of his instrument used in this study and permission was granted to use a modified form of his instrument (Appendix G).

Three changes were made from the original instruments used by Gagliardi and colleagues (1994) and Compton and colleagues (2003) to accommodate pre-service teachers in this study. These three changes are shown in Appendix H.

The modified instrument consisted of 39 items. Nine items were demographic in nature, five items measured attitudes toward emergency care in the school setting on a Likert scale (1= strongly agree to 5= strongly disagree), nine items measured confidence
in providing emergency care/willingness to provide emergency care in the school setting (yes or no), and 16 items focused on knowledge of emergency care skills. Responses to the instrument were to be filled out on blue number five Scantron sheets.

**Validity and Reliability**

Reliability of the instrument used by Gagliardi and colleagues (1994) had previously been established. The Kuder-Richardson formula established a .82 reliability coefficient. Likewise, reliability of the instrument used by Compton and colleagues (2003) was established. Reliability results are shown in Figure 1.

A jury of experts was used to establish content validity of the modified items on the instrument. Both qualitative and quantitative procedures, as outlined by McKenzie, Wood, Kotecki, Clark and Brey (1999), were used to establish content validity of the three additional emergency care items. Mimicking previous procedures by Gagliardi and colleagues (1994), a jury of emergency care providers including CPR instructors and emergency care providers was used to establish content validity of the modified instrument.

**Duties of Jurors**

Based on the previous criteria, seven individuals were invited to establish content validity of the one modified item on the instrument and the two additional items on the instrument. Of those invited to participate, all seven (listed in Appendix J) agreed to

Figure 1: Reliability Results

participate in the two step review process. Upon agreement to participate, the jurors were sent a packet of materials outlining their duties. This packet included: (a) cover letter, (b) draft instrument, and (c) a rating sheet (see Appendices J-L). The duties of the jurors were two-fold: (a) to indicate whether the item was necessary and if so, stated clearly and (b) to write comments or suggestions about (1) each item, (2) item(s) that should be added, and/or (3) the entire instrument.
After collecting and reviewing the jurors’ comments, necessary changes were made to the draft instrument. Within the three items on the draft instrument, a total of two changes were made. The jury agreed wording was awkward in item #33 and item #34 should to be changed to reflect current emergency care standards.

Changes were made to the draft instrument on item #33 and #34. After the draft instrument was revised, the new instrument was sent to the jurors for a quantitative review. Like the first review, six jurors participated in this second review. Each juror was sent a second packet containing (a) a cover letter with instructions (Appendix M) and (b) a quantitative review form of knowledge based items (Appendix N). Each juror was asked to finalize the content validity process by determining if each item was “essential,” “useful but not essential,” or “not necessary” on the quantitative review form.

Upon receipt of the juror packets, the ratings from the jurors for each item were totaled and used to calculate the content validity ratio (CVR). The CVR was calculated with steps outlined by McKenzie and colleagues (1999). A content validity ratio of 1.0 (p<0.05) was calculated for both items. Because of the level of significance (p<.05), it was necessary to include items #33 and #34 in the final instrument.

One demographic item was added to reflect the pre-service education population. Item #6 “I have covered emergency care (first aid, CPR, and AED use) in the course this instrument is being administered” was added. This item was included to determine whether content of the HSC 350 course would affect the results of the study. After this quantitative review process was completed, the instrument determined to have content
validity and was ready for a pilot study. Based on this information, the final draft instrument contained 40 items.

Pilot Study

To ensure the revised instrument served its intended purpose, to establish reliability of the instrument, and to determine the data collection procedures would work, a pilot study was conducted. The pilot study was performed on April 19, 2005 using Ball State University students enrolled in HSC 350 section 012 under the instruction of Dr. Denise Seabert. The purpose of the pilot study was to assess whether any flaws would be present within the data collection process.

The following results were obtained from the pilot study. First, the instrument took between 15 and 20 minutes to administer. Secondly, two changes needed to be made to the draft instrument. The first change occurred on item #1, in which age 23 was omitted from the answer choices. The second change that took place was regarding item #5. Clarification was made to indicate if participants do not intend to teach, they should leave the item blank. It was determined with these changes from the pilot study, the instrument was ready for the data collection process.

Final Instrument

Results obtained from the data collection process were used to calculate a total knowledge, attitude, and confidence score for each respondent. Items one through ten of the final instrument (see Appendix O) were used to collect demographic information for
the population. Items 11-15 were used to calculate a total attitude score for each respondent. Attitude scores ranged from zero, or a negative attitude, to five, or a positive attitude. Likewise, items 16-24 were used to calculate a total confidence, or willingness, score. Confidence scores ranged from least confident, represented by a one, to most confident, represented by a nine. Similarly, responses to items 25-40 were used to calculate a total knowledge score. Zero represented the least knowledge score, and 16 represented the highest knowledge score.

Data Collection

The 40-item questionnaire was administered during class time. The following procedures were used for data collection:

a. A consent form was read aloud to the subjects stating if the subjects filled out and returned the instrument they were consenting to participate (Appendix P).

b. Verbal instructions for filling out the instrument (see Appendix P) were read to the subjects prior to the subjects’ receiving the instrument.

c. Contact information for the Ball State Institutional Review Board, the primary investigator, and the committee chairperson for this study was provided to participants.

d. The following items were distributed to participants:

1. Cover sheet that included the verbal instructions intended to be kept by the participants if they had items regarding the research project (Appendix Q),

2. A 40-item instrument (Appendix N), and
3. A blue 5 Scantron sheet.

e. Participants were granted 15-20 minutes to answer items on the instrument.

f. Upon completion of the instrument, participants were asked to:

1. Place their Scantron sheet in a manila envelope located at the front of the classroom to maintain anonymity,

2. Return their instrument to the table located in the front of the classroom,

3. If they were not electing to keep their cover sheet, return it on the table located in the front of the classroom.

g. Each subject was thanked for their participation in the study.

h. Scantron sheets were checked for missing, incomplete, or mismarked results.

Data Analysis

The useable raw data from the completed instruments were taken to Ball State University’s Computing Services to be processed using SPSS version 11.0 (Norusis, 2002). Frequencies were obtained for all items on the instrument. Furthermore, descriptive statistics, cross tabulations, and t-tests were calculated. Analyses were completed to determine if test score differences were influenced by age or previous educational or emergency care occupations. Scores were used to determine whether a significant difference between groups based on age and prior emergency care training existed. Further analysis was conducted to compare students who had received emergency care material in HSC 350: Elementary School Health Program course and those who had not received course content.
Chapter Four

RESULTS OF THE STUDY

Analysis of Data

The problem of this study was to examine pre-service teachers’ knowledge of and attitudes toward emergency care in the school setting. This chapter presents the results and discussion associated with the research questions and null hypotheses presented. The sections included are: (a) description of participants, (b) description of participants’ knowledge and attitudes toward emergency care, (c) research questions, (d) null hypotheses, (e) discussion of findings, and (f) discussion of limitations.

Description of Participants

The population of this study included Ball State University students enrolled in HSC 350: Elementary School Health Program during the Spring Semester 2005. One-hundred-fifteen (115) of the 139 students enrolled in HSC 350 sections 001, 012, and 013 were present and completed the instrument on the day data were collected. A response rate of 82.73% was achieved.

Demographic data were obtained from items 1-10 on the instrument. The demographic data are presented in Table 4. Eight responses to question number three regarding major were excluded because they were either missing or mismarked.
### Table 4

**Demographic Characteristics of Study Population**

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</tr>
<tr>
<td></td>
<td>77</td>
<td>67.5</td>
<td>37</td>
<td>32.2</td>
</tr>
<tr>
<td>Emergency Care in HSC 350</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Previous Employment</th>
<th>CPR Instructor</th>
<th>Paramedic/EMT</th>
<th>Lifeguard</th>
<th>Nurse/Assistant</th>
<th>Other</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.7</td>
<td>5</td>
<td>6.8</td>
<td>14</td>
<td>19.2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>51</td>
<td>69.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Most study participants intend to teach grades 6-8 (n=52, 46.0%), whereas fewer indicated their intentions to teach grades 1-5 (n=46, 40.7%), preschool (n=13, 11.3%), or high school (n=2, 1.7%). Two thirds (n=77, 67.5%) of students had covered some form of emergency care in HSC 350: Elementary School Health Program. Of the total 115 respondents, 73 (63.5%) had held a job that required emergency care training. Likewise, 84 (75.7%) respondents indicated they had had some form of emergency care training, which occurred within the past two years (n=39, 46.4%). This training was most often provided by the American Red Cross (n=42, 53.8%).

**Description of Participants’ Knowledge and Attitudes Toward Emergency Care**

**Attitudes Toward Emergency Care in the School Setting**

Pre-service teachers’ knowledge of and attitudes toward emergency care was a factor that was analyzed throughout this study. The results of pre-service teachers’ attitudes are found in Table 5.

Participants’ attitudes toward emergency care were measured by their responses to items 11-24. Items 11-15 were measured using a five-point Likert scale. As Table 5 reports, the most frequently chosen response indicated most participants agreed they were prepared to deal with emergencies in the school setting (n= 42, 36.8%). More than half of the respondents agreed emergency care in the school setting should be included in teacher education programs (n=63, 54.8%), most strongly agreed schools should have staff members trained in emergency care (n=93, 80.9%), and they would attempt to provide emergency care if a person collapsed (n=43, 37.1%). The largest proportion of
Table 5

Pre-service Teachers’ Attitudes Toward Emergency Care

Confidence

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n  %</td>
<td>n  %</td>
<td>n  %</td>
<td>n  %</td>
<td>n  %</td>
</tr>
<tr>
<td>Item 11</td>
<td>2  1.8</td>
<td>15 13.0</td>
<td>37 32.2</td>
<td>42 36.8</td>
<td>18 15.7</td>
</tr>
<tr>
<td>Item 12</td>
<td>0  0.0</td>
<td>3  2.6</td>
<td>9  7.8</td>
<td>40 34.8</td>
<td>63 54.8</td>
</tr>
<tr>
<td>Item 13</td>
<td>1  0.9</td>
<td>1  0.9</td>
<td>0  0.0</td>
<td>20 17.4</td>
<td>93 80.9</td>
</tr>
<tr>
<td>Item 14</td>
<td>2  1.8</td>
<td>12 10.4</td>
<td>53 46.5</td>
<td>31 27.2</td>
<td>16 14.0</td>
</tr>
<tr>
<td>Item 15</td>
<td>3  2.6</td>
<td>5  4.3</td>
<td>23 20.0</td>
<td>41 35.7</td>
<td>43 37.1</td>
</tr>
</tbody>
</table>

Item 11: I feel I am adequately prepared to deal with medical emergencies (playground emergencies, chronic illnesses, a student who has collapsed) in the school setting.

Item 12: I feel emergency care (CPR, first aid, and AED training) with some emphasis on school related emergencies should be required in teacher education programs.

Item 13: I feel each school should have staff members trained in emergency care.

Item 14: Schools should purchase Automated External Defibrillators (AED) (~$3000 each) with public funds.

Item 15: If a person at my school collapsed, I would attempt to provide emergency care.

Participants (n=53, 46.5%) were uncertain whether AEDs (automated external defibrillators) should be purchased with public funds by schools.

Attitudes toward emergency care in the school setting were also evaluated using questions 16-24, focusing on confidence of emergency care and willingness to provide
emergency care in the school setting. Participants’ responses to items 16-24 are found in Table 6.

