COMPARISON OF PERFORMANCE OF ENGLISH AS A SECOND LANGUAGE CERTIFIED NURSE'S AIDE STUDENTS ON THE ORIGINAL AND REVISED BASIC LIFE SUPPORT ESL EXAM

A THESIS

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Date

To the Dean of the Graduate School:

I am submitting herewith a thesis written by Yolanda Velez-Reyna entitled "Comparison of Performance of English as a Second Language Certified Nurse's Aide Students on the Original and Revised Basic Life Support ESL Exam." I have examined this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science with a major in Nursing.

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DEDICATION

This thesis is dedicated to my dear father, Miguel Velez, who always stressed that education is the most wonderful gift that life can bring!

I thank my daughters, Sonia and Sara Reyna, who are my total inspiration in life, for their faith, patience, and endless love; and to my mother, Olivia Barraza, who taught me to have faith in God and stressed that, "I can do all things through Christ who strengthens me."

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ABSTRACT

YOLANDA VELEZ-REYNA, BSN

COMPARISON OF PERFORMANCE OF ENGLISH AS A SECOND LANGUAGE CERTIFIED NURSE'S AIDE STUDENTS ON THE ORIGINAL AND REVISED BASIC LIFE SUPPORT ESL EXAM

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The comparative, quantitative design was used in a study that measured the effects of modifications made to the wording of questions from the Original American Heart Association (AHA) Version "A" Basic Life Support (BLS) English as a Second Language (ESL) exam. Test scores of ESL Certified Nurse Assistants (CNAs) taking the Original Version "A" BLS ESL exam (group one) were compared to those taking the Revised BLS ESL exam (group two). The convenience sample (N = 40) consisted of ESL CNAs.

Random assignment of 40 ESL CNAs to group one or group two was implemented by choosing numbers from a hat. Group one was given the Original Exam (n = 20) and group two was given the Revised Exam (n = 20). Demographic data were gathered prior to testing and comments regarding both exams were obtained posttesting. An independent samples t-test of (t = -.341) and (p = 0.375) was used to

determine that there was no statistically significant difference ($p > .05$) in test score means between groups in this sample ($N = 40$) at a 95% confidence interval.

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CHAPTER I

INTRODUCTION

The United States (U.S.) is referred to as a cultural melting pot. Healthcare providers (HCP) in the United States are finding that education must conform to this culturally diverse population (Robinson & Kish, 2001). For the limited-English proficient (LEP) population who are being educated, not only are there language differences, but also cultural influences that affect their performance in school and on tests used to evaluate them (Geisinger & Carlson, 1992).

This ever-increasing diversity of the U.S. population means that working with culturally diverse persons is part of the practice reality for today's advance practice nurse (APN) (Robinson & Kish, 2001). The following example illustrates the need for cultural competence:

> A young female immigrant gets a job in a rural Mississippi eatery to help support her family. She holds out a plate of bacon to one of her coworkers and cries, "Is this toast? I need toast!" Thrown into the American culture without adequate preparation, this woman is a walking example of how language and perception differences can impact the ability to function. (Alexander, 2002, p. 30)

It is imperative that medical staff receive Basic Life Support (BLS) Training (Fossel, Kiskaddon, & Sternbach, 1983). In many facilities BLS is a requirement for all providers who have patient contact. Every staff member who has patient contact is required to pass the HCP BLS exam with a score of $\geq$ 84%. Clinical nurse specialists and nurse educators often are faced with the dilemma of many English as a Second Language (ESL) HCPs needing to retake the BLS HCP exam. Often this process is time consuming, frustrating, costly, and results in the use of one-on-one verbal remediation.

The present writer conducts weekly BLS HCP courses and has noted a trend in the failure rate of ESL certified nurse aides (CNAs) upon completion of the BLS HCP exam. Identifying performance of successful completion of the ESL BLS HCP exam by ESL CNA students was the focus of this study. Areas that have been researched extensively are learning, ESL students, BLS skills, and retention (Fossel et al., 1983; Goodwin, 1992; Kaye & Mancini, 1986; Safar, Brown, Holtey, & Wilder 1961; Weaver, Ramirez, Dorfman, & Raizner, 1979); however, only one research article by Doto (2000) was found in relation to the composition of how a HCP BLS exam is written and the results.

Purpose for the Study

The purpose of this study was to compare the performance of ESL CNA students on the Original AHA Version "A" BLS ESL Exam developed by the

American Heart Association (AHA) and the Revised Version "A" BLS ESL Exam; revised by six educators at a metropolitan hospital.

Hypothesis

ESL CNA students in BLS HCP courses will successfully pass the Revised BLS ESL HCP exam after reducing the reading level of the exam, from a 4.6 grade reading level to a 3.5 grade reading level. The independent variable is the revision of the Original AHA BLS ESL exam and the dependent variable is the successful completion of the exam by the ESL HCP CNA student.

Theoretical Framework

Bloom's taxonomy of educational objectives in the cognitive domain provides the theoretical framework for this study. Operating cognitively, the learner can achieve objectives ranging from simple recall of material learned to highly original ways of combining and synthesizing new ideas and materials. The hierarchical structure was developed by Bloom in 1956 (Boyd, Graham, Gleit, & Whitman, 1998). This theory contains six cognitive levels: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Knowledge emphasizes observation, recognition, recall, and the ability to remember facts in the way they were presented. Comprehension is the understanding of information and the ability to translate information into words. Application is the ability to use learned material in a new situation and to apply rules, laws, methods, and theories. Analysis is reasoning or the ability to break down information into

component parts and to detect relationships of one part to another and to the whole. Synthesis is the ability to assemble separate parts to form a new whole. Evaluation is the ability to make judgments based upon criteria or standards (Kingsley, 2002).

Many ESL students struggle to recall their knowledge base of BLS after didactic lecture and hands on skills demonstration. Often the meaning and intent of information presented are not comprehended (Guezubeuyukian, 2003).

All BLS courses are initiated with basic application principles, i.e., A-B-C and D. "A" is for Airway, "B" is for Breathing, "C" is for Circulation, and "D" stands for Defibrillation (Stapleton, Aufderheide, Hazinski, & Cummins, 2000). It is at this point that each student must analyze the material that has been taught. The next step is to synthesize the learned material and return demonstration of BLS skills to the BLS instructor. The final process in a BLS course is to take a written evaluation and successfully complete the BLS exam with a score of 84% or above. The intent of this study was to evaluate the efficacy of the revised BLS ESL Exam designed for ESL CNA HCP. Bloom's taxonomy has proven to be valid and reliable as it provides a useful structure in which to categorize test questions (Counseling Services, University of Victoria, 1996). The instruments used in this study are categorized into Bloom's six cognitive levels (see Appendices C and D).

Assumptions

The following assumptions were identified prior to collection and analysis of the data:

1. "Learning a second language takes a long and consistent effort. Many immigrant/migrant students enter American schools with no or limited English-speaking abilities" (Amoore, 2002, p. 1).

2. "ESL students are a significant percentage of the U.S. school population. These students also are among the lowest ranking in academic expectations. They are an at-risk population and also face many challenges" (Thompson, as cited in Pellino (2002, p. 1).

3. Many ESL students experience "language shock," which involves a struggle to learn the English language and to be accepted in a society that is not always willing to embrace diversity (Pellino, 2002, p. 2).

4. An effective method of enhancing the learning environment for the ESL student involves providing instructors who speak in their native language.

5. According to Doak (as cited in Winslow, 2001), "neither the number of years of schooling nor physical appearance accurately indicates reading ability" (p. 34).

Definition of Terms

1. *English as a Second Language (ESL)*--defined as "a population not speaking English as its primary language and its culture frequently differs from that of most Americans" (Geisinger & Carlson, 1992, p. 1).

2. *Cultural Competence*--"A set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enables that

system, agency, or those professionals to work effectively in cross-cultural situations" (Alexander, 2002, p. 30).

3. *Reading Level*--also called literacy, "it is the ability to read and write on a basic level, has been steadily rising in the U.S. for the last 100 years" (Stedman & Kaestle, 1987, p. 59).

4. *Healthcare Provider (HCP) Exam*--an exam provided and prepared by the American Heart Association to test participants in BLS HCP courses (Doto, 2000).

5. *Nurse's Aide (CNA)*--a healthcare professional that assists a nurse with tasks such as taking temperatures, blood pressure, respirations, glucometer tests, and bed baths.

6. *BLS*--"responding to life-threatening emergencies such as cardiac arrest, respiratory arrest, and foreign-body airway obstruction" (Stapleton, Aufderheide, Hazinski, & Cummins, 2000, p. xi).

7 *BLS skills*--the skills performed to resuscitate an individual from a respiratory or cardiac arrest (Doto, 2000).

Limitations

1. The ESL population encompasses a variety of languages, thus making it difficult to determine effective teaching methods and tools for each individual culture.

2. Another aspect that placed limitations on this study is "acculturation." It is difficult to determine the amount of acculturation by the number of years an ESL student has lived in the United States (Geisinger & Carlson, 1992).

3. Educational levels vary with different meanings in different countries. For example, in Colonia Esperanza, Mexico, one is considered to have graduated from high school after completion of the eighth grade (O. Barraza, personal communication, July 20, 2002).

4. Individual reading levels in ESL CNAs are also difficult to determine, and therefore reading levels are considered an extraneous variable (Polit & Hungler, 1999).

5. Other variables considered in this study were whether the CNA had worked the night before and was sleep deprived. Lack of sleep may have caused the empirical senses to be dulled so that the CNA could not think clearly to answer test questions.

6. The last variable identified was that BLS is a mandatory job requirement for HCPs. The class could have been mandatory attendance by the CNA and this could have affected the learning attitude and performance of the student.

Justification for the Project

One of the educational challenges that the United States currently faces is providing equal educational opportunities to students from various cultural backgrounds, which includes ESL students. Many immigrant students who enter American schools have little or no ability to speak English. These language minority students are not only faced with the challenge of learning a second language, but they also must learn to acclimate to the dominant American culture. Learning a second language takes long and consistent effort (Amoore, 2002). In addition, immigrants must differentiate behaviors that are acceptable in their own countries, from behaviors

that are not acceptable in the United States, which could makes it more difficult to conform to the educational system. An example would be eye contact during conversations; "In one culture, not looking directly into the eyes of another when speaking is a sign of dishonesty, while for another culture it is a sign of respect" (Amoore, 2002, p. 1). Educators need to understand how cultural background influences ESL students' test taking capabilities. A student's individual level of acculturation may be an important factor for certain tests such as those that measure and interpret personality. "Acculturation is the process of changing attitudes and behavior after living for some time in a different culture" (Geisinger & Carlson, 1992, p. 1).

According to Doak (as cited in Winslow, 2001), "The average adult in the U.S. can not read above the 8th grade level" (p. 33). This poses a problem for educators as well as students. While educators are being faced with a myriad of obstacles in successfully teaching ESL students, it is difficult to add the burden of being responsible for determining their reading level as well. It is imperative that the materials provided for the ESL CNA HCP are presented at the lowest possible reading level, preferably the sixth-grade level or lower (Winslow, 2001). The Flesh-Kincaid Method was used to determine the reading level of the instruments, Original AHA Version "A" BLS ESL Exam and Revised Version "A" BLS ESL Exam (see Appendices C and D) were used in this study. This research study looked further into

the performance of ESL CNA students on the Original AHA and Revised BLS ESL Exam.

CHAPTER II

REVIEW OF LITERATURE

Immigration to the United States is evident throughout U.S. history. Many difficulties of acculturation have been experienced. Learning the English language and the support of fellow Americans presents a difficult path for most immigrants. Immigrants also created a new workforce in the United States, and another controversy, "diversity." Adults have unique learning needs. Adults arriving from foreign countries are faced with a myriad of challenges. Some work in health care settings and are required to learn BLS. These individuals must not only learn to speak English, but pass BLS HCP exams. BLS history dates back to 800 B.C. and its training throughout time has made a powerful impact on society today. It too faced a rocky road to travel, but has succeeded with constant research and change.

History of Bilingual Education in the United States

A difficulty U.S. immigrants experienced in the past and new immigrants still experience today is learning the English language. There are many differences in culture, background, and customs. These differences often lead to fear and misunderstanding (Trundle, 1999).

There has been an abundance of cultural diversity in the United States since colonial times. This massive diversity has played a major role in shaping the educational history of the United States. In 1664, when the New Netherlands settlement was ceded to the British crown, approximately 18 languages were spoken in Manhattan. It was common for the educated, as well as the working class, to be bilingual (Crawford, 1999). During this period immigrants were well respected and involved in all aspects of life, from local communities to government (Trundle, 1999).

In Philadelphia in 1694, the Germans conducted schools in their native tongue, and sometimes they were bilingual. In the 1750s Benjamin Franklin, a politician, promoted anti-bilingualism, through his "Society For the Propagation of Christian Knowledge," as he was frustrated by his inability to influence German-speaking voters. As a pamphleteer Franklin expressed his concerns regarding bilingualism. He predicted that interpreters would soon be:

> Necessary in the Assembly, to tell one half of our Legislators what the other half say; In short unless the stream of their importation could be turned from this to other Colonies . . . [Germans] will soon so out number us, that all the advantages we have will not in my opinion be able to preserve our language, and even our Government will become precarious. (Crawford, 1999, pp. 21-22)

Later in life Franklin established one of the first German-language newspapers in the country, and became a supporter of bilingual education (Trundle, 1999).

Anti-bilingual views were rare among the nation's founding fathers. Bilingualism was accepted as a part of every day life. During the Revolutionary War many official war documents were published in German, French, and English. Persons who were anti-British during the American Revolution tried to get rid of the English language. The German language almost became the official U.S. language; however, the United States did not adopt an official language (Crawford, 1999). In 1780 John Adams asked congress to establish an official American language academy, as he wanted to refine, correct, and improve the English vocabulary. This plea was ignored by the Continental Congress, and the prominent idea was that democracy and political liberty ruled and the choice of language should be left up to the people (Crawford, 1999).

Another proponent of establishing an official U.S. language was Benjamin Rush. His view was that this goal could be better achieved on a volunteer basis rather than a forced issue. He proposed to open a federally funded German College, which he argued, "Would open the eyes of the Germans to a sense of the importance and utility of the English language and perhaps the only possible means, consistent with their liberty of spreading a knowledge of the English language among them" (Crawford, 1999, p. 23).

Noah Webster sought to standardize the American Language in 1789 by establishing "Federal English":

> As an independent nation, he argued in 1789, our honor requires us to have a system of our own, in language as well as government. There was also the danger that regional and class differences in speech might divide the new nation. Our political harmony is therefore concerned in a uniformity of language. (Crawford, 1999, p. 23)

From 1790 to 1815 the English language continued to dominate in the United States, and even the ethnic schools taught the English language. Additionally, "The U.S. government recognized the language rights of the Cherokee tribe under the 1828 treaty and agreed to subsidize the first newspaper published in an Indian tongue, the Cherokee Phoenix" (Crawford, 1999, p. 30).

According to Crawford (1999), by the mid-century there were many public and parochial German-English schools in the United States. Overall there were approximately a dozen states that passed laws allowing bilingual education. For example in 1839, Ohio became the first state to adopt a bilingual education law and use German-English instructions in their schools (History of Bilingual Education, 1998). In 1847, Louisiana schools authorized the use of the French-German language, and in 1848 New Mexico authorized Spanish-English education. The overall goal was to teach the children to be "Good Americans," which conflicted with support of bilingual training. In 1849 California's constitution required laws to be written and published in both Spanish and English. The practice was abandoned in 1855, and the California legislature mandated that English be the only language used in all schools.

According to Crawford (1999), this was done in an effort to discriminate against Spanish speakers.

"In 1879, however, federal officials began separating Indian children from their families and forcing them to attend off-reservation boarding schools. Students were punished when caught speaking their tribal tongues, even if they could speak no English" (Crawford, 1999, pp. 30-31). The Dawes Severalty Act of 1887 proposed taking over tribal schools and mandatory English-speaking only policies (Crawford, 1999).

The first federal language law was passed in 1906, and immigrants were required to speak minimal English in order to be naturalized. Organizations such as the YMCA facilitated adult English instruction for the first time. In 1912, New Mexico became a state. Its first constitution was against anti-bilingualism, and these legislators began to employ Spanish language teachers.

