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Injury Prevention Inclusion in Pre-Licensure Baccalaureate Nursing Curricula

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INJURY PREVENTION INCLUSION IN PRE-LICENSURE BACCALAUREATE NURSING CURRICULA

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Abstract

Integrading injury prevention into healthcare education has been recommended for over 10 years. However, the literature reveals little about how injury prevention is incorporated into nursing curricula. This study aimed to evaluate if unintentional injury prevention was being taught in pre-licensure baccalaureate nursing education. *The Essentials of Baccalaureate Education for Professional Nursing Practice* (2008), the *Recommended Baccalaureate Competencies and Curricular Guidelines for Public Health Nursing* (2018), and the Institute of Medicine's *Initiative on the Future of Nursing: Leading Change, Advancing Health* (2011) were utilized as the driving forces to support injury prevention inclusion. The research questions inquired if pre-licensure baccalaureate CCNE-accredited nursing programs were incorporating injury prevention into curricula. If so, the study considered whether primary, secondary, and tertiary prevention strategies were included. Finally, this study assessed the barriers to implementation of injury prevention topics if they were not covered. The research design was guided by Haddon's matrix of injury prevention with a focus on education involving the pre-event, event, and post-event phase of the matrix (Haddon, 1970). The study was implemented as a non-experimental descriptive study, and a convenience sample of $n = 29$ surveys from CCNE-accredited universities were evaluated. The findings from this study added to the science of nursing education knowledge and identified existing gaps in baccalaureate nursing programs.

Keywords: injury prevention, nursing curriculum, primary, secondary, and tertiary injury prevention

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Chapter 1

Academic educators in nursing are challenged with preparing nursing students for a workforce that is dynamic and fluid. The challenge to create independent thinkers—individuals who are able think critically under pressure and work in an inter-collaborative, interdisciplinary environment—is an arduous task (Škobalj, 2018, p. 1366). Creating and implementing effective, efficient, and concise educational strategies are key components in nursing education today. Curriculum committees in nursing academia are required to incorporate considerable amounts of content within the constraints of allowable credits to fulfill the requirements for the baccalaureate nursing degree. One overarching topic, containing considerable content, is the inclusion of injury prevention in baccalaureate nursing education. Primary, secondary, and tertiary prevention are inclusive in nursing education and practice.

Problem and Domain of Inquiry

Injury-related death in the United States is high, with the 10 leading causes of death remaining relatively similar in 2016 as in 2015 (CDC, 2018a). Cardiac disease, cancer, and unintentional injuries are the top three leading causes of death in the United States (CDC, 2019a). Although death rates from disease increase after the age of 44, unintentional injury is the leading cause of death between the ages of 1 and 44 (CDC, 2018a). The 10 leading causes of unintentional injury death (UID) across the lifespan are: sudden unintentional infant death (SUID) (ages 0-1), drowning (ages 1-4), motor vehicle collisions (ages 5-24), unintentional poisoning (ages 25-64), and death from falls (ages 65

and above) (CDC, 2019b). The graphical chart provided by the CDC can be seen in Appendix A.

The World Health Organization (WHO, 2014a) has concentrated their efforts on the global impact of unintentional injuries, since five million individuals, or 9% of all deaths per year are injury related. Furthermore, a partnership with the United Nation's International Children's Emergency Fund (UNICEF) was formed in 2008, resulting in the *World Report on Child Injury Prevention.* This extensive report addresses the background, characteristics and prevention of the most common childhood injuries, and most importantly, addressed recommendations for interventions directly associated with the type of injuries incurred (WHO, 2008). Many of the injuries listed in the WHO report are in the CDC's list of the top 10 causes of UID, based on age, including drowning, road traffic injuries, poisonings, and falls.

Professional nursing plays a crucial role in injury prevention advocacy. Nurses can become effective educators, as demonstrated by an effective training program entitled *Training Nurses to be Teachers,* where focus is placed on the assessment of patients' educational needs, barriers to learning, and effective teaching modalities. Results demonstrate improved patient retention when evidence-based standardized teaching methods are utilized (Kornburger, et al. 2013; Burkhart, 2008). Theoretical frameworks also play an important role in injury prevention through the use of effective educational strategies. The Emergency Nurses Association (ENA) released a position statement stressing the importance of the role of emergency room nurses as educators and as injury prevention advocates (ENA, 2016). In addition, the ENA developed the Institute for Quality, Safety, and Injury Prevention, which embraces the Theory of Planned Behavior,

as an example of the importance of utilizing sound theoretical educational frameworks when teaching patients about injury prevention (Heaton, 2011).

The Robert Wood Johnson Foundation: *Initiative on the Future of Nursing* addresses the need for nursing programs to adequately prepare students to meet current and future healthcare demands including public health issues, along with the need to prepare future nurses to work in multiple health care settings, including community and public health arenas (IOM, 2011). Understanding nursing academia and describing how future nurses are prepared paramount in addressing gaps in curriculum and recommendations for curricular revisions.

The American Association of Colleges of Nursing (AACN, 2018) focuses on establishing standards for quality nursing education (2018). The *Essentials of Baccalaureate Education for Professional Nursing Practice* was created by the AACN (2008) and serves as a framework to grow the discipline of nursing by focusing on sound curriculum. Essential VI, *Inter-professional communication and collaboration for improving patient health outcomes,* addresses measures to improve patient safety. Essential VII, *Clinical prevention and population health,* addresses injury prevention and patient safety across the lifespan. There is a paradigm shift occurring with regards to educating future nurses on how to provide patient care in outpatient and community-based settings together with their training in acute care settings. Therefore, the AACN called for enhanced curricular improvement by supplementing the *Baccalaureate Essentials*, with a focus towards public and community health issues by releasing a supplemental document, *Public Health: Recommended Baccalaureate Competencies and Curricular Guidelines for Public Health Nursing* (AACN, 2013). Unintentional injuries

have remained relatively unchanged, and nursing educators are in an ideal position to educate future nurses on injury prevention epidemiology and strategies to prevent injuries. It is critical then, to examine and understand how knowledge, skills, and attitudes regarding injury prevention are disseminated in undergraduate nursing curricula. Finally, the National Council for State Boards of Nursing (NSCBN, 2018) provides a detailed test plan for educators to prepare students for outcome evaluations upon graduation. This detailed blueprint includes injury prevention content across the life span (p. 15), community-based home safety content (p.16), health promotion, and the importance of education on injury prevention topics and its correlation with linking the licensure exam to nursing practice expectations.

Problem Statement

Unintentional injury accounts for over 160,000 deaths per year in the United States (CDC, 2016d). The costs associated with these unintentional injuries encompassing medical costs and loss of work amounted to close to $200 billion in 2010 (CDC, 2014a). Registered nurses providing care to these individuals are ideally positioned to provide these patients and families with injury prevention discharge teaching along with primary injury prevention teaching when delivering care in the community setting. In order to educate proficiently, nurses must acquire the knowledge, skills, and attitudes necessary to implement effective patient education. Professional organizations (IOM, 2011) and nursing regulating and accrediting bodies, such as the Commission on Collegiate Nursing Education (CCNE, 2018), assess and call for effective educational practices in nursing curricula in efforts to enhance public safety. There is paucity in published literature, whether unintentional injury prevention is

included in AACN accredited pre-licensure baccalaureate-nursing education. Therefore, whether unintentional injury prevention is integrated in CCNE accredited baccalaureate education warrants further investigation.

Purpose of the Study

The purpose of the study was to describe the current state of injury prevention inclusion in CCNE-accredited pre-licensure baccalaureate-nursing curricula and the state to which injury prevention skills and theory are integrated into academic curriculum, as recommended by the *Baccalaureate Essentials* and other professional organizations. Understanding the degree to which content is being covered, whether with primary, secondary, and/or tertiary preventative measures, may help address the state of the science related to unintentional injury prevention.

Research Questions

1. Are the top leading causes of unintentional injury death, across the lifespan, included in CCNE-accredited undergraduate pre-licensure baccalaureate nursing curricula?
2. If so, is this content addressing primary, secondary and tertiary preventive strategies?
3. If not, what are the barriers to their implementation?

Hypothesis

The hypothesis asserts that injury prevention on the leading causes of UID are included in CCNE-accredited pre-licensure baccalaureate nursing curricula. The null hypothesis states that unintentional injury prevention content is not covered in CCNE-accredited pre-licensure baccalaureate nursing curricula. Because this was a descriptive

study, a research hypothesis examining the relationship among variables was not included.

Significance of the Study

Nursing Education

To ensure consistent, effective, and evidence-based educational initiatives, the AACN has defined curricular components to ensure competency of baccalaureate nursing graduates. These components, outlined in the *Baccalaureate Essentials,* serve as the blueprint for topics to be included in nursing curriculum. Unintentional injuries are among the leading causes of deaths in the United States (CDC, 2019b); therefore, educating about unintentional injuries is a significant population health topic. The *Baccalaureate Essentials,* the guiding document for baccalaureate nursing education, recommends the inclusion of injury prevention in nursing education. The IOM's report (2010) calls for injury prevention topics to be covered in all healthcare curricula. Furthermore, education about evidence-based injury prevention strategies is of great importance, as nurses are at the forefront of patient health care. However, there is paucity of published literature confirming the inclusion of injury prevention content in baccalaureate curricula. Determining if the leading causes of UID and their preventive measures are being included, and to what extent, may help identify if and where instructional gaps exist, suggesting content that should be added, based on evidence. This study provided an opportunity to explore how undergraduate nursing programs have addressed the *Baccalaureate Essentials,* specifically essentials VI and VII.

Nursing education is in a position to help bridge the academic/practice gap. In order for nurses to be successful educators in injury prevention, it is incumbent on

nursing programs to include potentially life-saving information in the blueprint of their curricular objectives. As evidence about injuries surfaces, through sound scientific inquiry, curricula should be revised to remain current when addressing the most pressing health care issues.

Nursing Practice

There are nearly 3,000,000 registered nurses in the United States, with a projected need of 1.1 million more registered nurses by the year 2022 (U.S Department of Labor, Bureau of Labor Statistics, 2018). Registered nurses are ideally positioned to educate patients about healthcare topics, disease prevention, and injury prevention. This study may impact nursing practice by improving the quality of nursing education and thus preparing graduate nurses to better address all levels of prevention regarding unintentional injuries in the healthcare setting. Future studies can then determine the impact this may have on morbidity and mortality rates.

Nursing Research

There is paucity in published literature regarding nursing programs' inclusion of unintentional injury prevention content in curriculum, as recommended by the *Baccalaureate Essentials*. Interestingly, a search of published literature using the key phrase "injury prevention" resulted in extensive evidence on the following topics: medication administration errors (Hewitt, Tower, & Latimer, 2015; Lapkin, Levett-Jones, & Gilligan, 2015; Natan, Sharon, Mahajna, & Mahajna, 2017); skin breakdown and pressure ulcers (Garrigues, Cartwright, & Bliss, 2017; Gunningberg et al., 2015); infection control practices (Cox, Simpson, Letts, & Cavanagh, 2015; Öncü, Vayisoglu, Lafci & Yildiz, 2018); and safe patient handling (Anderson, et al., 2014). In order to

comply with the *Baccalaureate Essential* recommendations, there is need to expand published literature to include unintentional injury content, related to the top causes of unintentional injury death (UID), in nursing curricula.

Public Policy

Perhaps one of the greatest challenges involving injury prevention efforts includes public policy. Many injury prevention policies involving legislation occur at the state level. This lends itself towards disparities in laws governing safest practice recommendations. Laws governing child passenger travel, for example, vary among the 50 states.

Nursing academia is in an ideal position to educate nursing students about the policy changes needed to promote safety, prevent injury, and affect change. The professional nurse is also in a unique position to advocate for policy reform and ultimately to develop partnerships to implement legislative changes that will align with safer injury prevention practices. Key components to include in curriculum regarding policy reform include effective communication of supporting evidence, a sound network of community advocates, and the importance of understanding politics (Haring, Frattaroli, Schneider, Holland & Vernick, 2015).

Philosophical Underpinnings

Constructivism can be viewed as the combination of cognitive and behaviorally based theories, and educators with a constructivist mindset consider what students know and are open to allowing students to utilize new knowledge acquisition (Amineh & Davatgari, 2015). The constructivist viewpoint considers learning as a process of constructing meaning and making sense of life's experiences (Merriam, Caffarella, &

Baumgartner, 1999). Originally, the constructivist philosophy created a focus on the cognitive and social components of how individuals learned. Piaget incorporated the understanding that learning is a cognitive process, where an individual obtained knowledge and assimilated this knowledge into a new context, thus causing intellectual growth (Piaget, 1977). Vygotsky posited that social and interpersonal aspects of learning preceded the cognitive function of knowledge acquisition (Vygotsky, 1986). These two approaches may seem to contradict one another, but in fact, they work harmoniously to create a learning environment, where conflict of ideas leads to dialogue, which produces moments of personal reflection, leading to self-awareness and self-empowerment through newly acquired knowledge, along with the synthesis of personal experience (Amineh & Davatgari, 2015).

Hamner and Wilder (2001) addressed the need for faculty to look carefully at curriculum, through the lens of constructivism, to assure it provided a free flowing, non-linear approach to experiential teaching strategies/methods to obtain learning objectives. Careful consideration should be geared towards the learner and the guiding principles of constructivism, which includes learning as a search for meaning, with meaning as an effort to understand the big picture along with its working parts, and finally, learning as a means to construct meaning, not merely the memorization of information (Bhattacharjee, 2015). When applying the philosophy of constructivism to educational practices, an inclination exists to encourage graduates to engage in lifelong learning activities, such as self-reflection and critical thinking behaviors, and to inspire the synthesis of knowledge for application. This constructivist mindset may lead to better-prepared graduates for a complex health care system.

Theoretical Framework

A theoretical framework has been described as a blueprint guiding and structuring a study from a philosophical, analytical, methodological, and epistemological approach (Grant & Osanloo, 2014). The framework is a formal theory of scientifically recognized phenomena, concepts, and definitions that guide how research questions are answered. The purpose of this study was to explore the extent to which unintentional injury prevention content has been embedded into baccalaureate nursing education curriculum as suggested by the AACN (2008, 2013) in its *Baccalaureate Essentials and Their Curriculum Improvement*: *Curriculum Support for Public Health* and by the Institute of Medicine's *Initiative on the Future of Nursing: Leading change, advancing health* (2011). The theoretical framework revealed whether specific injury prevention topics were covered in nursing curricula and provided valuable information regarding potential gaps in curricular inclusion.

The Haddon Matrix

William Haddon was interested in the prevention of traffic-related injuries and developed Haddon's *phase-factor matrix* to better understand the dynamics of a vehicle collision, in terms of the physics of a crash and the factor of velocity, among other issues (Haddon, 1970). Included in the matrix are three time phases in relation to unintended injury occurrences: pre-event, event, and post-event. In addition, the matrix allows for the analysis of multiple contributory factors of unintentional injuries in each of the designated time phases (Figure 1).