Table 6

<table>
<thead>
<tr>
<th>Pre-service Teachers’ Knowledge of Emergency Care Confidence</th>
<th>Yes</th>
<th>No</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Item 16: Would you be willing to take a free emergency care course if offered?</td>
<td>109</td>
<td>94.8</td>
<td>6</td>
<td>5.2</td>
</tr>
<tr>
<td>Item 17: Are you concerned with legal repercussions when performing emergency care on a student?</td>
<td>79</td>
<td>69.3</td>
<td>35</td>
<td>30.7</td>
</tr>
<tr>
<td>Item 18: Are you concerned with contracting a disease when performing emergency care on a student?</td>
<td>50</td>
<td>44.6</td>
<td>62</td>
<td>55.4</td>
</tr>
<tr>
<td>Item 19: Are you concerned about performing emergency care correctly when performing on a student?</td>
<td>99</td>
<td>86.1</td>
<td>16</td>
<td>13.9</td>
</tr>
<tr>
<td>Item 20: Are you concerned about hurting a student when performing emergency care on the student?</td>
<td>89</td>
<td>78.8</td>
<td>24</td>
<td>21.2</td>
</tr>
<tr>
<td>Item 21: Are you concerned about legal repercussions when performing emergency care on a coworker?</td>
<td>71</td>
<td>62.3</td>
<td>43</td>
<td>37.7</td>
</tr>
<tr>
<td>Item 22: Are you concerned with contracting a disease when performing emergency care on a coworker?</td>
<td>61</td>
<td>53.5</td>
<td>53</td>
<td>46.5</td>
</tr>
<tr>
<td>Item 23: Are you concerned about performing emergency care correctly when performing on a coworker?</td>
<td>96</td>
<td>83.5</td>
<td>19</td>
<td>16.5</td>
</tr>
<tr>
<td>Item 24: Are you concerned about hurting a coworker when performing emergency care on the coworker?</td>
<td>84</td>
<td>74.3</td>
<td>29</td>
<td>25.7</td>
</tr>
</tbody>
</table>
Nearly all respondents (94.8%) indicated they would be willing to take an emergency care course if offered. Barriers to performing emergency care on students include concerns regarding potential legal repercussions (69.3%), contracting a disease (44.6%), performing the correct procedure (86.1%), and hurting a student (78.8%). Fifty-five (55.4) percent of respondents indicated they were not concerned with contracting a disease when providing emergency care on a student. Results indicated legal repercussions (62.3%), contracting a disease (53.5%), proper technique concerns (83.5%), and injuring the coworker (74.3%) were all concerns of pre-service teachers in the event they need to provide emergency care on a coworker.

Knowledge of Emergency Care in the School Setting

Fifteen scenario-based items were included in the instrument to assess knowledge of pre-service teachers toward emergency care in the school setting. Each scenario was posed, followed by five answer choices including a “not certain” response. Results to these items are illustrated in Table 7.

These scenario-based items included unconsciousness, drug overdose, convulsions, respiratory distress, lacerations, and heat related emergencies. Ten of the 16 knowledge questions were either incorrectly answered, or answered with uncertainty by more than half of the participants. These items included the following scenarios: head injuries, choking, lacerations, seizures, CPR and AED techniques, and diabetes. Based on this information, most participants are not able to successfully complete a knowledge
based test on emergency care as it is related to the school setting. These results are included in Table 7.

Participants’ knowledge of emergency care was measured by their responses to items 25-40. Items 25-40 were scenario-based items, followed by five responses. The five responses included a correct response, three incorrect responses, and a not certain response. Six of the 16 knowledge questions were answered correctly by the majority of the participants. The results of the knowledge items are reported in Table 7.

Table 7

<table>
<thead>
<tr>
<th>Item</th>
<th>Correct</th>
<th>Incorrect</th>
<th>Item</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Item 25</td>
<td>34</td>
<td>29.9</td>
<td>81</td>
<td>70.4</td>
<td>Item 33</td>
</tr>
<tr>
<td>Item 26</td>
<td>72</td>
<td>62.6</td>
<td>43</td>
<td>37.4</td>
<td>Item 34</td>
</tr>
<tr>
<td>Item 27</td>
<td>21</td>
<td>18.3</td>
<td>94</td>
<td>81.7</td>
<td>Item 35</td>
</tr>
<tr>
<td>Item 28</td>
<td>50</td>
<td>43.5</td>
<td>65</td>
<td>56.5</td>
<td>Item 36</td>
</tr>
<tr>
<td>Item 29</td>
<td>18</td>
<td>15.7</td>
<td>97</td>
<td>84.3</td>
<td>Item 37</td>
</tr>
<tr>
<td>Item 30</td>
<td>89</td>
<td>77.4</td>
<td>26</td>
<td>22.6</td>
<td>Item 38</td>
</tr>
<tr>
<td>Item 31</td>
<td>94</td>
<td>81.7</td>
<td>21</td>
<td>18.3</td>
<td>Item 39</td>
</tr>
<tr>
<td>Item 32</td>
<td>26</td>
<td>22.6</td>
<td>89</td>
<td>77.4</td>
<td>Item 40</td>
</tr>
</tbody>
</table>
Research Questions

Research Question #1: To what extent have pre-service teachers received prior training in emergency care? Based on the results of this study, most (75.7%) pre-service teachers have received some form of emergency care training. The extent of this training was varied. Two thirds (67.5%) of pre-service teachers had received emergency care training to some degree in HSC 350: Emergency School Health Program, the course in which this instrument was administered. The degree to which emergency care procedures were discussed in HSC 350: Emergency School Health Program did not exceed one hour of instructional time. Additionally, some pre-service education students (n=73, 63.5%) were previously employed as a cardiopulmonary resuscitation (CPR) instructor (2.7%), paramedic or emergency care technician (EMT) (6.8%), lifeguard (19.2%), nurse or nurse assistant (1.4%) or another occupation which commonly require emergency care certification (69.9%).

A total of 84 respondents (75.7%) indicated they had previously obtained some form of emergency care training. The time lapse between administration of the instrument and emergency care training varied from less than two years ago (46.4%), two to three years ago (22.6%), to greater than three years ago (21.7%). Based upon the statistics obtained in this study, most pre-service teachers were exposed to emergency care, primarily through a previous occupation. The extent of training obtained and time lapsed since training varied, again, dependent on the previous occupation.
Research Question #2: To what extent are pre-service teachers knowledgeable of emergency care protocols? Results for items 25-40 were used to calculate a total knowledge score for each respondent. A score of zero represented the least knowledge and a score of 16 represented the most knowledge. Respondents’ scores ranged from zero to 12. Table 8 represents participants’ knowledge scores.

Table 8
Pre-service Teachers’ Emergency Care Knowledge Scores

<table>
<thead>
<tr>
<th>Knowledge Score</th>
<th>Total Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>n</td>
<td>4</td>
</tr>
<tr>
<td>%</td>
<td>3.5</td>
</tr>
</tbody>
</table>

The range of total knowledge scores was 0-12. Four respondents scored zero (3.5%) and one respondent scored 12 (0.9%). Most respondents scored four (13.0%), five (11.3%), six (13.9%), seven (18.3%), or eight (16.5%). The mean score for participants’ knowledge of emergency care was 6.22, with a standard deviation of 2.57.

Based upon knowledge of emergency care procedures, as assessed by the instrument used in this study, most participants are able to apply practical knowledge obtained in emergency care training in only half of the scenarios. Otherwise, participants would apply incorrect emergency care procedures, or be uncertain of how to handle the scenario.
Research question #3: To what extent are pre-service teachers confident in their ability to provide emergency care in the school setting? Responses to questions 16-24 were used to calculate a total confidence/willingness score. Participants’ total confidence/willingness scores are shown in Table 9.

Table 9

<table>
<thead>
<tr>
<th>Willing</th>
<th>(least)</th>
<th>(greatest)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>n</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td>%</td>
<td>26.6</td>
<td>9.7</td>
</tr>
</tbody>
</table>

The scores ranged from one (25.7%), least confident, to nine (4.3%), most confident. Most respondents scored one (25.7%), three (24.8%), or five (13.3%). The mean confidence score was 3.38 with a standard deviation of 0.54. Most participants scored either a one, the least confident score, (n=30, 26.6%) or three (n=24.8%). Based on these results, most subjects were neither confident nor willing to provide emergency care services to a student or coworker in the school setting.

Null Hypotheses

There were three null hypotheses analyzed as a part of this study.

Null hypothesis #1: There is no significant difference in the knowledge of emergency care in the school setting between pre-service teachers with emergency care
training and those without emergency care training. Participants who had previously obtained some form of emergency care training (n=100) comprised a comparison group to be compared with those who had not obtained some form of emergency care training (n=15). Responses to the knowledge items on the instrument were used to compile a total knowledge score (see Table 7). Group means were compared to determine if a significant difference existed in knowledge between those participants who had obtained emergency care training and those who had not. A t-test for independent samples was used to analyze the data. These results are reported in Table 10.

Table 10
Pre-service Teachers’ Knowledge, Training v. No Training

<table>
<thead>
<tr>
<th></th>
<th>No Training</th>
<th></th>
<th>Training</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>Knowledge</td>
<td>15</td>
<td>4.93</td>
<td>2.71</td>
<td>100</td>
</tr>
</tbody>
</table>

A significance of p<0.038 was calculated for knowledge indicating a statistically significant difference in knowledge between those pre-service teachers who had obtained previous emergency care training and those pre-service teachers who had not obtained previous emergency care training. This information was obtained by conducting a t-test for Equality of Means.
Furthermore, a Levene’s Test for Equality of Variances was conducted to account for any variance between knowledge among those participants with emergency care training and those without emergency care training. Results of the Levene’s test (0.98) indicate no significant variance. When this equal variance was assumed, there was an insignificant difference ($t=1.98, p<0.051$) among those with and those without emergency care training. Null hypotheses #1 was accepted.

Null hypothesis #2: There is no significant difference in attitudes toward emergency care in the school setting between pre-service teachers with emergency care training and those without emergency care training. Comparison groups were formed of those who had previous emergency care training ($n=100$) and those who had not obtained emergency care training ($n=15$). These responses are shown in Table 11.

Table 11

<table>
<thead>
<tr>
<th></th>
<th>No Training</th>
<th></th>
<th>Training</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>Attitude</td>
<td>15</td>
<td>3.87</td>
<td>0.35</td>
<td>100</td>
</tr>
</tbody>
</table>
Responses to the attitude questions were used to calculate a total attitude score, ranging from zero, or the most negative attitude, to five, indicating a positive attitude. Results are shown in Table 12.

Table 12
Pre-service Teachers Total Attitude Score

<table>
<thead>
<tr>
<th>Total Attitude Score</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0-2.6 (least positive)</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>3.0-3.8</td>
<td>39</td>
<td>34.0</td>
</tr>
<tr>
<td>4.0-5.0 (most positive)</td>
<td>72</td>
<td>62.7</td>
</tr>
</tbody>
</table>

The mean knowledge score of respondents who have previously obtained emergency care training was 4.05 (standard deviation 0.56), and the mean score of respondents lacking emergency care training was 3.87 (standard deviation 0.35). An independent samples t-test was used to calculate significance of the difference between the means of the two comparison groups. The Levene’s Test for Equality of Variances indicated no significant difference in the variances of the two independent samples (p<0.05), thus supporting the equality of variances assumption. The independent samples t-test revealed that there was no significant difference (t=2.95, p<0.004) in knowledge of emergency care between those with emergency care training and those without emergency care training. Results indicate no significance difference (p<0.218) in attitudes between those with previous emergency care and those without emergency care.
Null hypothesis #3: There is no significant difference between pre-service teachers with emergency care training and those without emergency care training in confidence/willingness in providing emergency care. Responses to questions 16-24 were used to calculate a total confidence score, ranging from one, least confident, to nine, most confident. Pre-service total confidence score are shown in Table 13.

Table 13

Pre-service Teachers Total Confidence/Willingness Score

<table>
<thead>
<tr>
<th>Total Confidence/Willingness</th>
<th>Score</th>
<th>n</th>
<th>%</th>
<th>Score</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>(least)</td>
<td>1</td>
<td>29</td>
<td>25.7</td>
<td>5</td>
<td>15</td>
<td>13.3</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>9.7</td>
<td></td>
<td>6</td>
<td>9</td>
<td>8.0</td>
</tr>
<tr>
<td>3</td>
<td>28</td>
<td>24.8</td>
<td></td>
<td>7</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>9.7</td>
<td></td>
<td>(greatest) 9</td>
<td>5</td>
<td>4.4</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>3.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean scores of those participants who had emergency care training was 3.47 (standard deviation 1.96), compared to those without emergency care training (3.37, standard deviation 2.17). These results are shown in Table 14. T-test results indicated no significant difference (p<0.869) in these confidence/willingness to provide emergency care.
A Levene’s Test for Equality of Variances was conducted to determine the variance in attitudes between those participants with and without emergency care training. Results of the Levene’s test (0.76) indicate no significant variance (p<0.05) in attitudes of between those with and those without emergency care training. When this equal variance was assumed, there was an insignificant difference (t=-0.64, p<0.527) in knowledge between those with emergency care and those without emergency care. Null hypothesis #3 was accepted.