In opposition to this view, an Americanization campaign was led by the industrialists of the late 19th century. In 1915, in the city of Detroit the "English First" project was initiated. Motor vehicle tycoon, Henry Ford, required his foreign-born employees to attend after-hours English classes. The ideation was, "If you can speak good English, then you can be a good American" (Crawford, 1999, p. 26).

After the Spanish American War, the United States mandated English as the language of instruction in Puerto Rico, Hawaii, and the Philippines. President Theodore Roosevelt stated:

> We have room for but one language in this country and that is the English language, for we intend to see that the crucible turns our people out as Americans, of American nationality, and not as dwellers in a polyglot boarding House. (Crawford, 1999, p. 28)

In 1917, anti-German views increased, as several states passed laws that banned the German language from being spoken in the classroom, church, public meetings, and via telephone. Citizens of Findlay, Ohio were fined $25 for those who spoke the enemy's [German] language on the street.

One year after World War I, 15 states legalized English as the basic language of instruction. Many states followed Ohio's template of forbidding any foreign language study in the primary grades. By the mid-1920s, bilingual instruction was banned, and LEP students were failed and/or dropped out of school at alarming rates (History of Bilingual Education, 1998).

An important case in 1923 was that of *Meyer v. Nebraska*, in which a parochial school teacher was charged with reading a Bible story in German to a 10-year-old child (Trundle, 1999). By the late 1930s bilingual education was eradicated throughout the United States.

A different turn took place in 1934 when Indian Commissioner, John Collier, attempted to introduce native-language instructions in Indian community schools. He had hoped to introduce bilingualism. Overall, during the 1940s and 1950s immigrants

suffered when they used their own mother tongues (Crawford, 1999). In 1949 in El Paso, Texas, Mr. Mareo Escolar described a typical school day:

> I would sit in the classroom looking out the window. Here in this Catholic school it was mandated that one should not speak in Spanish. If we were caught speaking in our native tongue, we were punished. The punishment was writing "I will not speak Spanish" one hundred times. (Roca, 1999. p. 19)

During the 1950s a massive surge of Spanish-speaking immigrants flooded the United States, including Puerto Ricans and Cubans. The cultural deprivation theory emerged as educating non-English speaking residents, and once again this topic became a major issue in the United States. ESL programs were now needed, and students were taken from their regular classrooms 2 to 5 times a week for 45 minutes. These classes were for remedial instruction and took into account the lack of English skills (Trundle, 1999).

In the 1960s the overall dropout rate was 60% for Puerto Rican students in New York City. Language difficulties were ignored and minority students were labeled as slow or poor learners. Cubans also had fled to the United States in massive numbers in 1959. The Dade County Public Schools provided ESL instruction in 1961, and in 1963 this school district established a bilingual program. In 1963, the Cuban students at Coral Way Elementary School were grouped by language. Cuban children were instructed in Spanish in the morning and in English in the afternoon. The English-

speaking children were taught English in the morning and Spanish in the afternoon. The children were allowed to integrate languages during music, art, play activities, and lunch. By 1966, the program proved to be a success, as both groups of students learned how to operate effectively in both languages (Crawford, 1999).

The Bilingual Education Act of 1968 provided federal funding to encourage local school districts to experiment with new ways of incorporating native-language instruction. Most states followed suit and reintroduced bilingual education. The famous case, *Lau v. Nichols* required schools to take affirmative action to overcome language barriers that may impede children's educational access. This process was implemented by Congress through the Equal Educational Opportunity Act of 1974 (History of Bilingual Education, 1998).

In 1985, President Ronald Regan and Education Secretary, William Bennett, were not proponents of bilingual education, but in 1987 pro-bilingual education senators ordered a nonpartisan General Accounting Office study of bilingual programs. The study findings indicated that bilingual programs were effective, and Title VII was written to mandate instruction to bilingual children in their native language (Trundle, 1999).

In 1998, Proposition 227 was approved in California. This proposition required school instruction in the English language only. The idea was to teach the English language to students as soon as possible in the curriculum and integrate these students back into the regular classroom.

Article 1. Findings and Declarations sections (e) and (f) stated the following:

(e) Whereas, young immigrant children can easily acquire full fluency in a new language, such as English, if they are heavily exposed to that language in the classroom at an early age.

(f) Therefore, it is resolved that: all children in California public schools shall be taught English as rapidly and effectively as possible (Proposition 227, 1998)

Two known public opponents of Proposition 227 were Dr. Stephen Krashen and James Crawford (Trundel, 1999). Stephen Krashen argued that LEP children should be taught to master their own native language first and then subsequent subject matter instruction in English is comprehensible (Krashen, 1999).

Overall the debate still continues today. Supporters of bilingual education believe that schools should teach LEP students academics in their own native tongue. Opponents argue that teaching LEP students in their native tongue just delays learning the English language. Other factors are the modern media, access to transportation with less isolation, and increased access to computers in an increased percentage of the Hispanic population. Only time, analysis of historical events, and research can provide a solution to bilingual education (Roots in History: Speaking of Learning Bilingual Education 2001).

Diversity in the Work Place

Developing a workforce that is now recognized as being comfortable with diversity, Harvard University professors of management and economics spent 5 years researching how four large companies in different industries promoted and managed diversity (Parks, Godinez, & Lavigne, 2003). The study findings showed no supporting evidence that diversity in the work place is either good or bad. Researchers did find, however, that racial diversity can create tensions between employees unless they are trained in career development and diversity management (Parks et al., 2003).

Padilla and Salzman (1997) believed that healthcare organizations will be required to manage various cultural multilingual customers and staff, and that having a multicultural workforce enhances customer service because it helps to ensure a better understanding of who the customer is. Also, these authors stated that, "Having an effective diversity management program in place can assist the healthcare industry to remain competitive" (p. 1).

Challenges for ESL Healthcare Providers

Communication is a challenge for both the foreign health care provider and American health care organizations. Approaches for documentation, measurements, medications, and interacting with patients are different for the foreign health care provider. Communication barriers can lead to frustration for CNAs and other staff members, as well as patients. The inability to appropriately communicate a change in the patient's status can potentially cause patient injury. Nonverbal communication

differs in various cultures. Gestures can be perceived as inattentive, subservient, or disrespectful (Bola, Driggers, Dunlap, & Ebersole, 2003). For example, in Asian countries smiling or making eye contact with others while talking is rarely done. Smiles are considered untrustworthy; making eye contact is considered impolite and arrogant (Yi & Jezewski, 2000). Yet these behaviors are common and acceptable in the American culture.

Yi and Jezewski (2000) described how current health care staff may find it difficult to accept new coworkers, who have recently immigrated from other countries. Without a support system, these new health care providers may doubt their professional ability to function successfully. According to Yi and Jezewski, negative communication contributes to culture shock, depression, and homesickness, all of which affect job functioning. Researchers need to examine ways to integrate new healthcare providers into the existing culture and educate existing employees on the benefits of cultural diversity.

When assessing educational factors, two situations may be encountered: the foreign-educated CNA may require additional education outside the organization's orientation program, such as, English classes; or the foreign-educated CNA may exceed educational requirements for clinical practice. Educators can assist the ESL CNA by providing information regarding outside classes and financial resources (Bola, Driggers, Dunlap, & Ebersole, 2003).

Adult Learning

The current job market reflects a rich linguistically diverse population in the United States. This diversity creates a challenge for both those who are not proficient in English and staff members responsible for assimilating them. The individual's academic success in learning English and assimilating into the culture depends on many factors, both inside and outside the workplace, and those learning a new language and a new culture have unique needs (Freeman & Freeman, 2001).

Knowles' adult learning theory has been useful when teaching adult learners of all cultures. For Knowles, adult learning or andragogy is based on five crucial assumptions: self-concept, experience, readiness to learn, orientation, and motivation to learn. Knowles proposed that the self-concept of the mature adult includes the perception that one is self-directed. Instructors should be facilitators in the adult learning process. Mature adults bring a wealth of information to the learning situation through their past life experiences. New knowledge can be incorporated within past experiences. As a person matures, the readiness to learn increases as developmental tasks associated with the social roles increase. The adult must have a purpose or goal to learn effectively. Often job requirements prompt adults to attend classes and conferences. Orientation to learning occurs as a person matures. Time perspective changes from one of postponed application of knowledge to immediacy of application. Lastly, the motivation to learn comes from within, and the adult must have an innate desire to learn (Smith, 1999).

Historical Perspective of CPR

Since humankind began to record events, documents noted various methods of Cardiopulmonary Resuscitation (CPR) used throughout history. In the early ages, the Heating Method consisted of placing warm ashes, dried burnt animal excrement, or hot water on the abdomen in an attempt to restore life. The Flagellation Method also was used during medieval times, and the victim would be whipped in order to solicit a response. In the 1530s, Paracelsus used the Bellows Method which consisted of hot air blown into the victim's mouth using a bellows from the fireplace. This method resulted in the bag-valve-mask resuscitator that is used today. In 1711 the Fumigation Method was used by North American Indians to revive the dead. Smoke was blown into an animal bladder and then into the victim's rectum. In 1770, the inversion method was used. This method consisted of hanging the victim by the feet. Chest pressure was then applied in order to aid in expiration and then pressure was released to aid inspiration. In 1773 the Barrel Method was used, where the victim was placed on a large barrel and alternately rolled back and forth. In 1803 the Russian Method was used. This method involved the body temperature being reduced by burying the victim under a layer of snow and ice. The victim's face remained exposed and water was dashed on the face. In 1812 the Trotting Horse Method was used by lifeguards, whereby the trotting movement of the horse would result in alternate compression and relaxation of the chest as the victim was placed on the horse. In 1856 the Roll Method was developed by Marshal Hall. The victim was rolled from the stomach to the side

16 times a minute. Pressure also was applied to the victim's back while the victim was prone. In 1892 the Tongue Stretching method is described as holding the victim's mouth open, while pulling the tongue forcefully and rhythmically (Historical Resuscitation Cover Illustrations, 1974; History of CPR, 2002).

Resuscitation was rediscovered in the 1950s by Dr. Peter Safar and Dr. James O. Elam after reading how midwives resuscitated newborn babies (Cummins, Hazinkski, Baskett, et al., 2000). In December 1956 the first human CPR experiment was carried out in an operating room at Baltimore City Hospital by Drs. Safar and Elam. Volunteers were sedated and given curare to paralyze the breathing muscles, the heart however, continued to beat (Srikameswaran, 2002). Dr. Safar experimented opening the airway by tilting the head back and pulling the jaw forward. He had medically trained professionals perform the then accepted arm-lift method and people untrained in medicine, including his wife, firefighters, and Boy Scouts, do mouth-to-mouth ventilation. This research was published in the *Journal of the American Medical Association* in 1958 and reprinted in September 2001 in *Anesthesiology* to launch a series called "Classic Papers Revisited" (Srikameswaran, 2002).

The steps of modern CPR were historically labeled "A" for Airway, "B" for Breathing, and "C" for Circulation and closed cardiac chest compressions. This technique was used in the late 19th century and rediscovered in 1958 at Johns Hopkins Hospital. This same technique also was tested behind the Iron Curtain by Dr. Vladimir

Negovsky who, with Dr. Safar, was nominated on three occasions for the Nobel Prize (Srikameswaran, 2002).

In 1958 a Conference on Artificial Respiration was held. The National Academy of Sciences-National Research Council, endorsed mouth-to-mouth and mouth-to-nose techniques as the gold standard of artificial resuscitation. Since then there has been worldwide acceptance of artificial respiration in a non-breathing, unresponsive person (Cardiopulmonary Resuscitation, 1966).

In 1960 Kouwenhoven and colleagues observed during a series of anesthesia induced cardiac arrests that forceful chest compressions produced palpable arterial pulses. They confirmed that chest compressions alone could sustain life while awaiting more definitive care. Cummings et al. (2000) stated that "the era of cardiopulmonary resuscitation (CPR)--'closed chest' compressions and 'artificial respirations' has arrived" (p. I-1).

In July of 1960, efficacy of external chest compressions was reported. Documented studies have indicated that the combination of artificial respirations and external cardiac compression can resuscitate a victim who has suffered a sudden cardiac arrest. Studies also revealed the hazards of external cardiac compressions and the importance of proper training in those individuals who administer cardiac compression (Cardiopulmonary Resuscitation, 1966).

The first external CPR training programs began at Baltimore City Hospital in 1959. The first instructors' programs began at the University of Pittsburgh in 1963.

Both evolved then into the AHA program. The AHA was formulated by the AHA CPR Emergency Cardiac Care (ECC) Committee which was founded in 1963 by Elam, Jude, Gordon, and Safar. The Standards for CPR and ECC were based on education and research in CPR by Drs. Winchell and Safar (P. Safar, personal communication, November 11, 2002). "Soon Safar confirmed the combined technique, now known as basic CPR" (Cummings et al., 2000, p. I-1).

"Closed-chest cardiopulmonary resuscitation was endorsed as a medical procedure in September 1962, *Circulation Magazine*. Later, in May 1965, *Circulation Magazine*, the method was reclassified as an "emergency procedure." These endorsements were strongly supported by the American Heart Association, the American National Red Cross, the Industrial Medical Association, and the U.S. Public Health Service. These organizations strongly recommended that the technique be used by trained medical personal (Cardiopulmonary Resuscitation, 1966, p. 372).

> In 1963, the American Heart Association established the Committee for Cardiopulmonary Resuscitation. In 1971 it was expanded to a Committee on Cardiopulmonary Resuscitation and Emergency Cardiac Care. The committee established a number of standards for BLS and Advanced Cardiac Life Support (ACLS). (Standards for Cardiopulmonary Resuscitation and Emergency Cardiac Care, 1974, p. 837)

Additionally, "The 1974 recommendations for the Standards for Cardiopulmonary Resuscitation and Emergency Training in Cardiac Care resulted in widespread acceptance of cardiopulmonary resuscitation and training" (Standards for Cardiopulmonary Resuscitation and Emergency Cardiac Care, 1974, p. 837).

The standards for Cardiopulmonary Resuscitation and Emergency Cardiac Care have undergone many changes since the early 1970s to present times. The Emergency Cardiac Care (ECC) Committee of the American Heart Association published its first guidelines for cardiopulmonary resuscitation (CPR) and ECC in 1974 with amendments in 1980, 1986, and 1992. The AHA guidelines are now recognized as the world's "Gold standard" for resuscitation (Cummins, Sanders, Mancini, & Hazinski, 1997). The latest changes to the procedure were made in 2000 (Cummings et al., 2000).

History of CPR Training Methods

During the 1960s and 1970s CPR training methods combined lecture and skills demonstration. By 1974, both the AHA and the American Red Cross (ARC) had established a combination of lecture, demonstration, and hands-on practice with training mannequins. During this era the ARC made an attempt to utilize the "modular method." This method consisted of a programmed learning approach and became popular throughout the United States.

In the 1980s and 1990s an important dissertation by Alan Braslow documented that only a small percentage of instructors followed recommended AHA guideline

practices when teaching CPR courses, and even fewer could pass a basic CPR test. The ARC then developed didactic videotape training. The majority of the course content was taught by video and other sections of the course text were read in class. This method was chosen in an effort to make CPR training consistent among instructors (Cummins et al., 1998). Today in the new millennium AHA CPR training programs utilize video based instructions. This method was chosen in an effort to standardize uniform teaching practices among CPR instructors (Cummings, Hazinski, Baskett, et al., 2000, p. I-1).

CPR Education, Training, and Examinations

Core training objectives for CPR education were defined in the year 2000. These objectives were implemented in an effort to assist the instructor with curricula development, teaching techniques, and learner evaluation. The AHA also has standardized teaching methods by encouraging the use of AHA video-based training and AHA teaching tools. This allows for cognitive material to be presented in a consistent uniform fashion (Education, Training & Examination, 2000).

Many CPR exams have been written at various reading levels. The first HCP exams were written at a 12th plus grade reading level and were written for physicians only (J. Street, personal communication, November 11, 2002). The current 2000 CPR Healthcare provider exam is written at a 7.7 grade reading level and can be obtained from the AHA National Office in Dallas, Texas (English 601: Flesch-Kincaide Reading Measures, 2003).

Another change made in the year 2000 was reconstruction of the written exams. For example, some older questions on exams were ambiguous. The new questions, however, have been written, pilot tested, and validated by educational experts. The new questions evaluate major learning objectives (Education, Training & Examination, 2000).