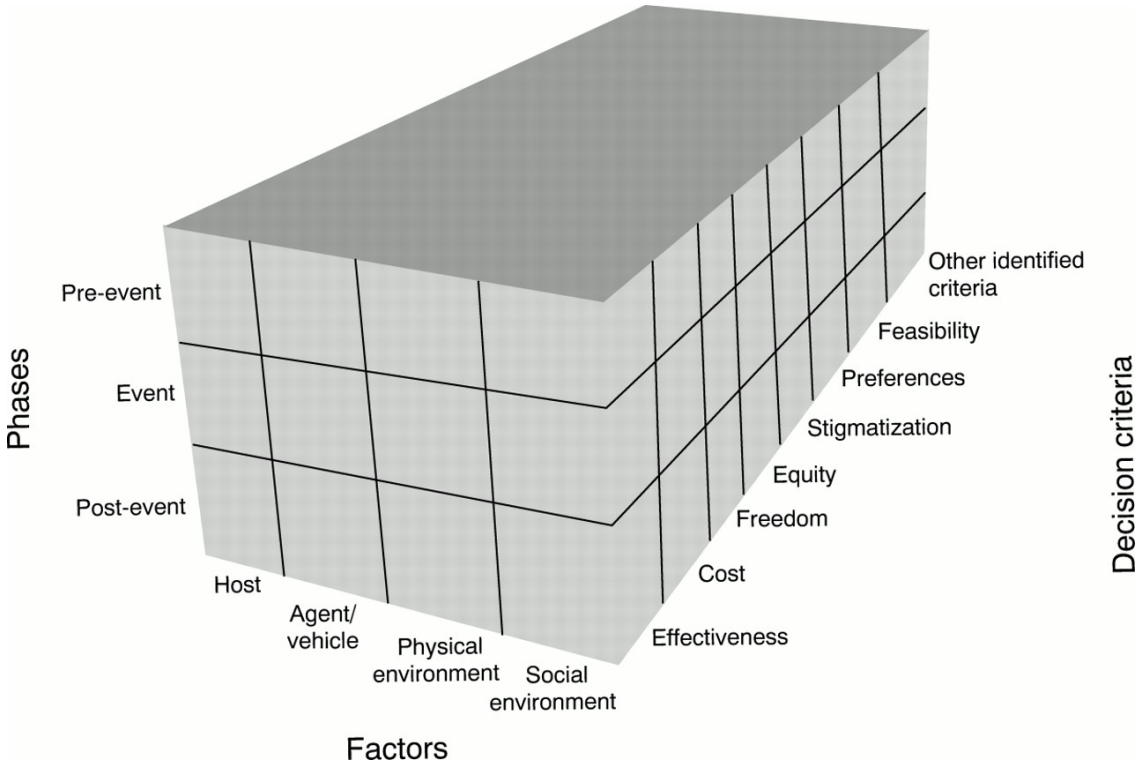

Figure 1. Haddon's matrix with the third tier created by Runyan, Decision Criteria (Runyan, 1998).

Haddon's matrix is comprehensive and provides an effective framework to analyze and formulate injury prevention strategies. Due to the nature of the comprehensiveness of the matrix, potential gaps can be exposed, related to factors associated with specific injuries, especially when considering all of the components of injury across the time phases, pre-event, event, and post-event. When assessing nursing curriculum for the insertion of unintentional injury prevention content, Haddon's matrix provides an exceptional framework to support and clarify the arrangement of whether unintentional injury prevention is being taught, specifically if focus on injury is addressing one or more of the components of the event phase. For example, pre-event in

nursing terms can be considered primary prevention. The event phase of the matrix can be considered secondary prevention, while the post-event phase can be considered tertiary prevention. Within the context of this matrix, curriculum can be closely evaluated for inclusion and potential gaps of content inclusion.

Use of Haddon Matrix in the Literature

The Haddon matrix has been used extensively as a research framework for injury prevention studies (Anderson, et al., 2014; Cox et al., 2015; Fagan, Greene, Knight, & Royds, 2014; Garrigues et al., 2017; Gunninberg et al., 2015; Hewitt et al., 2015). Public health providers have utilized the phase-factor matrix to better understand injury and their respective preventative strategies as a planning tool for public health initiatives (Archer, Spencer, & McArdle, 2016; Barnett et al., 2005; Bugeja, McClure, Ozanne-Smith, & Ibrahim, 2011). Studies focusing on burns using Haddon's matrix are abundant (Deljavan, Sadeghi-Bazargani, Fouladi, Arshi, & Mohammadi, 2012; Peck et al., 2008; Sadeghi-Bazargani et al., 2015;), as are studies utilizing the framework for traffic-related injuries (Goniewicz, Goniewicz, Pawlowski, & Fiedor, 2016; Masoumi et al., 2016). The Haddon matrix has also been used to address injury prevention strategies for falls (Lach & Nolmontree, 2018; Zhao, Alderden, Lind, & Kim, 2018), along with unintentional drowning (Basilio, Guevarra, Orbillo, & Go, 2012; Guevarra, Franklin, Basilio, Orbillo, & Go, 2015).

It is advantageous to examine interdisciplinary approaches to learn about injury prevention incorporation in health care curriculum. Medical training has, for over a decade, emphasized the need to include injury prevention in medical curriculum as demonstrated by various methods of curricular implementation. One example considered

Haddon's matrix to view injury as disease and used the six competencies recommended by the Accreditation Council for Graduate Medical Education (ACGME), which included general arching themes that assisted faculty in creating objectives for injury prevention teaching (Phelan, Falimirski, Simpson, Czinner, & Hargarten, 2007).

Another example included the implementation of a 2-week injury-prevention training program for pediatric medical residency students, which built in content related to drowning, firearms, choking, poisonings, suffocation, and motor vehicle-related injuries (Gittleman, Pomerantz, & Schubert, 2010). This later study demonstrated effective retention of knowledge after a 3-year period. In another study, a more longitudinal approach was used throughout a 4-year residency program, where after careful evaluation, injury prevention was addressed in pediatric training courses. Again, the competencies from the ACGME were used as a guide after the Association of American Medical Colleges published a report calling for medical schools to incorporate injury training into curricula (Graham, Newton, Gaddy, Tariq & Aitken, 2010; Yoshii, Sayegh, Lotfipour, & Vaca, 2010).

Within the realm of nursing, the Emergency Nurses Association (ENA, 2018) published a position statement, *The Role of the Emergency Nurse in Injury Prevention,* using Haddon's matrix, with the addition of Runyan's third dimension to the matrix, to incorporate a comprehensive multidisciplinary approach to provide effective injury prevention discharge teaching (Runyan, 2018), thus demonstrating how Haddon's matrix is a powerful framework for the development of educational strategies related to injury prevention. The literature has also revealed evidence of service-learning activities as a means to prepare nursing students to address injury prevention strategies. The utilization

of Haddon's theoretical framework ascertains that networks established through service-learning activities are a means to transfer knowledge about unintentional injuries (Alexander, Canclini, & Krauser, 2014). The matrix can also be used to assess nursing curricula for a comprehensive look at knowledge acquisition, skills, and patient education for primary, secondary, and tertiary prevention purposes. Results of this study may guide nursing accrediting bodies to evaluate the presence of unintentional injury prevention in curricula with efforts to standardize and disseminate injury prevention education.

Definition of Terms

The following terms are defined for the purpose of this research. To ensure concept clarity, they are derived from the Centers for Disease Control and Prevention (CDC), the field of epidemiology, the *Baccalaureate Essentials*, the American Association of Colleges of Nurses (AACN), its Commission on Collegiate Nursing Education (CCNE), and the National League for Nursing (NLN). Definitions are provided for injury, accident, injury prevention (primary, secondary, and tertiary), injury prevention/countermeasures, safety, unintentional injury deaths, baccalaureate-nursing curriculum, pre-licensure baccalaureate teaching strategies, and students' curriculum placement.

Injury

Theoretical definition. Injury is defined by the CDC (2009), as:

> The physical damage that results when a human body is suddenly or briefly subjected to intolerable levels of energy. Injury can be a bodily lesion resulting from acute exposure to energy in amounts that exceed the threshold of physiologic tolerance, or it can be an impairment of function resulting from a lack

of one or more vital elements (i.e. air, water, or warmth), as in strangulation, drowning, or freezing. The time between exposure to the energy and the appearance of an injury is short. The energy causing an injury may be one of the following:

- Mechanical (e.g., an impact with a moving or stationary object, such as a surface, knife, or vehicle)
- Radiant (e.g., a blinding light or a shock wave from an explosion)
- Thermal (e.g., air or water that is too hot or too cold)
- Electrical
- Chemical (e.g., a poison or an intoxicating or mind-altering substance such as alcohol or a drug)

Operational definition. Injury is operationally defined in this study as physical damage resulting from one of the top 10 causes for unintentional injury deaths in the United States, covering the lifespan, including suffocation (0-1 year of age), drowning (ages 1-4), motor vehicle collision (ages 5-24), poisoning (ages 25-64), and falls (ages 65+).

Accident

Theoretical definition. An accident is considered a non-preventable act that occurs by chance (Pless & Hagel, 2005).

Operational definition. Accidents are operationally defined as occurrences that are genuinely non-preventable that lead to injury; therefore, the term accident will not be used in this study, as UIDs are considered to have an element of preventability (CDC, 2014b).

Injury Prevention/Countermeasures

Theoretical definition. Injury prevention or countermeasures reflect interventions that produce measurable reduction of injuries (Pless & Hagel, 2005).

Operational definition. Injury prevention is operationally defined as actions and/or intervention strategies that are meant to reduce injury, utilizing three main approaches via education, engineering, and enforcement, of which are often referred to as injury countermeasures -(Pless & Hagel, 2005). Furthermore, injury prevention is categorized utilizing Haddon's matrix component of phase to focus on the pre-event, event, and post-event (Haddon, 1970) and his prevention strategies to limit harmful energy transfer when applicable (Haddon, 1995).

Primary prevention. Primary prevention is operationally defined as preventative efforts made before an event occurs. The focus may be on preventing the extent of an injury or of the injury occurring at all. This term will be used interchangeably with the pre-event phase of Haddon's matrix when assessing curriculum.

Secondary prevention. Secondary prevention is operationally defined as preventative measures that focus on reducing the extent of injury by omitting actions that will further enhance injury. This term will be used interchangeably with the event-phase of Haddon's matrix when assessing curriculum.

Tertiary prevention. Tertiary prevention is operationally defined as actions taken to reduce, eliminate, or minimize the long-term effects of injury, as well as the promotion of the human body returning to homeostasis. It also implies the period of adaptation and assimilation to an irreversible condition. This term will be used interchangeably with the post-event phase of Haddon's matrix when assessing curriculum.

Unintentional Injury Deaths

Theoretical definition. Unintentional injury deaths (UID) are defined as:

> Those with the underlying cause of death classified by the *International Classification of Diseases, 10th Revision* (ICD-10) as drowning (W65–W74), falls (W00–W19), fires or burns (X00–X19), transport-related injuries (V01–V99), poisoning (X40–X49), and suffocation (W75–W84) (*4*), or falling in a category of other injury deaths comprising all other mechanisms of unintentional injuries: cut or pierced, unintentional firearm, machinery, natural and environmental, overexertion, struck by or against an object, and other specified and unspecified. (CDC, 2012, pp. 830-833)

Operational definition. UID is operationally defined in this study as answers to a survey tool that will ask participants to identify if primary (pre-event phase), secondary (event phase), and tertiary (post-event phase) preventive measures about the top 10 causes of unintentional injury death are being taught in the nursing curriculum. It is also defined as the barriers that may exist for the inclusion of these topics or their appropriate countermeasures.

Pre-Licensure Baccalaureate Nursing Curriculum

Theoretical definition. Curricula is defined as, using a national-consensus based process, guided by essential documents that outline the expected skills, knowledge, and theory acquisition of students upon graduation (AACN, 2018).

Operational definition. Nursing curriculum is operationally defined as a program of study that is CCNE accredited and follows the guidelines provided in *The Essentials of Baccalaureate Education for Professional Nursing Practice* (AACN, 2008) document,

along with the *Public Health: Recommended Baccalaureate Competencies and Curricular Guidelines for Public Health Nursing document (*AACN, 2018*).*

Baccalaureate Teaching Strategies

Theoretical definition. Teaching strategies are defined according to the National League for Nursing's *Hallmarks of Excellence in Nursing Education* (2008).

Operational definition. Teaching strategies are defined in the *Hallmarks of Excellence in Nursing Education, Exemplars in Innovative Teaching Strategies and Curriculum Development* section (NLN, 2008). In order to minimize confusion, any of the exemplars that demonstrate a teaching strategy concentrating on the top 10 causes of unintentional injury deaths by age group and injury prevention in the primary, secondary, and tertiary phase of injury are considered unintentional injury prevention teaching strategies in baccalaureate education.

Teaching strategies are generally defined as experiential, audio-visual, collaborative, and traditional. Experiential instruction includes but is not limited to hands-on approaches, such as service-learning projects, simulation, clinical experiences, virtual simulations, and role-play. Audio-visual instruction is in the form of, but not limited to, seminars, webinars, podcasts, and videos. Collaborative teaching strategies are defined as interactive instruction such as but not limited to, discussion forums, group blogs, social media groups, and general group projects. Traditional instruction methods include but are not limited to lectures, reading materials, and PowerPoint presentations.

Students' Curricular Placement

Theoretical definition. Students' curricular placement is theoretically defined as the total sum of experiences obtained by students throughout a pre-licensure

baccalaureate nursing education program (Ramasubramaniam & Angeline, 2015). It is also defined according to program tracks that present content to students via different routes towards the baccalaureate degree. For example, nursing programs may include a 4-year associate degree with a baccalaureate degree obtained after the 4-year program. A program may also be a 2-year accelerated program where nursing courses are started after a 2-year associates degree is obtained.

Operational definition. The operational definition of students' curricular placement for this study will focus on how students are labeled in the nursing program based on their current semester. Participants will be defined as students who are enrolled in a pre-licensure baccalaureate-nursing program in semesters according to the university's program content requirements. Ultimately, students will be defined as being a freshman, sophomore, junior, or senior nursing student in a 4-year program of study.

Chapter 2

Unintentional injuries are predictable and preventable, with an estimated 40% of unintentional injury deaths considered to be preventable (CDC, 2014b), and one of the most under-recognized public health problems in the United States (CDC, 2016c). An estimated $130 billion are spent annually due to loss of work and medical bills from unintentional injuries (CDC, 2016c). Injury prevention efforts are gaining attention because of the predictability and preventability component of many of these injuries (CDC, 2014b). Professional nursing states that nurses will act as patient advocates both in acute care and public health care settings. Credentialing bodies are calling for academia to educate and prepare graduate nurses to address injury prevention in their programs (AACN, 2008, 2013; IOM, 2011;). This study focused on nursing academia and whether unintentional injury prevention content was included in baccalaureate nursing academia.

Literature Review

A comprehensive review of published literature was conducted to determine whether injury prevention content was included in health professions education. Particularly, evidence specific to the inclusion of unintentional injury prevention content in pre-licensure baccalaureate nursing education. To do so, the following databases were studied: Cumulative Index of Nursing an Allied Health Literature (CINAHL), PubMed, ProQuest, and Education Resources Information Center (ERIC). The following parameter for year of publication included published literature from 2008 to 2018, chosen to align

with the recommendations of injury prevention inclusion from the *Baccalaureate Essentials* (AACN, 2008) and the IOM (2011). Peer-reviewed and scholarly work was another parameter. Key words and phrases were: injury prevention, primary prevention, injury prevention strategies, unintentional injuries, nursing curriculum, nursing academia, baccalaureate nursing education, nursing education, and nursing students. Several topics, including suffocation, drowning, motor vehicle collisions, poisoning (opioid), and falls, were also included, as they were proven to be the top causes of UID. A total of 1628 articles were discovered, with the majority of hits obtained from PubMed regarding falls.

Published literature demonstrated studies involving the inclusion of injury prevention education on medication safety and medication error prevention while in the acute care setting (Hewitt et al., 2015; Lapkin et al., 2015; Natan et al., 2017). Evidence was also found regarding topics including injury prevention of pressure ulcers in acute care settings (Garrigues et al., 2017; Gunninberg et al., 2015). Safe patient handling and infection control injury prevention were also present in the literature (Anderson et al., 2014; Cox et al., 2015; Öncü, Vayisoglu, Lafci, & Yildiz, 2018). Literature was sparse regarding unintentional injury in nursing academia. The top 10 leading causes of unintentional deaths in the United States are from unintentional suffocation, drowning, motor vehicle collisions, poisoning, and falls, respectively by age group (CDC, 2018b).

CDC's Top Ten Leading Causes of Unintentional Injury Deaths per Age

Unintentional injury death is prevalent in the United States and accounts for the leading cause of death in individuals aged 1-44 (CDC, 2019b). The term "unintentional" implies a level of preventability, and, thus, the focus in health care should address

countermeasures to prevent injuries from occurring in the first place, to prevent further injury once an event has occurred, and to prevent reoccurring injury.