Furthermore, results of a Levene’s Test for Equality of Variances indicated no significant variance (0.758, p<0.05) between those with and those without emergency care training. Null hypotheses #3 was accepted.

Table 14
Pre-service Teachers’ Willingness, Training v. No Training

<table>
<thead>
<tr>
<th></th>
<th>No Training</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>Willingness</td>
<td>15</td>
<td>4.93</td>
</tr>
</tbody>
</table>

Discussion of Findings

A major finding of this study was that there is a significant difference in knowledge of pre-service teachers with emergency care training when compared with
pre-service teachers with no emergency care training (Null Hypothesis 1). Participants who have participated in some extent of emergency care training have been exposed to the likelihood of encountering an emergency care situation in the school setting. However, most pre-service teachers have a positive attitude toward emergency care in the school setting regardless of previous emergency care training as analyzed with Null Hypothesis 2, which was accepted. This may be related to participants’ desire to enter the teaching profession—to help others.

To answer Research Question #1, most respondents (75.7%) reported having had some form of emergency care training. The extent of this training is extremely varied, and was only minimally examined in this study. Results of Item 7, emergency care training in previous occupations, was of questionable accuracy. It appears that subjects interpreted “other” as any other occupation they may have had, not solely any occupation that required emergency care training. For purposes of this study, the latter was intended. Item 8, seemed to corroborate this concern. If Item 7 was clarified be “any occupation requiring emergency care certification,” then results would be consistent with Item 8.

Participants were most likely to have taken an American Red Cross (36.5%) training course, or some other form of emergency care training (28.2%). The other forms of emergency care training were not examined, however subjects could have obtained a minimal amount of information from HSC 350: Elementary School Health Program, the course used for data collection.

Furthermore this study examined whether there was a significant difference in knowledge of emergency care when comparison groups were formed for those with
emergency care training and those without. Null hypothesis #1 was rejected: There was a significant difference in knowledge of emergency care in the school setting between pre-service teachers with emergency care training and those without emergency care training. It is important to consider what the extent of the emergency care training obtained is—This was not examined in its entirety in this study. Furthermore, some participants answered “yes” they had emergency care training. The extent of this training was not determined. It is not possible to determine if the training was skill-based or as an awareness basis. Clarification of this confusion may affect the results of this study.

With a clarification to Item 7, participants who answered “yes” to emergency care training, but actually were not formally certified, would be included with the no training group. As a result, the comparison groups (training v. no training) may have been drastically different. Awareness is not emergency care and does not imply a duty to provide emergency care. However, a formal certification in emergency care includes a sense of duty.

Similarly, it is important to consider the time lapsed between emergency care certification and survey administration. Questions could be raised as to whether participants had current emergency care knowledge, as reflected in changes from the American Heart Association and American Red Cross. Also, questions could be asked whether this time lapse may affect retention of information. It would be expected that those participants’ who recently completed an emergency care certification course would have a higher knowledge score. As an example, the American Heart Association certifications expire two years from the month they were issued. It would be expected
that a participant who completed the course one month ago would have a higher
knowledge than someone who took the same course three years ago. These results could be utilized to create further comparison groups.

Knowledge of emergency care in the school setting was also examined in this study. Fifteen school related scenario based questions were used to examine knowledge of emergency care. Despite confidence and positive attitudes toward providing emergency care, respondents were only minimally knowledgeable of emergency care protocols, supporting previous research (Gagliardi et al., 1994; Swor et al., 2003). This may suggest pre-service teachers have low knowledge retention, participate in poor training programs, or have unrealistic expectations. This could also be consistent with numerous guidelines, laws, and policies that are left up to interpretation. Even if a national guideline is published, it is often left to states, districts, and even schools to interpret the guideline for their own population. A difference also exists between American Heart Association and American Red Cross certification programs.

It should be noted that this study did not gather data regarding the number of participants who have previously been involved in knowledge application of emergency care training. If participants have had prior experience with emergency care and have successfully administered emergency care, then perhaps their attitudes, and indirectly confidence, toward providing emergency care would be impacted.

There was no significant difference in attitudes toward emergency care training between pre-service teachers with emergency care training and those without emergency care training. It is important to consider the fact that most participants take this course
their sophomore or junior year, prior to being exposed to the school setting on a long-term, full-time basis. Because of this, there is a chance that expectations of the need of emergency care, and the understanding of their role in the school setting could change with the transition from pre-service to in-service teachers. If this study were conducted with a population of pre-service teachers near graduation, it would be expected that they would have completed emergency care training through the American Red Cross or American Heart Association (as now required for licensure) and as a result, had a higher knowledge score. Likewise, participants would have completed student teaching and gained a more accurate perception of the professional field of teaching.

Participants’ in this study predominantly had a positive attitude toward emergency care in the school setting. Most respondents agreed (52.5%) that they were adequately prepared to deal with emergencies in the school setting. The word adequacy could be interpreted differently in several contexts. Some participants could have answered yes, they were adequately prepared because they felt they were ready to obtain a teaching position at the time of data collection. Other participants could have interpreted it to mean “entry level,” others as willing, and others simply as “could you do it.” However, results indicated participants are not knowledgeable of practical school based scenarios which may require emergency care.

Researchers suggest liability reasons prevent school personnel from providing emergency care (Children’s Safety Network [CSN], 1997), indicating pre-service teachers are not fully aware of their responsibilities and expectations as a school teacher, supporting evidence reported by Gagliardi and colleagues (1994). Undoubtedly, pre-
service teachers are unaware of their professional responsibilities as in-service teachers due to limited exposure. Results of this study revealed a fear related to legal repercussions, correctly performing emergency care, and hurting a student are barriers pre-service teachers have toward providing emergency care in the school settings.

Most respondents agreed (89.6%) that emergency care with some emphasis on school related emergencies should be required in teacher education programs (Item 12). The likelihood of a teacher providing emergency care in the school setting is high (CSN, 1997; Compton et al., 2003; Danseco et al., 2000; Olson et al., 2004). The results indicated there is a need for educating pre-service teachers on emergencies that are prone to occur in the school setting. However, at the time pre-service teachers are educated they feel they are adequately prepared to deal with emergencies in the school setting. This adequacy could be related to their eagerness to graduate, obtain licensure as a teacher, and begin their teaching careers. The final test of their confidence, of course, is not until they receive their first classroom teaching assignment and are faced with an emergency care situation.

Further examination should focus on the adequacy of emergency care training programs. The extent of emergency care training participants in this study had had was not examined. However, two out of every three participants’ acknowledged having had some training. The training is irrelevant if the participants are unable to apply the knowledge, like with an emergency care scenario based instrument used in this study. As a result, the training itself, the acquisition of knowledge, and the retention of knowledge should be examined.
Likewise, nearly all respondents agreed to some extent (98.3%) that each school should have staff members trained in emergency care. However, not all schools have medical staff or trained personnel to provide emergency care (Kann et al., 2007; USDHHS, 2000), and the responsibility is not solely that of the school nurse (Libbus et al., 2003). Again, this can be attributed to the premature professionalism of pre-service teachers about their roles and responsibilities in the school setting. If persons believe they are more likely to provide emergency care, they are more likely to obtain emergency care certification (Swor et al., 2003).

It should be noted that in the state of Indiana, as of June 30, 2006, all pre-service teachers electing to obtain licensure to teach are required to have emergency care training. Data in this study were collected before this date, and attitudes toward emergency care could be impacted by this mandate.

Research Question #4 examined the willingness to act in an emergency care situation. Barriers to providing emergency care for students, including legal repercussions (69.3%), correct technique (86.1%), and hurting the student (78.8%), did not seem to affect the attitude and confidence of respondents. Similarly, barriers to providing emergency care for coworkers, including legal repercussions (62.3%), contracting a disease (53.5%), using proper technique (83.5%), and hurting the coworker (74.3%), did not seem to affect attitudes or confidence of participants. These barriers toward providing emergency care are consistent with previous research (Axelsson, 2001).
Lastly, there was no significant relationship between emergency care training and confidence in providing emergency care. This may be attributed to the fact that participants in this study are pre-service teachers, some with limited knowledge, and perhaps lack the experience in providing emergency care. A second explanation may include training that was not extensive enough or was outdated at the time of data collection to impact participants’ knowledge or level of confidence of providing emergency care. Examining the extent and experience of providing emergency care at the pre-service and in-service levels could impact the results of this study and future studies.

Discussion of Limitations

The limitations of this study must be considered when interpreting the results of this study. First, a cross-sectional survey design was used to collect data for this study. Baranowski (1985) reported there are several factors that influence self-reported data including social desirability of responses, physical environment during data collection, interpretation and understanding of instructions, ability to assess self in response to instrument items, emotional state, and individual response biases. As a result, the results of this study may not be a true representation of pre-service teachers.

Secondly, this study only included pre-service teachers enrolled in HSC 350 during the Spring Semester 2005. There is the potential that pre-service students enrolled in other courses would have responded differently if they had participated in this study. For example, if data were collected in a Music Appreciation class, participants would be
fully removed from health science. The health environment (classrooms, posters, newsletters, etc) of the Cooper Life Science building may have influenced some participants’ answers. Should data be collected in a setting fully removed from health and healthcare, it would be expected participants would feel less obligated to answer questions more honestly. This assumption, paired with the clarification of emergency care training, researchers would expect fewer students would answer “yes” to having had previous emergency care training. This would exhibit a clearer picture of emergency care training knowledge retention for those with emergency care training.

Furthermore, there is the possibility that students enrolled in HSC 350 do not have an adequate understanding of the likelihood of situations requiring emergency care in the school setting. HSC 350 is a course that is taken at the sophomore, junior, or senior level. Practical hours, including practicum and student teaching, in Ball State’s elementary education major are not completed until the junior and senior years. This indicates participants could have participated in this study before any direct hand-on fieldwork was completed. Likewise, material taught in HSC 350 related to emergency care in the school setting could have influenced results of this study. With these factors considered, results of the study may be different than those presented in this thesis.

No data related to culture, religiosity, and spirituality were assessed in this study. There is a possibility some respondents who have less knowledge of emergency care and/or a negative attitude toward emergency care could be influenced by their cultural customs, religion, and spiritual practices, which is sometimes present in the medical field regardless of context.
Next, data were collected in an anonymous format. Using an anonymous format allowed participants to withdraw from the study at any time, and it was generalized that participants who participated in this study willingly did so. Also, there were 24 participants who were enrolled in HSC 350 sections 001, 012, or 013 during the Spring Semester 2005 who did not participate in the data collection process. Most likely these participants were absent during the data collection process, but they could have also withdrawn during the process. Perhaps those 24 participants’ responses could have changed the results of this study.

Lastly, the sizes of the two groups, training versus no training, are radically different. This should be considered when interpreting the results of the t-tests used to obtain some results of this study. No homogeneity of error variance was considered. A larger number of participants and clarification of Item 7 could have resulted in different comparison groups.
Chapter Five

SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The problem of this study was to examine pre-service teachers’ knowledge of and attitudes toward emergency care in the school setting.

Summary

The participants of this study were 115 Ball State University pre-service elementary education students enrolled in HSC 350 Elementary School Health Program during the Spring Semester 2005. Using a cross-sectional survey design, a 40-item instrument was administered during class time. Demographic items, attitude items toward emergency care in the school setting, and knowledge items toward emergency care in the school setting were found on the instrument. The final instrument was modified from previous similar studies (Gagliardi, et al., 1994; Compton, et al., 2003) and was updated and validated by a jury of experts.

Data were analyzed with assistance from Ball State University’s Computing Services Department. Frequencies were obtained for all 40 items on the instrument. More specifically, descriptive statistics, and t-tests were conducted. Analyses were conducted to determine if test score differences were influenced by age or previous
emergency care training. Participants who had some form of emergency care training were pooled to create a comparison group. Results of this study indicate that there is a significant difference in emergency care knowledge between pre-service teachers with emergency care training and pre-service teachers without emergency care training.