Kaye and Mancini (1986) noted that the importance of CPR training for all healthcare staff is vital. They proposed that all staff who have patient contact should be required to take a CPR class. Several studies have documented poor retention of core CPR skills beyond 6 to 12 months. These skills deteriorate rapidly if they are not practiced and used frequently in a clinical setting (Emergency Cardiac Care Statement on Retraining Targeted Responders, 2003). Past studies have shown that CPR skills are not retained and suggest CPR skills should be reinforced within the first 12 months after initial training (Kaye & Mancini, 1986; Weaver et al., 1979).

The overall goal of CPR training is participant retention of CPR skills. Those who are CPR certified should master CPR psychomotor skills as a second-nature and be able to use their instinctive training in a sudden cardiac arrest situation. In order to retain those master skills, ample time for hands-on practice in CPR classes must be given. Past studies have shown that insufficient time was devoted to skills practice, sometimes even with as little as 3 minutes per student (Kaye et al., 1991).

Continuing to standardize CPR and Emergency Training in Cardiac Care internationally is a role that the AHA undertook in 2000. Agreements and partnerships

are being made with various organizations throughout the world to develop AHA ECC training networks. These organizations are called AHA International Training Organizations (Teaching AHA Courses Outside U.S. Boundaries, 2001).

It has been a long-term goal of the AHA to create accepted international resuscitation guidelines. All guidelines are based on evidence-based international scientific research and are reviewed by experts, researchers, and highly experienced international clinical personnel (Overview of International Guidelines, 2000).

Course material is being published in the United States in eight languages other than English. These languages are, Chinese, simplified Chinese, French, Italian, Japanese, Portuguese, Spanish, and Thai. The greatest demand is for materials in Spanish, and these are available in the United States, Spain, and Latin America (Saving Lives in Many Languages, 2003).

CPR Training in the Future

Is current CPR training a help or hindrance? Exactly what can the CPR instructor do to help participants successfully learn CPR? Educational science has focused on the best way that people can learn CPR and master the skills. In the past CPR instructors made the mistake of putting subject matter in their own words. Now CPR training requires instructors to focus on core messages that facilitate learning. The learner also must take an active part in learning. Learners rarely come prepared to CPR courses. The AHA has focused its mission on keeping CPR training simple. In 2000, some steps of CPR training for the layperson were deleted. Another attempt to

simplify training would be to simplify the wording; for example, instead of checking for "signs of circulation," the words "check for signs of life" could be used. The ultimate goal for the CPR instructor is to facilitate CPR learning and keep training simple (Eikeland, 2003).

Summary

The review of history of bilingualism in the United States revealed that immigrants experienced difficulty in learning the English language. In earlier times, immigrants were not allowed to speak in their native tongue and often suffered severe consequences when they did. Overall, bilingual education became a sensitive topic for the U.S. government, businesses, and the general public. Proponents of bilingual education believe that immigrant children should be taught to master their native language first, and then the English language can be taught. Opponents of bilingual education believe that immigrant children should be immersed into an all English American classroom to either "sink or swim". The United States has yet to find a solution in educating the bilingual population.

In this new millennium, the United States has inherited a rich mosaic composed of a culturally diversified workforce. To date there is no evidence to support propositions that cultural diversity is either good or bad in the American society, and these value judgments impede research. Employers are faced with a myriad of challenges in training ESL employees. What has meaning in one culture can have a different meaning in the American culture. U.S. companies are now valuing and

investing in diversity management training to help staff understand population differences.

Adults have unique learning needs. It is difficult to assess the reading level of an adult once they enter the workforce. Educators can facilitate adult learning by recognizing these differences, allowing autonomy, and incorporating past learning experiences from their students as they seek to master the English language.

The practice of CPR was used as early as 800 B.C., and many methods of resuscitation have been used throughout history. Resuscitation was rediscovered in the 1950s by Dr. Peter Safar, who is referred to as the "Father of CPR." Resuscitation standards were initiated during the 1970s by the AHA and the ARC. Since then many changes in CPR have been made. Today CPR core objectives are clearly defined. This was done in an effort to standardize training. Teaching methods have changed from instructor lecture to video-based training. Despite changing education methods, many studies have indicated that CPR skills are not retained past 6 to 12 months. The AHA continues to standardize training in both the United States and internationally. Future CPR classes are focusing more on skills, manikin practice, core BLS objectives, and keeping CPR classes simple.

CHAPTER III

METHODOLOGY

This study utilized a comparative, quantitative design. Manipulative intervention was made by the researcher (Polit & Hungler, 1999). The study compared the test scores of ESL students who were randomly assigned to take the Original AHA Version "A" BLS ESL Exam (see Appendix C) which is at a 4.6 reading level, or the Revised Version "A" BLS ESL Exam (see Appendix D), which is at a 3.5 grade reading level.

An internal threat to the validity of this study is instrumentation; "This bias reflects changes in the researcher's measuring instruments between an initial point of data collection and subsequent point" (Polit & Hungler, 1999, p. 229). Threats to external validity include measurement of exam scores to other CNA students. For example, if the two versions of the BLS ESL exam were given to non-ESL CNAs would the scores differ? These BLS exam participants could potentially have similar scores as ESL students (Polit & Hungler, 1999). "There are several variables impacting the ability to generalize these research findings to another setting--the external validity" (Polit & Hungler, 1999, p. 231). For example, this study should be repeated comparing other ESL CNA HCP test scores in another large metropolitan facility.

A convenience sample was obtained with random assignment to two groups. Participants were required to be an ESL CNA HCP or to have taken a BLS class within the past 2 years. Students were randomly assigned in a BLS renewal course to one of two test groups by selecting numbers from a hat. Pretest demographic information was collected and student assessment of the ease of reading the test was collected posttest. Group one was given the Original AHA Version "A" BLS ESL HCP Exam, which was printed on sky blue paper, and only the researcher was knowledgeable about which color represented which exam. A total of 45 minutes was allotted to complete the exam. Group two was given the Revised Version "A" BLS ESL HCP Exam, which was printed on pink paper. A total of 45 minutes was allotted to complete the exam. Scores of both exams were tallied and compared. Data were collected during the fall of 2003.

Setting

The setting in which this study was conducted was a classroom within a large urban metroplex hospital. The BLS course was a BLS HCP renewal course.

Population and Sample

The target sample population selected included 40 ESL CNAs taking a BLS HCP renewal course at a large metropolitan hospital. This target population consisted of a convenience sample of ESL CNAs who were employees of the hospital.

Procedures

Participants were informed of the research study being conducted prior to the beginning of a BLS course. A consent form was given to each participant prior to testing. A demographic data questionnaire also was given to each participant at this time. A post-exam questionnaire regarding the exam was given to each participant after the exam was taken. Results and scores were discussed with the participants after testing, as this is part of the BLS HCP exam remediation process.

The rights of the subjects were protected in accordance with the policies of the Texas Woman's University Institution Review Board (IRB) (see Appendix B) and the policies of the IRB board (see Appendix A) of the large metropolitan hospital that was the setting for the study. Study participants' rights were protected in the following manner.

An explanation of the purpose and benefits of the study was provided.

1. A consent form (see Appendix E) clearly explaining the purpose of the study, rights of the subjects, benefits, and risks of this research study was provided prior to each BLS HCP Renewal Course.

2. This form also explained that agreeing to complete the exam and sign the consent form indicated informed consent to participate in the research study.

3. The form also explained the right to refuse to participate in completing the exam.

4. A statement regarding protection of confidentiality was provided. Results were reported as group findings so that individual scores were not identified.

5. Information was provided regarding how to obtain the study results and the name and phone number of the researcher were included.

6. The subjects were given a copy of the consent form to keep.

Instrumentation

The two instruments used in this study were the Original AHA Version "A" BLS ESL HCP Exam and the Revised AHA Version "A" BLS ESL HCP Exam (see Appendices C and D). Original AHA Version "A" BLS ESL HCP Exam was developed by the AHA in September of 2001 for ESL HCPs. Upon implementation of this exam in September of 2001, it was noted that ESL CNAs were experiencing difficulty in successfully completing this exam. Due to the difficult nature of the Original AHA Version "A" BLS ESL HCP Exam, six educators at the large metropolitan hospital that was the setting of the study met and revised the exam in July of 2002. A letter was then proposed to AHA to allow use of the Revised Version "A" BLS ESL HCP Exam. The Flesch-Kincaide Word Processing Program was used to determine the readability level of both instruments used in this study (Mesde & Smith, 1991). Original AHA Version "A" BLS ESL HCP Exam was calculated to have a 4.6 reading level and the Revised AHA Version "A" BLS ESL HCP Exam was calculated to have a 3.5 reading level.

Blooms Taxonomy (see Appendices C and D) was used to categorize test questions in six cognitive levels; knowledge, comprehension, application, analysis, synthesis, and evaluation. For both exams, 12 questions were categorized as knowledge, 3 questions as comprehension, and 10 as application. No questions were categorized as falling under the category of analysis, synthesis, or evaluation. The knowledge questions were applicable to the control and purpose of the BLS course, as they emphasize observation, recognition, recall, and the ability to remember facts in the way they were presented. The three comprehension questions assessed the ability of students to translate information into their own words, then information must be translated in the student's own words. The 10 application questions also were appropriate for BLS courses, as the student must be able to apply the material to a new situation (Kingsley, 2002).

The English as a Second Language Certified Nurses Aide Demographic Data Questionnaire (see Appendix F) was administered prior to the exam. This questionnaire consists of 12 items to obtain the following data: name, gender, age, ethnic group, native language, language spoken at home, length of time lived in the U.S., highest level of education completed, reading level, length of time being a nurses aide in a large metropolitan hospital, whether or not the subject worked the evening prior to taking the exam, and the number of times the participant has taken the exam. No specific score was obtained from the demographic information obtained. The

demographic data questionnaire was used as a tool to gather information regarding subjects' similarities and differences., and assess differences between the two groups.

The English as a Second Language Certified Nurses Aide Post Examination Questionnaire (see Appendix G) was used to determine if the instructions for taking the exams were clear, and a Likert scale assessed participants' response to the exam on a scale ranging from "*very easy*," "*easy*," "*hard*," or "*very hard.*" A place for written comments also was provided.

Participants were randomly assigned to a group as they attended weekly scheduled BLS HCP Renewal Courses at a large metropolitan hospital. They were assigned to one of two test groups by taking numbers from a hat. The subjects who chose odd numbers were given the Original Exam and the subjects who chose even numbers were given the Revised Exam. Demographic information was collected prior to administration. Participant assessment of the ease of reading the test was collected after administration. Scores were tallied and compared. These exam results are shown in Tables 3, 4, 5, 6, and 7. Comparison of exam scores were analyzed to evaluate the directional hypothesis: ESL CNA students in BLS HCP courses will successfully pass the Revised BLS ESL HCP Exam after reducing the reading level of the exam, from a 4.6 grade reading level to a 3.5 grade reading level.

Data Collection Methods

Data scores were collected after subjects attended a HCP BLS renewal course and completed the exam with participants randomly assigned to the Original AHA

Version "A" BLS ESL Exam or the Revised Version "A" BLS ESL Exam. All returned exams were reviewed for completeness. Although incomplete exams would have been excluded from data analysis, all exams were complete and incorporated into statistical analysis. The researcher graded the exams and provided feedback to each student immediately after administration of the exam. Missed questions were discussed individually with each participant to ensure that the student understood why the item was missed, as is the usual practice following the BLS exam administration and part of the AHA remediation process. The scores were entered into the Statistical Package for the Social Sciences (SPSS) data base for statistical analyses. Test scores and averages were used to describe participants' performance on the Original and Revised BLS ESL Exams.

Treatment of Data

Descriptive statistics, including frequencies, percentages, averages, means, ranges, standard deviation, and t-tests were used to analyze data. The demographic data consisted of name, gender, age, ethnic group, native language, language spoken at home, length of time lived in the U.S., highest level of education completed, reading level, length of time of employment as a nurses aide at a metropolitan hospital, whether the participant worked the evening prior to taking the exam, and the number of times the participant has taken the BLS exam. All returned questionnaires were reviewed for completeness. There were no incomplete demographic questionnaires. Frequency and percentage scores were used to compare the following categories of

demographic data for both exams: gender, ethnic group, highest level of education, reading level, and working the evening prior to exam. A description of age, years lived in U.S., years worked as a CNA, and number of times the participant had taken the BLS exam at the large metropolitan hospital were analyzed by comparing frequency, range, mean, and standard deviation in both groups.

The English as a Second Language Certified Nurses Aide Post Examination Questionnaire was used to determine if the participants perceived that the instructions provided about exams were clear and a Likert scale was used to assess participant perceptions at the start of the process. The items on the scale were "*very easy*," "*easy*," "*hard*," or "*very hard.*" Participants were encouraged to provide written comments and their perceptions of the experience following evaluation of exam performance. Written comments also were encouraged after the exams. All returned post-exam questionnaires were reviewed for completeness. There were no incomplete post-examination questionnaires. Frequency, range, mean, and standard deviation were used to compare scores obtained from both groups.

Test scores were entered into the SPSS data base for statistical analysis. Test scores and averages were utilized to describe participants' performance on the Original and Revised BLS ESL Exams. An independent samples t-test was used to determine statistical differences in test score means between the groups in this population, with significance designated as a 95% confidence interval.

CHAPTER IV

FINDINGS

An independent samples t-test was used to determine if there was a statistically significant difference between the test score means of the two groups. Descriptive statistics were employed to describe the respondents' demographic data. The sample size was 40 participants. The pre- and post-exam questionnaires were given in the manner previously described. Twenty subjects took the Original Version AHA "A" BLS ESL Exam and 20 subjects took the Revised Version "A" BLS ESL Exam. Forty pretest demographic questionnaires and posttest questionnaires were completed with a 100% response rate and no incomplete data.

Findings of the Study

Table 1 describes demographic data for this study. There were 32 ESL CNA females, and 8 ESL CNA males. Ethnic groups consisted of 10 Hispanics, 9 Indians from India, 2 Filipinos, and 19 other participants (18 African nations, and one participant from Bosnia). Education ranged from high school to completion of a bachelors degree. Reading levels ranged from 3rd grade to college level. Four participants worked the night prior to the exam and 36 participants did not work the night prior to the exam.

Table 1

Description of Gender, Ethnic Group, Highest Education Completed, Reading Level, and Whether Worked Evening Prior to Exam in ESL CNA Study (N = 40)

Variable	Number	Percent
Gender on Original Exam:		
Male	4	20
Female	16	80
Gender on Revised Exam:		
Male	4	20
Female	16	80
Ethnic Group on Original Exam:		
Hispanic	4	20
Indian	6	30
Filipino	0	0
Other	10	50
Ethnic Group on Revised Exam:		
Hispanic	6	30
Indian	3	15
Filipino	2	10
Other	9	45
Highest Education on Original Exam		
High school	5	25
Some college	4	20
Technical - vocational	3	15
Associate degree	2	10

Table 1 (continued)

Variable	Number	Percent
Bachelors degree	6	30
Highest Education on Revised Exam		
High school	5	25
Some college	6	30
Technical - vocational	4	20
Associate degree	2	10
Bachelors degree	3	15
Reading Level on Original Exam:		
Third grade	0	0
Sixth grade	1	5
Junior high	0	0
Ninth grade	0	0
College	15	75
High school	3	15
High school, 12th grade	1	5
Reading Level on Revised Exam:		
Third grade	1	5
Sixth grade	1	5
Junior high	1	5
Ninth grade	1	5
College	10	50
High school	6	30
High school, 12th grade	0	0
Worked Evening Prior to Original Exam:		
Yes	1	5

Table 1 (continued)

Variable	Number	Percent
No	19	95
Worked Evening Prior to Revised Exam:		
Yes	3	15
No	17	85

Table 2 contains descriptions of age, years lived in United States, years worked as a CNA, and number of times the participant has taken the BLS exam. The youngest participant was 20 years old and the oldest participant was 60 years of age. Participants had lived in the United States from 1 1/2 years to 37 years. Length of CNA employment of participants at this hospital ranged from 6 months to 17 years. The number of times the participants had completed the BLS exam ranged from 2 times to 10 times.