Sudden Unintentional Injury Death

Sudden unintentional injury death (SUID) is the leading cause of death in the United States in children from birth to 1 year of age (CDC, 2019). When discussing SUID, the CDC's focus is on different causes for sudden unexpected infant death. These SUIDs can be classified into three categories: accidental suffocation and strangulation, sudden infant death syndrome (SIDS), and SUID of unknown etiology. The American SIDS Institute defines SIDS using the National Institute of Child Health and Human Development's (NICHD) definition as "the sudden death of an infant under one year of age which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history" (Willinger, James, & Catz, 1991).

Suffocation often results from bed-sharing or from objects left in the crib such as blankets and pillows (Gaw, Chounthirath, Midgett, Quinlan, & Smith, 2017), crib bumper pads (Scheers, Woodard, & Thach, 2016), loose bedding, soft mattresses, and stuffed toys (Whiteside-Mansell et al., 2017). Strangulation can occur due to loose bedding (Gaw et al., 2017).

Implications to nursing practice. There is evidence of the implementation of safe sleep practices being utilized in the clinical setting. Safe sleep practice recommendations were issued by the American Academy of Pediatrics' (AAP) policy statement (2016). Because nurses are at the forefront of patient care, they are in an ideal position to educate parents and caregivers and therefore need to be aware of and

implement safe sleep recommendations into their practice. For example, role modeling (pre-event/primary prevention) and nursing education (pre-event/primary prevention) proved to increase repetition of safe sleep performances by parents in eight maternity units when patients reported receiving safe sleep education by nurses, who then reported observing parental compliance by over 90% when babies were found sleeping on their backs in their hospital bassinets (Kellams et al., 2017). In addition, nursing in-service education on safe sleep recommendations demonstrated the additional benefit of promoting behavior change of the nursing staff providing direct patient care, as well as the behavior of infant caregivers (Geyer, Smith & Kair, 2016).

There are examples of the impact to nursing practice using event and post-event/tertiary prevention of SIDS, such as the creation of a 4-year public health intervention campaign resulting in licensing regulation changes in childcare facilities in Arkansas. The death of one child initiated a proactive approach to raising awareness about SIDS and training caregivers and parents how to perform cardio-pulmonary resuscitation (Matthews & Moore, 2013). Awareness about safe sleep practices can also be raised through children's books created to educate parents about safe sleep environments (AAP, 2018). Children's books to promote sleep safety have been shown to promote safer parental practices than printed brochures, demonstrating less bed-sharing practices when books were utilized for teaching purposes (Hutton et al., 2017).

Implications for nursing education. Nurse educators are tasked with educating students about safe sleep practices, following the AAP's recommendations for safe sleep infant environments and for pursuing ongoing training (Cirelli et al., 2018). Keeping abreast with current evidence validates that healthcare professionals model safe sleep

practices along with supporting government policies meant to increase safe sleep practices (Selk, Finnerty, Levesque, & Fitzgerald, 2015). No published literature was found utilizing Haddon's matrix as a framework for preventive strategies for safe sleep practices.

Drowning

Drowning is defined as "the process of experiencing respiratory impairment from submersion/immersion in liquid; outcomes are classified as death, morbidity, and no morbidity" (WHO/UNICEF, 2018). Children from ages 1 to 4 are at greatest risk of drowning, with most incidents occurring in residential swimming pools, with most victims of male gender (CDC, 2016a). For every drowning death, there are eight emergency room visits for non-fatal drowning treatment, which can result in severe brain damage, causing life-long disabilities (CDC, 2016b). There is great effort to decrease the incidences of drowning by injury prevention organizations, such as Water Safety USA, whose primary strategy is to collaborate for the promotion of water safety and drowning prevention. Collaborating partners include the CDC, American Academy of Pediatrics, Safekids Worldwide, U.S. Coast Guard, USA Swimming Foundation, and many other affiliates (CDC, 2016b). The American Red Cross offers cardiopulmonary resuscitation (CPR) training, as well as swimming and water safety courses for community members to take action in the event of a drowning (American Red Cross, 2019). The American Red Cross also provides primary and secondary preventive measures by providing CPR training, along with emergency cardiac care courses for community members (American Heart Association, 2018). Nurses in practice are required, at minimum, to be certified in CPR and should emphasize to parents and caregivers the importance of CPR training at

hospital discharge as a means of primary prevention. Nursing students are also CPR certified and should practice how to provide discharge teaching to families about the importance of obtaining CPR training.

Implications to nursing practice. Emergency room nurses are tasked with using their assessment skills to carefully report to physicians the condition of near drowning victims to determine if admission for observation is warranted or if the patient can be safely discharged home (Brennan, Hong, & Wang, 2018). When discharging a post-drowning victim, nurses are tasked with providing primary/tertiary prevention in the form of appropriate discharge teaching. Injury prevention strategies such as proper discharge teaching are varied among emergency room nurses, indicating multiple barriers as the cause, such as lack of time and resources (Wilding, O'Brien, Pagliarello, & Friedberg, 2008). There are drowning prevention resources available to nurses, such as free Internet sites that discuss the most effective preventative instructions including (a) prevention of lack of supervision of children whenever in water or near water of any kind, (b) reminders to immediately empty buckets and bathtubs after use, (c) installation of pool fences and self-latching gates, and (d) closing laundry room and bathroom doors to prevent access to water (Valdez, 2013). Further recommendations are to educate about the importance of water safety and the effectiveness of swimming lessons, especially effective for children aged 2 to 4 (Wallis et al., 2015). Emergency room nurses can be positively impacted from treating and hearing about drowning cases, enough to promote behavior change, in the form of more formalized discharge teaching plans, including suggesting parents take CPR courses to handle drowning emergencies (Griffin, 2005).

Implications for nursing education. Drowning is a global health problem with over 370,000 deaths globally per year (WHO, 2014b) and over 400 deaths per year in the United States (CDC, 2016b). Drowning rates may seem to be declining in the United States; however, due to under-reporting, drowning rates are actually increasing (WHO, 2014a, p. 3). An extensive review of the literature failed to present information about drowning prevention in baccalaureate nursing curriculum. A study conducted assessing Ireland's pediatric curriculum, found that only one of the seven universities surveyed had material regarding injury prevention in pediatric education. Pediatric content in the study was on pediatric care in the acute care setting, not in academia (Nicholl, Begley, Murphy, Hollywood, & King, 2012).

Two articles produced published literature using Haddon's matrix as a framework to create intervention strategies pertaining to the pre-event phase of drowning in injury prevention education (Basilio, et al., 2012; Guevarra et al., 2015, p. 251).

Motor Vehicle Collisions

Motor vehicle collisions are responsible for the leading cause of death in individuals between the ages of 5 to 24 in the United States (CDC, 2019). Due to the implications of injury type based on age, weight, and motor vehicle collisions, the CDC's age-grouping system will be used to define incidence and prevalence data. Children aged 5 to 9 accounted for 48.8% of fatalities, children aged 10 to 14 accounted for 53.7%, and adolescents and young adults aged 15 to 24 accounted for 50.6% of fatalities, in all races and both sexes, from motor vehicle collision-related injuries (CDC, 2016d).

It is estimated that only 10% of children aged 8-12 utilize a booster seat in the United States, and when comparing injury results using a booster seat versus a seat belt

alone, a 29% reduction in the odds of injury was observed (Anderson, Carlson, & Rees, 2017). A driver survey obtained through a phone-based study found that 37% of children aged 4 to 9 were restrained using only seat belts, and 78% of those using a seatbelt reported an improper seatbelt fit, with the major issue being incorrect placement of the shoulder harness (Macy, Reed, & Freed, 2011).

Distracted driving resulted in over 3,400 deaths and over 390,000 injuries in the United States in 2015 (CDC, 2017a). The CDC (2017a) defined three types of distracted-driver issues, comprised of visual (taking eyes off the road), manual (taking hands off the wheel), and cognitive (taking your mind off driving) distractions. The age group most at-risk for distracted driving are drivers under the age of 20 (CDC, 2017b). This correlates with findings from a Distracted Driving Survey (DDS), $n = 1211$. Findings revealed that age had a significant factor on rates of cell phone-related distractions with an $r = -0.46$ and a $p < 0.0001$ (Gliklich, Guo, & Bergmark, 2016). Another cause for distraction worth noting within the adolescent population involves the presence of peer passengers and horseplay that ensues when peers are present (Foss & Goodwin, 2014). Furthermore, in 2016, 53-62% of individuals, aged 15-24 involved in fatal collisions were not wearing seatbelts (CDC, 2017a). This poses additional risks for occupant-to-occupant contact injuries during motor vehicle collisions, with adolescent and adult passengers most at risk for these injuries, especially in side-impact and rollover collisions (Viano & Parenteau, 2017).

Implications to nursing practice. Treatments for motor vehicle injuries require an understanding of the sensitivity of time to delivery of trauma care (Doud et al., 2017). Urban trauma statistics versus rural statistics vary with regards to pediatric and

adolescent motor vehicle injuries (Wolf, Chowdhury, Tweed, Vinson, Losina, & Qureshi, 2017). Death from trauma is defined as immediate (at the scene), early (in hospital, < 4 hours from injury), and late (> 4 hours after injury) according to Gunst et al. (2010). The majority of trauma injuries involved traumatic brain injury (TBI) from all types of trauma, with motor vehicle collisions representing 17% of TBI. The implication to nursing practice is in the decrease of late deaths when early intervention was accomplished through appropriate delivery of trauma care, with only 4% of deaths occurring after the 24-hour mark compared to 9% when care delivery time was delayed (Gunst et al., 2010).

Utilizing theory-based approaches to discharge teaching in the emergency room, such as the application of the Theory of Planned Behavior (TPB), can lead to an increase in patients' intentions to change behavior to avoid further injury. Furthermore, according to the TPB, injury prevention efforts by emergency room nurses may impact patients' attitudes and their perceived behavioral control over a situation, such as abiding by speed limits and avoiding texting while driving, and alter their subjective norms increasing the intention to perform the wanted behavior (Heaton, 2011).

Implications to nursing education. It is incumbent on healthcare providers to counsel about the multiple causes of distracted driving and the epidemiology of injury morbidity and mortality related to time-sensitivity in reaching trauma care. Resources are available to assist educators with materials on motor vehicle injury prevention regarding texting and driving (Caird, Johnston, Willness, Asbridge, & Steel, 2014). An extensive literature review concerning education on unintentional motor vehicle collision injury and death in nursing academia revealed no data, resulting in difficulty determining if primary

prevention of unintentional MVC injuries is addressed in curriculum. This gap warrants further investigation to obtain relevant information.

Haddon's pre-event, event, and post-event phases and factors of the matrix are discussed in detail regarding motor vehicle collisions (Hawk, Cataldo, Puntillo, & Miaskowski, 2012). An example of the use of Haddon's matrix includes a pre-event factor (gender), as female drivers are more likely to drive closer to the steering wheel, an event factor involving older adult driver errors, resulting in increased risk of side impact collisions, and post-event factors in elderly crash victims, including death from complications associated with infections and multi-organ failure (Hawk et al., 2012).

Poisoning

The CDC defines a poison as:

> A substance that can cause illness, injury, or death. Poisons can be swallowed, inhaled, or absorbed through the skin. Some substances are toxic in small doses, but other usually harmless substances can be poisonous if encountered in large enough quantities. A poisoning can occur in almost any setting, from any substance, and in any form (liquid, solid, or gas). (CDC, 2017d)

Although poisoning injury and death can occur from compounds other than prescription and illicit drugs, such as from carbon monoxide, pesticides, food, and alcohol, the focus for this study was on assessing curriculum for education of opioid and synthetic opioid drug overdoses, since current trends are rising drastically (CDC, 2018a). These poisonous substances are classified as (a) oxycodone, (b) hydrocodone, (c) methadone, (d) heroin, and (e) synthetic opioids: fentanyl, tramadol, and carfentanil

(CDC, 2017d).

It is also of great importance to understand the opioid epidemic as referred to by the CDC and the three waves in the rise of opioid overdose deaths (2018b). The CDC explains that the first wave occurred in the 1990s, with overprescribing of opioid-containing medications. The second wave began in 2010 with heroin overdoses and more recently in 2013 with significant spikes in overdose deaths associated with synthetically, illicitly manufactured fentanyl (CDC, 2018b).

The National Center for Health reports poisoning deaths between 1999 and 2016 have tripled overall, doubled for males, and have ascertained that individuals aged 35-44 are most at risk for death by poisoning (CDC, 2018a). In 2017, more than 17,000 deaths occurred from opioid overdoses (CDC, 2017e).

Implications to nursing practice. With rising trends in addiction rates nationwide, the American Nurses Association (ANA) recommends that governing nursing bodies address the nation's opioid crisis, stating the role nurses play in assessing, diagnosing, and managing patients battling with addiction (ANA, 2016). Often, uncontrolled chronic pain with limited non-pharmacological alternatives is associated with overuse of opioid pain medication to treat patients with unresolved pain (Volkow & McLellan, 2016). The ANA currently released a call to action for expanding the role of nurses as holistic providers of patient-centered care, with a specific focus on the prevention, timely recognition, and appropriate interdisciplinary interventions when addressing patients' pain (ANA, 2018). Some states are facing greater numbers of unintentional deaths related to opioid overdosing. For example, the state of Ohio addressed the opioid crisis in their state during the 2017 biennial convention, calling for

legislative assistance to allow the Ohio healthcare nursing community to raise awareness of the problems of addiction, to provide their nurses with proper training on opioid addiction, to utilize collaborative organizations to assist with the problem, and even to provide assistance to support the rehabilitation treatments for opioid addicted nurses (ONA, 2016). This is an example of the social responsibility of the nursing role in procuring the health and wellbeing of the public.

A final implication to nursing practice includes emergency room nurses and the risks they face when treating addicted patients. These nurses are at risk when treating Carfentanil-addicted patients, a synthetic opioid, that is five times more potent than heroin and emergency room nurses can become lethally poisoned when touching patients without proper protective equipment (ENA, 2017b).

Implications to nursing education. Since opioids have addictive qualities, and it is uncertain which patients have propensity towards addiction, several screening tools have been created for use in the clinical setting to identify patients at high risk for addiction (Sehgal, Manchikanti, & Smith, 2012). Guidelines for the management of pain have been developed, yet many of the survey tools to assess for high-risk patients' susceptibility to addiction from opioids have not been empirically validated (Kaye et al., 2017). Furthermore, published literature reveals that only 30% of medical schools adequately incorporate pain management training into the curriculum (Morley-Foster, Pergolizzi, Taylor, Axford-Gatley, & Sellers, 2013). No published articles were found regarding pain management training in undergraduate nursing curriculum. Understanding addiction and how to educate nursing students about addiction is important to combat the epidemic. Educating baccalaureate-nursing students about proper treatment options for

addicts and the nature of addiction is an important component, to modify students' views about addiction from a moral issue to one of a chronic health issue (CDC, 2015; ONA, 2016; Volkow et al., 2014). In addition, it is interesting to note the need to educate public health nurses and those in community settings to reach out to restaurant business owners and coffee shops owners, as many overdoses occur in the restrooms of these settings. Looking at the public health perspective, educating these individuals about proper identification of opioid overdosing and the use of Narcan (naloxone) is gaining momentum (Wolfson-Stofko, Bennet, Elliot, & Curtis, 2017).

The ANA released a statement explaining the need to expand medicated-assisted treatment facilities where nurses can assist addicts within an interdisciplinary setting (ANA, 2018). In addition, school nurses can play a role in the prevention of opioid addiction and overdose-related death through education and training on the use of Naloxone, an opioid antagonist, used to treat victims who have overdosed (ANA, 2018). A review of the literature failed to present information about opioid poisoning prevention in baccalaureate nursing curriculum or information about Haddon's matrix as a means to develop preventive strategies regarding opioid addiction.

Falls

Falls are the leading cause of death in individuals aged 65 and older in the United States (CDC, 2018a), with one in every five elders falling each year (CDC, 2017c). In addition, falls are the most common cause of traumatic brain injury, costing $50 billion annually to treat. Seventy-five percent of medical charges rely on Medicare and Medicaid to cover these costs, placing considerable financial strain on the system (CDC, 2017c). Certain factors increase the risks of falls in the elderly: vitamin D deficiencies, visual

disturbances, and medications such as tranquilizers, antidepressants, and sedatives, which can impair balance, and hazards in the home such as throw rugs, electrical cords, and stairs also increase the propensity for an elder to succumb to a fall (CDC, 2017c).