**Findings**

The analysis of data revealed the following major findings:

1. Pre-service teachers had low levels of knowledge of emergency care protocols.
2. Pre-service teachers have a predominantly positive attitude toward emergency care.
3. Most pre-service teachers have taken some form of emergency care training.
4. Most pre-service teachers “agree” or “strongly agree” that emergency care with some emphasis on school related emergencies should be required in teacher education programs.
5. Most pre-service teachers would be willing to take a free emergency care course if offered.
6. A conflict exists between attitude of emergency care and knowledge of emergency care procedures.
7. A conflict exists between attitude toward emergency care and confidence of providing emergency care in the school setting.
8. Pre-service elementary teachers acknowledge legality, performing the correct technique, and hurting students as barriers to providing emergency care.
As a result of the findings of this study, most participants were optimistic toward emergency care. This optimism could be attributed to previous emergency care training, personal experiences, or their pre-service knowledge. However, the reality of this optimism is grim. The average knowledge score was 50%, indicating the practicality and retention of emergency care knowledge was not present in the subjects selected for this study.

**Conclusions**

Based upon the findings and within the limitations of the study, the following conclusions were drawn:

1. Pre-service elementary education teachers are ill prepared to address emergencies in the school setting.

2. At the time of this study, no systematic way was in place to monitor pre-service teachers’ training in emergency care.

**Implications**

Based on the findings of this study, the following implications may be considered:

1. Emergency care certification programs required for licensure (rather than one single unit in one single course, like HSC 350) should be included as a part of teacher training programs to prepare pre-service teachers for the likelihood of emergency care events in the school setting.
2. Stronger collaboration related to emergency care should be present between all teachers, schools, and community members and organizations. This collaboration may include in-service and continuing education opportunities.

3. In-service teachers and those educating pre-service teachers should understand the importance of emergency care in the school setting and serve as role models to pre-service teachers by obtaining and maintaining emergency care certification.

4. Pre-service teachers may increase their confidence with practical application and abilities to perform emergency care.

Recommendations

The following recommendations are made as a result of the foregoing study:

1. The study should be repeated with a larger population at multiple institutions in higher education to permit a more valid generalization of the findings.

2. The study should be repeated with a population that includes all pre-service teachers, not singularly pre-service elementary education students.

3. A comparison of pre-service teachers’ attitudes and knowledge of emergency care should be obtained before and after emergency care training (pre- and post-test).

4. A comparison of pre-service teachers’ attitudes toward and knowledge of emergency care should be obtained based on the extent of their emergency care training.

5. Further studies should focus on determining if any singular dimension of health (emotional, intellectual, physical, social, and/or spiritual) affects knowledge of or attitudes toward emergency care among pre-service teachers.
6. An evaluation of parents of K-5 students should be conducted to determine their expectations of pre-service teachers’ toward emergency care in the school setting.

7. One standard policy and set of procedures regarding emergency care in the school setting should be facilitated for implementation at the school, district, state, and federal levels, resulting in a stronger collaboration of teachers, schools, and community members.

8. An evaluation should be conducted to determine whether pre-service teachers have been impacted by their teachers’ knowledge of and attitudes toward emergency care through role modeling and/or their own experiences.

9. A comparison study should be conducted to compare differences in knowledge and attitudes of emergency care between pre-service and in-service teachers.

10. A longitudinal study should be conducted to indicate whether changes in knowledge and attitudes of emergency care occur with the transition of pre-service teachers to in-service teachers.

11. A study should be conducted to determine whether school districts have and adhere to emergency care guidelines, protocols, and procedures.

12. A study should be conducted to examine whether personal relationships and/or experiences impact knowledge or attitudes of emergency care procedures or training.

Undoubtedly, the probability of students in the school setting needing emergency care is prominent. Without emergency care training, especially by teachers, then more injuries and deaths would occur. Emergency care is a duty—a responsibility—not only
of teachers, but of everyone. The knowledge and attitudes of emergency care, like those studied in this thesis, starts personally with each of us. It is a personal choice, often not a professional one, to obtain emergency care training—to be prepared for the unknown. It is then that our kindness and generosity can extend to others. If we expect to change knowledge levels and attitudes of emergency care, then we must start individually, then with those around us, then with schools, then with states… Besides, what a better way for teachers to earn the trust of kids—by them knowing we can be trusted with their lives?

It is my challenge to all who read this thesis to examine your own knowledge and attitudes of emergency care. Then, examine those who you love and care about. Would you know what to do in an emergency situation? Could you save their life? Do you trust those surrounding you to save your life in a time of need?
References


International Classification of Diseases, 9th Revision, Clinical Modification.


APPENDIX A

Summary of *Healthy People 2010* Objectives

Related to Injury Prevention
Appendix A: Summary of *Healthy People 2010* Objectives Related to Injury Prevention

<table>
<thead>
<tr>
<th>Number</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>Increase the proportion of persons appropriately counseled about health behaviors.</td>
</tr>
<tr>
<td>1-13</td>
<td>Increase the number of Tribes, States, and the District of Columbia with trauma care systems that maximize survival and functional outcomes of trauma patients and help prevent injuries from occurring.</td>
</tr>
<tr>
<td>7-2</td>
<td>Increase the proportion of middle, junior high, and senior high schools that provide school health education to prevent health problems in the following areas: suicide; tobacco use and addiction; alcohol and other drug use; unintended pregnancy, HIV/AIDS, and STD infection; unhealthy dietary patterns; inadequate physical activity; and environmental health.</td>
</tr>
<tr>
<td>7-3</td>
<td>Increase the proportion of college and university students who receive information from their institution on each of the six priority health-risk behavior areas.</td>
</tr>
<tr>
<td>7-11</td>
<td>Increase the proportion of local health departments that have established culturally appropriate and linguistically competent community health promotion and disease prevention programs.</td>
</tr>
<tr>
<td>15-1</td>
<td>Reduce hospitalization for nonfatal head injuries.</td>
</tr>
<tr>
<td>15-2</td>
<td>Reduce hospitalization for nonfatal spinal cord injuries.</td>
</tr>
<tr>
<td>15-3</td>
<td>Reduce firearm-related deaths.</td>
</tr>
<tr>
<td>15-4</td>
<td>Reduce the proportion of persons living in homes with firearms that are loaded and unlocked.</td>
</tr>
<tr>
<td>15-5</td>
<td>Reduce nonfatal fire-arm related injuries.</td>
</tr>
<tr>
<td>15-6</td>
<td>(Developmental) Extend State-level child fatality review of deaths due to external causes for children aged 14 years and younger.</td>
</tr>
<tr>
<td>15-7</td>
<td>Reduce nonfatal poisonings.</td>
</tr>
<tr>
<td>15-8</td>
<td>Reduce deaths caused by poisonings.</td>
</tr>
<tr>
<td>15-9</td>
<td>Reduce deaths caused by suffocation.</td>
</tr>
<tr>
<td>15-10</td>
<td>Increase the number of States and the District of Columbia with statewide emergency department surveillance systems that collect data on external causes of injury.</td>
</tr>
<tr>
<td>15-11</td>
<td>Increase the number of States and the District of Columbia that collect data on external causes of injury through hospital discharge data systems.</td>
</tr>
<tr>
<td>15-12</td>
<td>Reduce hospital emergency department visits caused by injuries.</td>
</tr>
<tr>
<td>15-13</td>
<td>Reduce deaths caused by unintentional injuries.</td>
</tr>
<tr>
<td>15-14</td>
<td>(Developmental) Reduce nonfatal unintentional injuries.</td>
</tr>
<tr>
<td>15-15</td>
<td>Reduce deaths caused by motor vehicle crashes.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
</tr>
<tr>
<td>15-16</td>
<td>Reduce pedestrian deaths on public roads.</td>
</tr>
<tr>
<td>15-17</td>
<td>Reduce nonfatal injuries caused by motor vehicle crashes.</td>
</tr>
<tr>
<td>15-18</td>
<td>Reduce nonfatal pedestrian injuries on public roads.</td>
</tr>
<tr>
<td>15-19</td>
<td>Increase use of safety belts.</td>
</tr>
<tr>
<td>15-20</td>
<td>Increase use of child restraints.</td>
</tr>
<tr>
<td>15-21</td>
<td>Increase the proportion of motorcyclists using helmets.</td>
</tr>
<tr>
<td>15-22</td>
<td>Increase the number of States and the District of Columbia that have adopted a graduated driver licensing model law.</td>
</tr>
<tr>
<td>15-23</td>
<td>(Developmental) Increase use of helmets by bicyclists.</td>
</tr>
<tr>
<td>15-24</td>
<td>Increase the number of States and the District of Columbia with laws requiring bicycle helmets for bicycle riders.</td>
</tr>
<tr>
<td>15-25</td>
<td>Reduce residential fire deaths.</td>
</tr>
<tr>
<td>15-26</td>
<td>Increase functioning residential smoke alarms.</td>
</tr>
<tr>
<td>15-27</td>
<td>Reduce deaths from falls.</td>
</tr>
<tr>
<td>15-28</td>
<td>Reduce hip fractures among older adults.</td>
</tr>
<tr>
<td>15-29</td>
<td>Reduce drowning.</td>
</tr>
<tr>
<td>15-30</td>
<td>Reduce hospital emergency room visits for nonfatal dog bite injuries.</td>
</tr>
<tr>
<td>15-31</td>
<td>(Developmental) Increase the proportion of public and private schools that require use of appropriate head, face, eye, and mouth protection for students participating in school-sponsored physical activities.</td>
</tr>
<tr>
<td>16-14</td>
<td>Reduce the occurrence of developmental disabilities.</td>
</tr>
<tr>
<td>20-1</td>
<td>Reduce deaths from work-related injuries.</td>
</tr>
<tr>
<td>20-2</td>
<td>Reduce work-related injuries resulting in medical treatment, lost time from work, or restricted work activity.</td>
</tr>
<tr>
<td>20-3</td>
<td>Reduce the rate of injury and illness cases involving days away from work due to overexertion or repetitive motion.</td>
</tr>
<tr>
<td>24-12</td>
<td>(Developmental) Reduce the proportion of vehicular crashes caused by persons with excessive sleepiness.</td>
</tr>
<tr>
<td>26-1</td>
<td>Reduce deaths and injuries caused by alcohol-and drug-related motor vehicle crashes.</td>
</tr>
<tr>
<td>26-6</td>
<td>Reduce the proportion of adolescents who report that they rode, during the previous 30 days, with a driver who had been drinking alcohol.</td>
</tr>
<tr>
<td>26-7</td>
<td>(Developmental) Reduce intentional injuries resulting from alcohol-and illicit drug-related violence.</td>
</tr>
<tr>
<td>28-8</td>
<td>(Developmental) Reduce occupational eye injury.</td>
</tr>
</tbody>
</table>
APPENDIX B

Standards and Performance Indicators from the National Health Education Standards Related to Injury Prevention
## Appendix B: Standards and Performance Indicators from the National Health Education Standards Related to Injury Prevention