Table 2

Description of Age, Years Lived in United States, Years Worked as CNA at Study Location, Number of Times Taken BLS Exam ($N = 40$)

Test version	*N*	Range	Minimum	Maximum	Mean	SD
Variable: Age						
Original Exam Female	16	40	20	60	36.69	13.34
Original Exam Male	4	16	32	48	37.25	7.54
Revised Exam Female	16	38	20	58	38.44	10.42
Revised Exam Male	4	15	24	39	33.50	6.65
Variable: Years lived in U.S.						
Original Exam Female	16	35	1.5	37	9.76	9.66
Original Exam Male	4	8	1.0	9	3.50	3.69
Revised Exam Female	16	22	2.5	25	10.15	6.88
Revised Exam Male	4	18	6.0	24	16.75	8.13
Variable: Years worked as a CNA						
Original Exam Female	16	16.5	5	17	3.97	4.98
Original Exam Male	4	2	40	2.5	1.47	.94
Revised Exam Female	16	15.9	.019	16	4.13	4.74
Revised Exam Male	4	4.50	.50	5	2.1	2.13
Variable: Number of times taken BLS exam						
Original Exam Female	16	6	2	8	3.19	1.72
Original Exam Male	4	0	2	2	2.00	.00
Revised Exam Female	16	8	2	10	3.25	
Revised Exam Male	4	3	2	5	2.75	1.50

Table 3 describes ages, ethnic groups, native languages, educational levels, reading levels, and scores of 20 CNA subjects on the Original AHA Version "A" BLS ESL Exam. Ages ranged from 20 to 60 years of age. Six participants in their 20s took the Original Exam and averaged a mean score of 82%. Seven participants were in their 30s and averaged a mean score of 84%. Two participants were in their 40s and averaged a score of 68%. Four participants were in their 50s and their scores averaged 80%. One was age 60 and scored 64%.

Ten African ESL CNA participants took the Original Exam. Out of these 10 African participants, 6 passed the exam and 1 scored 100%, 3 scored in the 90% range, and 2 scored 84%. The AHA HCP BLS exam passing score criteria is 84% and above. Four African participants failed the exam. Three of these African participants spoke Igbo and one spoke Ibo, all four passed the exam and three scored in the 90% range. Four Hispanic participants took the Original Exam, two Hispanics passed the exam with scores of 88% and 98%. Two Hispanics failed the exam. These four Hispanics spoke Spanish. Six Indian participants took the Original Exam and three passed with scores equal to or above the 84% range. Three Indians failed the exam. Out of the six Indian participants, four spoke Hindi and 50% passed and 50% failed the exam. One Indian participant spoke Bengali and passed with a score of 88% percent. One Indian participant spoke Malayalam and failed the exam.

The highest educational level of the participants was a bachelors' degree. Six participants had a bachelors' degree and three out of the six passed the Original exam

and three failed the exam. One participant had an associate degree and scored 100%. Three participants stated they had some college and three of these passed the exam. Three participants had technical degrees, and only one in this group passed the exam. Five noted they had a high school education, while three of these passed the exam and two did not.

Reading scores ranged from college level to the sixth grade. Fifteen participants wrote that they read at a college level, but only eight passed the Original Exam. Two stated they read at a high school level and passed the exam with scores of 84%. The lowest score was 48% and this participant wrote that he had some college and read at a college level.

Table 3

Description of Age, Ethnic Groups, Native Languages, Education Levels, Reading Levels, and Scores of the ESL CNAs Who took the Original AHA Version "A" ESL Exam (N = 20)

Subject	Age	Ethnic Group	Native Language	Education Level	Self-report Reading Level	Score
03	36	African	Igbo	Associate	College	100
31	51	African	Ewe	Some college	College	96
35	21	Hispanic	Spanish	Some college	College	96
21	31	African	Ibo	Bachelors	College	92
19	28	African	Igbo	Some college	College	92
13	34	Indian	Bengali	Bachelors	College	88
15	22	Hispanic	Spanish	Technical	High school	88
39	23	Indian	Hindi	High school	College	88
11	55	Indian	Hindi	Bachelors	College	84
07	32	African	Ewe	High school	High school	84
01	37	African	Agbo	High school	High school	84
29	32	African	Ewe	Bachelors	College	80
37	41	African	Amaharic	Technical	College	80
05	26	Hispanic	Spanish	Technical	College	80
25	50	African	Koswahili	Associate	College	72
17	52	Indian	Hindi	Bachelors	College	68
23	37	Hispanic	Spanish	High school	College	60
33	60	Indian	Malayalam	High school	High school	64
09	48	Indian	Hindi	Bachelors	Sixth grade	56
27	20	African	Bafuf	Some college	College	48

Table 4 describes ages, ethnic groups, native languages, self-reported reading levels, educational levels, and scores in 20 CNA subjects on the Revised Version "A" BLS ESL Exam. The ages ranged from 20 years to 58 years. Three participants were in their 20s and averaged a mean score of 81%. Eleven participants who took the revised exam were in their 30s and the highest score in this category was 92% and the lowest was 64%. The overall average score was 80% for those in the 30s age range. Those aged in the 40s range averaged an overall average of 77% and those in their 50s averaged a score of 72%.

Eight African ESL CNA participants took the Revised Exam. Out of these eight African participants, three passed the exam. One of these scored 92%, while the two scored 88%. Five African participants failed the exam, making a score below 84%. One African, who spoke Ibo, passed the exam. Two Africans spoke Swahili and one of these passed the exam scoring 99%; the other failed the exam. One spoke Ashanti and scored 92%. Other African languages were Tigrigna, Beiweiny, Yoruba, and Vai; all of these participants failed the exam. Six Hispanics participants took the Revised Exam. Two Hispanics passed the exam, with scores of 100% and 92%, respectively. Four Hispanics failed the exam. All six Hispanics spoke Spanish. Three Indian participants took the Revised Exam and two of these passed with a score of 84% and 88%. All three spoke Hindi. Two Filipino participants took the exam. One Filipino scored 84% and passed the exam. The other scored 68% and failed the exam. Both Filipinos spoke Tagalog. One Bosnian who spoke Bosnian, took the exam and failed.

Six participants stated that they had a college degree and all six passed the exam. The three who noted technical degrees also failed the exam. Three wrote that they had some college and only one passed the exam. Only one participant out of four wrote high school as their level of education passed the revised exam.

Self-reported reading levels were from college to third-grade levels. Only one college reading level and two high school reading level participants passed the exam.

Table 4

Description of Age, Ethnic Groups, Native Languages, Education Levels, Reading Levels and Scores of the CNAs Who took the Revised AHA Version "A" ESL Exam (N = 20)

Subject	Age	Ethnic Group	Native Language	Education Level	Self-report Reading Level	Score
12	24	Hispanic	Spanish	Some college	College	100
10	34	African	Ashanti	Bachelors	College	92
22	39	Hispanic	Spanish	High school	College	92
06	34	African	Swahili	Some college	College	88
08	32	African	Ibo	Some college	College	88
40	49	Indian	Hindi	Some college	High school	88
26	35	Filipino	Tagalog	High school	College	84
18	28	Indian	Hindi	Bachelors	High school	84
38	51	Hispanic	Spanish	Bachelors	High school	80
36	30	African	Vai	Some college	High school	80
16	58	African	Tigrigna	High school	Sixth grade	80
32	34	African	Yoruba	Associates	College	76
28	48	Indian	Hindi	Associates	High school	76
20	32	African	Beiweiny	Technical	High school	76
34	38	Bosnian	Bosnian	Some college	College	72
24	31	Filipino	Tagalog	Technical	Junior high	68
04	45	Hispanic	Spanish	High school	College	68
02	37	Hispanic	Spanish	Technical	Third grade	64
30	20	African	Swahili	High school	College	60
14	50	Hispanic	Spanish	Technical	Ninth grade	56

Table 5 shows the test scores and whether the 20 ESL CNAs who took the Original AHA Version "A" ESL Exam passed or failed the exam. The AHA BLS HCP passing score must be equal to or above 84%. Table 5 indicates that 11 participants passed the exam with an average passing score of 90%. It also indicates that 9 participants failed the exam with an average failure score of 67%. The overall average mean score was 80%.

Table 6 shows the test scores, and whether the 20 ESL CNAs who took the Revised Version "A" ESL Exam passed or failed. The AHA BLS HCP passing score must be equal to or above 84%. This table indicates that 8 participants passed the exam with an average score of 89%. It also indicates that 12 participants failed the exam with an average failure score of 71%. The overall average mean score was 78%.

Table 5

Test Scores of and Pass and Fail Rates in ESL CNAs Who Took the Original AHA Version "A" ESL BLS Exam ($N = 20$)

Subject #	Exam Score	Pass	Fail
01	84	P	
03	100	P	
05	80		F
07	84	P	
09	56		F
11	84	P	
13	88	P	
15	88	P	
17	68		F
19	92	P	
21	92	P	
23	60		F
25	72		F
27	48		F
29	80		F
31	96	P	
33	64		F
35	96	P	
37	80		F
39	88	P	
Total = 20	Average Mean = 80	Total Passed = 11	Total Failed = 9

Table 6

Test Scores of and Pass and Fail Rates in ESL CNAs Who Took the Revised Version "A" ESL BLS Exam (N = 20)

Subject #	Exam Score	Pass	Fail
02	64	P	F
04	68		F
06	88	P	
08	88	P	
10	92	P	
12	100	P	
14	56		F
16	80		F
18	84	P	
20	76		F
22	92	P	
24	68		F
26	84	P	
28	76		F
30	60		F
32	76		F
34	72		F
36	80		F
38	80		F
40	88	P	
Total = 20	Average Mean = 78.6	Total Passed = 8	Total Failed = 12

Table 7 compares the scores of the 40 participants in which 20 ESL CNAs took the Original AHA Version "A" ESL BLS Exam and 20 ESL CNAs took the Revised Version "A" ESL BLS Exam. It indicates that the average score on the Original AHA Version "A" ESL BLS Exam was 80%. It also indicates that the average score on the Revised Version "A" ESL BLS Exam was 78%.

Table 7

Comparison of Test Scores and Pass/Fail Rates in 20 ESL CNAs Who Took the Original AHA Version "A" ESL BLS Exam and ESL CNAs Who Took the Revised Version "A" ESL BLS Exam (*N* 20)

Test Version	Pass	Fail	N	Range	Minimum	Maximum	Mean	SD
Original	11/20	9/20	20	52	48	100	80	14.33
Revised	8/20	12/20	20	44	56	100	78.6	11.48

Table 8 illustrates the test questions that were most frequently missed on the Original AHA Version "A" ESL BLS Exam. The questions also are categorized according to Bloom's Taxonomy. There are a total of 25 questions on the Original AHA Version "A" BLS ESL Exam. Twelve questions were categorized as knowledge questions. Nine knowledge questions were most frequently missed. Three questions were categorized as comprehension questions. All three comprehension questions were

most frequently missed. Ten questions were categorized as application. Nine application questions were most frequently missed.

Table 8

Test Questions Most Frequently Missed on the Original AHA Version "A" ESL

Test Question # and Blooms Category	Question & Answer	Total Missed
1 Application	Q. You are walking in the Basement of the hospital. You see a middle-aged man lean against the wall. He then slides to the floor. No one else is in sight. What should you do next? A. Check to see if he responds. If the man does not respond, phone the Hospital emergency number then begin CPR.	9
3 Knowledge	Q. Your hospital has started a project to teach people how to reduce the risk of stroke. Which of the following is the strongest risk factor for stroke that people can change? A. Untreated high blood pressure.	2
4 Comprehension	Q. You are caring for a 60-year-old man after surgery. You have watched him closely since the surgery. At first he was alert and talking normally. But now he slurs his words. The right side of his face is drooping. He also has trouble moving his arm. What is the most likely cause of these problems? A. Stroke.	2

Table 8 (continued)

Test Question # and Blooms Category	Question & Answer	Total Missed
5 Application	Q. You are teaching the parents of an infant who was in the hospital with pneumonia. The parents have just taken the CPR for Family and Friends Course. The mother asks you what to do if she is alone and finds the infant unresponsive. Which of the following is the best answer? A. Begin the ABC's of CPR, give rescue support for 1 minute, and then phone 911.	2
7 Knowledge	Q. You respond to an emergency call for a 68-year-old man. He does not respond when you get to his room. He has no sign of injury. What is the best way to open this man's airway? A. Use the head tilt-chin lift.	3
8 Knowledge	Q. Before you give rescue breaths, you must check to see if the victim is breathing adequately. Two ways to check breathing are to *listen* and *feel* for air at the victim's nose or mouth. What else should you do to check breathing? A. Look and see if the patient's chest rise and falls.	2
9 Application	Q. You work in a doctor's office. You and your coworkers are performing CPR. You have a pocket mask but no oxygen. What is the *best* way to give mouth-to-mask breathing when you do not have oxygen? A. Give the same size and length of breaths that you would give for mouth-to-mouth breathing (give enough air to make the chest rise, and give breaths over 2 seconds).	3

Table 8 (continued)

Test Question # and Blooms Category	Question & Answer	Total Missed
10 Application	Q. A 24-year-old woman has taken an overdose of sleeping pills. She is unresponsive when you arrive. You open her airway and find that she has only gasping breaths. You use a pocket mask to give 2 rescue breaths. You then check for signs of circulation, including a pulse. Her pulse is fast but weak. What should you do next? A. Give 1 rescue breath every 5 seconds (10 to 12 breaths per minute).	10
11 Application	Q. You are sure that an adult is choking. You stand behind him and give abdominal thrusts. He then becomes limp and unresponsive, and he slumps to the floor. What should you do next? A. Lay the man on his back, open his airway with a tongue-jaw lift, sweep his mouth with your finger, open the airway, check breathing and try to give rescue breaths if he is not breathing adequately.	3
12 Knowledge	Q. You are walking through a cafeteria. You hear a 2-year-old child begin to cough loudly. When you arrive at her table, her cough is weaker and not as loud. She also makes "squeaky" noises when she inhales. The child looks scared, and her lips are blue. What is the most likely cause of these signs? A. Complete blockage of the airway.	4

Table 8 (continued)

Test Question # and Blooms Category	Question & Answer	Total Missed
13 Knowledge	Q. You are part of an emergency response team. You provide CPR for patients of all ages. You have been called to perform CPR for a 6 year-old-child. How much air should you give during rescue breaths for this child? A. Give enough air to make the child's chest rise.	3
14 Knowledge	Q. You are giving rescue breaths to an unresponsive child. The child is not breathing, but he has signs of circulation. How often should you give rescue breaths to this child? A. Once every 3 seconds (20 breaths per minute).	2
15 Application	Q. You arrive to help rescuers try to resuscitate a middle-aged man. One rescuer is giving rescue breaths using a bag and mask but no oxygen. He delivers 2 breaths after each set of 15 chest compressions. Each breath lasts about 1 second or less. Both sides of the chest rise a lot with each breath. A second rescuer is giving chest compressions at the center of the chest, between the nipples. You then see that the patient's stomach is rising. What is the likely cause of the stomach rise? A. The rescue breaths are too quick, and they may be too forceful.	6
17 Knowledge	Q. You are part of a 2-rescuer team performing CPR. You are giving chest compressions. What <u>speed</u> (rate) of compressions should you use for this man? A. A rate of about 100 times per minute.	6

Table 8 (continued)

Test Question # and Blooms Category	Question & Answer	Total Missed
18 Application	Q. You are working in the x-ray department of a hospital. Suddenly your partner shouts that a patient stopped breathing. You phone the emergency response number and get the emergency cart with the AED. When you enter the room, you see a man on a cart. Your partner is giving chest compressions. What is the best way to check if the compressions are deep enough and forceful enough? A. Check for a pulse with each chest compression.	8
19 Application	Q. You are alone and giving CPR to a 5-year-old child. How should you give compressions to this child? A. Compress at a rate of about 100 times per minute.	6
20 Application	Q. What is the best way to give chest compressions to a 3-year-old child? A. Use the heel of one hand.	4
21 Knowledge	Q. The first link in the Chain of Survival for infants and children is prevention of arrest and injuries. Which of the following are the *most common* causes of cardiac arrest in infants and children? A. Severe airway problems, breathing problems, or shock.	4

Table 8 (continued)

Test Question # and Blooms Category	Question & Answer	Total Missed
23 Comprehension	Q. You are walking in the hospital hallway. As you pass a female patient, she suddenly slumps against you. She is unresponsive. You gently lower her the ground. You ask another healthcare worker to phone the emergency response number and get the AED. When should you first check the woman for signs of circulation? A. After you open her airway, check for adequate breathing, and give 2 rescue breaths.	8
24 Comprehension	Q. You are teaching CPR to husbands and wives of high-risk patients. You want to make sure they know why immediate bystander CPR is important. Which of the following reasons should you tell them? A. Immediate CPR sends oxygen-rich blood to the heart and brain, 'buying time' until defibrillation.	1
25 Knowledge	Q. Your neighbor runs to your house. A 6-year-old boy has been hit by a car near your home. The child does not respond. You send the neighbor to phone 911, and you remain with the child. How should you open the child's airway? A. Use the jaw thrust without moving the neck.	9

Table 9 shows the test questions that were most frequently missed on the Revised Version "A" ESL BLS Exam. The questions are also categorized according to Blooms Taxonomy. There are a total of 25 questions on the Revised Version "A" BLS ESL Exam. Twelve questions were categorized as knowledge questions. Ten

knowledge questions were most frequently missed. Three questions were categorized as comprehension questions. All three comprehension questions were most frequently missed. Ten questions were categorized as application. Nine application questions were most frequently missed.