Implications to nursing practice. Three million emergency room visits per year and 800,000 hospital admissions annually are due to head injuries or hip fractures resulting from falls (CDC, 2017c). By the year 2040, it is predicted that 21.7% of the population will be aged 65 or older (ENA, 2017a). The ENA implements the use of fall screening tools, such as the Morse Fall Scale screening tool during emergency room care, that have been validated in the literature (Murray & Belanger, 2018). However, readmissions for elderly emergency room visits are high, propelling the ENA to implement other valid and reliable screening tools, used to decrease the numbers of re-admissions. Some examples include the Hospital Readmission and Emergency Department Revisits tool, the Medication Awareness tool, and the Pain Assessment tool (ENA, 2017a).

Implications to nursing education. Fall prevention is a Healthy People 2020 goal (Healthy People, 2018). Although researchers have been able to produce evidence-based fall prevention interventions and guidelines, few older adults follow the recommendations and primary care providers often fail to address falls (Child et al., 2012; Phelan, Aerts, Dowler, Eckstron, & Casey, 2016). After an initial fall, increased elderly awareness to susceptibility of future falls may provide nurses with a teachable moment for fall prevention education. An extensive literature review did not reveal information about fall prevention strategies taught in baccalaureate nursing programs. However, published literature on the use of Haddon's matrix to develop fall prevention

strategies was found (Lach & Nolmontree, 2018; Zhao, Alderden, Lind, & Kim, 2018).

Traumatic brain injury has been associated with elderly falls (CDC, 2017c), and Haddon's matrix has also been used to review current evidence-based fall prevention strategies to reduce the numbers of elders affected with traumatic brain injuries (Krishnamoorthy, Distelhorst, Vavilala, & Thompson, 2018). Elderly falls have also led to blunt thoracic injuries in the elderly, and Haddon's matrix has been used to describe the pre-event, event, and post-event factors associated with falls and blunt thoracic trauma (Hawk et al., 2012). Utilizing Haddon's matrix, a prevent factor, includes physiologic loss of muscle mass and loss of strength in the elderly individual, while an event factor includes the height from which the elder adult fell and the type of surface that was struck upon impact, with a post-event factor implying an understanding that older adults suffer more post-trauma complications than their younger counterparts, despite the severity of the initial injury (Hawk et al., 2012).

Nursing Curriculum Textbook Review

An extensive review of a selection of textbooks used in pre-licensure baccalaureate nursing education was conducted to determine if the leading causes of unintentional injuries by age group were presented. The review utilized Evolve Elsevier's PageBurst: VitalSource e-library, a reputable repository for faculty resources in nursing academia. Select texts in maternal-child, pediatric, emergency nursing, medical-surgical, community-public health, and nursing fundamentals were included.

The review indicated that the leading causes of death related to unintentional injuries across the lifespan—suffocation, drowning, motor vehicle collisions, poisoning, and falls—were addressed in the selected set of textbooks. However, not all textbooks

included all topics. For example, injury prevention topics for the pediatric populations were found in the maternal-child, pediatric, and community health textbooks (Leifer, 2015; Maurer & Smith, 2013; McKinney, James, Murray, Nelson, & Ashwill, 2013; Price & Gwin, 2012; Stanhope & Lancaster, 2014; Wilson & Hockenberry, 2012). Injury prevention strategies regarding poisoning were predominantly found in medical-surgical, community health, and emergency nursing textbooks (DeWit, Stromberg, & Dallred, 2017; Howard, 2009; Lewis, Dirkson, Heitkemper, & Bucher, 2014; Maurer & Smith, 2013; Stanhoope & Lancaster, 2014), and fall prevention education was predominately found in nursing fundamentals, medical-surgical, community health, and emergency nursing textbooks (DeWit et al., 2017; Howard, 2009; Lewis et al., 2014; Potter, Perry, Stockert, & Hall, 2013).

Chapter Summary

Research has identified governing nursing bodies, accrediting agencies, and professional organizations calling for injury prevention inclusion in nursing curricula (AACN, 2008, 2013; IOM, 2011). Published research on unintentional injury prevention inclusion in nursing curricula is sparse. Much of the research on injury prevention focuses on injuries in the acute care settings, not in academia, and does not necessarily focus on the 10 leading causes of UIDs across the lifespan. The data search made a strong case for utilizing Haddon's matrix for the construction of injury prevention strategies, related to most of the causes of unintentional injury deaths: drowning (Basilio et al., 2012; Guevarra et al., 2015), motor vehicle collisions (Goniewicz et al., 2016; Masoumi et al., 2016), and falls (Lach et al., 2018; Zhao et al., 2018). No studies focused on whether the 10 leading causes of UIDs across the lifespan, according to the CDC, were

covered in baccalaureate nursing education, and if so, the specific injury prevention topics addressed and the topics in need of inclusion. An evident gap was identified in whether unintentional injury prevention content is covered in baccalaureate nursing programs warranting further investigation.

Chapter 3

A gap exists in the current nursing literature regarding the extent to which unintentional injury prevention is addressed in undergraduate pre-licensure baccalaureate curricula. The purpose of this study was to describe whether unintentional injury prevention is included in nursing curricula and the degree to which primary, secondary, and tertiary prevention was included in the baccalaureate curricula of CCNE-accredited programs. Furthermore, when not included, the study aimed to explore the barriers to its inclusion. For classification purposes, the phase component of Haddon's matrix was used as the theoretical framework, consisting of the time-phase before, during, and after an incident, leading to unintentional injury and ultimate death. The study was able to identify the inclusion of primary, secondary, and tertiary injury prevention content within each of the 10 leading causes of UID along with gaps in injury prevention inclusion

Methods

Research Design

A descriptive, non-experimental design was used utilizing simple randomized sampling to evaluate CCNE-accredited undergraduate pre-licensure baccalaureate nursing programs, regarding the inclusion of unintentional injury prevention content in its curriculum. The frequency of injury prevention inclusion, within the context of primary, secondary, and tertiary prevention and barriers to inclusion in each category, was also explored.

Research Assumptions

Research assumptions are the principles accepted as true, based on logic or reason, without proof (Polit & Beck, 2018). Research assumptions for this study included:

- CCNE-accredited universities use the *Baccalaureate Essentials* to plan curricula.
- Haddon's time-phased approach for classifying injury prevention content is a valid and reliable theoretical framework. The time-phase component, consisting of the pre-event, event, and post-event intervention strategies, plays a role in the classification of injury severity.
- Morbidity and mortality rates are affected by the implementation of preventative measures.
- Administrators and faculty from CCNE-accredited universities have adequate knowledge of their program's curriculum.
- Respondents will answer truthfully about injury prevention inclusion in their program on the study survey.

Setting

The setting involved CCNE-accredited universities randomly sampled from the AACN website. All pre-licensure nursing tracks, including traditional, accelerated, foreign-educated physician to nursing, and medic/veteran to nursing tracks, were invited to participate. An electronic survey tool, REDCap, was distributed to a randomized sample of CCNE-accredited pre-licensure baccalaureate nursing programs. The survey submissions identity remained anonymous throughout the study.

Sampling Plan

The target population for this study included CCNE-accredited pre-licensure baccalaureate nursing programs. The sampling plan included a simple randomized sampling approach, which provided an opportunity for an adequate size to be representative of the population being studied, and random selection guaranteed that differences between the sample and the population were simply a function of chance (Polit & Beck, 2018, p. 180). Descriptive statistical methods were utilized to report the number of universities that included injury prevention in the curricula. Furthermore, analysis was performed to describe frequency rates of primary, secondary, and tertiary injury prevention inclusion. Barriers to inclusion were explored when participants were given the opportunity to explain why the particular injury prevention content was not included.

Sampling Strategy

Probability sampling is respected in the research community, as it is the most reliable approach to generating a representative sample (Boswell & Cannon, 2017). To ensure a representative sample of CCNE-accredited schools, a simple random probability sampling technique was used. This approach provided equal opportunity for all randomly selected CCNE-accredited programs to be surveyed and to participate in the study.

Eligibility Criteria

Careful attention was made to address and define the inclusion and exclusion criteria. Inclusion criteria are the required components the participants need to

demonstrate in order to participate in the study. Exclusion criteria are specific components that exclude participants from the study.

Inclusion criteria for this study included:

- The baccalaureate pre-licensure program held current CCNE-accreditation.
- The baccalaureate program was a traditional, accelerated, foreign-educated physician to BSN, or veteran/medic to BSN pre-licensure program.
- Survey respondents had the ability to read and write in English.
- Survey respondents had Internet access, in order to receive emails and to complete and submit the survey instrument.

Exclusion criteria for this study included:

- Programs that offered only post-licensure programs, such as RN to BSN programs.
- Survey respondents unable to read and write in English.
- Survey respondents with lack of access to the Internet in order to receive emails and to complete the survey instrument.

Determination of Sample Size

The study population included a simple sampling of CCNE-accredited baccalaureate-nursing programs using probability sampling. Probability sampling allowed the researcher to estimate the difference between sample values and population values; however, lack of statistical power may have occurred, as the sample size was small (Polit & Beck, 2018). However, a G*Power analysis was not necessary for this study, as it was not evaluating for inferential data. Instead, a practical approach was taken to determine sample size based on the total number of available programs. Numerous

factors were considered when deciding on sample size including the population, study design, measurement to be analyzed, and the practicality of obtaining the necessary data (Boswell & Cannon, 2017). Attempts to minimize bias were enhanced by utilizing this randomization approach, which provided equal opportunity for participants to contribute to the study's findings. An important population factor in this study was the homogenous nature of CCNE programs. All programs are expected to follow the guidelines provided by the *Baccalaureate Essentials* when developing curriculum.

There were 793 CCNE-accredited nursing programs listed on the AACN website at the time of this study. Four hundred twenty-five programs were randomly selected to participate in the study. This accounted for a little over 50% of all CCNE-accredited universities. Boswell and Cannon (2017) explained that the study design influences the sample size depending on the variables that are being studied. As this is a straightforward descriptive study, whereby the subjects are institutions and not individual students, the sample size at minimum must be representative of the total number of institutions.

The number 425 was chosen to make room for the exclusion of CCNE-accredited universities that provide only post-licensure degrees, since the study aimed to evaluate pre-licensure programs for injury prevention inclusion, so this number was chosen to attempt to invite and survey at least half of the total number of CCNE-accredited programs. Fowler (2002) explained the misconception of using a fraction or percentage of a target population to determine sample size along with the importance of considering the goal of the study when determining an adequate sample size. The author stressed that the focus be placed on the minimum sample size tolerated for the smallest subgroups of the target population. This study aimed to describe whether CCNE-accredited pre-

licensure nursing programs include injury prevention of the top leading causes of UID and if primary, secondary, and tertiary injury prevention strategies are incorporated and the barriers to inclusion..

Protection of Human Subjects

In this descriptive study, an electronic survey tool delivered via an electronic link was distributed to CCNE-accredited nursing programs in the United States and Puerto Rico. Responses were anonymous, thus minimizing potential risks to participants. The survey tool provided an integrated consent form agreement within the survey link itself to minimize the potential of identifying factors, thus ensuring anonymity. The sample of CCNE-accredited universities was randomized by an online randomizer called *research randomizer*. Each CCNE-accredited program was assigned a number from 1-793. Programs excluded from the list due to exclusion criteria were randomly replaced with programs from the second half of the CCNE program list using the same research randomizer. In addition, to ensure participant protection, the researcher carefully followed the recommendations of the dissertation committee, awaited approval from the Institutional Review Board (IRB) at Nova Southeastern University, and followed the guidelines and instructions during the approval process. In the event a participant had questions, the researcher did not inquire about the program's name or any identifying information and simply asked the participant to identify themselves as a participant in the study. If email correspondence for questions contained identifying information, emails were stored in an encrypted folder in the researcher's secured Nova email account to be deleted once the required post-study period of 3 years had expired. The respondents'

demographic section of the instrument was anonymous, as the instrument had no geographical identifying information to link respondents to a particular nursing program.

Risk of participation. Because this study was anonymous and voluntary, there was low probability of risk to participants. The demographic information requested included the type of program, whether it was a traditional, accelerated, foreign educated physician to BSN, and/or veteran/medic to BSN program. In addition, information regarding survey respondents' role at the university, whether they were the dean, undergraduate director, chair or supervisor, and/or a faculty member or a member of the curriculum committee was obtained.

Benefits of participation. Potential benefits to participants included adding to the body of knowledge specific to curricular design of undergraduate pre-licensure nursing programs. Participating in this study described the extent to which injury prevention content was included in curricula, as recommended by the *Baccalaureate Essentials* (AACN, 2008), the *Institute of Medicine* (IOM, 2010), and the CCNE's *Curriculum Support for Public Health Supplement* (AACN, 2018). This research data may help prepare future nurses for injury prevention practices and increase the potential to save lives, by applying knowledge and skills in the practice setting. Furthermore, using the time-phase component of Haddon's matrix may identify the strengths and weaknesses in curriculum associated with primary, secondary and tertiary prevention measures, along with barriers to their implementation.

Data storage and collection. The protected data included the demographic information along with the survey instrument tools' responses from the *Injury Prevention Inclusion in Pre-Licensure Baccalaureate Nursing Curricula* survey instrument. The data

for each survey was collected utilizing REDCap (Research Electronic Data Capture), which is a secure, web-based application intended to gather data for research, including multisite data collection. The REDCap application is supported, in part, by the National Institute of Health (REDCap, 2018). This software application is provided by Nova Southeastern University and enables the researcher to perform frequency statistics as well as to export the data to multiple statistical analysis software programs. In order to maintain data integrity, proper logging of data into the computer along with checking the data for accuracy was implemented (Trochim & Donnelly, 2008). Data were exported to the dissertation researcher's password-protected computer and, per Nova Southeastern University's IRB requirements, is being held in a secured storage for a period of 3 years. Only the researcher has access to the data.

Recruitment

The researcher confirmed CCNE-accredited baccalaureate nursing programs from across the country via the AACN website (CCNE, 2018). In total, there were 793 schools that met accreditation. The programs' chief nurse administrators' email addresses were compiled in an Excel spreadsheet. The chief nurse administrator of each nursing program was invited to participate as the respondent in the study or encouraged to forward the link to a faculty member versed in the curriculum layout. The invitation letter to participate in the study (Appendix B) stressed anonymity and was addressed in the consent form as well. An item within the demographic section inquired about the respondents' role at the university. A follow-up email was sent every 4 days following the initial invitation letter to encourage participation (Fink, 2003).

Instrumentation

The instrument was developed by the researcher utilizing two components: the top 10 leading causes of unintentional injury death by age group, as defined by the CDC (2019) and Haddon's matrix (1970), with attention to the time-factor phase of pre-event, event, and post-event. Scoring utilized the framework provided by Haddon's matrix and was based on a 5-point Likert scale. Scoring was ordinal in nature by inquiring about injury prevention inclusion in the following manner: (0) not at all, (1) very little, (2) somewhat covered, (3) quite a bit, and (4) unsure. The unsure option was available to respondents in the event that injury prevention inclusion was not easily obtainable without an in-depth review of the curriculum. The first response, not at all, if chosen, bridged to an option of checkboxes to describe the barriers to injury prevention inclusion in the curriculum. REDCap was set to allow for multiple answers, and these checkboxes included the following responses: "not at all" due to: "too much existing curricular content", "other topics are more important", "unaware injury prevention topic is recommended", and "other" with an opportunity to respond in an open ended short-answer format for this later response. The instrument underwent a thorough review by content experts to assure for content validity and internal consistency and to ensure the survey items related to the research questions. Ease of readability was also evaluated, and content experts in nursing education helped ensure this validity, which is the degree to which the items in a survey can measure the content of the construct that is being measured (Polit & Beck, 2018). There were four content experts who held doctoral degrees and had at least five years of experience in nursing academia.