<table>
<thead>
<tr>
<th>Standard</th>
<th>Pre-K to 2</th>
<th>3 to 5</th>
<th>6 to 8</th>
<th>9 to 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Comprehend concepts related to health promotion and disease prevention to enhance health</td>
<td>1.2.4: list ways to prevent common childhood injuries</td>
<td>1.5.3 describe ways in which a safe and healthy school and community environment promote personal health</td>
<td>1.8.3 analyze how the environment impacts personal health</td>
<td>1.12.3 analyze how environment and personal health are interrelated</td>
</tr>
<tr>
<td></td>
<td>1.5.4 describe ways to prevent common childhood injuries and health problems</td>
<td>1.8.5 describe ways to reduce or prevent injuries and other adolescent health problems</td>
<td>1.12.5 propose ways to reduce or prevent injuries and health problems</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8.8 examine the likelihood of injury or illness if engaging in unhealthy behaviors</td>
<td>1.12.8 analyze personal susceptibility to injury, illness, or death if engaging in unhealthy behaviors</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8.9 examine the potential seriousness of injury or illness if engaging in unhealthy behaviors</td>
<td>1.12.9 analyze the potential severity of injury or illness if engaging in unhealthy behaviors</td>
<td></td>
</tr>
<tr>
<td>2: Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors</td>
<td>2.2.2 identify what the school can do to support personal health practices and behaviors</td>
<td>2.5.3 identify how peers can influence healthy and unhealthy behaviors</td>
<td>2.8.3 describe how peers influence healthy and unhealthy behaviors</td>
<td>2.12.3 analyze how peers influence healthy and unhealthy behaviors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.5.4 describe how the school and community can support personal health practices and behaviors</td>
<td>2.8.4 analyze how the school and community can impact personal health practices and behaviors</td>
<td>2.12.4 evaluate how the school and community can impact personal health practices and behaviors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.8.10 explain how school and public health policies can influence health promotion and disease prevention</td>
<td>2.12.10 analyze how public health policies and government regulations can influence health promotion and disease prevention</td>
<td></td>
</tr>
<tr>
<td>3: Demonstrate the ability to access valid information and products and services to enhance health</td>
<td></td>
<td>3.8.4 describe situations that may require professional health services</td>
<td>3.12.4 determine when professional health services may be required</td>
<td></td>
</tr>
<tr>
<td>4: Demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks</td>
<td>4.2.3 demonstrate ways to respond when in an unwanted, threatening, or dangerous situation</td>
<td>4.5.3 demonstrate non-violent strategies to manage or resolve conflict</td>
<td>4.8.3 demonstrate effective conflict management or resolution strategies</td>
<td>4.12.3 demonstrate strategies to prevent, manage, or resolve interpersonal conflicts without harming self or others</td>
</tr>
<tr>
<td></td>
<td>4.2.4 demonstrate ways to tell a trusted adult if threatened or harmed</td>
<td>4.5.4 demonstrate how to ask for assistance to enhance personal health or others</td>
<td>4.8.4 demonstrate how to ask for assistance to enhance the health of self or others</td>
<td>4.12.4 demonstrate how to ask for and offer assistance to enhance the health of self and others</td>
</tr>
<tr>
<td>7: Demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks</td>
<td>7.2.2 demonstrate behaviors to avoid or reduce health risks</td>
<td>7.5.3 demonstrate a variety of behaviors to avoid or reduce health risks</td>
<td>7.8.3 demonstrate behaviors to avoid or reduce health risks to self and others</td>
<td>7.12.3 demonstrate a variety of behaviors to avoid or reduce health risks to self and others</td>
</tr>
<tr>
<td>8: Demonstrate the ability to advocate for personal, family, and community health</td>
<td></td>
<td>8.8.3 work cooperatively to advocate for healthy individuals, families, and schools</td>
<td>8.12.3 work cooperatively as an advocate for improving personal, family, and community health</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

Scope of Introduction of Indiana Academic Standards (2002)

Related to Injury Prevention
### Appendix C: Scope of Introduction of Indiana Academic Standards (2007) Related to Injury Prevention

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1.1</td>
<td>1</td>
<td>Comprehend concepts related to health promotion and disease prevention</td>
</tr>
<tr>
<td>A.2</td>
<td>1</td>
<td>Demonstrate the ability to evaluate health information, products, and services</td>
</tr>
<tr>
<td>A.3.1</td>
<td>1</td>
<td>Demonstrate the ability to analyze the influence of family, culture, peers, community, media, and technology on health and health behaviors</td>
</tr>
<tr>
<td>A.4</td>
<td>1</td>
<td>Demonstrate the ability to apply self-management skills to enhance health</td>
</tr>
<tr>
<td>A.5</td>
<td>1</td>
<td>Demonstrate the ability to utilize interpersonal communication skills to enhance health</td>
</tr>
<tr>
<td>A.6</td>
<td>1</td>
<td>Demonstrate the ability to implement decision making and goal setting to enhance health</td>
</tr>
<tr>
<td>A.7</td>
<td>1</td>
<td>Demonstrate the ability to advocate for personal, family, and community health</td>
</tr>
</tbody>
</table>

#### 2.1 Health Promotion and Disease Prevention

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.1.2</td>
<td>2</td>
<td>Demonstrate the ability to locate resources from home, school, and community that provide valid information on health and wellness</td>
</tr>
<tr>
<td>B.2.1</td>
<td>2</td>
<td>Identify resources from home, school, and community that provide valid health information</td>
</tr>
<tr>
<td>B.3</td>
<td>2</td>
<td>Demonstrate the ability to access and evaluate health information, products, and services for personal and/or familial use</td>
</tr>
<tr>
<td>B.4</td>
<td>2</td>
<td>Demonstrate the ability to utilize a variety of health communication strategies to enhance health</td>
</tr>
<tr>
<td>B.5</td>
<td>2</td>
<td>Demonstrate the ability to influence and support others for making positive health choices</td>
</tr>
</tbody>
</table>

#### 3.1 Injury Prevention and Safety

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.1.3</td>
<td>3</td>
<td>Explain the role of business, industry, and other health-related specialists</td>
</tr>
<tr>
<td>C.2</td>
<td>3</td>
<td>Identify ways to avoid, reduce, or prevent health problems and injuries while working in a variety of environments</td>
</tr>
<tr>
<td>C.3</td>
<td>3</td>
<td>Analyze the positive and negative impacts of work and community environments on health and wellness</td>
</tr>
</tbody>
</table>

#### 4.1 Personal Health

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.1.1</td>
<td>4</td>
<td>Explain the role of individual and family health behaviors and the prevention of injury, illness, disease, and premature death</td>
</tr>
<tr>
<td>D.2</td>
<td>4</td>
<td>Explain the relationship between health-related behaviors and the prevention of injury, illness, disease, and premature death</td>
</tr>
<tr>
<td>D.3</td>
<td>4</td>
<td>Demonstrate the ability to locate resources from home, school, and community that provide valid health information</td>
</tr>
<tr>
<td>D.4</td>
<td>4</td>
<td>Demonstrate the ability to influence and support others for making positive health choices</td>
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</table>

#### 5.1Community Health

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.1.1</td>
<td>5</td>
<td>Explain the role of individual and family health behaviors and the prevention of injury, illness, disease, and premature death</td>
</tr>
<tr>
<td>E.2</td>
<td>5</td>
<td>Explain the relationship between health-related behaviors and the prevention of injury, illness, disease, and premature death</td>
</tr>
<tr>
<td>E.3</td>
<td>5</td>
<td>Demonstrate the ability to locate resources from home, school, and community that provide valid health information</td>
</tr>
<tr>
<td>E.4</td>
<td>5</td>
<td>Demonstrate the ability to influence and support others for making positive health choices</td>
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</table>

#### 6.1Professional Health

<table>
<thead>
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<tr>
<td>F.1.1</td>
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<td>F.2</td>
<td>6</td>
<td>Explain the relationship between health-related behaviors and the prevention of injury, illness, disease, and premature death</td>
</tr>
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<td>F.3</td>
<td>6</td>
<td>Demonstrate the ability to locate resources from home, school, and community that provide valid health information</td>
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<tr>
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<td>6</td>
<td>Demonstrate the ability to influence and support others for making positive health choices</td>
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#### 7.1Advanced Health

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<td>G.1.1</td>
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<td>Explain the relationship between health-related behaviors and the prevention of injury, illness, disease, and premature death</td>
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<td>G.3</td>
<td>7</td>
<td>Demonstrate the ability to locate resources from home, school, and community that provide valid health information</td>
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<td>G.4</td>
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<td>Demonstrate the ability to influence and support others for making positive health choices</td>
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#### 8.1Basic Health

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</tr>
<tr>
<td>H.2</td>
<td>8</td>
<td>Explain the relationship between health-related behaviors and the prevention of injury, illness, disease, and premature death</td>
</tr>
<tr>
<td>H.3</td>
<td>8</td>
<td>Demonstrate the ability to locate resources from home, school, and community that provide valid health information</td>
</tr>
<tr>
<td>H.4</td>
<td>8</td>
<td>Demonstrate the ability to influence and support others for making positive health choices</td>
</tr>
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#### 9.1Intermediate Health

<table>
<thead>
<tr>
<th>Standard</th>
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</thead>
<tbody>
<tr>
<td>I.1.1</td>
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<td>Explain the role of individual and family health behaviors and the prevention of injury, illness, disease, and premature death</td>
</tr>
<tr>
<td>I.2</td>
<td>9</td>
<td>Explain the relationship between health-related behaviors and the prevention of injury, illness, disease, and premature death</td>
</tr>
<tr>
<td>I.3</td>
<td>9</td>
<td>Demonstrate the ability to locate resources from home, school, and community that provide valid health information</td>
</tr>
<tr>
<td>I.4</td>
<td>9</td>
<td>Demonstrate the ability to influence and support others for making positive health choices</td>
</tr>
</tbody>
</table>
APPENDIX D

Institutional Review Board Approval
INSTITUTIONAL REVIEW BOARD

TO: Tiffany Brown
2409 W. Bethel #24
Muncie, IN 47304

FROM: Jerrell Cassady, Chair
Institutional Review Board

DATE: April 15, 2004


The Institutional Review Board has recently approved your project titled Knowledge and Attitudes of Pre-Service Teachers' toward Emergency Care in the School Setting as originally submitted as an exempt study. Such approval is in force from 4/15/2004 to 4/14/2005.

It is the responsibility of the P.I. and/or faculty supervisor to inform the IRB:

- when the project is completed, or
- if the project is to be extended beyond the approved end date,
- if the project is modified,
- if the project encounters problems,
- if the project is discontinued.

Any of the above notifications should be addressed in writing to the Institutional Review Board, c/o the Office of Academic Research & Sponsored Programs (2100 Riverside Avenue). Please reference the above identification number in any communication to the IRB regarding this project. Be sure to allow sufficient time for extended approvals.

pc: Jeffrey Clark, Physiology and Health Science
APPENDIX E

Institutional Review Board Extension
The Institutional Review Board has reviewed and accepted your modification request to change the population of your approved protocol and has reviewed your request for continuing review of your protocol. On March 31, 2005, the IRB determined that your procedures qualify as "exempt." Projects that are determined to be exempt on or after March 3, 2005 are no longer required to be actively monitored by the IRB. As such, there will be no further review of your protocol, and you are cleared to continue with the procedures outlined in your protocol. As an exempt study, there will be no requirement for continuing review. Your protocol will remain on file with Academic Research and Sponsored Programs as a matter of record.

Editorial note: Please secure permission from the instructors of the classes you wish to survey. Also, please provide assurance to the IRB that you will not be administering surveys to your own students. In your introductory letter to your participants, please replace Sandra Smith's name with the new Coordinator of Research Compliance, Ms. Melanie L. Morris.

While your project does not require continuing review, it is the responsibility of the P.I. (and, if applicable, faculty supervisor) to inform the IRB if the procedures presented in this protocol are to be modified or if problems related to research participants arise in connection with this project. Any procedural modifications must be evaluated by the IRB before being implemented, as some modifications may change the review status of this project. Proposed modifications should be addressed in writing to the IRB at Academic Research and Sponsored Programs (2700 W. Riverside Avenue). Please reference the above identification number (IRB #) in any communication to the IRB regarding this project.

Reminder: Even though your study is exempt from the relevant federal regulations of the Common Rule (45 CFR 46, subpart A), you and your research team are not exempt from ethical research practices and should therefore employ all protections for your participants and their data which are appropriate to your project.

pc: Jeffrey Clark, Physiology and Health Science
APPENDIX F

Permission to Use Instrument from Dr. Gagliardi
Hi Tiffany. Always good to hear from someone who recognizes "un-met" needs of public school teachers. I have always been somewhat amazed at the false assumptions shared by public educators in regards to student emergencies. The assumption that the school nurse will always be there to "call them out" or that the nearest ambulances will always be immediately available to respond is fairly typical expectations. The instrument you request would need much work as the standard of care has changed significantly in several of the emergency care items that we assessed. As I have also moved twice since then, I will need to see if I maybe still have the questionnaire somewhere in unpacked boxes at home. I assume you have the complete article. Either way, I will hunt for it and get back with you in the next day or so. Best Wishes.