Table 9

Questions Most Frequently Missed on Revised Exam, Version "A" ESL Exam Item Analysis

Test Questions #	Question & Answer	Total Missed
1 Application	Q. You see an older man leaning against the wall in a hospital. He slides to the floor. When you check, the man does not respond. What should you do *next*? A. Phone the hospital emergency number then begin CPR.	8
3 Knowledge	Q. Which of the following is a major risk factor for stroke that people can change? A. Untreated high blood pressure.	7
4 Comprehension	Q. You are caring for a 60-year-old man after surgery. Now he slurs his words. The right side of his face is drooping. He also has trouble moving his right arm. What is the most likely cause of these problems? A. A stroke.	4
5 Application	Q. A mother is alone and finds her infant unresponsive. What should she do next? A. CPR for 1 minute, and then phone 911.	6

Table 9 (continued)

Test Questions #	Question & Answer	Total Missed
6 Knowledge	Q. Which of the following offers the best chance of survival after a heart attack? A. Immediate CPR and defibrillation within 3 to 5 minutes.	3
8 Knowledge	Q. You should listen and feel for air at the nose or mouth. What is the other way to check breathing? A. Look and see if the chest rises and falls.	1
9 Application	Q. The best way to give mouth-to-mask breathing without oxygen is to give. A. The same size and length of breaths as with oxygen.	8
10 Application	Q. You find an unresponsive woman. who has only gasping breaths. You give 2 rescue breaths. Her pulse is fast but weak. What should you do next? A. Give 1 (one) rescue breath every 5 (five) seconds.	10
11 Application	Q. You see someone choking, all of a sudden they collapse and go unconscious. What should you do next? A. Open airway and sweep mouth.	8
12 Knowledge	Q. You see a 2 year old choking, she makes no noise. Her lips are blue. What is the most likely cause of these signs? A. Complete blockage of the airway.	2

Table 9 (continued)

Test Questions #	Question & Answer	Total Missed
13 Knowledge	Q. You are providing CPR for a 6 year old. How much air should you give during rescue breaths for this child?	6
	A. Enough air to make the child's chest rise.	
Application	Q. If.you see the stomach rising during CPR, what could be the most likely cause.	5
	A. The rescue breaths are too quick, and they may be too forceful.	
16 Knowledge	Q. The best place to check a pulse on an adult is?	3
	A. Carotid artery of the neck.	
17 Knowledge	Q. You are giving 2-man CPR to an adult woman. How fast do you compress the chest every minute?	5
	A. 100 times.	
18 Application	Q. The best way to tell if chest compressions are deep and forceful enough is to check the:	4
	A. Pulse.	
19 Application	Q. You are alone and giving CPR to a 5-year-old child. How should you give compressions to this child?	5
	A. 5 (five) chest compressions and 1 (one) breath.	
20 Application	Q. What is the best way to give chest compressions to a 3-year-old child?	7
	A. Use the heel of one hand.	

Table 9 (continued)

Test Questions #	Question & Answer	Total Missed
21 Knowledge	Q. Which of the following are the most common causes of cardiac arrest in infants and children? A. Respiratory problems or shock.	3
22 Knowledge	Q. How many breaths to compressions would you give a child or infant? A. 1 to 5	1
23 Comprehension	Q. In adult CPR, when should you first check for a pulse? A. After you open the airway, check for adequate breathing, and give 2 rescue breaths.	8
24 Comprehension	Q. Why is it important to start CPR immediately? A. CPR sends oxygen-rich blood to the heart and brain.	1
25 Knowledge	Q. A 6-year old boy has been hit by a car near your home. The child does not respond. You send the neighbor to phone 911, and you remain with the child. How should you open the child's airway? A. Do NOT move the neck, use the jaw thrust technique.	4

Table 10 describes whether the instructions about taking the Original AHA Version "A" ESL BLS Exam were clear or not clear. Ninety percent of the 20 ESL CNA participants answered yes, the instructions about taking the exam were clear. Ten

percent of the 20 participants answered no, that instructions about taking the exam were not clear.

Table 10

English as a Second Language Certified Nurses Aide Post Examination Questionnaire, Were the Instructions on the Exam Clear on the Original Exam?

Variable	Were the Instructions on the Exam Clear			
Ethnic Group	Yes	Mean	No	Mean
Hispanic	4	1	0	0
Indian	5	72	1	88
Other	9	84	1	72
Filipino	0	0	0	0

Table 11 describes whether the instructions about taking the Revised Version "A" ESL BLS Exam were clear or not clear. One-hundred percent of the 20 ESL CNA participants answered yes, the instructions about taking the exam were clear. None of the 20 participants answered that instructions about taking the exam were not clear.

Table 11

English as a Second Language Certified Nurses Aide Post Examination Questionnaire, Were the Instructions on the Exam Clear on the Revised Exam?

Variable	Were the Instructions on the Exam Clear			
Ethnic Group	Yes	Mean	No	Mean
Hispanic	6	77	0	0
Indian	3	83	0	0
Other	9	79	0	0
Filipino	2	76	0	0

Table 12 shows whether the Original AHA Version "A" BLS ESL Exam was considered to be very easy, easy, or hard to read by 20 ESL CNA participants Twenty-five percent indicated that the test was very easy. Sixty percent indicated that the test was easy. Fifteen percent indicated that the exam was hard.

Table 12

English as a Second Language Certified Nurses Aide Post Examination Post Questionnaire regarding How Easy or Hard It Was to Read the Questions on the Original Exam

Variable	How Easy or Hard Was It to Read the Questions					
Ethnic Group	Very Easy	Mean	Easy	Mean	Hard	Mean
Hispanic	1	80	3	81	0	0
Indian	1	88	3	76	2	66
Other	3	91	6	81	1	72
Filipino	0	0	0	0	0	0

Table 13 shows whether the Revised Version "A" BLS ESL Exam was *very easy*, *easy*, or *hard* to read by 20 ESL CNA participants Twenty-five percent of the participants indicated that the test was very easy. Seventy percent indicated that the test was easy. Five percent indicated that the exam was hard.

Table 13

English as a Second Language Certified Nurses Aide Post Examination Post Questionnaire Regarding How Easy or Hard It Was to Read the Questions on the Revised Exam?

Variable	How Easy or Hard Was It to Read the Questions					
Ethnic Group	Very Easy	Mean	Easy	Mean	Hard	Mean
Hispanic	0	0	5	78	1	68
Indian	1	84	2	82	0	0
Other	4	72	5	85	0	0
Filipino	0	0	2	76	0	0

In summary of the findings, the hypothesis was tested with the independent samples *t*-test procedure comparing the means of the two groups of cases. The subjects were randomly assigned to two groups, so that any difference in response (as measured by the group mean of test scores) was hypothesized to be due to the modifications and changes made to the wording of the original AHA Version "A" BLS ESL Exam and not to other factors. At 95% confidence, the *p* value of the *t*-test statistic must be less than or equal to .05 ($p <= 0.05$), in order to reject the null hypothesis. If the null hypothesis cannot be rejected, then the *p* value of the independent samples *t*-test statistic is greater than .05 ($p > 0.05$) and therefore the null hypothesis is accepted, at a 95% level of confidence. An independent samples *t*-test of (+ = -.341) and a

($p = 0.735$) was used to determine that there was no statistically significant difference ($p > 0.05$) in test score means between groups in this population ($n = 40$) at 95% confidence interval.

Additional Findings

Additional findings discovered through informal interviews noted that two of the research subjects were physicians in their own country, five participants were registered nurses, one participant had a bachelors degree in laboratory science, and one was a computer specialist.

As previously stated in the limitations, one research participant was attending the BLS renewal class because it was mandatory. This participant was eager to get to an appointment and verbally stated, "they were there by force, but wanted to volunteer for the study." This participant did not, however, pass the Revised Exam. Two participants were taught in Spanish, and this could have altered the results of the study. One passed the Revised Exam, and the other did not. The participant who did not pass had worked a 16-hour shift prior to the exam and was sleep deprived, which also was a limitation.

Verbal and written comments were made regarding the exam. Two participants stated, "they preferred the Original Exam and more detail was better to make the questions complete." Both participants also commented that the questions on the Revised Exam did not provide sufficient information to select an appropriate answer.

Both of these participants were Hispanic and passed the Revised Exam. One participant who took the Original Exam, but reviewed the Revised Exam, stated:

"The questions were too long that one loses the point in the question by the end of reading through the questions. It takes a lot of time to understand what the question or examiner wants. Make the questions short and precise, since most of the ESL students have problems reading and translating whatever is read into the native language and then back to English."

Some other written comments were:

"I feel that the revised version is clearer, shorter, and easy to understand."

"Make tests easy so that ESL students can understand."

"I think the revised test is a good test because it is not going to confuse the ESL people like the regular one does sometimes."

"Revised exam is easier than the original."

"The revised test is so much more clearer and takes you step by step on CPR. There are no confusing questions or extra words."

"The revised questions are very easy because it takes you straight to the point of what is needed, from where the original goes on with a long story, thereby confusing the person. Options given for the answers are clearer in the revised than the original."

"I think that if the questions were condensed then the answers would be easier to find."

"You will have to specify on the revised test in question number 11 whether it is an adult or a child."

"We hope to continue on this revised ESL program. It gives us a better understanding about CPR and the way we read the questions is more simple."

"I feel that this test (revised exam) needed more explanation or details in the questions."

"Some questions are more difficult to understand (revised exam), as these are with half meaning."

It is evident that changes need to be made on the Revised Version "A" ESL BLS exam. Questions need to be more complete with enough information given to allow the student to answer the question, without extraneous detail. Questions of this nature will allow the ESL student to process the information given and answer the questions correctly. Questions and answers should be short, clear, and to the point.

CHAPTER V

DISCUSSION OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Discussion of Findings

Today the United States is filled with diverse populations. Industries of all types, including healthcare are experiencing massive changes with growth in cultural diversity of workers. Working with others from different cultures allows increased new exposure to new, rich information. At times this information can be frustrating, especially if there is miscommunication among individuals from different cultures. Training HCP staff of ESL origin can be challenging for the clinical nurse educator. BLS is necessary for all HCPs to have patient contact. Understanding BLS is important, and BLS certification is a requirement in most healthcare facilities. While conducting weekly BLS renewal course training at a large southwestern metropolitan hospital, it was noted that ESL CNAs were not successful at passing the current BLS HCP exam, even though skill performance was successfully demonstrated. The reading level of the current AHA BLS HCP 2001 Exam is at 7.7. This trend seemed to strengthen, and it became evident that change was required to help this population, CNAs of ESL origin, pass the BLS exam.

The literature states repeatedly that ESL students are among the lowest ranking in academic performance (Pellino, 2002). Learning a new language can be difficult, as is part of the acculturation to a new country. Is the problem in the reading ability of the ESL student or understanding the meaning of words in the English language? It is crucial to target and address their problems so solutions can be implemented.

The purpose of this study was to measure the effect of modifications made to the English wording of the questions in the Original AHA Version "A" BLS ESL exam, upon test score performance. The test scores of ESL CNAs taking the Original AHA Version "A" BLS ESL Exam (group one) were compared to those taking the Revised BLS ESL Exam (group two). A comparative quantitative design was used in this research study. The sample for the study ($N = 40$) consisted of ESL CNAs who are employees of a large metropolitan hospital. The setting for the study was a classroom in a large metropolitan hospital in the southwestern United States.

The Original AHA Version "A" BLS ESL Exam was developed by the AHA in September of 2001 and the Revised Version "A" BLS ESL Exam was revised by six educators at a metropolitan hospital in July of 2002. The Demographic Data Questionnaire and the English as a Second Language Certified Nurses Aide Post Examination Questionnaire were developed by this researcher for this study. Information was provided to the subjects on a voluntary basis. Random assignment of the 40 ESL CNAs to group one or group two was carried through by choosing numbers from a hat. Group one was given the Original Exam ($n = 20$) and group two

was given the Revised Exam (n = 20). Demographic data were gathered prior to testing, and comments regarding both exams were obtained posttesting. The demographic data provided information about the differences among the various ethnic groups. The t-test, percentage, means, range, and standard deviation were used to analyze data test scores.

A total of 40 ESL CNA ESL research subjects participated in this research. Results of the study indicated that subjects included 32 females and 8 males of various ethnic groups. The sample included 10 Hispanics, 9 Indians from India, 2 Filipinos, and 19 others.

The median age range of those in this study was 40 years of age. Those who were younger scored better than those who were older on the Original Exam. Participants from the ages 20 to 39 scored an average of 83%. Those who ranged from the ages 40 to 60 scored an average of 74%. The average score on the Revised exam for ages 20 to 39 and 40 to 60 averaged 75%. This indicates that age was a significant variable in score performance on exams, as the younger age group randomly received the Original exam and scored higher than those who were older.

The highest level of education indicated by self-report was a bachelors degree and the lowest reported as high school. Nine participants in the study had a bachelors degree, and four participants had associate degrees. Seven participants had a technical-vocational school education. Ten participants had some college. Ten participants had a high school education. Six participants that took the Original ESL BLS Exam had a

bachelors degrees and the scores on the Original Exam were higher than those of the Revised BLS ESL Exam, where only three participants had a bachelors degree. The higher scores of the original group indicated that higher education may be an important variable in successfully passing the BLS exam. Six participants were in their first semester of nursing school and five out of the six had passing scores. Three ESL nursing students took the Original Exam. Two were Hispanic and one scored a 96% and the other scored 80%, failing the exam. Both spoke Spanish. The other participant an African, and this participant who spoke Igbo scored 100%. Three nursing students took the Revised Exam. One was Hispanic, and this participant scored 100%. The other two were African, and they spoke Ashanti and Ibo. The one who spoke Ashanti scored 92% and the other who spoke IBO scored 88%.

As stated previously, reading levels are difficult to determine by self-report, and they did not correlate with the test scores of those who took either exam. This is a limitation of the present study, and objective measures of reading levels could decrease the effect of this limitation.

Three of the four participants who worked the night prior to the exam failed the revised exam and one passed the original exam. The presence of sleep deprivation is a limitation that seemed to alter the exam scores of these three participants.

The number of years lived in the United States ranged from 1 to 37 years. The number of times the exam was taken by the participants ranged from 2 to 10. The number of years lived in the U.S. or the number of times the participant had taken the

exam did not seem to influence exam scores. How long the CNA had been a nurse's aide at the large metropolitan hospital had no effect on research results.

The three major ethnic groups of participants were African, Hispanic, and Indian. The largest ethnic group was African, and they spoke a variety of language dialects as their native language. Out of the 10 Africans who took the Original Exam, 6 successfully passed. Three of the six spoke Igbo and one spoke Ibo. The scores of these four were 100%, 92%, 92%, and 84%, respectively. The remaining two of the six Africans who were successful spoke Ewe. Their scores were 96% and 84%. The overall average for the Africans who took the Original exam was 83%. Eight Africans took the Revised Exam and out of the eight, three successfully passed the exam with scores of 88%, 88%, and 92%. Two of these participants spoke Swahili and Ibo. The one who scored 92% spoke Ashanti. The overall average score for Africans who took the Revised Exam was 67%. The African participants were noted to be very detailed, inquisitive, and eager to learn CPR, and they asked questions when instructions were not understood. All other student participants were polite and attentive, but did not ask as many questions as those of African descent.