Instrument 1 – *Injury Prevention Content in Undergraduate Baccalaureate Nursing Curricula.*

Validity. Content validity refers to the accuracy of the answers to a research question and the rigor of the study's conclusions (Sullivan, 2011). Validity also refers to the use of relevant populations and content experts (Burns & Grove, 2009). Construct-validity is enhanced when utilizing Haddon's matrix through the time-phase component. This framework specifies specific points in time where injury prevention measures are addressed, ensuring a comprehensive evaluation of injury prevention inclusion. The evaluation of injury prevention incorporation in nursing curricula was created due to recommendations of professional and governing nursing bodies. Content expert review of the instrument was performed to verify the validity of the study's instrument. The results of Cronbach's alpha ensured internal consistency. Areas of inconsistency and of concern were amended based on the content experts' feedback.

The theoretical framework for the study, Haddon's matrix, utilized the pre-event, event, and post-event components of the matrix to apply to nursing academia. This identified pre-event as the primary intervention strategies, identifying factors that can assist in preventing the injury from occurring in the first place. The event phase was comparable to the secondary injury prevention strategies, which involved direct patient care and the prevention of further injury during the acute care phase of a particular injury. Lastly, post-event comprised the tertiary injury prevention strategies, involving sound discharge teaching strategies to reach and maintain optimal health and prevent further or recurring injury.

Reliability. Reliability implies that the instrument yields consistent results each time it is used in similar settings with similar participants (Sullivan, 2011). Reliability is a component of validity. Internal consistency implies that a few items are created within an instrument to measure the same concept. Cronbach's alpha is a test used to measure internal consistency and correlations between all variables (Sullivan, 2011). A Cronbach's alpha of 0.8 or higher is considered to be a good result (Polit & Beck, 2018). For this study, injury prevention inclusion necessitated all three aspects of the time-phase component of Haddon's matrix, in each of the top leading causes of UID. In other words, the curriculum was evaluated to assess for primary, secondary, and tertiary injury prevention inclusion in all top causes of UID. Cronbach's alpha was conducted for the instrument as a whole and then for the specific components of Haddon's time-phase matrix, a 21-item analysis.

Scoring. The survey included 71 fields containing seven major blocks. Each block included items inquiring about a specific UID topic with elements of primary, secondary, and tertiary injury prevention inclusion. Due to the fact that injuries from motor vehicle crashes have unique preventative strategies based on height, weight, and age within the age range of 5 to 24, this section of the survey instrument included three separate blocks. Response options were scored on a 5-point Likert scale ranging from no injury prevention labeled as "not at all" injury prevention inclusion to injury prevention inclusion covered "quite a bit." The option for "unsure" answers was also included, as some of the details on injury prevention strategies might not be easily obtainable without performing an in-depth audit of topical outlines for each course covering the age-specific unintentional injury.

Evidence-based examples for each component of the theoretical framework of time-phase, including primary, secondary, and tertiary injury prevention examples, for each of the leading causes of UID, were included in the stem of each survey question to ensure the participants were aware of what was being evaluated. For example, within the category of UID related to drowning, respondents were asked if primary prevention strategies such as proper use of pool fences, parental/caregiver supervision, implementation of swimming lessons for infants and toddlers aged 2-4, pool tarps, or pool alarms were included. These examples are evidenced-based and can be reviewed in Appendix D.

When asked if each of the CDC's leading causes of UID were included in curriculum, in the three realms of primary, secondary, and tertiary prevention, the number zero indicated covered "not at all," number 1 indicated content inclusion was "very little", number 2 indicated "somewhat included", number 3 indicated content was covered "quite a bit", and number 4 indicated "unsure" if content was in the curriculum. The numbered responses were dependent on the number of individual strategies included in each level of prevention category. For example, for the response, "quite a bit", three or more listed preventative strategy recommendations needed to be present in the curriculum to warrant a number 3 response, two strategies for content covered "somewhat", and at least one strategy for content covered "very little".

In cases where initial responses were chosen as "not at all," the question sought to evaluate the respondents' reasons for exclusion with a list of checkbox responses. Multiple answers could then be chosen, in a 'select all that apply' option, as well as open-ended short-answer option, per the respondents' preference, in order to gain an

understanding of exclusion rationales. These options included, too much existing curricular content, other topics are more important, and unaware injury prevention topic was recommended.

This approach provided valuable information regarding differences, if any in the type and degree to which unintentional injury prevention is included in nursing curriculum across programs. Also, the response indicating the "unsure" response signified that the content was difficult to ascertain without a thorough curriculum content audit, which is a topic for further discussion.

General Statistical Strategy

The objective was to describe if injury prevention content was included in pre-licensure programs and the extent to which it was included in CCNE-accredited pre-licensure baccalaureate nursing programs. The data were collected using REDCap and analyzed within the RedCap program for initial review. Data were then transferred to SPSS for analysis. As a descriptive approach was sought, the frequency and percentages were obtained, and the data were evaluated for errors, and parametric data were analyzed to ensure the population studied followed the appropriate probability distribution. In this study, the CCNE-accredited programs' relative normal distribution frequency was determined and is displayed in narrative and visual format as well. This is in an attempt to clearly define the components of injury prevention that are addressed and the gaps that may exist.

Data Cleaning

Data cleaning was an important process in order to prepare data for analysis. Survey responses were evaluated for completeness and evaluated for outliers. This

process ensured that data was correct and consistent across analysis. REDCap provided a feature when creating a survey instrument that was utilized that does not allow item sets to remain unanswered, therefore eliminating the risk of incomplete data. All responses were required to proceed to the next set of items in a block, and all responses were complete. All surveys were complete. There was one exception, which included a respondent who chose not to identify their role in the nursing program. All other items within the survey were collected for data analysis.

Descriptive Analysis

Descriptive statistics were used to describe the characteristics of the sample, including the type of program, the respondents' role at the university, and confirmation of current CCNE accreditation. Descriptive statistics included the frequency via percentages of injury prevention inclusion in all three components of prevention: primary, secondary, and tertiary. Distributions of inclusion were described using these statistical methods. The analysis summarized the dataset, which, for this study, represented a sample of the population of CCNE-accredited programs that can be generalized to the other CCNE-accredited programs due to the homogenous nature of these programs.

Reliability Testing

In broad terms, reliability refers to consistency among scores and an element of freedom from measurement error. Furthermore, internal consistency in self-reported studies may be influenced by the reader and their interpretation of the wording in the survey (Polit & Beck, 2018). Reliability coefficient (Cronbach's alpha) was computed when assessing the instrument for internal validity, and provided a numeric index, which

offered a quantitative value to the instrument's reliability, in this case, how well the instrument assessed injury prevention inclusion in nursing curricula.

Hypothesis Testing

The hypothesis for this injury prevention inclusion study claimed that injury prevention content was included in nursing curricula, among CCNE-accredited pre-licensure baccalaureate programs. The null hypothesis stated injury prevention content was not covered in CCNE-accredited pre-licensure baccalaureate programs. Because this was a descriptive study, a research hypothesis examining the relationship among variables was not included. The benefit of rejecting the null hypothesis was to gain new knowledge about populations (Polit & Beck, 2018), and this is discussed in Chapter 5 of this dissertation when addressing implications to nursing education, proving CCNE-accredited programs include injury prevention in their curricula, despite the lack of published literature. Rejecting the null hypothesis contributed to new knowledge to the science of nursing education regarding gaps in curriculum related to UIP inclusion.

Limitations

The study's limitations included threats to internal and external validity. Limitations for this study may have included a lack of truthfulness from participants when identifying gaps in injury prevention. Another limitation may have resulted from poor response rates, as this survey was distributed at the end of an academic calendar year. As all CCNE programs fitting the inclusion criteria were included, ample opportunity was provided for representation.

Descriptive studies cannot provide evidence for causal inferences (Polit & Beck, 2018). The study was limited to explore and describe whether injury prevention content

was included in nursing curricula without providing inferential data. This was due to the paucity in published literature related to this particular set of research questions about nursing curriculum.

Another limitation involved the variances in how and where injury prevention strategies were embedded in different curriculums. If the respondents were not well versed on the topical outlines within the curriculum, the evaluation might have been limited.

One final limitation involved how the participant read and perceived the survey items. How each item was phrased may have lent itself to differences in interpretation. This limitation was minimized by demonstrating a strong Cronbach's alpha score, when evaluating the reliability of the survey instrument.

Threats to Internal Validity

Internal validity was enhanced by appropriately selecting participants. In this case, a simple randomized sample ensured that proper representation of the country's CCNE-accredited nursing programs were evaluated. The study was changed from a simple randomized study to a sample of convenience, and this change mid-stream will be explained in detail. Another method to ensure internal validity rested on the instrument, which was evaluated by content experts and was based on Haddon's injury prevention framework, which has been highly utilized in research and in developing planning tools for public health initiatives (Archer et al., 2016; Barnett et al., 2005; Bugeja et al., 2011).

Threats to External Validity

Threats to external validity focused on the ability to generalize study results. By surveying ample number of CCNE-accredited universities, external validity can be

maximized, along with statistical power. This study ultimately invited 100% of CCNE accredited programs to participate in the study with a desired response rate of at least 10%. An attempt to minimize external validity was achieved by sending a reminder email every 4 days after initial contact to encourage submission of the survey instrument. Furthermore, a power analysis was not warranted, as data was to be presented in descriptive format.

Chapter Summary

This study was a non-experimental, simple probability sampling turned sample of convenience inquiry, utilizing a descriptive study design. Haddon's matrix of time-phase factor was utilized to form a comprehensive survey instrument. The study sought to gain information about injury prevention inclusion in CCNE-accredited pre-licensure baccalaureate nursing curricula. The purpose of the study was to describe the current state of injury prevention inclusion in nursing curricula, as there is great paucity in published literature regarding studies looking at injury prevention in nursing curricula. *The Injury Prevention Content in Undergraduate Baccalaureate Nursing Curricula* survey tool was created and utilized to measure the state of injury prevention inclusion. The study findings provided a framework for nursing curricular revision to continue attempts to educate nurses about injury prevention in their practices.

Chapter 4

As stated throughout, the purpose of the study was to describe the current state of injury prevention inclusion in CCNE-accredited pre-licensure baccalaureate-nursing curricula and the state to which injury prevention skills and theory was integrated into academic curriculum, as recommended by the *Baccalaureate Essentials* and other professional organizations. Understanding the degree to which content was being included, whether with primary, secondary. and/or tertiary preventative measures, helped explore the state of the science related to unintentional injury prevention education.

Initially, invitations to participate were sent electronically to 425 randomly selected CCNE-accredited nursing programs over a 2-week period, and reminders to complete the survey were sent electronically every 4 days from the initial invitation. This represented over 50% of the total number of CCNE-accredited programs (*n=793*) listed on the organization's webpage. Response rate was low (*n= 10*). Ten programs completed the survey, an additional seven chief nurse administrative officers corresponded, stating their programs did not meet inclusion criteria and were excluded. In an attempt to increase response rates, an amendment was submitted and approved by Nova Southeastern IRB's department to extend the invitation to participate to the remaining CCNE-accredited baccalaureate programs. Response rates again remained lower than anticipated *(n* = 19). Of the invited participants, 10 did not meet the inclusion criteria and were excluded. The final sample size was lower than anticipated (*n*= 29).

All responses (n = 29) were complete. Lack of missing data was due to the REDCap functionality requiring full responses before moving forward in the survey. The only exception to this was to the role of the respondent to maintain individual anonymity. Data were exported to SPSS 2018. The data were compared to the feature available on REDCap titled *Data Exports, Reports, and Stats* to ensure data consistency.

Data Analysis

Descriptive analysis was undertaken to identify demographic variables of the sample and the frequency of injury prevention inclusion in nursing curriculum specific to the top causes of UIDs in the United States. Frequencies for inclusion of primary, secondary, and tertiary injury prevention according to Haddon's time-phase matrix was analyzed for each of the top leading causes of UID. Percentage rates for inclusion of primary, secondary, and tertiary prevention of each of the major cause of UID were also included. The aim of this analysis was to identify areas of inclusion and, therefore, gaps of injury prevention content in pre-licensure baccalaureate curricula. Each level of prevention included examples of preventative strategies that should be addressed when educating about a particular injury type. Frequencies were determined dependent on the number of interventions included per level of prevention and injury topic. Prevention strategies were current evidenced-based injury prevention strategies for each injury type (Appendix D) and were deliberately provided to participants in order to provide validity to the instrument and ensure reliability.

Demographic Descriptive Data

Type of program classification. Colleges and universities with traditional baccalaureate programs (typically 4 years in length) (n= *27*) as well as colleges and

universities with both traditional and accelerated baccalaureate programs (approximately 14-18 months in length) (*n=2*) responded and were included in data analysis (Table 1).

Table 1

Type of Program

Type of Program	Frequency	Percentage
Traditional	27	93%
Traditional & Accelerated	2	7%
FEP-BSN	0	0
Medic-BSN	0	0

Note: FEP-BSN refers to Foreign Educated Physician to Baccalaureate Nursing Student, Medic-BSN refers to individuals who served as army medics or paramedics to Baccalaureate Nursing Student.

Respondents' role. Respondents self-reported their role in their organization. The respondents included 10 deans of nursing, 10 undergraduate directors, chairs, or supervisors, seven faculty members, one curriculum committee member, and one other that chose not to specify their role (Table 2).

Table 2

Respondents' Role

Respondents' Role	Frequency	Percentage
Dean	10	34.4%
UG-Director/Chair/Supervisor	10	34.4%
Faculty Member	7	24%
Curriculum Committee Member	1	3.6%
Other[a]	1	3.6%

[a]One participant chose not to disclose their role in the program.

Sudden Unintentional Infant Death and Suffocation Ages 0-1

Respondents' indicating whether injury prevention inclusion at each level of prevention was included for SUID and suffocation were indicated by very little (one intervention strategy), somewhat (two intervention strategies), quite a bit (three or more intervention strategies), or no intervention inclusion at all. In addition, frequencies for whether programs were unsure of inclusion were reported as well.

Primary intervention recommendations for SUID and suffocation included interventions: supine position for all sleep; no bedsharing; avoidance of blankets, pillows or stuffed animals; room temperatures set to 68-72 degrees Fahrenheit, promotion of breastfeeding; avoidance of exposure to cigarettes, alcohol, and drugs; and cribs positioned away from window treatments and window/electrical cords.

Secondary prevention recommendations included understanding of the time factor to first-responder CPR, time to a trauma unit/emergency room, and acute care management of suffocation/SIDS.

Tertiary prevention recommendations included prompt notification if complications arose after discharge, safe sleep practices as recommended by the APA, CPR training for parents and caregivers, and risk factors associated with suffocation/SIDS.

SUID refers to deaths caused by suffocation, sudden infant death syndrome, and unexplained infant death after autopsy and comprehensive investigation. The survey responses specific to SUID, the primary cause of death in the pediatric population ages 0-1, indicated that all programs included injury prevention content to some extent (not at all responses = 0). Across levels of prevention, however, there were seven

responses who reported very little inclusion and two responses that reported they were unsure of SUID prevention inclusion. Table 3 describes the frequency of primary SUID and suffocation injury prevention coverage in nursing curricula.

Table 3

Sudden Unintentional Infant Death Ages 0-1. Primary Prevention

Sudden Infant Unintentional Death-Primary Prevention	Frequency	Percentage
None of the Recommendations	0	0
Very Little	0	0
Somewhat	2	6.9
Quite a bit	27	93.1
Unsure	0	0

Note: Primary injury prevention strategies included: (a) supine position for all sleep; (b) no bedsharing; (c) no blankets, pillows, or stuffed animals; (d) room temperature set at 68-72 degrees Fahrenheit; (e) promotion of breastfeeding; (f) avoid exposure to cigarettes, alcohol, and drugs; (g) crib positioned away from window treatments and window/electrical cords.

SUID and suffocation primary prevention are clearly covered as indicated in Table 3. Collaborative and campaign efforts such as the Back to Sleep Campaign initiated in 1994 by the Academy of Pediatrics (2019), when what was then called “crib death” claimed nearly 4,700 SUIDs in 1993 alone. Policy statements from professional organizations such as this promote incentives to change practice and are effective, as evidenced by the fact that deaths from SUID were reported almost 22% lower in 2017 (CDC, 2019).