Monte Gagliardi, EdD, CCEMT/P

> -----Original Message-----
> From: Tiffany [SMTP:ttbrown3@bsu.edu]
> Sent: Tuesday, November 18, 2003 10:24 PM
> To: Monte Gagliardi
> Subject: Instrument Inquiry
>
> < File: image001.gif >
> Dr. Gagliardi,
> My name is Tiffany Brown and I am a graduate student at Ball State University (Muncie, IN). I hope to complete requirements, including a thesis, for the Master of Science in Health Science degree (Community Health Track) July 2004. I am currently beginning research for my thesis, tentatively entitled > " Attitudes and beliefs of pre-service elementary education students of Ball State University regarding emergency medical care in the classroom." " My focus is to determine the reality of pre-service education students becoming certified in first aid and CPR as a requirement for their degree." " Since there potentially is legislation mandating it: " and assess the perceived need of first aid and CPR in the classroom (from pre-service education students: " point of view.
> Amongst my literature review, I came across an article with you name to receive correspondence: Emergencies in the School Setting: Are Public School Teachers Adequately Trained to Respond?. It appears your focus of this study is similar to my intended focus, with the exception of current practicing teachers v. pre-service teachers. May I look at your instrument, and possibly use it (with modifications if necessary) to collect data for my thesis? If you have no objections, I would happily share any results or information you request. Also, at your convenience, please send any information you feel will be valuable to conducting my research.
> Thank you kindly for your time and considerations, Dr. Gagliardi. I will look forward to hearing a response back from you soon, along with any potential helpful information. Please contact me to discuss information you deem pertinent via the contact information below. Thank you again for your considerations.
> Sincerely,
> Tiffany L. Brown
> 2409 W. Bethel Ave.
> Apt. 24
> Muncie, IN 47304
> ttbrown3@bsu.edu <mailto:ttbrown3@bsu.edu>
> (260) 356-8477 home
> (765) 214-1108 school
> (260) 413-9107 cell
>

APPENDIX G

Permission to Use Instrument from Dr. Compton
Hi Tiffany,

I have attached the survey instrument that I used for that study. If you need anything further, please let me know - I'd be glad to help out in any way that I can.

Your topic sounds interesting. I suggest that if you haven't seen Stefan Timmermans' book "Sudden Death and the Myth of CPR" that you take a look at it.

Good luck,
Scott

----------------------------------------------
Scott Compton, PhD
Assistant Professor
Department of Emergency Medicine
Wayne State University
http://myprofile.cos.com/scompton
(313) 745-4238

-----Original Message-----
From: Brown, Tiffany Lynn [mailto:tibrown3@bsu.edu]
Sent: Monday, November 17, 2003 1:58 PM
To: Compton, Scott
Subject: Instrument Use

Dr. Compton,

My name is Tiffany Brown, and I am a graduate student in Health Science at Ball State University (Muncie, IN). I am working on a thesis tentatively titled "Knowledge attitudes, and beliefs of Ball State pre-service elementary education students on mandatory first aid, CPR, and AED training." My objective is to determine the mindset of pre-service elementary education majors towards mandatory first aid, CPR, and AED training, and the likelihood of unintentional injuries in the classroom.

I came across your article Urban Public School Teachers' Attitudes and Perceptions of the Effectiveness of CPR and Automated External Defibrillators from the American Journal of Health Education, and am interested in looking at your instrument, and possibly use it for my study. Please forward any information you have to offer that could help me. Thank you for your time, and I will look forward to your response.

Sincerely,

Tiffany L. Brown
2409 W. Bethel Ave.
Apt. 24
Muncie, IN 47304
(260) 413-9107
APPENDIX H

Original Instruments Changes
Appendix H

Original Instrument Changes

<table>
<thead>
<tr>
<th>Initial Instrument</th>
<th>Draft Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.) In the preceding scenario, if the child stops breathing and her heart also stops, you should begin CPR. Assuming she is 13 years of age, what is the correct number of chest compressions to ventilations that you would perform?</td>
<td>11.) In the previous scenario, if the student stops breathing and their heart also stops, you should begin CPR. Assuming the student is 13 years old, what is the correct number of chest compressions to ventilations that you should perform?</td>
</tr>
<tr>
<td>A. 15 compressions to 1 ventilation</td>
<td>a. 15 compressions to 1 ventilation</td>
</tr>
<tr>
<td>B. 5 compressions to 2 ventilations</td>
<td>b. 5 compressions to 2 ventilations</td>
</tr>
<tr>
<td>C. 15 compressions to 2 ventilations</td>
<td>c. 15 compressions to 2 ventilations</td>
</tr>
<tr>
<td>D. 5 ventilations to 5 compressions</td>
<td>d. 5 compressions to 1 ventilation</td>
</tr>
<tr>
<td>E. Not Certain.</td>
<td>e. Not certain.</td>
</tr>
</tbody>
</table>

15) A student returning from the restroom has indicated seeing a janitor lying in the hallway. After initial assessment, you discover the janitor is breathing, and does have a weak, rapid pulse. A second teacher is present as has the school's AED (automated external defibrillator). You should:

- Give two rescue breaths.
- Begin chest compressions.
- Attach the school's AED (automated external defibrillator) to the janitor's bare chest.
- Give two abdominal thrusts.
- Not certain.

16) When placing AED (automated external defibrillator) pads to a bare chest, where should the pads be placed?

- A. Near the right shoulder and under the left breast.
- B. Near the left shoulder and under the right breast.
- C. Near the right shoulder and near the left shoulder.
- D. Under the left breast and under the right breast.
- E. Not certain.
APPENDIX I

List of Jurors
<table>
<thead>
<tr>
<th>Name</th>
<th>Credentials</th>
<th>Step One</th>
<th>Step Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lisa Gruss</td>
<td>RN, BSN, ACLS</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Christine Carpenter</td>
<td>Clinical Coordinator, RN, BSN, ACLS</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Karen Julian</td>
<td>Exercise Physiologist, BS, ACLS</td>
<td>X</td>
<td></td>
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<tr>
<td>LeeAnn Miguel</td>
<td>RN, Education Coordinator, ACLS</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Diane Rose</td>
<td>RN, BSN, ACLS</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Rita Ropp</td>
<td>Clinical Coordinator, RN, ACLS</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Bill Swygart</td>
<td>RN, ACLS</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Appendix J

First Juror Letter
March 25, 2004

Lutheran Hospital of IN
7590 W. Jefferson Blvd.
Fort Wayne, IN 46804

Dear Lutheran Hospital Employee,

Thank you for volunteering to validate an instrument to use with my Master’s thesis from Ball State University tentatively entitled “Knowledge and attitudes of pre-service teachers’ towards emergency care in the school setting.” Your opinions will help in the validation of an instrument for identifying and describing knowledge and attitudes of pre-service teachers’ towards emergency care in the school setting.

Enclosed you will find two copies of the following: Proposed instrument, juror review form, and return envelope. I ask you fill out one copy, and have an employee fill out the second form. The proposed instrument is primarily to serve as an idea of how the final instrument will look.

JUROR INSTRUCTIONS
Using the accompanying review form, your task is to evaluate questions 19-34. For each question listed, please answer the following on the juror review form:

1. If the question is current with emergency care standards
2. If the question is clearly stated
3. State any comments or feedback about the question.

Below, you will find a sample. The checkmarks and comments are provided as an example of how the Juror Review Form should be filled out.

1) What is your gender?
   a. Female
   b. Male

<table>
<thead>
<tr>
<th>I believe item #1 needs modification or updating to be current</th>
<th>Clearly Stated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Comments: Would be better stated....

After responding to the accompanying items on the Juror Review Form, please return the form back to me. Upon receipt of the Juror Review Forms, I will revise the proposed instrument to reflect any changes that need to be made and a second review will be requested to classify questions as essential, useful but not necessary, or not needed. I will be available to answer any necessary questions that may arise. Thank you kindly for your assistance with this research.

Sincerely,

Tiffany L. Brown
Appendix K

Draft Instrument
Emergency Care in the School Setting

The following questionnaire and test is being utilized as part of a research project focused on knowledge and attitudes of pre-service teachers toward emergency care in the school setting. Your participation in this project is greatly appreciated.

The following scenario-based test will help determine your ability to effectively care for students needing emergency care in the school environment. IN EACH OF THE FOLLOWING SCENARIOS, RESPOND AS IF YOU WERE THE CLASSROOM TEACHER, NOT A SUBSTITUTE OR STUDENT TEACHER.

Please Note:
- Mark your answers on the Scantron sheet provided.
- You will notice that each situation (question) is followed by 5 possible answers including a “Not Certain” response. Please choose this response if you are NOT CERTAIN about what would be correct.

1) A student has fallen over backwards on their desk, striking their head on the floor. They are apparently unconscious on their back with their head propped-up against a wall with their chin against their chest. The chest is rising and falling, but their face is turning blue. You should:
   a. Not move the student, cover them, and wait for trained help.
   b. Move the student away from the wall and place something under the head to keep it elevated.
   c. Move the student away from the wall enough to open the airway with a jaw thrust and assess breathing.
   d. Not move the student, but continue to watch the chest to assure they are breathing.
   e. Not Certain

2) You have responded to a report of a student who was found unconscious in a bathroom. Upon your arrival you determine the student is not breathing. Assuming that someone is summoning trained personnel, you should:
   a. Open the student’s airway, give two rescue breaths and check for a pulse.
   b. Check for a pulse, and if present, do nothing but cover them and keep them warm.
   c. Administer the Heimlich maneuver.
   d. Check for a pulse, and if not present, thump the chest with your fist.
   e. Not Certain

3) You have been summoned to the cafeteria where a student is reportedly choking on some food. Following several unsuccessful attempts using the Heimlich maneuver, the student becomes unconscious. Assuming trained personnel have been summoned you should:
   a. Place the student on their side and wait for trained personnel to arrive.
   b. Attempt to give rescue breaths, and if unsuccessful, follow with abdominal thrusts, finger sweeps, and rescue breaths.
   c. Place the student on their stomach, and give several blows with your hand between their shoulder blades. Follow this with rescue breaths.
   d. Using a spoon or knife, attempt to open their mouth so you can reach down and dislodge the food.
   e. Not Certain

4) You have been called to assist a student who reportedly has slipped and fallen on some ice on the school sidewalk. You find the student in pain, lying on the ice, which is also wet. The outside temperature is just below freezing. The student has struck their head causing a small laceration and is also complaining of numbness and tingling in their arms and legs. You should:
   a. Get assistance from other faculty and carefully move the student into the building for further assessment.
   b. Elevate the students head with a coat or blanket, gently place coats and blankets under and over the student and summon an ambulance.
   c. Have someone hold the students head in place, cover, tuck, and pack around the student with coats or blankets, and summon an ambulance.
   d. Bring a car as close as possible and quickly and carefully move the student to it while keeping her head slightly elevated.
   e. Not Certain.
5) A student who is running through the school building, stumbles and falls against a glass door, breaking the door and severely lacerating their arm. Upon your arrival, you notice profuse bleeding with blood pulsating from a four inch laceration to the forearm. You should:
   a. Ask the student to remain calm and still while you search for some clean material to apply to the wound.
   b. Quickly find some material and apply a tourniquet approximately 2-3 inches above the wound.
   c. First check the student over completely for other injuries, while someone else is getting some bandages.
   d. Apply pressure with your bare hand directly over the wound while simultaneously elevating the limb above the heart.
   e. Not certain

6) A student has reportedly overdosed on some drugs and is found lying on their back in the bathroom. They are unresponsive but breathing. There is some vomit around their mouth and on their clothes. You should:
   a. Cover them and keep them warm, attempt to find out what they have taken, and wait with them for trained help to arrive.
   b. Leave them on their back, slightly elevate their head, and cover them up. Then go call for help.
   c. Roll them on their side, monitor their breathing, and send a bystander (if present) for help.
   d. Get faculty assistance and move them to a more private location, elevate their head, and cover them up while waiting for help.
   e. Not certain.

7) A student has suddenly slumped to the floor and begins having convulsions and significant jerking and spasms of the head, arms, and legs. You should immediately:
   a. Have other students or faculty gently restrain the limbs until the apparent seizure ends.
   b. While others are restraining the limbs, attempt to place a padded object between the teeth to prevent the student from biting or swallowing their tongue.
   c. Move desks and other objects away from the student, place the student on their side, and attempt to protect their head by padding under it or holding it with your hands.
   d. Aggressively hold their arms and legs, use whatever object you can to find to keep them from biting their tongue.
   e. Not Certain.