Hispanics taking the exam all spoke Spanish. Four Hispanics took the Original exam and passed with scores of 88% and 96%. Six Hispanics took the revised exam and two Hispanics passed the exam and scored 100% and 92%.

Six Indian participants took the Original exam and out of those six, three passed with scores of 84%, 88%, and 88%. One spoke Bengali, the other two spoke

Hindi. Three Indians took the revised exam and two passed the exam with scores of 84% and 88%. Both spoke Hindi. The mean score of the 20 ESL CNAs who took the Original exam was 80%.

The mean score of the 20 ESL CNAs who took the Revised Exam was 78%. These results suggest that impact of native language is an important variable on performance of exams, as many of the African participants scored higher than the Hispanics and Indians. At the end of this study the researcher learned that some African participants were required to learn English as a second language in Africa during their grade school years. These findings correspond to the theory proposed by Krashen (1999). Krashen proposed that when a child learns to read and write their native language well, learning a second language is not as difficult to master.

Most questions on both exams missed were knowledge, as classified according to Blooms taxonomy. This indicates that participants who took the BLS HCP exams had the greatest difficulty retaining knowledge. More than five participants who took the Original Exam and the Revised Exam missed questions that were categorized as "application." One question that many students stated they did not understand was the meaning of question number 10 (application question); the participants did not understand the meaning of the word "gasp." The researcher had to explain the meaning of gasping breaths to 80% of the students taking either exam. These results indicate that many of the participants are not able to use the learned material in a new situation and apply its theory if needed.

Thirty-eight of the respondents answered that instructions on taking the exams were clear. Ten respondents answered that the exam was very easy, 26 indicated that the exam was easy, and 4 indicated that the exam was hard. Scores on the Revised Exam were lower in this study, even though the majority of the participants verbally stated that the Revised Exam appeared to be easier and the questions more clear.

The null hypothesis stated that there is no statistically significant difference, at the 95% Confidence Level, between the mean scores of Group One (the Original AHA Version "A" BLS ESL Exam) and Group Two (the Revised Version "A" BLS ESL Exam). The alternate hypothesis is that there is indeed a statistically significant difference, at the 95% Confidence Level, between the mean scores of Group One and Group Two. The current hypothesis is that a significantly higher number of ESL CNA students in BLS HCP courses will successfully pass the Revised BLS ESL HCP Exam written at a reading level of 3.5, than will pass a similar exam written at a 4.6 grade reading level. The independent variable is the revision of the Original AHA BLS ESL Exam and the dependent variable is the successful completion of the exam by the ESL HCP CNA student.

The hypothesis was tested with the independent samples t-test procedure comparing the means of the two groups of cases. The subjects were randomly assigned to two groups, so that any difference in response (as measured by the group mean of test scores) was hypothesized to be due to the modifications and changes made to the

wording of the original AHA Version "A" BLS ESL Exam and not to other factors. At 95% Confidence, the p value of the t-test statistic must be less than or equal to 0.05 ($p <= 0.05$), in order to reject the null hypothesis. If the null hypothesis cannot be rejected, then the p value of the independent samples t-test statistic is greater than 0.05 ($p > 0.05$) and therefore the null hypothesis is accepted, at a 95% level of confidence. An independent samples t-test of (+ = - .341) and a ($p = 0.735$) was used to determine that there was no statistically significant difference ($p > 0.05$) in test score means between groups in this population ($n = 40$) at 95% confidence interval.

Another finding was the limitation of this study which was the small number size of the group ($N = 40$). The two groups also were not comparable.

Conclusions of the Study

Results of this study provided support to the proposition that language is the most important variable for predicting exam scores. Revision of the Version "A" BLS ESL Exam did not achieve the desired results, as the overall mean score for the Original exam was 80% and 78% on the Revised Exam. The AHA passing score criteria on BLS HCP exams is 84% or greater. Therefore the hypothesis was rejected.

Recommendations

Recommendations would include (a) to discuss findings with the six educators at the large metropolitan hospital who developed the Revised Version "A" BLS ESL Exam, and (b) changing the wording on questions number 1, 5, 8, 10, 11, 12, 13, 15, 17, 18, 23, and 25 to make the questions more descriptive and complete. This exam

would consists of 26 questions and the odd questions would be taken from the Original AHA, Version "A" BLS ESL Exam and the even questions would be taken from the Revised Version "A" BLS ESL Exam. An extra question could be added so that the new exam would have an even number of 26 questions. This is considered a split-test version. The new revised exam would be titled Revised Version "B" BLS ESL Exam (see Appendix H). Data analysis would be on the students' performance on the even questions which are at a 4.7 reading level versus the same students' performance on the odd questions which are at a reading level of 3.8. The Demographic Data Questionnaire also could be revised by adding two additional questions: did you learn English in your native country, and what was your profession in your native country (see Appendix I)?

Testing should be done at another large metropolitan hospital in several large testing sessions of approximately 20 subjects per course. A total of 100 participants should be tested, as limitations to this study indicated the small size of the groups and also the two groups were not comparable.

Results of the new study with the new Revised Version "B" BLS ESL Exam may be useful nationally to CNSs, nursing educators, American Heart Association, American Heart Association Training Center Coordinators, and American Heart Association Certified BLS Instructors who teach ESL CNA staff. Additionally, the changes on the Revised BLS Version "B" ESL Exam could be submitted as a proposal to the AHA for consideration for future use if the original hypothesis remains valid.

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APPENDIX A

Agency Permissions for Conducting Study

Presbyterian
Hospital of Dallas
A Member of Presbyterian Healthcare System

8200 Walnut Hill Lane
Dallas, Texas 75231-4496

DATE: JUNE 26, 2003.

TO: YOLANDA VELEZ-REYAN, B.S.R.N.
PRINCIPAL INVESTIGATOR

FROM: JAMES F. STRAUSS, M.D.
CHAIRMAN, INSTITUTIONAL REVIEW BOARD

James F. Strauss, M.D.

SUBJECT: HUMAN RESEARCH PROTOCOL : INITIAL REVIEW

P664. COMPARISON OF PERFORMANCE OF ENGLISH AS A SECOND LANGUAGE (ESL) CERTIFIED NURSE'S AIDE STUDENTS ON THE ORIGINAL AND REVISED BASIC LIFE SUPPORT ESL EXAM.

At its meeting on June 26, 2003, the Institutional Review Board reviewed and approved the above requests with the stipulation that the consent form be revised. The committee agreed that the following clarification be made and the consent form be revised according to the requests by the legal department and E. Winslow.

- Revision and clarification of the use of ESL in the consent form.

The next review of this study is scheduled for June, 2004.

The HHS regulations require you to submit annual and terminal progress reports to our Institutional Review Board and to receive continuing review of your activity annually by this Committee. You are also required to report to this Committee any death or serious reaction(s) resulting from your study. Failure to submit the above reports may result in severe sanctions being placed on Presbyterian Hospital of Dallas. Furthermore, if you require a modification to this protocol or its associated informed consent document, please contact the Medical Staff Office in order that appropriate review and approval can be made prior to implementing any change.

The JCAHO standards related to patients taking part in research require that they be informed about the benefits, risks, alternative treatments, research procedures and refusal to participate. This information is contained in each approved research consent forms. All in-patients and out-patients that are actively taking part in clinical research must have a copy of their signed consent form on their open medical records.

If you have any questions related to this protocol or to the Institutional Review Board, please contact the IRB Office at 214-345-6901.

br
Enclosure

*Please note the number assigned to the protocol. It will be necessary for the assigned number to be included on all correspondence and when making inquiries in person or by telephone.

American Heart Association.
Fighting Heart Disease and Stroke

National Center
7272 Greenville Avenue
Dallas, Texas 75231-4596
Tel 214.373.6300
americanheart.org

July 24, 2003

AGENCY PERMISSION FOR CONDUCTING STUDY

The American Heart Association grants to Yolanda Velez-Reyna, B.S., R.N., a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of using it's instrument in order to research the following:

Comparison of performance of English as a second language (ESL) Certified Nurse's Aide students on the original and revised Basic Life Support ESL Exam. The conditions mutually agreed upon are as follows:

1. The agency may be identified in the final report.
2. The names of the consultative or administrative personnel in the agency may be identified in the final report.
3. The agency wants a conference with the student when the final report is completed.

July 24, 2003
Date

Signature of Agency Personnel

Yolanda Velez-Reyna, R.N.
Signature of Student

Marilyn P. Miller, Ph.D., RN-C
Signature of Faculty Advisor

APPENDIX B

Texas Woman's University Graduate School Approval

TWU
TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON

College of Nursing
1810 Inwood Road, Dallas, TX 75235-7299
214-689-6510 Fax 214-689-6539

Yolanda Velez-Reyna, BS, RN
School of Nursing
Dallas Campus

September 3, 2003

Dear Ms. Velez-Reyna,

The study entitled "Comparison of Performance of English as a Second Language Certified Nurse's Aide Students on the Original and Revised Basic Life Support Exam ESL Exam" has been reviewed by the members of the Institutional Review Board and in their judgement meets requirements in regard to protection of individuals' rights. The Institutional Review Board approves collection of data for this project. This approval is granted for one year. You are responsible for updating the committee concerning the status of this project, should it continue past the expiration date of September 2, 2004. You are also responsible for keeping the committee informed of any changes in the study which affect human rights.

For this study, signatures indicating informed consent must be obtained from all human subjects. These are to be filed with the Institutional Review Board. They may be sent to me in care of the School of Occupational Therapy on the Presbyterian Campus. Upon receipt of these consent forms the committee will issue a statement ending its involvement with this project.

If you have any questions concerning this review I may be contacted at (214) 689-6522 or by e-mail, SSheriff@twu.edu. The Institutional Review Board is pleased to acknowledge your sense of responsibility for ethical research.

Sincerely,

Susan Sheriff

Susan Sheriff, PhD, RN
Chair, IRB - Dallas

TEXAS WOMAN'S
UNIVERSITY
DENTON/DALLAS/HOUSTON

THE GRADUATE SCHOOL
P.O. Box 425649
Denton, TX 76204-5649
Phone: 940/898-3400
Fax: 940/898-3412

449-29-1035

September 17, 2003

Ms. Yolanda Reyna
1713 Walnut Hill Drive
Rowlett, TX 75088

Dear Ms. Reyna:

I have received and approved the prospectus entitled **"Comparison of Performance of English as a Second Language Certified Nurse's Aide Students on the Original and Revised Basic Life Support ESL Exam"** for your thesis research project.

Best wishes to you in the research and writing of your project.

Sincerely yours,

Jennifer L. Martin, Ph.D.
Dean of the Graduate School

ekd

cc: Dr. Marilyn Miller-Anderson, College of Nursing-Dallas/Parkland
Dr. Sharon Van Sell, Associate Dean, College of Nursing-Dallas/Parkland

APPENDIX C

Original AHA Version "A" BLS ESL Exam

American Heart Association

Basic Life Support for Healthcare Provider

Written Examination

Original Version A (ESL)

Categorized By Blooms Taxonomy

4.6 Grade Reading Level

September 2001

BLS for Healthcare Providers Course
Original AHA Version "A" BLS ESL Written Examination

Please do not mark on this examination. Record the best answer on the separate answer sheet.

Application
1. You are walking in the basement of the hospital. You see a middle-aged man lean against the wall. He then slides to the floor. No one else is in sight. What should you do *next?*

a. *Check to see if he responds. If the man does not respond, phone the hospital emergency number then begin CPR.*

b. Phone the hospital emergency number, wait for responders, and bring them to the man.

c. Turn the man to the recovery position and wait for emergency responders to bring equipment.

d. Give CPR for 1 minute and then phone the emergency response number.

Application
2. Your tennis partner is a healthy 52-year-old woman. She does not have any known heart problems. Thirty minutes ago she told you she had "pressure" in the middle of her chest. Now the pressure is worse, and she has back pain. She is sick to her stomach, dizzy, and sweating. But she says she is not having a heart attack. What should you do?

a. Give her 1 aspirin and tell her to rest for an hour.

b. Tell her to lie down and then you call her doctor.

c. Let her walk outside to get some fresh air.

d. *Tell her to lie down or sit quietly and then you phone 911 right away.*

Knowledge

3. Your hospital has started a project to teach people how to reduce the risk of stroke. Which of the following is the strongest risk factor for stroke that people can change?

a. Untreated high blood sugar.

b. Untreated high blood protein.

c. Untreated high blood sodium.

d. Untreated high blood pressure.

Comprehension

4. You are caring for a 60-year-old man after surgery. You have watched him closely since the surgery. At first he was alert and talking normally. But now he slurs his words. The right side of his face is drooping. He also has trouble moving his arm. What is the most likely cause of these problems?

a. A seizure.

b. A heart attack.

c. *A stroke.*

d. A coma.

Application

5. You are teaching the parents of an infant who was in the hospital with pneumonia. The parents have just taken the CPR for Family and Friends Course. The mother asks you what to do if she is alone and finds the infant unresponsive. Which of the following is the best answer?

a. Check for signs of circulation and phone 911 if the infant has no signs of circulation.

b. Phone 911 right away and then begin the ABC's of CPR.

c. Give 2 rescue breaths and phone 911 if the infant does not respond.

d. *Begin the ABC's of CPR, give rescue support for 1 minute, and then phone 911.*

Knowledge
6. You are caring for a man who recently had a heart attack. He is still recovering. Suddenly he goes into cardiac arrest. Which of the following treatments will give him the best chance of survival?

a. CPR given by EMS rescuers as soon as they arrived at his workplace.

b. *Immediate CPR and defibrillation within 3 to 5 minutes.*

c. Defibrillation in 10 minutes, with or without CPR.

d. Immediate CPR and defibrillation in 10 minutes.

Knowledge
7. You respond to an emergency call for a 68-year-old man. He does not respond when you get to his room. He has no sign of injury. What is the best way to open this man's airway?

a. Give abdominal thrusts and then sweep his mouth with your finger.

b. *Use the head tilt-chin lift.*

c. Use a mask to give rescue breaths.

d. Grab and lift the chin.

Knowledge
8. Before you give rescue breaths, you must check to see if the victim is breathing adequately. Two ways to check breathing are to *listen* and *feel* for air at the victim's nose or mouth. What else should you do to check breathing?

a. Look in the patient's mouth to see if anything is blocking the airway.

b. Gently shake the patient's shoulders.

c. Check the patient's eyes to see if the pupils narrow (constrict) in response to light.

d. Look and see if the patient's chest rise and falls.

Application
9. You work in a doctor's office. You and your coworkers are performing CPR. You have a pocket mask but no oxygen. What is the *best* way to give mouth-to-mask breathing when you do not have oxygen?

a. Give smaller and shorter breaths than you would give for mouth-to-mouth breathing.

b. Give the same size and length of breaths that you would give for mouth-to-mouth breathing (give enough air to make the chest rise, and give breaths over 2 seconds).

c. Give larger and longer breaths than you would give for mouth-to-mouth breathing.

d. Give 3 breaths between each set of compressions.

Application
10. A 24-year-old woman has taken an overdose of sleeping pills. She is unresponsive when you arrive. You open her airway and find that she has only gasping breaths. You use a pocket mask to give 2 rescue breaths. You then check for signs of circulation, including a pulse. Her pulse is fast but weak. What should you do next?

a. Give 1 rescue breath every 5 seconds (10 to 12 breaths per minute).

b. Start chest compressions because her pulse is weak.

c. Put the woman in the recovery position.

d. Give chest compressions for 1 minute.

Application
11. You are sure that an adult is choking. You stand behind him and give abdominal thrusts. He then becomes limp and unresponsive, and he slumps to the floor. What should you do next?

a. Roll the man onto his stomach and give 5 back blows between the shoulder blades.

b. Lay the man on his back, open his airway, and give fast mouth-to-mouth breaths, blowing as hard as you can.

c. Lay the man on his back, give 5 abdominal thrusts, and try to give rescue breaths; then give abdominal thrusts again, and keep trying to give rescue breaths.

d. Lay the man on his back, open his airway with a tongue-jaw lift, sweep his mouth with your finger, open the airway, check breathing and try to give rescue breaths if he is not breathing adequately.