Table 4

Sudden Unintentional Infant Death Ages 0-1. Secondary Prevention

Sudden Unintentional Infant Death-Secondary Prevention	Frequency	Percentage
None of the Recommendations	0	0
Very Little	6	20.7%
Somewhat	11	37.9%
Quite a bit	10	34.5%
Unsure	2	6.9%

Note: Secondary injury prevention strategies included: (a) time to first-responder CPR, (b) time to trauma unit/emergency room, (c) acute care management of suffocation/SIDS.

Approximately 28% of the time, respondents statedthat secondary prevention strategies were not included or uncertain if they included secondary SUID prevention in the curriculum. Secondary prevention implies patient care management at the bedside until discharge and having a greater understanding of how to prevent further harm from the original injury. (Table 4)

Table 5

Sudden Unintentional Infant Death Ages 0-1. Tertiary Prevention

Sudden Unintentional Infant Death-Tertiary Prevention	Frequency	Percentage
None of the Recommendations	0	0
Very Little	1	3.4%
Somewhat	12	41.4%
Quite a bit	16	55.2%
Unsure	0	0

Note: Tertiary injury prevention strategies included: (a) prompt notification if complications arise, (b) safe sleep practices, (c) CPR training for parents and caregivers, (d) risks associated with suffocation/SIDS.

Only 3.4% of respondents reported very little inclusion for tertiary prevention inclusion of SUID and suffocationm with the remaining 96.6% including this content in their curriculum. The lack of comprehensive inclusion for tertiary SUID and suffocation accounted for one program (Table 5).

SUID and suffocation inclusion in nursing curriculum, based on study results, indicated that programs were providing at least two to three recommended prevention strategies for primary and tertiary prevention. The largest deficit for inclusion in SUID and suffocation involved secondary prevention measures as indicated in Table 4. More needs to be done to educate nursing students about management of care of SUID and victims of suffocation along with the importance of educating families about the importance of prompt emergency response measures, such as performing CPR prior to emergency service arrival for the prevention of hypoxia.

Drowning Ages 1-4

Respondents' reported whether injury prevention inclusion at each level of prevention was included for drowning, indicated by very little (one intervention strategy), somewhat (two intervention strategies), quite a bit (3 or more intervention strategies), or no intervention inclusion at all. In addition, frequencies for whether programs were unsure of inclusion were reported as well.

Primary prevention strategies for drowning included proper installation/use of pool fences, adult supervision at all times, CPR trained parents and caregivers present,

swim lessons (especially for ages 2-4), and use of a Coast Guard-approved life vest during clean up.

Secondary prevention strategies included time to first-responder CPR, time to trauma unit/emergency room, and acute care management for post drowning victims. Tertiary prevention strategies included prompt notification of potential post-drowning complications, installation of a pool fence, parental/caregiver supervision, matriculation to swimming lessons, and the importance of CPR-training for parents and caregivers.

One university indicated no inclusion regarding secondary prevention of drowning, with 16 reporting very little inclusion: four pertaining to primary prevention, five to secondary prevention, and seven pertaining to tertiary prevention. In addition, six responses indicated they were unsure if inclusion across levels of prevention was included in their programs, and these were evenly distributed among primary, secondary, and tertiary prevention measures.

Table 6

Drowning Ages 1-4. Primary Prevention

Drowning Ages 1-4 Primary Prevention	Frequency	Percentage
None of the Recommendations	0	0
Very Little	4	13.8%
Somewhat	11	37.9%
Quite a bit	12	41.4%
Unsure	2	6.9%

Note: Primary injury prevention strategies included: (a) proper installation/use of pool fences, (b) adult supervision at all times, (c) CPR-trained parents and caregivers, (d)

swim lessons, especially for ages 2-4, and (5) Coast Guard-approved life vests during cleanup.

Approximately 21% of respondents reported very little inclusion or uncertainty if primary drowning prevention was addressed in their curriculum (Table 6). Near-drowning experiences can be avoided if preventative strategies are established.

Table 7

Drowning Ages 1-4. Secondary Prevention

Drowning Ages 1-4 Secondary Prevention	Frequency	Percentage
None of the Recommendations[a]	1	3.4%
Very Little	5	17.2%
Somewhat	15	51.7%
Quite a bit	6	20.7%
Unsure	2	6.9%

Note: Secondary injury prevention strategies included: (a) time to first-responder CPR, (b) time to trauma unit/emergency room, (c) acute care management for post drowning victim.

[a]Reason provided for exclusion: Too much existing curricular content.

Approximately 28% of respondents reported no inclusion, very little inclusion, or uncertainty of inclusion regarding secondary drowning prevention (Table 7).

Table 8

Drowning Ages 1-4. Tertiary Prevention

Drowning Ages 1-4 Tertiary Prevention	Frequency	Percentage
None of the Recommendations	0	0
Very Little	7	24.1%
Somewhat	8	27.6%
Quite a bit	12	41.4%
Unsure	2	6.9%

Note: Tertiary injury prevention strategies included: (a) when to call for post-drowning complications, (b) installation of a pool fences, (c) parental/caregiver supervision, (d) swim lessons, (e) importance of CPR-trained parents and caregivers.

Approximately 31% of respondents reported very little inclusion or uncertainty of inclusion regarding tertiary drowning prevention (Table 8). Knowing how to prepare parents for discharge and assuring their compliance with recommendations are considered tertiary prevention for potential reoccurrence of near drowning experiences.

The survey responses specific to drowning prevention, the primary cause of death in the pediatric population ages 1-4, indicated that the majority, but not all programs included injury prevention related to drowning death in their curriculum. Study results indicated gaps across all levels of drowning injury prevention inclusion: primary, secondary, and tertiary. Drowning prevention requires multiple levels of prevention to be effective. Multiple intervention strategies need to be implemented for drowning prevention to occur—for example, swimming lessons, life vests and pool fences, and lastly constant supervision, which is considered to be the greatest deterrent for drowning.

Motor Vehicle Crash-Related Deaths Ages 5-24

Descriptive frequencies for primary, secondary, and tertiary injury prevention inclusion in baccalaureate CCNE-accredited nursing programs for motor vehicle crash-related deaths in the pediatric, adolescent, and young adult population were categorized as pediatric individuals aged 5-9, children aged 10-14, and adolescents aged 15 to young adults up to age 24. These age variances required particular injury prevention strategies specific to height, weight, and age. For this purpose, motor vehicle crash data was divided into three sections in this study. Respondents indicated whether injury prevention inclusion was present at each level of prevention based on age range, indicated by very little (one intervention strategy), somewhat (two intervention strategies), quite a bit (three or more intervention strategies), or no intervention inclusion at all. In addition, frequencies for whether programs were unsure of inclusion were reported as well.

Motor vehicle crashes ages 5-9. The survey responses specific to motor vehicle-related injury death, the primary cause of death in pediatric population ages 5-9, indicated five reports of no inclusion at all and nine reports of very little inclusion. Reasons for no inclusion were unanimous and reported curricula contained too much existing curricular content. In addition, three responses reported being unsure if the content was covered in the curriculum.

Table 9

Motor Vehicle Crashes Ages 5-9. Primary Prevention

Motor Vehicle Crashes Ages 5-9 Primary Prevention	Frequency	Percentage
None of the Recommendations[a]	1	3.4%
Very Little	2	6.9%
Somewhat	4	13.8%
Quite a bit	21	72.4%
Unsure	1	3.4%

Note: Primary injury prevention strategies included: (a) proper booster seat type per height and weight, (b) booster seat use for every ride including carpooling, (c) proper lap and shoulder belt fit with booster seat, (d) avoiding front seat until age 13.

[a]Reason provided for exclusion: Too much existing curricular content.

Approximately 14% of respondents reported lack of inclusion or uncertainty whether primary prevention strategies for motor vehicle crashes for children aged 5-9 were taught in nursing curriculum (Table 9).

Table 10

Motor Vehicle Crashes Ages 5-9. Secondary Prevention

Motor Vehicle Crashes Ages 5-9 Secondary Prevention	Frequency	Percentage
None of the Recommendations[a]	2	6.9%
Very Little	5	17.2%
Somewhat	14	48.3%
Quite a bit	7	24.1

Motor Vehicle Crashes Ages 5-9 Secondary Prevention	Frequency	Percentage
Unsure	1	3.4%

Note: Secondary injury prevention strategies included: (a) first-responder treatment, (b) time to trauma unit/emergency room, (c) acute care management of motor vehicle injuries.

[a]Reasons provided for exclusion: Too much existing curricular content.

Approximately 28% of respondents reported no use at all, very little use, or unsure if secondary prevention strategies were addressed in their curriculum (Table 10). This statistic is staggering considering the number of hospital admissions in this pediatric age range from motor vehicle crashes. Nurse educators need to include content such as seatbelt syndrome, a serious, life-threatening condition caused by improper seatbelt/booster seat use. Furthermore, content on traumatic brain injury and spinal cord injury from motor vehicle crashes should be included as these injuries are the most serious and common when treating pediatric motor vehicle crash victims.

Table 11

Motor Vehicle Crashes Ages 5-9. Tertiary Prevention

Motor Vehicle Crashes Ages 5-9 Tertiary Prevention	Frequency	Percentage
None of the Recommendations	2	6.9%
Very Little	2	6.9%
Somewhat	11	37.9%
Quite a bit	13	44.8%

Motor Vehicle Crashes Ages 5-9 Tertiary Prevention	Frequency	Percentage
Unsure	1	3.4%

Note: Tertiary injury prevention strategies included: (a) When to call for possible complications post discharge, (b) proper use of a booster seat, (c) common errors and misconceptions about car seats, (d) avoiding the front seat until age 13, (e) replacement of booster seat/seat belt post vehicle collision

[a]Reasons provided for exclusion: Too much existing curricular content

With regards to tertiary prevention inclusion for motor vehicle crashes of children aged 5 to 9, there were 17% of respondents who reported no inclusion, very little inclusion, or uncertainty if inclusion of this type of injury prevention was covered in curriculum (Table 11). Discharge teaching is paramount in order to prevent injury reoccurrences, specifically, the replacement of the booster seat and seatbelt for any occupant seated in the vehicle during the crash.

Motor vehicle crashes in ages 10-14. The survey responses specific to motor vehicle-related injury death, the primary cause of death in the pediatric population ages 10-14, demonstrated that six programs reported no inclusion, with 10 reporting very little inclusion, and three respondents reported being unsure if injury prevention regarding motor vehicle crashes for ages 10-14 was covered in their curriculum.

Table 12

Motor Vehicle Crashes Ages 10-14. Primary Prevention

Motor Vehicle Crashes Ages 10-14 Primary Prevention	Frequency	Percentage
None of the Recommendations[a]	2	6.9%
Very Little	2	6.9%
Somewhat	12	41.4%
Quite a bit	12	41.4%
Unsure	1	3.4%

Note: Primary injury prevention strategies included: (a) Booster seat use until 80-100 lbs., and/or 4'9", (b) proper lap and shoulder seat belt fit before transition, (c) avoid front seat until age 13

[a]Reasons provided for exclusion: Too much existing curricular content

Approximately 17% of respondents reported no inclusion, very little inclusion, or uncertainty of primary prevention related to motor vehicle crashes for children aged 10 to 14 (Table 12). Exclusion was attributed to having too much existing curricular content in the program to include these prevention strategies.

Table 13

Motor Vehicle Crashes Ages 10-14. Secondary Prevention

Motor Vehicle Crashes Ages 10-14 Secondary Prevention	Frequency	Percentage
None of the Recommendations[a]	2	6.9%
Very Little	4	13.8%
Somewhat	16	55.2%

Motor Vehicle Crashes Ages 10-14 Secondary Prevention	Frequency	Percentage
Quite a bit	6	20.7%
Unsure	1	3.4%

Note: Secondary injury prevention strategies included: (a) first-responder treatment, (b) time to trauma unit/emergency room, (c) acute care management of motor vehicle injuries

[a]Reasons provided for exclusion: Too much existing curricular content

Approximately 24% of respondents reported no inclusion, very little inclusion, or uncertainty of secondary prevention related to motor vehicle crashes for children aged 10 to 14 (Table 13). Exclusion was attributed to having too much existing curricular content in the program to include these prevention strategies.

Table 14

Motor Vehicle Crashes Ages 10-14. Tertiary Prevention

Motor Vehicle Crashes Ages 10-14 Tertiary Prevention	Frequency	Percentage
None of the Recommendations[a]	2	6.9%
Very Little	4	13.8%
Somewhat	17	58.6%
Quite a bit	5	17.2%
Unsure	1	3.4%

Note: Tertiary injury prevention strategies included: (a) When to call for possible complications, (b) proper use of booster seat if warranted, (c) proper use of seatbelt if ready for transition, (d) avoiding front seat until age 13

Reasons provided for exclusion: "Too much existing curricular content"

As with secondary prevention, approximately 24% of respondents reported no inclusion, very little inclusion, or uncertainty of tertiary prevention inclusion related to motor vehicle crashes for children aged 10 to 14 (Table 14). Exclusion was attributed to having too much existing curricular content in the program to include these prevention strategies.

Study results indicated a gap across primary, secondary, and tertiary prevention inclusion for ages 10 to 14, with regards to motor vehicle collisions and the contributing factors for injuries based on age, weight, and height. Nursing curricula should include important content such as the appropriate time to upgrade a child from a booster seat to a seatbelt and to refrain from using the front seat until the minimum age of 13.

Motor vehicle crashes in ages 15-24. The survey responses specific to motor vehicle-related injury death, the primary cause of death in the adolescent to young adult population ages 15-24, reported six respondents reporting no inclusion and 13 respondents reporting very little inclusion. Three respondents indicated that they were unsure if injury prevention content for ages 15-24 covered in their curriculum.

Table 15

Motor Vehicle Crashes Ages 15-24. Primary Prevention

Motor Vehicle Crashes Ages 15-24 Primary Prevention	Frequency	Percentage
None of the Recommendations	1	3.4%
Very Little	6	20.7%
Somewhat	6	20.7%
Quite a bit	15	51.7%
Unsure	1	3.4%

Note: Primary injury prevention strategies included: (a) Proper use of a vehicle seatbelt, (b) minimize distractions (texting, loud music, phone conversations, teen co-passengers), (c) driving lessons and practice before driving independently, (d) avoidance of alcohol and illicit drug consumption (designated drivers), and (e) avoidance of nighttime driving until experienced.

[a]Reasons provided for exclusion: "Too much existing curricular content"

Study results for this segment revealed that approximately 28% of respondents reported no inclusion, very little inclusion, or uncertainty if primary prevention for motor vehicle collision in individuals aged 15 to 24 took place in their curriculum (Table 15).

Table 16

Motor Vehicle Crashes Ages 15-24. Secondary Prevention

Motor Vehicle Crashes Ages 15-24 Secondary Prevention	Frequency	Percentage
None of the Recommendations	3	10.3%

Motor Vehicle Crashes Ages 15-24 Secondary Prevention	Frequency	Percentage
Very Little	4	13.8%
Somewhat	13	44.8%
Quite a bit	8	27.6%
Unsure	1	3.4%

Note: Secondary injury prevention strategies included: (a) first-responder treatment, (b) time to trauma unit/emergency room, (c) acute care management of motor vehicle injuries

As with primary prevention in this age bracket, approximately 28% of respondents who reported no inclusion, very little inclusion, or uncertainty of secondary prevention for motor vehicle collision in individuals aged 15 to 24, included in their curriculum (Table 16), indicating gaps in injury prevention inclusion for this age group.

Table 17

Motor Vehicle Crashes Ages 15-24. Tertiary Prevention

Motor Vehicle Crashes Ages 15-24 Tertiary Prevention	Frequency	Percentage
None of the Recommendations	2	6.9%
Very Little	3	10.3%
Somewhat	9	31%
Quite a bit	14	48.3%
Unsure	1	3.4%

Note: Tertiary injury prevention strategies included: (a) proper use of a vehicle seatbelt, (b) minimize distractions (texting, loud music, phone conversations), (c) avoid/minimize

multiple vehicle occupants (until driving skills well established), (4) avoidance of alcohol/illicit drug

There were approximately 21% of respondents indicating no inclusion, very little inclusion, or uncertainty of tertiary prevention for motor vehicle collision in individuals aged 15 to 24, included in their curriculum (Table 17), indicating again gaps in this level of prevention.