8) In the previous scenario, after the student stops seizing, you should:
   a. Maintain them on their side, check for breathing and pulse, and cover them up.
   b. Keep them on their back, check for a pulse, and find out if this has ever happened before.
   c. Continue to hold their arms and feet in case they have another seizure or until they begin to respond.
   d. Elevate their head with a coat or blanket, and cover them up.
   e. Not Certain.

9) You are assisting a student who has been struck in the head by a rock thrown by another student. The injured student is lying on their back and going in and out of consciousness. There is moderate bleeding from a three inch laceration at the hair line. The most important thing you can do for the student while waiting for trained personnel to arrive is:
   a. Cover the student and keep them warm.
   b. Maintain an open airway.
   c. Tell the student to keep breathing.
   d. Control the bleeding.
   e. Not certain.

10) You have been asked to assist a student who is reportedly in the bathroom having breathing difficulties. Upon your arrival you notice the student sitting against the wall, wheezing, and hoarse with rapid and shallow breathing. The student also has red spots on their neck and face that are itching. You should:
    a. Immediately have someone summon an ambulance as the student is probably having a severe allergic reaction.
    b. Have the student lay down, and apply cool moist towels to her neck and face.
    c. Administer some sugar to the student as this is a diabetic emergency.
    d. Assume drug overdose and have the student lie down and remain still until help arrives.
    e. Not Certain.
11) In the previous scenario, if the student stops breathing and their heart also stops, you should begin CPR. Assuming the student is 13 years old, what is the correct number of chest compressions to ventilations that you should perform?
   a. 15 compressions to 1 ventilation
   b. 5 compressions to 2 ventilations
   c. 15 compressions to 2 ventilations
   d. 5 compressions to 1 ventilation
   e. Not Certain.

12) You have applied a cloth wash towel to a severe cut on the hand of a student at your school. After about 5 minutes, the blood starts seeping through the cloth and dripping on the floor. You should:
   a. Remove this cloth and replace it with a clean towel.
   b. Elevate the limb and control the bleeding by applying pressure to the upper arm at the pressure point.
   c. Apply more material over the original cloth and continue direct pressure and elevation.
   d. Consider placing a tourniquet just above the wound.
   e. Not Certain.

13) You have been asked to assist a student who has been exercising vigorously in a hot environment and has possibly developed a heat related emergency. You have found the student to be pale, dizzy, and sweaty with some nausea. You should:
   a. Have the student lie down, elevate their feet and fan them with a towel or shirt.
   b. Move the student to a cool environment and have them drink water in small sips while monitoring their status.
   c. Pour some water over them and cool them as quickly as possible to prevent heat stroke.
   d. Do nothing for them as they will recover shortly on their own if allowed to rest.
   e. Not Certain.

14) You have been asked to assist with a student who was reported to be displaying bizarre behavior. The student is found frantically digging in their backpack, and, although attempting to speak, is unable to talk and is only making unintelligible sounds. Another teacher states this is not normal for the student to behave this way as she knows the student. You should:
   a. Inquire about the possibility of epilepsy.
   b. Have the student sit down and calm down until they can tell you what’s wrong.
   c. Have the student consume something with sugar in it because of the possibility of a diabetic emergency.
   d. Do not give the student anything as this may be drug related and they may start vomiting.
   e. Not Certain.

15) A student returning from the restroom has indicated seeing a janitor lying in the hallway. After initial assessment, you discover the janitor is breathing, and does have a weak, rapid pulse. A second teacher is present and has the school’s AED (automated external defibrillator). You should:
   a. Give two rescue breaths.
   b. Begin chest compressions.
   c. Attach the school’s AED (automated external defibrillator) to the janitor’s bare chest.
   d. Give two abdominal thrusts.
   e. Not Certain.

16) When placing AED (automated external defibrillator) pads to a bare chest, where should the pads be placed?
   a. Near the right shoulder and under the left breast.
   b. Near the left shoulder and under the right breast.
   c. Near the right shoulder and near the left shoulder.
   d. Under the left breast and under the right breast.
   e. Not Certain.

Emergency Care Instrument 3
Knowledge and Attitudes of Pre-service Teachers Toward
Emergency Care in the School Setting

Please note:

- Answers will remain confidential
- Please do not write your name on this form
- **EMERGENCY CARE** - cardiopulmonary resuscitation (CPR), first aid, and automated external defibrillator (AED)

17) What is your age?
   a. < 18 ** please stop here
   b. 19-22
   c. 24-28
   d. > 29

18) What is your gender?
   a. Female  b. Male

19) What is your major?
   a. Early Childhood
   b. Elementary Education
   c. Secondary Education
   d. Other

20) Do you plan to continue studies as an education major?
   a. Yes
   b. No

21) What grade level do you intend to teach?
   a. Pre-K to K
   b. 1-2
   c. 3-4
   d. 5-6
   e. 7-12

22) I have covered emergency care (first aid, CPR, AED use) in HSC 350.
   a. Yes
   b. No

23) Have you previously been employed in any of the following occupations which may require emergency care training?
   a. CPR instructor
   b. Paramedic/EMT
   c. Lifeguard
   d. Nurse/Nurse assistant
   e. Other

24) Have you ever been trained in any form of emergency care (CPR, first aid, and/or AED)?
   a. Yes
   b. No* If no, skip to #26.

25) When were you last trained in any form of emergency care?
   a. 0-3 yr. ago
   b. 3-5 yr. ago
   c. > 3 yr. Ago
   d. Unknown

26) What was the nature of your emergency care training?
   a. College course
   b. American Heart Association
   c. American Red Cross
   d. EMT
   e. Other

Use the following responses for questions 26-30

   a. Strongly Agree
   b. Agree
   c. Not Sure
   d. Disagree
   e. Strongly Disagree

27) I feel I am adequately prepared to deal with medical emergencies (playground injuries, chronic illnesses, a student who has collapsed) in the school setting.

28) I feel emergency care (CPR, first aid, and AED training) with some emphasis on school related emergencies should be required in teacher education programs.

29) I feel each school should have staff members trained in emergency care.

30) Schools should purchase Automated External Defibrillators (AED) (~$3000 each) with public funds.

31) If a person at my school collapsed, I would attempt to provide emergency care.

Use the following responses for questions 31-39

   a. Yes  b. No

31) Would you be willing to take a free emergency care course if offered?

32) Are you concerned about legal repercussions when performing emergency care on a student?

33) Are you concerned with contracting a disease when performing emergency care on a student?

34) Are you concerned about performing emergency care correctly when performing on a student?

35) Are you concerned about hurting a student when performing emergency care on the student?

36) Are you concerned about legal repercussions when performing emergency care on a coworker?

37) Are you concerned with contracting a disease when performing emergency care on a coworker?

38) Are you concerned about performing emergency care correctly when performing on a coworker?

39) Are you concerned about hurting a coworker when performing emergency care on the coworker?
Appendix L

Juror Rating Sheet
Knowledge and Attitudes of Emergency Care in the School Setting
Juror Validation Form

Juror Name: ________________________________________________________________

Juror Occupation/Job Title: __________________________________________________

24) In the previous scenario, if the student stops breathing and their heart also stops, you should begin CPR. Assuming the student is 13 years old, what is the correct number of chest compressions to ventilations that you should perform?
   a. 15 compressions to 1 ventilation
   b. 5 compressions to 2 ventilations
   c. 15 compressions to 2 ventilations
   d. 5 compressions to 1 ventilation
   e. Not Certain.

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<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Comments: ________________________________________________________________

33) A student returning from the restroom has indicated seeing a janitor lying in the hallway. After initial assessment, you discover the janitor is breathing, and does have a weak, rapid pulse. You should:
   a. Give two rescue breaths.
   b. Begin chest compressions.
   c. Attach the school’s AED to the janitor’s bare chest.
   d. Give two abdominal thrusts.
   e. Not Certain.

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<tr>
<td>Yes</td>
<td>No</td>
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Comments: ________________________________________________________________
34) When placing AED pads to a bare chest, where should the pads be placed?
   
   a. Near the right shoulder and under the left breast.
   b. Near the left shoulder and under the right breast.
   c. Near the right shoulder and near the left shoulder.
   d. Under the left breast and under the right breast.
   e. Not Certain.

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Comments:
APPENDIX M

Second Juror Letter
April 6, 2005

Lutheran Hospital of IN
7950 W. Jefferson Blvd.
Fort Wayne, IN 46804

Dear Lutheran Hospital Employee,

Thank you for agreeing to participate in a two-step review process to validate an instrument to be used to collect data for my thesis entitled "Knowledge and attitudes of pre-service teachers toward emergency care in the school setting." The following information will assist you with step two of this review process.

JUROR INSTRUCTIONS

Using the accompanying review form, your task is to determine whether each of the following questions is essential, useful, but not essential, or not needed. For each question listed, please mark the corresponding box with your professional opinion and provide any written comments as needed. Below, you will find a sample. The checkmarks and comments are provided as an example of how the step two of the Juror Review Form should be filled out.

1) What is your gender?
   a. Male
   b. Female

<table>
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<tbody>
<tr>
<td>Essential ☐</td>
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</table>

Comments:

After responding to the accompanying items on the Juror Review Form, please return the form back to me. Upon receipt of the Juror Review Forms, I will revise the proposed instrument to reflect any changes that need to be made. Thank you kindly for your assistance with this research.

Sincerely,

Tiffany L. Brown
Appendix N

Juror Quantitative Review Form
15) A student returning from the restroom has indicated seeing a janitor lying in the hallway. After initial assessment, you discover the janitor is breathing, and does have a weak, rapid pulse. A second teacher is present and has the school’s AED (automated external defibrillator). You should:

a. Give two rescue breaths.
b. Begin chest compressions.
c. Attach the school’s AED (automated external defibrillator) to the janitor’s bare chest.
d. Give two abdominal thrusts.
e. Not Certain.

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</table>

16) When placing AED (automated external defibrillator) pads to a bare chest, where should the pads be placed?

a. Near the right shoulder and under the left breast.
b. Near the left shoulder and under the right breast.
c. Near the right shoulder and near the left shoulder.
d. Under the left breast and under the right breast.
e. Not Certain.

<table>
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</table>
APPENDIX O

Final Instrument
1) What is your age?
   a. < 18 ** please stop here  
   b. 19-23 
   c. 24-28 
   d. > 29 
2) What is your gender?
   a. Female 
   b. Male 
3) What is your major?
   a. Early Childhood 
   b. Elementary Education 
   c. Secondary Education 
   d. Other 
4) Do you plan to continue studies as an education major?
   a. Yes 
   b. No 
5) What grade level do you intend to teach?
   a. Pre-K to K 
   b. Elementary School 
   c. Middle School/ Jr. High 
   d. High School 
   e. Other/Unknown 
6) I have covered emergency care (first aid, CPR, AED use) in the course this instrument is being administered.
   a. Yes 
   b. No 
7) Have you previously been employed in any of the following occupations which may require emergency care training?
   a. CPR Instructor 
   b. Paramedic/EMT 
   c. Lifeguard 
   d. Nurse/Nurse assistant 
   e. Other 
8) Have you ever been trained in any form of emergency care (CPR, first aid, and/or AED)?
   a. Yes 
   b. No* If no, skip to #11. 
9) When were you last trained in any form of emergency care?
   a. 0-2 yr. ago 
   b. 2-3 yr. ago 
   c. > 3 yr. Ago 
   d. Unknown 
10) What was the nature of your emergency care training?
   a. College course 
   b. American Heart Association 
   c. American Red Cross 
   d. EMT 
   e. Other 

Use the following responses for questions 11-15
   a. Strongly Agree 
   b. Agree 
   c. Not Sure 
   d. Disagree 
   e. Strongly Disagree 
11) I feel I am adequately prepared to deal with medical emergencies (playground injuries, chronic illnesses, a student who has collapsed) in the school setting. 
12) I feel emergency care (CPR, first aid, and AED training) with some emphasis on school related emergencies should be required in teacher education programs. 
13) I feel each school should have staff members trained in emergency care. 
14) Schools should purchase Automated External Defibrillators (AED) (~$3000 each) with public funds. 
15) If a person at my school collapsed, I would attempt to provide emergency care. 