Knowledge

12. You are walking through a cafeteria. You hear a 2-year-old child begin to cough loudly. When you arrive at her table, her cough is weaker and not as loud. She also makes "squeaky" noises when she inhales. The child looks scared, and her lips are blue. What is the most likely cause of these signs?

a. An acute asthma attack.

b. Complete blockage of the airway.

c. An upper airway infection.

d. A seizure caused by a head injury.

Knowledge

13. You are part of an emergency response team. You provide CPR for patients of all ages. You have been called to perform CPR for a 6 year-old-child. How much air should you give during rescue breaths for this child?

a. Give exactly half the amount of air that you would give an adult.

b. Give twice the amount of air that you would give a 3-year-old child.

c. Give enough air to make the child's chest rise.

d. Base the amount of air you give on the child's weight.

Knowledge

14. You are giving rescue breaths to an unresponsive child. The child is not breathing, but he has signs of circulation. How often should you give rescue breaths to this child?

a. *Once every 3 seconds (20 breaths per minute).*

b. Once every 4 seconds (15 breaths per minute).

c. Once every 6 seconds (10 breaths per minute).

d. Once every 10 seconds (6 breaths per minute).

Application

15. You arrive to help rescuers try to resuscitate a middle-aged man. One rescuer is giving rescue breaths using a bag and mask but no oxygen. He delivers 2 breaths after each set of 15 chest compressions. Each breath lasts about 1 second or less. Both sides of the chest rise a lot with each breath. A second rescuer is giving chest compressions at the center of the chest, between the nipples. You then see that the patient's stomach is rising. What is the likely cause of the stomach rise?

a. The rescue breaths are too quick, and they may be too forceful.

b. The victim does not have enough time to exhale between breaths.

c. The man's stomach is probably full from a large meal.

d. The chest compressions are being given too low on the breastbone (sternum), and they are probably too forceful.

Knowledge

16. A 48-year-old man collapses in the cardiac rehab center after exercise. He is unresponsive. Someone goes to phone the emergency phone number and get the AED. You open the man's airway and find that he is only gasping a few times a minute. You give 2 rescue breaths with a pocket mask. You now want to check for signs of circulation, including a pulse. Where is the best place to check this man's pulse?

a. At the radial artery of the wrist.

b. At the brachial artery of the arm.

c. At the carotid artery of the neck.

d. On the chest directly over the heart.

Knowledge
17. You are part of a 2-rescuer team performing CPR. You are giving chest compressions. What speed (rate) of compressions should you use for this man?

a. A rate no faster than 60 times per minute.

b. A rate of 80 to 100 times per minute.

c. A rate of about 100 times per minute.

d. A rate of at least 120 times per minute.

Application
18. You are working in the x-ray department of a hospital. Suddenly your partner shouts that a patient stopped breathing. You phone the emergency response number and get the emergency cart with the AED. When you enter the room, you see a man on a cart. Your partner is giving chest compressions. What is the best way to check if the compressions are deep enough and forceful enough?

a. Check for wide (dilated) pupils after 1 minute of CPR.

b. Check for a pulse with each chest compression.

c. Check the victim's breathing.

d. Note the victim's skin color.

Application
19. You are alone and giving CPR to a 5-year-old child. How should you give compressions to this child?

a. Compress at a rate of about 100 times per minute.

b. Push the breastbone (sternum) down at least 2 inches.

c. Use 2 fingers to compress the center of the sternum.

d. Compress 15 times and then give 2 quick breaths.

Application
20. What is the best way to give chest compressions to a 3-year-old child?

a. Use both hands, one on top of the other.

b. *Use the heel of one hand.*

c. Use the tips of 2 fingers.

d. Use the palm and fingers of one hand.

Knowledge
21. The first link in the Chain of Survival for infants and children is prevention of arrest and injuries. Which of the following are the *most common* causes of cardiac arrest in infants and children?

a. Poor development and inherited heart disease.

b. Severe airway problems, breathing problems, or shock.

c. Electric shocks from appliances.

d. Severe head injuries.

Knowledge
22. You are part of an emergency response team. Your team is called to the pediatric clinic. As you rush to the scene, you review CPR numbers in your mind. What is the correct ratio of compressions to ventilation's (rescue breaths) for infants or child CPR?

a. 10 to 2

b. 2 to 2

c. *5 to 1*

d. 15 to 2

Comprehension
23. You are walking in the hospital hallway. As you pass a female patient, she suddenly slumps against you. She is unresponsive. You gently lower her the ground. You ask another healthcare worker to phone the emergency response number and get the AED. When should you first check the woman for signs of circulation?

a. As soon as she slumps.

b. After you have given CPR for 1 minute.

c. After you open her airway, check for adequate breathing, and give 2 rescue breaths.

d. Right after you open her airway.

Comprehension
24. You are teaching CPR to husbands and wives of high-risk patients. You want to make sure they know why immediate bystander CPR is important. Which of the following reasons should you tell them?

a. Immediate CPR reduces the need for coronary artery bypass.

b. Immediate CPR forces the heart to return to a normal rhythm.

c. If defibrillation is performed within 6 to 10 minutes, bystander CPR is not needed.

d. Immediate CPR sends oxygen-rich blood to the heart and brain, 'buying time' until defibrillation.

Knowledge
25. Your neighbor runs to your house. A 6-year-old boy has been hit by a car near your home. The child does not respond. You send the neighbor to phone 911, and you remain with the child. How should you open the child's airway?

a. Use the head tilt-chin lift without moving the neck (cervical spine).

b. Use the tongue-jaw lift and a blind finger sweep.

c. Use the head tilt-chin lift and move the neck if needed.

d. *Use the jaw thrust without moving the neck.*

APPENDIX D

Revised Version "A" BLS ESL Exam

Basic Life Support for Healthcare Providers

Written Examination

Revised Version A (ESL)

Categorized by Blooms Taxonomy

3.5 Grade Reading Level

July 2002

BLS for Healthcare Providers Course
Revised Version "A" BLS ESL Written Examination

Please do not mark on this examination. Record the best answer on the separate answer sheet.

Application
1. You see an older man leaning against the wall in a hospital. He slides to the floor. When you check, the man does not respond. What should you do next?

a. Phone the hospital emergency number then begin CPR.

b. Phone the hospital emergency number, wait for responders, and bring them to the man.

c. Turn the man to the recovery position and wait for emergency responders to bring equipment.

d. Give CPR for 1 minute and then phone the emergency response number.

Application
2. Your walking partner is a healthy 52-year-old woman. She complains of pressure in her chest. She is sick to her stomach, dizzy, and sweating. But she says she is not having a heart attack. What should you do?

a. Give her 1 aspirin and tell her to rest for an hour.

b. Tell her to lie down and then you call her doctor.

c. Let her walk outside to get some fresh air.

d. Tell her to lie down or sit quietly and then you phone 911 right away.

Knowledge
3. Which of the following is a major risk factor for stroke that people can change?

a. Untreated high blood sugar.

b. Untreated high blood protein.

c. Untreated high blood sodium.

d. Untreated high blood pressure.

Comprehension

4. You are caring for a 60-year-old man after surgery. Now he slurs his words. The right side of his face is drooping. He also has trouble moving his right arm. What is the most likely cause of these problems?

a. A seizure.

b. A heart attack.

c. A stroke.

d. A coma.

Application

5. A mother is alone and finds her infant unresponsive. What should she do next?

a. Check for signs of circulation and phone 911 if the infant has no signs of circulation.

b. Phone 911 right away and then begin the ABC's of CPR.

c. Give 2 rescue breaths and phone 911 if the infant does not respond.

d. CPR for 1 minute, and then phone 911.

Knowledge

6. Which of the following offers the best chance of survival after a heart attack?

a. CPR begun by EMS rescuers when they arrive.

b. Defibrillation in 10 minutes without CPR.

c. *Immediate CPR and defibrillation within 3 to 5 minutes.*

d. Immediate CPR and defibrillation in 10 minutes

Knowledge

7. What is the best way to open an airway in a patient who has no signs of injury.

a. Abdominal thrusts.

b. Grab and lift the chin.

c. *Head tilt-chin lift.*

d. Mask with rescue breaths.

Knowledge

8. You should listen and feel for air at the nose or mouth. What is the other way to check breathing?

a. Check the pupils of the eyes.

b. Gently shake the shoulders.

c. Look in the mouth for an object.

d. Look and see if the chest rise and falls.

Application

9. The best way to give mouth-to-mask breathing without oxygen is to give.

a. Larger and longer breaths.

b. Smaller and shorter breaths.

c. The same size and length of breaths as with oxygen.

d. Three breaths between each set of compressions.

Application
10. You find an unresponsive woman. who has only gasping breaths. You give 2 rescue breaths. Her pulse is fast but weak. What should you do next?

a. Begin CPR for 1 (one) minute.

b. Give 1 (one) rescue breath every 5 (five) seconds.

c. Put her in the recovery position.

d. Start chest compressions only.

Application
11. You see someone choking, all of a sudden they collapse and go unconscious. What should you do next?

a. 5 (five) back blows between the shoulder blades.

b. Mouth to mouth breaths.

c. Five abdominal thrusts.

d. *Open airway and sweep mouth.*

Knowledge
12. You see a 2 year old choking, she makes no noise. Her lips are blue. What is the most likely cause of these signs?

a. An acute asthma attack.

b. *Complete blockage of the airway.*

c. An upper airway infection.

d. A seizure caused by a head injury.

Knowledge

13. You are providing CPR for a 6 year old. How much air should you give during rescue breaths for this child?

a. Half the amount of air that you would give an adult.

b. Two times the amount of air that you would give a 3-year-old child?.

c. Enough air to make the child's chest rise.

d. Base the amount of air you give on the child's weight.

Knowledge

14. How often should you give rescue breaths to a child who is not breathing, but has signs of circulation?

a. Once every 3 seconds (20 breaths per minute).

b. Once every 4 seconds (15 breaths per minute).

c. Once every 6 seconds (10 breaths per minute).

d. Once every 10 seconds (6 breaths per minute).

Application

15. If you see the stomach rising during CPR, what could be the most likely cause?

a. *The rescue breaths are too quick, and they may be too forceful.*

b. The victim does not have enough time to inhale between breaths.

c. The man's stomach is probably full from a large meal.

d. The chest compressions are being given too low on the breastbone (sternum), and they are probably too forceful.

Knowledge
16. The best place to check a pulse on an adult is?

a. Radial artery of the wrist.

b. Brachial artery of the arm.

c. Carotid artery of the neck.

d. Femoral artery in the leg.

Knowledge
17. You are giving 2-man CPR to an adult woman. How fast do you compress the chest every minute?

a. 60 times.

b. 80 to 100 times.

c. 100 times.

d. 120 times.

Application
18. The best way to tell if chest compressions are deep and forceful enough is to check the:

a. Pupils.

b. Pulse

c. Breathing.

d. Skin color.

Application
19. You are alone and giving CPR to a 5-year-old child. How should you give compressions to this child?

a. Use two hands.

b. Push the breastbone (sternum) down at least 2 inches.

c. Use 2 fingers to compress the center of the sternum.

d. 5 (five) chest compressions and 1 (one) breath.

Application
20. What is the best way to give chest compressions to a 3-year-old child?

a. Use both hands, one on top of the other.

b. Use the heel of one hand

c. Use the tips of 2 fingers.

d. Use the palm and fingers of one hand.

Knowledge
21. Which of the following are the most common causes of cardiac arrest in infants and children?

a. Poor development and inherited heart disease.

b. Respiratory problems or shock.

c. Electric shocks from appliances.

d. Severe head injuries.

Knowledge

22. How many breaths to compressions would you give a child or infant?

a. 10 to 2

b. 12 to 2

c. 1 to 5

d. 15 to 2

Comprehension

23. In adult CPR, when should you first check for a pulse?

a. As soon as the adult slumps.

b. After you have given CPR for 5 minutes.

c. After you open the airway, check for adequate breathing, and give 2 rescue breaths.

d. Right after you open the airway

Comprehension

24. Why is it important to start CPR immediately?

a. CPR reduces the need for open heart surgery.

b. CPR forces the heart to pump slowly.

c. If the AED is used within 6 to 10 minutes, bystander CPR is not needed.

d. CPR sends oxygen-rich blood to the heart and brain.

Knowledge

25. A 6-year old boy has been hit by a car near your home. The child does not respond. You send the neighbor to phone 911, and you remain with the child. How should you open the child's airway?

a. Use the head tilt-chin lift without moving the neck (cervical spine).

b. Use the tongue-jaw lift and a blind finger sweep.

c. Use the head tilt-chin lift and move the neck if needed.

d. Do NOT move the neck.

APPENDIX E

Consent Form

Subject Consent To Be In Research

Title of Study: P664 Comparison of Performance Of English As a Second Language (ESL) Certified Nurse's Aide Students On the Original and Revised Basic Life Support ESL Exam

Sponsor:

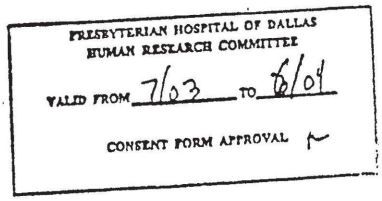
Researcher: Yolanda Velez-Reyna, B.S., R.N.
Office Phone: (214)345-8872
Night/Weekend Phone: (214)284-4112

You are being asked to be in a research study. Persons who are subjects in research have certain rights. These rights include your right to:

1. Be told about the nature and purpose of the research,
2. Be told about the procedures and any drug or device to be used in the research,
3. Be told about any discomforts and risks that could occur,
4. Be told about any benefits to the subject to be expected,
5. Be told about any other treatments, drugs, or devices that might be helpful to the subject,
6. Be told about other medical treatments, if any, available to the subject during or after the research if problems arise,
7. Ask questions about the research,
8. Stop being in the study at any time,
9. Have a copy of this signed and dated consent form, and
10. To decide to be in the study or not to be in the study without pressure or untruths.

You have the right to privacy. Any information gathered in this study that relates to you personally will be kept private. Any information that comes from this study that has your name on it may be shown only to those carrying out the study, the sponsors of the study, the Presbyterian Hospital of Dallas Institutional Review Board (described below), and your doctors. The Food and Drug Administration (FDA) of the U.S. government also may inspect all of the records of this study. Information that includes your name will be shown to others only as required by law. If the results of the study are published, your name will not be used.

The records about your being in this study may be looked at by members and staff of the Presbyterian Hospital of Dallas Institutional Review Board, and you may be asked questions by a member of that Committee about being in this study. If you wish, you may refuse to answer these questions. Your record may be chosen at random (as by drawing straws) for review by the Committee.



Initials: _____

The researcher can tell you about treatment in case of problems from the research, which you should report to them promptly. Phone numbers where the researcher(s) may be reached are listed on the top of this form.

Be sure to ask the researcher any questions you have about the research or about your rights as a subject. If you have questions later, or if you wish to report a problem related to the research (besides telling the researcher), you may call the Institutional Review Board of Presbyterian Hospital of Dallas at 214/345-6901.

The Presbyterian Hospital of Dallas Institutional Review Board has reviewed this research based on certain laws about research in human subjects. Approval of this research by the Committee does not imply that the Committee is responsible for the conduct of this research or its results.

Being in this research is of your own free will. Choosing not to be in this study will involve no penalty or loss of benefits. If you decide to be in this research, you are free to withdraw at any time. If you withdraw from the study, you can still have standard treatment outside the study.

The information on the next few pages tells you about the research and what you will be asked to do if you decide to be in the study. It also tells you about the risks and benefits of being in the study. Please read this with care and feel free to ask questions.

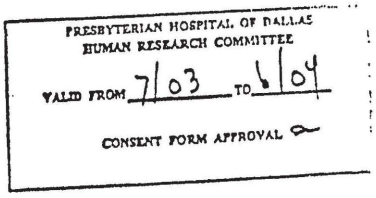
Purpose:

The purpose of this study is to compare the test scores of two Basic Life Support (BLS) English as a Second Language (ESL)exams in order to learn which exam is easier to read. The term ESL was chosen because the Instrument, Original BLS ESL Exam was titled by the American Heart Association and this title can not be changed.

You are being asked to be in this study because you are an ESL student, a certified nurses aide (CNA) and you are taking a BLS renewal course.