All age ranges from 5 to 24 with regards to motor vehicle collision injury prevention inclusion demonstrated gaps in curriculum across levels of prevention, including many responses indicating that content was not being covered in the curriculum due to too much existing curricular content. In addition, uncertainty of inclusion was reported nine times, evenly distributed across levels of prevention and per age group. Although majority of programs reported including prevention strategies for motor vehicle strategies, the percentage of programs not covering the content is concerning, considering the number of UID and serious injuries occurring from this injury type. The number of graduates and potential injury prevention advocates that enter the workforce annually lead the researcher to conclude it is imperative to develop continuity among nursing programs with regards to injury prevention education about motor vehicle collisions.

Poisoning-Related Deaths

Respondents' responses indicated whether injury prevention inclusion, at each level of prevention, was included, indicated by very little (one intervention strategy), somewhat (two intervention strategies), quite a bit (three or more intervention strategies), or no intervention inclusion at all. In addition, frequencies for whether programs were unsure of inclusion were reported as well.

The survey responses specific to poisoning death, the primary cause of death in the adult population ages 25-64, included four respondents reporting no content related to poisoning prevention, with 11 reporting very little content. The majority reported too much content as reason for exclusion, and one reported being unaware that poisoning prevention was recommended for inclusion in nursing curriculum. In addition, three reported they were unsure if poisoning prevention was included in their curriculum.

Table 18

Poisoning. Ages 25-64. Primary Prevention

Poisoning Ages 25-64 Primary Prevention	Frequency	Percentage
None of the Recommendations[a]	1	3.4%
Very Little	3	10.3%
Somewhat	9	31%
Quite a bit	15	51.7%
Unsure	1	3.4%

Note: Primary injury prevention strategies included: (a) drug addiction prevention counseling, (b) education on risks factors associated with prescription drug use, (c) education about proper storage of prescription medications in the home.

[a]Reason provided for exclusion: Unaware injury prevention topic was recommended

Approximately 17% or respondents reported no inclusion, very little inclusion, or uncertainty of primary prevention for poisonings in individuals aged 25 to 64, included in their curriculum (Table 18). This is concerning due to the fact that opioid addiction has reached epidemic proportions due to illicitly-manufactured fentanyl now found in heroin and cocaine among other illicit drugs.

Table 19

Poisoning. Ages 25-64. Secondary Prevention

Poisoning Ages 25-64 Secondary Prevention	Frequency	Percentage
None of the Recommendations[a]	1	3.4%
Very Little	4	13.8%
Somewhat	11	37.9%
Quite a bit	13	44.8%
Unsure	0	0

Note: Secondary injury prevention strategies included: (a) first-responder actions (recognition of overdose), (b) appropriate use of Narcan (Naloxone), (c) acute care management of poisoning related injuries

[a]Reason provided for exclusion: Too much existing curricular content

Again with primary prevention, 17% of respondents reported no inclusion, very little inclusion, or uncertainty of secondary prevention for poisonings in individuals aged 25 to 64, included in their curriculum (Table 19).

Table 20

Poisoning. Ages 25-64. Tertiary Prevention

Poisoning Ages 25-64 Tertiary Prevention	Frequency	Percentage
None of the Recommendations[a]	2	6.9%
Very Little	4	13.8%
Somewhat	15	51.7%
Quite a bit	6	20.7%
Unsure	2	6.9%

Note: Tertiary injury prevention strategies included: (a) discharge to rehabilitation center if warranted, (b) discharge teaching including resources for addiction counseling, (c) follow-up home health evaluation with social services for ongoing care and prevention

[a]Reasons provided for exclusion: Too much existing curricular content

There were approximately 28% of respondents reporting no inclusion, very little inclusion, or uncertainty of secondary prevention for poisonings in individuals aged 25 to 64, included in their curriculum (Table 20).

The data regarding injury prevention inclusion in baccalaureate nursing curriculum relating to UID from poisoning indicated that there is a gap in all levels of prevention. The largest reported gap found in tertiary prevention. Due to the nature of this fast-growing epidemic, nurse educators need to evaluate current evidence and trends in addiction to better prepare their students for practice.

Fall-Related Deaths

Respondents indicating whether injury prevention inclusion for falls in individuals ages 65 and above was included in their curriculum were given strategies at

each level of prevention, indicated by very little (one intervention strategy), somewhat (two intervention strategies), quite a bit (three or more intervention strategies), or no intervention inclusion at all. In addition, frequencies for whether programs were unsure of inclusion were reported as well.

The survey responses specific to fall-related death, the primary cause of death in the adult population ages 65 and above, indicated that the majority of programs are including injury prevention on falls. Four responses indicated very little inclusion for secondary prevention, and three indicated they were unsure if injury prevention relating to falls was covered in their curriculum (Table 20).

Table 21

Falls. Ages 65 and Older. Primary Prevention

Falls Ages 65+ Primary Prevention	Frequency	Percentage
None of the Recommendations	0	0
Very Little	0	0
Somewhat	0	0
Quite a bit	28	96.6
Unsure	1	3.4

Note: Primary injury prevention strategies included: (a) promotion of safe environment (no throw rugs and cords, ensuring clear pathways between rooms, (b) use of the CDC's STEADI toolkit and the MORSE risk assessment tool, (c) proper assessment of medication lists affecting fall risk, (d) ability to call for help in the event of a fall (i.e., Life-Alert™), (e) daily check-ins from family/caregivers to assess status

This study revealed that primary fall prevention inclusion in undergraduate baccalaureate CCNE-accredited nursing programs is strong, with approximately 97% reporting inclusion and 3.4% uncertain if the content is covered in their curriculum (Table 21).

Table 22

Falls. Ages 65 and Older. Secondary Prevention

Falls Ages 65+ Secondary Prevention	Frequency	Percentage
None of the Recommendations	0	0
Very Little	4	13.8%
Somewhat	8	27.6%
Quite a bit	16	55.2%
Unsure	1	3.4%

Note: Secondary injury prevention strategies included: (a) first-responder actions, (b) time from fall injury to trauma unit/emergency room, (c) acute care management of fall-related injuries

Approximately 17% of respondents reported very little inclusion, or uncertainty of secondary prevention for falls in individuals aged 25 to 64, included in their curriculum (Table 22).

Table 23

Falls. Ages 65 and Older. Tertiary Prevention

Falls Ages 65+ Tertiary Prevention	Frequency	Percentage
None of the Recommendations	0	0
Very Little	0	0
Somewhat	5	17.2%
Quite a bit	23	79.3%
Unsure	1	3.4%

Note: Tertiary injury prevention strategies included: (a) discharge to rehabilitation center if warranted, (b) discharge teaching related to safe environment by removing throw rugs, cords, and ensuring clear pathways between rooms, (c) assessment of fall risks using validated tools such as the CDC's STEADI toolkit, (d) assessment of medication lists affecting fall risk, (e) discharge teaching regarding the ability to call for help in the event of a fall utilizing devices such as medical alert systems, (f) discharge teaching relating to daily family/caregiver check-ins

Approximately 97% reported including primary and tertiary fall prevention content in curriculum somewhat and quite a bit, indicating at least two injury prevention strategies. One respondent reported be unsure if tertiary prevention was covered in the curriculum (Table 23). Overall, there was a slight gap in inclusion pertaining to secondary prevention related to falls.

Reliability Testing

Reliability testing was performed utilizing Cronbach's alpha, resulting in a score of .903. A 21-item total reliability score was also analyzed when taking into account the

three levels of prevention: primary, secondary, and tertiary, along with the causes of unintentional injury death. Overall Chronbach's alpha score, along with Chronbach's alpha scores addressing the 21-item reliability score per level of prevention are listed below. (Table 24).

Table 24

Cronbach's Alpha Score

Cronbach's Alpha	.903

21-item Cronbach's Alpha

21-item Chronbach's Alpha	
Primary Prevention	.732
Secondary Prevention	.808
Tertiary Prevention	.813

Hypothesis Testing

Descriptive statistics, including frequencies and percentages, were analyzed to determine the describe the current state of injury prevention inclusion in CCNE-accredited pre-licensure baccalaureate-nursing curricula and the state to which injury prevention skills and theory are integrated into academic curriculum, as recommended by the *Baccalaureate Essentials* and other professional organizations.

The research questions were as follows:

1. Are the leading causes of unintentional injury death, across the lifespan, included in CCNE-accredited undergraduate pre-licensure baccalaureate nursing curricula?

2. If so, is this content addressing primary, secondary, and tertiary preventive strategies?
3. If not, what are the barriers to their implementation?

H_1 The leading causes of unintentional injury death, across the lifespan, are included in the form of primary, secondary, and tertiary prevention in CCNE-accredited undergraduate pre-licensure baccalaureate nursing curricula.

H_0 The leading causes of unintentional injury death, across the lifespan, are not included in the form of primary, secondary, and tertiary prevention in CCNE accredited undergraduate pre-licensure baccalaureate nursing curricula.

Null Hypothesis Rejected

In all categories investigated, injury prevention content was included in baccalaureate curriculum to some degree. Thus, the null hypothesis was rejected, and the alternate hypothesis was accepted. Inclusion was based on having at least the majority of responses as "somewhat" or "quite a bit" throughout the levels of prevention and injury category, indicating a minimum of two intervention strategies addressed per cause of UID. There were, however, various gaps identified in curriculum related to secondary prevention for suffocation; primary, secondary, and tertiary injury prevention related to drowning; primary, secondary, and tertiary injury prevention related to for all age groups related to motor vehicle injury death; gaps related to poisoning prevention across all levels of prevention; and a small deficit in secondary prevention related to falls, as a cause of unintentional injury death.

Chapter Summary

Unintentional injury deaths continue to be the leading cause of death in the United States for ages 0-44 (CDC, 2019). Professional nursing associations and accrediting nursing bodies call for action for nursing academia to play a role in UID prevention through sound scientific evidence on preventative strategies in an effort to reduce morbidity and mortality rates. This study investigated the inclusion and degree of inclusion of unintentional injury prevention in nursing curriculum with an opportunity to identify gaps in order to expand the body of science related to injury prevention in nursing curricula across the country. Overall, the question of whether injury prevention inclusion of the leading causes of UID is included in pre-licensure baccalaureate CCNE-accredited nursing programs was answered. Furthermore, details on the level of prevention inclusion was also detailed in the results of this study. Finally, gaps in inclusion and barriers to implementation were discovered and provided in the results section of this dissertation.

Chapter 5

Unintentional injury continues to be the leading cause of death up to the age of 44 in the United States and one of the leading causes of deaths throughout the lifespan. Furthermore, death rates from unintentional injuries remain relatively unchanged from year to year. The purpose of this study was to explore if unintentional injury prevention education was included in the baccalaureate nursing education of CCNE curricula. The *Baccalaureate Essentials (*AACN, 2008)*,* along with the supplemental document, *Public Health: Recommended Baccalaureate Competencies and Curricular Guidelines for Public Health Nursing* (AACN, 2013) published to encourage academic inclusion of public health injury prevention, is used by CCNE-accredited universities as a blueprint to develop and guide curricula. To evaluate if injury prevention strategies were being addressed in curricula, Haddon's matrix, a well-researched and utilized tool in injury prevention studies, was used as the theoretical framework for this study. The framework comprehensively addressed the three levels of prevention relative to nursing education and nursing care in the form of primary, secondary, and tertiary prevention. The findings strongly supported Haddon's framework by demonstrating that injury prevention is included in curricula and that educational gaps do exist to varying degrees depending on injury type.

Summary of Findings

Professional nursing practice implies that nurses abide by evidenced-based research findings to guide practice and to provide safe care. A major responsibility within

the scope of nursing practice includes educating the public about health concerns that are prevalent. These duties are meant to be addressed in nursing curriculum and are ethical in nature, as they involve attempts to decrease morbidity and mortality rates of the more common causes of injury and death in the United States. As educators, more focus needs to take place to address injury prevention content, as is done with the disease process, in efforts to decrease rates of morbidity and mortality incurred from injuries.

Study results demonstrated gaps in injury prevention content in nursing curricula in all of the major causes of unintentional injury deaths, with motor vehicle crashes exhibiting the largest gaps, followed by death by drowning and closely followed by death by poisoning, with sudden unintentional infant death with deficits and falls demonstrating relatively better results yet containing gaps in secondary prevention inclusion. Of great significance was the data revealing that 23 responses stated uncertainty if specific content was covered in curriculum, suggesting a need to create a better blueprint of each programs' curriculum for clearer identification of injury prevention inclusion. In addition, there were of total of 22 areas of injury prevention inclusion where participants stated content was not covered at all. This has significant implications and needs to be addressed in order to improve curriculum in nursing programs with regards to the ramifications of excluding life-saving educational content.

Integration of Findings with Current Literature

Published literature of unintentional injury prevention inclusion in nursing curricula is extremely sparse. Literature was found related to nursing practice, predominately in the acute care setting (Anderson et al., 2014; Cox et al., 2015; Garrigues et al., 2017; Gunningberg et al., 2015; Hewitt et al., 2015; Lapkin et al., 2015; Natan et

al., 2017; Öncü et al., 2018). Literature in medical academia was found; however, the published literature was not current (Gittleman, Pomerantz, & Schubert, 2010; Graham et al., 2010; Phelan et al., 2007; Yoshii, et al., 2010). There was a plethora of current literature on the use of Haddon's matrix as a means to evaluate and develop preventative strategies for injury prevention. (Anderson et al., 2014; Archer et al., 2016; Barnett et al., 2005; Basilio et al., 2012; Bugeja et al., 2011; Cox et al., 2015; Deljavan et al., 2012; Fagan et al., 2014; Garrigues et al., 2017; Goniewicz et al., 2016; Guevarra et al., 2015; Gunninberg et al., 2015; Hewitt et al., 2015; Lach et al., 2018; Masoumi et al., 2016; Peck et al., 2008; Sadeghi-Bazargani et al., 2015; Zhao et al., 2018;). However, there was little to no information found regarding information about the leading causes of UID in the United States in pre-licensure nursing curricula.

Findings from this dissertation study were unique, in that this study focused on addressing unintentional injury prevention inclusion in nursing academia, not acute nursing practice. An extensive review of textbooks utilized in nursing academia was conducted in an attempt to evaluate injury prevention content in potential reading materials. This review revealed injury prevention content is present across the collection of books often used in nursing curricula; however, comprehensive injury prevention content required a minimum of five to six textbooks to cover injuries across the lifespan (DeWit et al.,2017; Howard, 2009; Leifer, 2015; Lewis et al., 2014; Maurer et al., 2013; McKinney et al., 2013; Potter et al., 2013; Price et al., 2012; Stanhope et al., 2014; Wilson et al. 2012). Furthermore, textbook adoption varies from program to program, and an in-depth evaluation of topical outlines and assignments would need to be performed to ascertain if students are being exposed to this material.

Implications of the Findings

The implications of this study clearly demonstrate the need to evaluate curricula for injury prevention inclusion more closely. It also revealed the need to incorporate unintentional injury prevention content evenly across the levels of prevention. Rates of death for unintentional injuries are staggering. More than 3,500 babies die annually from SUID before they reach the age of 1. Despite attempts to educate the public about safe sleep practices, babies continue to sleep in cribs with items that can prove to be deadly, such as stuffed animals, pillows, blankets and bumper pads. They are placed prone or on their sides as opposed to a supine position, often with after-market products falsely claiming to protect babies during sleep when they actually can cause injury and death. Manufacturers of these products ought to provide labels warning parents of the risk of suffocation if placed in sleeping areas, or these products should be taken off the market as the evidence proves the danger.

Nurse educators should be teaching students about the evidenced-based strategies for SUID prevention taken from the Academy of Pediatrics and SIDS alliance, such as safe sleep practices, promotion of breastfeeding, room temperatures set to 68-72 degrees Fahrenheit, pacifier use, fans to circulate air, and especially the avoidance of smoking in the household and exposure to second and third hand smoking to infants via clothing.