Use the following responses for questions 16-24
   a. Yes 
   b. No 
16) Would you be willing to take a free emergency care course if offered? 
17) Are you concerned about legal repercussions when performing emergency care on a student? 
18) Are you concerned with contracting a disease when performing emergency care on a student? 
19) Are you concerned about performing emergency care correctly when performing on a student? 
20) Are you concerned about hurting a student when performing emergency care on the student? 
21) Are you concerned about legal repercussions when performing emergency care on a coworker? 
22) Are you concerned with contracting a disease when performing emergency care on a coworker? 
23) Are you concerned about performing emergency care correctly when performing on a coworker? 
24) Are you concerned about hurting a coworker when performing emergency care on the coworker?
25) A student has fallen over backwards on their desk, striking their head on the floor. They are apparently unconscious on their back with their head propped-up against a wall with their chin against their chest. The chest is rising and falling, but their face is turning blue. You should:
   a. Not move the student, cover them, and wait for trained help.
   b. Move the student away from the wall and place something under the head to keep it elevated.
   c. Move the student away from the wall enough to open the airway with a jaw thrust and assess breathing.
   d. Not move the student, but continue to watch the chest to assure they are breathing.
   e. Not Certain

26) You have responded to a report of a student who was found unconscious in a bathroom. Upon your arrival you determine the student is not breathing. Assuming that someone is summoning trained personnel, you should:
   a. Open the student’s airway, give two rescue breaths and check for a pulse.
   b. Check for a pulse, and if present, do nothing but cover them and keep them warm.
   c. Administer the Heimlich maneuver.
   d. Check for a pulse, and if not present, thump the chest with your fist.
   e. Not Certain

27) You have been summoned to the cafeteria where a student is reportedly choking on some food. Following several unsuccessful attempts using the Heimlich maneuver, the student becomes unconscious. Assuming trained personnel have been summoned you should:
   a. Place the student on their side and wait for trained personnel to arrive.
   b. Begin CPR.
   c. Place the student on their stomach, and give several blows with your hand between their shoulder blades. Follow this with rescue breaths.
   d. Using a spoon or knife, attempt to open their mouth so you can reach down and dislodge the food.
   e. Not Certain

28) You have been called to assist a student who reportedly has slipped and fallen on some ice on the school sidewalk. You find the student in pain, lying on the ice, which is also wet. The outside temperature is just below freezing. The student has struck their head causing a small laceration and is also complaining of numbness and tingling in their arms and legs. You should:
   a. Get assistance from other faculty and carefully move the student into the building for further assessment.
   b. Elevate the students head with a coat or blanket, gently place coats and blankets under and over the student and summon an ambulance.
   c. Have someone hold the student's head in place, cover, tuck, and pack around the student with coats or blankets, and summon an ambulance.
   d. Bring a car as close as possible and quickly and carefully move the student to it while keeping her head slightly elevated.
   e. Not Certain.

29) A student who is running through the school building, stumbles and falls against a glass door, breaking the door and severely lacerating their arm. Upon your arrival, you notice profuse bleeding with blood pulsating from a four inch laceration to the forearm. You should:
   a. Ask the student to remain calm and still while you search for some clean material to apply to the wound.
   b. Quickly find some material and apply a tourniquet approximately 2-3 inches above the wound.
   c. First check the student over completely for other injuries, while someone else is getting some bandages.
   d. Apply pressure with your bare hand directly over the wound while simultaneously elevating the limb above the heart.
   e. Not Certain

30) A student has reportedly overdosed on some drugs and is found lying on their back in the bathroom. They are unresponsive but breathing. There is some vomit around their mouth and on their clothes. You should:
   a. Cover them and keep them warm, attempt to find out what they have taken, and wait with them for trained help to arrive.
   b. Leave them on their back, slightly elevate their head, and cover them up. Then go call for help.
   c. Roll them on their side, monitor their breathing, and send a bystander (if present) for help.
   d. Get faculty assistance and move them to a more private location, elevate their head, and cover them up while waiting for help.
   e. Not Certain.
31) A student has suddenly slumped to the floor and begins having convulsions and significant jerking and spasms of the head, arms, and legs. You should immediately:
   a. Have other students or faculty gently restrain the limbs until the apparent seizure ends.
   b. While others are restraining the limbs, attempt to place a padded object between the teeth to prevent the student from biting or swallowing their tongue.
   c. Move desks and other objects away from the student, place the student on their side, and attempt to protect their head by padding under it or holding it with your hands.
   d. Aggressively hold their arms and legs, use whatever object you can to find to keep them from biting their tongue.
   e. Not Certain.

32) In the previous scenario, after the student stops seizing, you should:
   a. Maintain them on their side, check for breathing and pulse, and cover them up.
   b. Keep them on their back, check for a pulse, and find out if this has ever happened before.
   c. Continue to hold their arms and feet in case they have another seizure or until they begin to respond.
   d. Elevate their head with a coat or blanket, and cover them up.
   e. Not Certain.

33) You are assisting a student who has been struck in the head by a rock thrown by another student. The injured student is lying on their back and going in and out of consciousness. There is moderate bleeding from a three inch laceration at the hair line. The most important thing you can do for the student while waiting for trained personnel to arrive is:
   a. Cover the student and keep them warm.
   b. Maintain an open airway.
   c. Tell the student to keep breathing.
   d. Control the bleeding.
   e. Not Certain.

34) You have been asked to assist a student who is reportedly in the bathroom having breathing difficulties. Upon your arrival you notice the student sitting against the wall, wheezing, and hoarse with rapid and shallow breathing. The student also has red spots on their neck and face that are itching. You should:
   a. Immediately have someone summon an ambulance as the student is probably having a severe allergic reaction.
   b. Have the student lay down, and apply cool moist towels to her neck and face.
   c. Administer some sugar to the student as this is a diabetic emergency.
   d. Assume drug overdose and have the student lie down and remain still until help arrives.
   e. Not Certain.

35) In the previous scenario, if the student stops breathing and their heart also stops, you should begin CPR. Assuming the student is 13 years old, what is the correct number of chest compressions to ventilations that you should perform?
   a. 15 compressions to 1 ventilation
   b. 5 compressions to 2 ventilations
   c. 15 compressions to 2 ventilations
   d. 5 compressions to 1 ventilation
   e. Not Certain.

36) You have applied a cloth wash towel to a severe cut on the hand of a student at your school. After about 5 minutes, the blood starts soaking through the cloth and dripping on the floor. You should:
   a. Remove this cloth and replace it with a clean towel.
   b. Elevate the limb and control the bleeding by applying pressure to the upper arm at the pressure point.
   c. Apply more material over the original cloth and continue direct pressure and elevation.
   d. Consider placing a tourniquet just above the wound.
   e. Not Certain.
37) You have been asked to assist a student who has been exercising vigorously in a hot environment and has possibly developed a heat related emergency. You have found the student to be pale, dizzy, and sweaty with some nausea. You should:
   a. Have the student lie down, elevate their feet and fan them with a towel or shirt.
   b. Move the student to a cool environment and have them drink water in small sips while monitoring their status.
   c. Pour some water over them and cool them as quickly as possible to prevent heat stroke.
   d. Do nothing for them as they will recover shortly on their own if allowed to rest.
   e. Not Certain.

38) You have been asked to assist with a student who was reported to be displaying bizarre behavior. The student is found frantically digging in their backpack, and, although attempting to speak, is unable to talk and is only making unintelligible sounds. Another teacher states this is not normal for the student to behave this way as she knows the student. You should:
   a. Inquire about the possibility of epilepsy.
   b. Have the student sit down and calm down until they can tell you what’s wrong.
   c. Have the student consume something with sugar in it because of the possibility of a diabetic emergency.
   d. Do not give the student anything as this may be drug related and they may start vomiting.
   e. Not Certain.

39) A student returning from the restroom has indicated seeing a janitor lying in the hallway. After initial assessment, you discover the janitor is breathing, and does have a weak, rapid pulse. A second teacher is present and has the school’s AED (automated external defibrillator). You should:
   a. Give two rescue breaths.
   b. Begin chest compressions.
   c. Attach the school’s AED (automated external defibrillator) to the janitor’s bare chest.
   d. Give two abdominal thrusts.
   e. Not Certain.

40) When placing AED (automated external defibrillator) pads to a bare chest, where should the pads be placed?
   a. Near the right shoulder and under the left breast.
   b. Near the left shoulder and under the right breast.
   c. Near the right shoulder and near the left shoulder.
   d. Under the left breast and under the right breast.
   e. Not Certain.
APPENDIX P

Participant Implied Consent and Instructions
The following is an informed consent that will be read aloud to prospective participants and/or placed visually on overhead.

- This questionnaire is part of a study on pre-service teachers' knowledge and attitudes toward emergency care in the school setting. By completing and returning this questionnaire, you are voluntarily giving your consent to be a participant in this study. You may discontinue participation at any time during the data collection process without prejudice from the investigator or your class instructor.

- This process should take approximately 15-20 minutes of your time.

- Confidentiality: The data from this study will be completely anonymous. The researcher will not have any means to identify you or matching you to your responses. No record of student names will be used nor will any type of code or number be used to identify the responses and/or subjects.

- If you have questions, please feel free to ask.

- When you have finished your questionnaire, please return it in the manila envelope located in the front of the classroom.

- For Clarification: These questions refer to your knowledge and attitudes of emergency care in the school setting. Emergency care should be recognized as first aid, cardiopulmonary resuscitation (CPR) and automated external defibrillators (AED).

- If you have questions concerning your rights as a research subject, please contact:

  Ms. Melanie Morris,
  Coordinator of Research Compliance
  Academic Research and Sponsored Programs
  Ball State University
  Muncie, IN 47306
  (765) 285-5070

- If you have specific questions concerning this research project, please contact:

  Ms. Tiffany Brown
  Primary Investigator
  Dept. of Physiology and Health Science
  Ball State University
  Muncie, IN 47306
  (765) 285-2257

  Dr. Jeffery K. Clark
  Committee Chairperson
  Dept. of Physiology and Health Science
  Ball State University
  Muncie, IN 47306
  (765) 285-8350

**Directions**

Please respond to each item as if you were the classroom teacher, not a substitute or other school professional.

1) Use a #2 pencil to complete the answer sheet.
2) Mark your answers on the Scantron sheet provided.
3) You will notice that each situation (question) is followed by 5 possible answers including a “Not Certain” response. Please choose this response if you are NOT CERTAIN about what would be correct.
Appendix Q

Participant Cover Sheet
Emergency Care in the School Setting

The following questionnaire and test is being utilized as apart of a research project focused on knowledge and attitudes of pre-service teachers toward emergency care in the school setting. Your participation in this project is greatly appreciated.

The following scenario based test will help determine your ability to effectively care for students needing emergency care in the school environment. IN EACH OF THE FOLLOWING SCENARIOS, RESPOND AS IF YOU WERE THE CLASSROOM TEACHER, NOT A SUBSTITUTE OR STUDENT TEACHER.

Emergency Care has been identified as cardiopulmonary resuscitation (CPR), automatic external defibrillator (AED) use, and first aid.

Please Note:
- Participation in this study is voluntary.
- Answers will remain confidential and anonymous—please do not write your name anywhere on this form or the Scantron sheet.
- Mark your answers on the Scantron sheet provided.
- You will notice that each situation (question) is followed by 5 possible answers including a “Not Certain” response. Please choose this response if you are NOT CERTAIN about what would be correct.
- If you have questions concerning your rights as a research subject, please contact:

  Ms. Melanie Morris,
  Coordinator of Research Compliance
  Academic Research and Sponsored Programs
  Ball State University
  Muncie, IN 47306
  (765) 285-5070

- If you have specific questions concerning this research project, please contact:

  Ms. Tiffany Brown
  Primary Investigator
  Dept. of Physiology and Health Science
  Ball State University
  Muncie, IN 47306
  (765) 285-2257

  Dr. Jeffery K. Clark
  Committee Chairperson
  Dept. of Physiology and Health Science
  Ball State University
  Muncie, IN 47306
  (765) 285-8350

Directions

Please respond to each item as if you were the classroom teacher, not a substitute or other school professional.

1) Use a #2 pencil to complete the answer sheet.
2) Mark your answers on the Scantron sheet provided.
3) You will notice that each situation (question) is followed by 5 possible answers including a “Not Certain” response. Please choose this response if you are NOT CERTAIN about what would be correct.