What You Will Be Asked To Do If You Are In This Study:

You will be asked if you want to take part in this study at the beginning of a BLS renewal course. The study will be explained in detail. If you agree to take part you will sign this consent form. You will then take the routine BLS renewal course with the other students in the class. The renewal course takes about 4 hours. You will then draw a number out of a hat. One group will take the Original AHA BLS ESL exam. The other group will take the revised BLS ESL exam. It will take about 45 minutes to take the written exam. You also will be asked to give some information about yourself such as your age and native language. You also will be asked how easy or hard you thought it was to read the test. The tests will be graded right away and you will be given your test results on a one-on-one basis, as is normal practice. The researcher will later analyze the scores from the two exams to see if the revised exam is better for ESL students.



Initials: _____

If you choose not to take part in this study, you will take the standard AHA BLS exam which is written at a 7.7 grade reading level. This standard exam is the exam that ESL students have taken in the past.

Research Procedures:

One group will take the Original AHA BLS ESL exam. The other group will take the revised BLS ESL exam. The groups will be randomly assigned by drawing numbers from a hat.

Risks And Discomforts:

The only risk to being in this study would be if your test scores or information about yourself is shared when it should not be. The researcher will keep this information private. The only data that will be shared, as is normal practice, is if you fail the exam two times. Then your manager or clinical nurse specialist will be informed.

Benefits:

A. You may have an easier time taking the BLS exam because both exams used in the study are for ESL students..
B. Your taking this exam may help future ESL CNA BLS students.
C. Your taking this exam may help future BLS instructors help other ESL CNAs.
D. The revised BLS ESL exam may be used by the American Heart Association in the future.

Options To Being In The Study:

You do not have to be in this study. If you decide not to be in this study, you will take the standard BLS exam that is at a 7.7 grade reading level.

Withdrawal From Being In The Study:

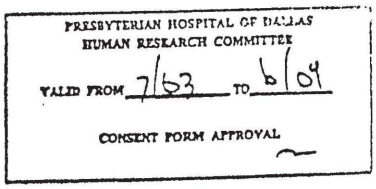
You are not required to be in this study. You are in this study of your own free will. You may withdraw from this study at any time without penalty. If you choose not to be in the study, your BLS renewal status will not be affected.

Costs Of Being In The Study:

There are no costs to you for being in this study.

New Findings:

Any new findings that might affect your desire to be in this study will be given to you.



Initials: _____

Payment For Being In The Study:

You will not be paid for being in this study.

Consenting To Be In This Study:

You are deciding whether or not to be in this study. You should not sign until you understand all the information presented in this form and until all of your questions about this research have been answered. Signing this form shows that you have decided to be in this study, having read the information given above.

1.	I understand that this is a research study.	[ ] Yes	[ ] No
2.	I understand the risks of being in this study.	[ ] Yes	[ ] No
3.	I understand the length of time I will be in this study.	[ ] Yes	[ ] No
4.	I understand the purpose and hoped for outcomes of this study.	[ ] Yes	[ ] No
5.	I understand that my being in this study is of my own free will.	[ ] Yes	[ ] No

If you did not answer "yes" to all of the above questions, please review being in this study again with the researcher. You should only sign this consent when you have answered "yes" to all of the questions above.

Signature Lines:

_____ _____

Signature of Subject Date

_____ _____

Signature of Researcher Date

PRESBYTERIAN HOSPITAL OF DALLAS
HUMAN RESEARCH COMMITTEE
VALID FROM 2/03 TO 2/04
CONSENT FORM APPROVAL

APPENDIX F

English as a Second Language Certified Nurses Aide

Demographic Data Questionnaire

ENGLISH AS A SECOND LANGUAGE CERTIFIED NURSES AIDE

DEMOGRAPHIC DATA QUESTIONNAIRE

NAME: _____ GENDER: _____ AGE: _____ Years

( ) Male
( ) Female

ETHNIC GROUP:

( ) Hispanic
( ) Indian (from India)
( ) Philipino
( ) Japanese
( ) Korean
( ) Vietnamese
( ) Other Specify: _____

NATIVE LANGUAGE: What is your native language? _____

LANGUAGE SPOKEN AT HOME: What language do you speak at home?

_____

LENGTH OF TIME LIVED IN UNITED STATES:
How long have you lived in the United States? _____ Years

HIGHEST LEVEL OF EDUCATION COMPLETED:

( ) Less than High School
( ) High School
( ) Some College
( ) Technical/Vocational School
( ) Associate Degree
( ) Bachelors Degree
( ) Other Specify: _____

READING LEVEL:
What grade level would you rate your English reading level to be? For example, 3rd grade, 6th grade, junior high, high school, or college, etc. _____ Grade

HOW LONG HAVE YOU BEEN A CERTIFIED NURSES AID AT PRESBYTERIAN HOSPITAL OF DALLAS?: _____ Years

WORKED THE EVENING PRIOR TO EXAM:
Did you work the night before taking this exam? ( ) Yes ( ) No

HOW MANY TIMES HAVE YOU TAKEN THE BLS EXAM (INCLUDING THIS TIME)?: _____

APPENDIX G

English as a Second Language Certified Nurses Aide

Post-Examination Questionnaire

English as a Second Language Certified Nurses Aide

Post-Examination Questionnaire

1. Were the instructions about taking the exam clear? ( ) Yes ( ) No

Comments: _____

_____

_____

_____

_____

_____

2. How easy or hard was it to read the exam questions?
( )Very Easy ( )Easy ( )Hard ( )Very hard

3. Do you have any suggestions about this exam to help improve it for other ESL students?

_____

_____

_____

_____

_____

Thank you!

APPENDIX H

Revised Version "B" BLS ESL Exam

Basic Life Support for Healthcare Providers

Written Examination

Revised Version "B" BLS ESL

4.3 Grade Reading Level

November 2003

BLS for Healthcare Providers Course
Revised Version "B" BLS ESL Written Examination

Please do not mark on this examination. Record the best answer on the separate answer sheet.

Application
Question revised

1. You are a nurse admitting a patient to the hospital. When you return to check on him, he is unresponsive. What should you do *next?*

a. Check to see if he responds. If the man does not respond, phone the hospital emergency number then begin CPR.

b. Phone the hospital emergency number, wait for responders, and bring them to the man.

c. Turn the man to the recovery position and wait for emergency responders to bring equipment.

d. Give CPR for 1 minute and then phone the emergency response number.

Application

2. Your walking partner is a healthy 52-year-old woman. She complains of pressure in her chest. She is sick to her stomach, dizzy, and sweating. But she says she is not having a heart attack. What should you do?

a. Give her 1 aspirin and tell her to rest for an hour.

b. Tell her to lie down and then you call her doctor.

c. Let her walk outside to get some fresh air.

d. Tell her to lie down or sit quietly and then you phone 911 right away.

Knowledge

3. Your hospital has started a project to teach people how to reduce the risk of stroke. Which of the following is the strongest risk factor for stroke that people can change?

a. Untreated high blood sugar.

b. Untreated high blood protein.

c. Untreated high blood sodium.

d. Untreated high blood pressure.

Comprehension

4. You are caring for a 60-year-old man after surgery. Now he slurs his words. The right side of his face is drooping. He also has trouble moving his right arm. What is the most likely cause of these problems?

a. A seizure.

b. A heart attack.

c. *A stroke.*

d. A coma.

Application
Question revised

5. You are teaching the parents of an infant who was in the hospital with pneumonia. The parents have just taken a CPR Course. The mother asks you what to do if she is alone and finds the infant unresponsive. Which of the following is the best answer?

a. Check for signs of circulation and phone 911 if the infant has no signs of circulation.

b. Phone 911 right away and then begin the ABC's of CPR.

c. Give 2 rescue breaths and phone 911 if the infant does not respond.

d. Give CPR for 1 minute, and then phone 911.

Knowledge

6. Which of the following offers the best chance of survival after a heart attack?

a. CPR begun by EMS rescuers when they arrive.

b. Defibrillation in 10 minutes without CPR.

c. Immediate CPR and defibrillation within 3 to 5 minutes.

d. Immediate CPR and defibrillation in 10 minutes

Knowledge

7. You respond to an emergency call for a 68-year-old man. He does not respond when you get to his room. He has no sign of injury (trauma). What is the best way to open this man's airway?

a. Give abdominal thrusts and then sweep his mouth with your finger.

b. Use the head tilt-chin lift.

c. Use a mask to give rescue breaths.

d. Grab and lift the chin.

Knowledge
Question revised

8. You should look, listen, and feel for air at the nose or mouth. What is the other way to check for breathing?

a. Check the pupils of the eyes.

b. Gently shake the shoulders.

c. Look in the mouth for an object.

d. Look and see if the chest rises and falls.

Application

9. You work in a doctor's office. You and your coworkers are performing CPR. You have a pocket mask but no oxygen. What is the *best* way to give mouth-to-mask breathing when you do not have oxygen?

a. Give smaller and shorter breaths than you would give for mouth-to-mouth breathing.

b. Give the same size and length of breaths that you would give for mouth-to-mouth breathing (give enough air to make the chest rise, and give breaths over 2 seconds).

c. Give larger and longer breaths than you would give for mouth-to-mouth breathing.

d. Give 3 breaths between each set of compressions.

Application
Question revised

10. A 24-year old woman has overdosed on sleeping pills. You check her and she does not respond. You open her airway and she is not breathing well. How can you help her breath?

a. Give 1 rescue breath every 5 seconds (10 to 12 breaths per minute).

b. Start chest compressions because her pulse is weak.

c. Put the woman in the recovery position.

d. Give chest compressions for 1 minute.

Application
Question revised

11. An adult is choking. You give him abdominal thrusts. He then becomes unresponsive, and begins to fall to the floor. What should you do next?

a. Roll the man onto his stomach and give 5 back blows between the shoulder blades.

b. Lay the man on his back, open his airway, and give fast mouth-to-mouth breaths, blowing as hard as you can.

c. Lay the man on his back, give 5 abdominal thrusts, and try to give rescue breaths; then give abdominal thrusts again, and keep trying to give rescue breaths.

d. Put the man on his back, open his airway with a tongue-jaw lift, sweep his mouth with your finger, open the airway, check for breathing and try to give rescue breaths if he is not breathing adequately.

Knowledge
Question revised

12. You see a 2 year old choking, she makes no noise. Her lips are blue. What is the most likely cause of these signs?

a. An acute asthma attack.

b. *Complete blockage of the airway.*

c. An upper airway infection.

d. A seizure caused by a head injury.

Knowledge
Question revised

13. You provide CPR for patients of all ages. You have been called to perform CPR on a 6 year-old-child. How much air should you give during rescue breaths for this child?

a. Give exactly the amount of air that you would give an adult.

b. Give twice the amount of air that you would give a 3-year-old child.

c. Give enough amount of air to make the child's chest rise.

d. Give half the amount you would give an adult.

Knowledge

14. How often should you give rescue breaths to a child who is not breathing, but has signs of circulation?

a. Once every 3 seconds (20 breaths per minute).

b. Once every 4 seconds (15 breaths per minute).

c. Once every 6 seconds (10 breaths per minute).

d. Once every 10 seconds (6 breaths per minute).

Application
Question revised

15. You arrive to help to resuscitate a middle-aged man. One rescuer is giving rescue breaths using a bag and mask but no oxygen. He delivers 2 breaths after each set of 15 chest compressions. Each breath lasts about 1 second or less. Both sides of the chest rise a lot with each breath. You then see that the patient's stomach is rising. What is the likely cause of the stomach rise?

a. The rescue breaths may be too forceful and quick.

b. The victim does not have enough time to exhale between breaths.

c. The man's stomach is probably full from a large meal.

d. The chest compressions are being given too low on the breastbone (sternum), and they are probably too forceful.

Knowledge

16. The best place to check a pulse on an adult is?

a. Radial artery of the wrist.

b. Brachial artery of the arm.

c. Carotid artery of the neck.

d. Femoral artery in the leg.

Knowledge
Question revised

17. You are part of a 2-man rescuer team performing CPR. You are giving chest compressions. How many compressions per minute should you use for two man CPR?

a. A rate no faster than 60 times per minute.

b. A rate of 80 to 100 times per minute.

c. *A rate of about 100 times per minute.*

d. A rate of at least 120 times per minute.

Application
Question revised

18. The best way to check if your partner is performing adequate chest compressions in two man CPR is to check the:

a. Pupils

b. Pulse

c. Breathing

d. Skin color

Application

19. You are alone and giving CPR to a 5-year-old child. How many compressions per minute should you give this child?

a. *Compress at a rate of about 100 times per minute.*

b. Push the breastbone (sternum) down at least 2 inches.

c. Use 2 fingers to compress the center of the sternum.

d. Compress 15 times and then give 2 quick breaths.

Application

20. What is the best way to give chest compressions to a 3-year-old child?

a. Use both hands, one on top of the other.

b. Use the heel of one hand

c. Use the tips of 2 fingers.

d. Use the palm and fingers of one hand.

Knowledge

21. The first link in the Chain of Survival for infants and children is prevention of arrest and injuries. Which of the following are the *most common* causes of cardiac arrest in infants and children?

a. Poor development and inherited heart disease.

b. Severe airway problems, breathing problems, or shock.

c. Electric shocks from appliances.

d. Severe head injuries.

Knowledge

22. How many breaths to compressions would you give a child or infant?

a. 10 to 2

b. 12 to 2

c. 1 to 5

d. 15 to 2

Comprehension
Question revised

23. You are walking in the hospital hallway. As you pass a female patient, she suddenly becomes unresponsive. You gently lower her to the ground. You ask another healthcare worker to phone the emergency response number and get the AED. When should you first check the woman for signs of circulation?

a. As soon as she slumps.

b. After you have given CPR for 1 minute.

c. After you open her airway, check for adequate breathing, and give 2 rescue breaths.

d. Right after you open her airway.

Comprehension

24. Why is it important to start CPR immediately?

a. CPR reduces the need for open-heart surgery.

b. CPR forces the heart to pump slowly.

c. If the AED is used within 6 to 10 minutes, bystander CPR is not needed.

d. CPR sends oxygen-rich blood to the heart and brain.

Knowledge
Question revised

25. Your neighbor runs to your house. A 6-year-old boy has been hit by a car near your home. The child does not respond. He has trauma. You send the neighbor to phone 911, and you remain with the child. How should you open the child's airway?

a. Use the head tilt-chin lift without moving the neck (cervical spine).

b. Use the tongue-jaw lift and a blind finger sweep.

c. Use the head tilt-chin lift and move the neck if needed.

d. Use the jaw thrust without moving the neck.

Application

26. You enter a patient's room. You discover your 64-year-old female patient lying unresponsive on the floor. What do you do?

a. Shout for help – if no one responds, leave the patient to phone the emergency response number.

b. Shout for help and begin CPR

c. Perform rescue breathing until help arrives.

d. Transfer the patient to advanced care.

APPENDIX I

English as a Second Language Certified Nurses Aide

Demographic Data Questionnaire

(Revised)

ENGLISH AS A SECOND LANGUAGE CERTIFIED NURSES AIDE

DEMOGRAPHIC DATA

NAME: _____ GENDER: AGE: _____ Years

( ) Male
( ) Female

ETHNIC GROUP:

( ) Hispanic
( ) Indian (from India)
( ) Philipino
( ) Japanese
( ) Korean
( ) Vietnamese
( ) Other Specify: _____

NATIVE LANGUAGE: What is your native language? _____

LANGUAGE SPOKEN AT HOME: What language do you speak at home?

_____

LENGTH OF TIME LIVED IN UNITED STATES:
How long have you lived in the United States? _____ Years

HIGHEST LEVEL OF EDUCATION COMPLETED:

( ) Less than High School
( ) High School
( ) Some College
( ) Technical/Vocational School
( ) Associate Degree
( ) Bachelors Degree
( ) Other Specify: _____

PROFESSION IN NATIVE COUNTRY:
What was your profession in your native country? _____

ENGLISH LEARNED IN NATIVE COUNTRY:
Did you learn English in your country?

( ) Yes
( ) No

READING LEVEL:
What grade level would you rate your English reading level to be? For example, 3rd grade, 6th grade, junior high, high school, or college, etc. _____ Grade

HOW LONG HAVE YOU BEEN A CERTIFIED NURSES AID AT PRESBYTERIAN HOSPITAL OF DALLAS?: _____ Years

WORKED THE EVENING PRIOR TO EXAM:
Did you work the night before taking this exam? ( ) Yes ( ) No

HOW MANY TIMES HAVE YOU TAKEN THE BLS EXAM (INCLUDING THIS TIME)?: _____