Over 3,500 children die annually between the ages of 1-4 from drowning, mostly in residential swimming pools. This amounts to about 10 deaths per day (CDC,2016a). Of the non-fatal near drowning incidences, most suffer brain damage, and many are left in a vegetative state. This denotes an immense burden to families and the health care system in terms of costs and emotional duress. It is important to note and educate nursing

students that the most effective deterrent to drowning is constant parental/caregiver supervision. Items such as pool fences and patio door alarms should be encouraged, and swimming lessons should occur by the age of 2. Of great importance is the need to prepare students for direct patient care of individuals suffering from an acute hypoxic episode along with the potential risk factors associated with infection, immobility, and the implications to family members, particularly parents and siblings suffering from the traumatic event and the uncertainty of a positive prognosis.

For every child and young adult killed in a motor vehicle collision, eight are hospitalized. There are over 7,400 motor vehicle-related deaths from ages 5-24 annually. This is a disturbing statistic, as 80% of these serious injuries and deaths could have been prevented if proper restraint was utilized during travel.

Parents often struggle to properly restrain their children due to lack of knowledge, an inability to address behavioral issues when children rebel against using a car seat or seatbelt, and the notion that booster use is for babies, thus leading parents to graduate their children to an adult seatbelt long before height and weight recommendations. Efforts to promote booster seat use have been ongoing and state laws have slowly been changing to promote safety and prevent motor vehicle injuries for this vulnerable population. Nurse educators need to emphasize the need for booster seat use in this vulnerable population and educate students about the various barriers to booster seat use, including the misconception that a seatbelt is as effective as a booster seat for children weighing less than 80 pounds and that their children are big enough (tall enough) to use a seatbelt safely.

Once out of a booster seat, seatbelt syndrome, an injury resulting from an improperly fitted or placed seatbelt or from lack of booster seat use, may cause severe internal damage, such as lacerations to the liver and spinal cord injuries, as well as traumatic brain injury. Again, many of these injuries have lasting detrimental effects. Children are often allowed to sit in the front seat prior to age 13, which can lead to harm from powerful airbag deployment during collisions.

Adolescents and young adults are often found driving distracted with mobile devices, loud music, and peer passengers, which increases the rates of fatal collisions drastically. Nurses at the forefront of care should be screening all individuals in this age bracket about safe traveling habits. Asking about seatbelt use, texting while driving, and peer travel is a crucial screening element and a teaching opportunity at every visit.

Educators would benefit from having a Child Passenger Safety Technician (CPST) visit the classroom or simulation center, or have students attend a Child Passenger Safety (CPS) event where they can learn experientially the best methods to educate parents and caregivers about CPS. Due to the nature of the complexity of factors involved in proper child passenger safety installment and practices, hands-on exposure will promote longer retention of information when educating parents.

Perhaps one of the saddest trends affecting public health today are deaths caused by opioid poisoning. More than 70,000 individuals die annually from opioid overdose CDC, 2017d). It is imperative that health care professionals, specifically nurses who are at the forefront of health care become informed, learn to manage and especially learn to provide primary, secondary, and tertiary preventative care to these individuals. Individuals suffering from addiction should be treated as ones with a medical condition

and not treated with bias. A true understanding of how individuals become addicted may help nurses understand the ramifications of treating pain and the risk of addiction. This is especially important for nurse practitioners prescribing opioid medications and registered nurses providing care and screening individuals presenting with pain. Understanding the history of this growing epidemic is important when educating students in order to gain an understanding that the problem with opioid overdose is growing due to a wave in synthetically, illicitly manufactured fentanyl, often added to drugs, leading to increases in lethal doses.

Falls account for over 30,000 deaths per year in our elderly population. Nursing academia has done a better job training nursing students about fall prevention in the acute and community-based arena, yet deficits exist primarily in secondary prevention efforts related to falls and some programs are unsure of inclusion across levels of prevention. Furthermore, UIDs from falls continues to be the number one cause of death for individuals 65 years and older. Further research is needed to explore what preventative strategies work best at reducing mortality and morbidity rates from falls.

Finally, overall, numbers indicate that over 114,000 deaths are occurring annually from unintentional injuries, all of which have an element of preventability. More effort needs to be made on the part of nurse educators when planning nursing curriculum to include injury prevention content.

Implications for Nursing Education

Further research is warranted on how injury prevention is addressed in curriculum and where content should be placed for optimal learning. Results from medical curricular studies provide a few suggestions regarding the incorporation of injury prevention. Some

recommend separate modules to be incorporated throughout the program, others recommend a more longitudinal approach and incorporating injury prevention as a pervasive thread throughout curriculum (Gittleman et al., 2010; Graham et al., 2010; Phelan et al, 2007; Yoshii et al., 2010). Utilization of Haddon's matrix clearly demonstrates an effective approach, as was seen in studies conducted by the ENA when assessing the success of utilizing the matrix to develop tertiary discharge teaching plans in the emergency department by registered nurses (Alexander et al, 2014; Runyan, 2018). Furthermore, Haddon's Matrix encompasses three tiers or dimensions, the time-phase tier was addressed in this study. As nursing students advance their academic pursuits from BSN to MSN, the *factor* tier can be implemented and Runyan's additional third dimension—decisional criteria—can be incorporated for DNP programs when assessing for and implementing injury prevention strategies. This makes Haddon's matrix a comprehensive approach to developing prevention strategies as nurses advance in their professional scope of practice.

The approach taken in this study may help curriculum committees and nursing faculty develop appropriate and relevant content to address injury prevention. Utilizing the CDC's *10 leading causes of death by age group* will assure that content is current and relevant. Although this study focused on the leading causes of unintentional injury death, the CDC chart may provide nurse educators with more content areas by moving down the chart to include perhaps homicides and suicides, which are also prevalent in the United States and are topics of great importance. The results of this study indicated that nurse educators are concerned with the amount of content to be incorporated into a nursing

program of study. This challenges educators to create succinct, relevant, and effective teaching strategies to cover significant topical content.

Implications for Nursing Practice

Perhaps one of the major benefits resulting from this study was the information obtained to help bridge the academic/practice gap. As graduate nurses enter the workforce, it benefits them, as well as the public, to have a deeper understanding of unintentional injuries and their implications to the health care system. Knowing what topics to cover and providing evidenced-based preventative strategies in their patient education interactions are paramount in preventing injuries and furthering harm. In the acute care setting, nurses span the levels of prevention, initially by providing competent care in the form of secondary prevention to prevent further injury, providing tertiary prevention in the form of discharge teaching to manage the effects of the current injury, and finally addressing primary prevention strategies to prevent unwanted injuries relevant to the stage of life of the patient at the time of discharge.

Implications for Nursing Research

Perhaps one of the most revealing truths when conducting this study involved the realization that there was sparsity in published literature regarding nursing curricular injury prevention content inclusion. Further research should be conducted on the attitudes and beliefs of nursing faculty towards injury prevention inclusion. Multiple responses in this study indicated that there was already too much existing curricular content to further add injury prevention content. This may lead faculty to believe that injury prevention content is not important enough to address, yet statistical data states otherwise.

Furthermore, the public relies on professional nurses to educate and inform them about health and the prevention of illness and injury.

Best methods to conduct these types of research are implications for further research as well. For example, to investigate curricula and curricular mapping, an in-depth understanding of what currently exists in curricula regarding injury prevention based on the *baccalaureate, master's, and doctorate essentials* are all areas where further research will benefit curricular development efforts and address current public health care needs. Researchers should also be versed in the most appropriate timing of survey deployment in an academic calendar, the survey style most likely to elicit participation and knowledge of the academic member most likely to know the curriculum best, in order to obtain strong data.

Implications for Public Policy

Evidence has demonstrated the effectiveness of implementing laws to enhance safety. Intense investigation is conducted in the event of sudden unintentional infant death, including autopsy, in an effort to determine the cause of death. Similarly, laws have been created to prevent pediatric drowning, including use of pool enclosures and other specifications needed to pass inspection on pool construction and the usage of existing pools, both residential and public.

Perhaps one of the greatest areas of concern involve the discrepancies of laws involving motor vehicle transportation safety. It is the researcher's belief that laws pertaining to child passenger safety and all across the lifespan should be held at the federal, not state level. This opinion is based on the evidence that shows safest travel practices. As in medical emergencies, where gold standards of care are implemented

across the nation, unintentional injury recommendations and laws deserve the same attention. This is most evident seen in the pediatric population pertaining to the use of booster seats, where all 50 states have different laws, recommendations, and penalties for improper child restraint use.

Another great area of concern involves the rise of opioid overdoses and the spike in new addictions between the ages between 38 and 44 (CDC, 2018c). This demonstrates the need to develop public policy on opioid dispensing and more comprehensive medical training on dealing with addiction as a health care crisis and not a moral issue. Public policy in the form of legislation is a strong recommendation for timely outcomes.

Finally, efforts need to continue to protect our elderly population from injuries incurred during falls. Stricter regulations should be implemented in public facilities where accessibility to safe passage such as automatic doors and elevators are available and in working order. These handicap accessible accommodations help prevent elders from falling although they are labeled for handicap use.

The nursing profession practices utilizing ethical principles and follows a nursing code of ethics created by the American Nurses Association (2015). Provision 7 states, for example, that nurses in all roles and settings, utilize scholarly inquiry to advance the science of nursing in order to develop standards of practice and affect change through nursing and health policy. It is a professional obligation to impact social justice by staying current with health trends in efforts to minimize morbidity and mortality rates to the public. This is clearly stated in the CCNE Essentials across nursing education programs, and there is an expectation that curriculum will develop and grow as new evidence surfaces.

Limitations

The response rate for this study was small. Efforts to mitigate this limitation were made, and the entire CCNE population was ultimately invited to participate. Despite the small sample size, due to the homogeneity of CCNE-accredited programs with respect to curricular expectations, it is optimistic that generalizability of the data is possible, yet cannot be assured.

Another possible limitation included the available option for participants to respond that they were "unsure" if particular injury prevention content was included. This option conflicts with the research assumption that respondents would have a clear understanding of the curriculum and its content; however, the option also provided valuable information regarding the need to create curriculum blueprints that are transparent and easy to navigate when locating particular content material.

Ultimately, future research on how to conduct studies involving nursing curriculum is warranted. There are various studies conducted on students' learning after implementation of certain teaching strategies, but very little on curriculum and how curriculum is developed and executed. This study has provided an opportunity for future researchers to appraise how a sound theoretical framework can be utilized to obtain data pertaining to curriculum about a particular content area.

Chapter Summary

The study entitled *Injury Prevention Inclusion in Pre-Licensure Baccalaureate Nursing Curricula* set out to determine if injury prevention content is addressed in nursing curricula, to what extent, and what the barriers to inclusion might be. Utilizing a sound theoretical framework, the Haddon's matrix provided a brilliant method to assess

the second research question addressing the comprehensiveness of inclusion, if present. CCNE-accredited nursing programs are addressing injury prevention content in curricula; however, gaps in the comprehensiveness of inclusion exists and further work needs to be done to fill in these gaps, in efforts to close the academic/practice gap and to decrease morbidity and mortality rates associated with unintentional injuries incurred in the United States.

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Appendix A

IRB Approval Form

NOVA SOUTHEASTERN UNIVERSITY

Institutional Review Board

To: **Ali M Galindo, MSN-ARNP** From: **Vanessa A Johnson, Ph.D.,**

MEMORANDUM

Center Representative, Institutional Review Board Date: **April 9, 2019**

Re: **IRB #: 2019-225; Title, "Injury Prevention Inclusion in Pre-Licensure Baccalaureate Nursing Curricula"**

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review under **45 CFR 46.101(b) (Exempt 2: Interviews, surveys, focus groups, observations of public behavior, and other similar methodologies)**. You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

1. 1) CONSENT: If recruitment procedures include consent forms, they must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.
2. 2) ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair and me (954-262-5369 and Vanessa A Johnson, Ph.D., respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.
3. 3) AMENDMENTS: Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Linda Evans
Vanessa A Johnson, Ph.D.

3301 College Avenue • Fort Lauderdale, Florida 33314-7796
(954) 262-0000 • 800-672-7223, ext. 5369 • Email: *irb@nova.edu* • Web site: www.nova.edu/irb

NSU NOVA SOUTHEASTERN UNIVERSITY

IRB No.-Site

IRB No.:	2019-225-Web	**Site:**	Web - Online/Internet Study
Study Title:	Injury Prevention Inclusion in Pre-Licensure Baccalaureate Nursing Curricula	**Committee:**	Institutional Review Board
PI:	Galindo, Ali Marie MSN-ARNP	**Sponsor Id**	

Event

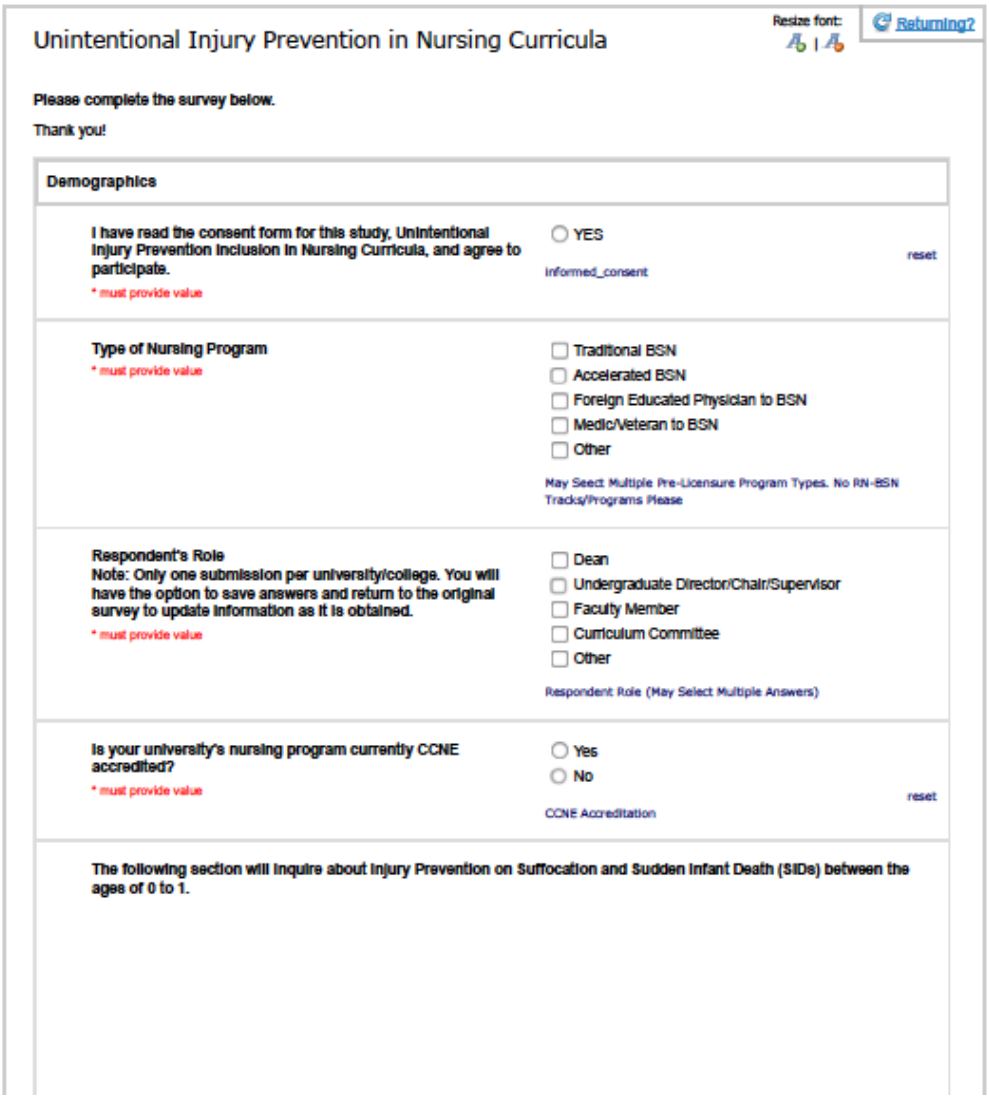
Type:	Amendment	**Started:**	05/07/2019
Instance:	*425 invitations were submitted on April 18, 2019 with a low response rate of 10 submissions (2-week response period). *I propose to remove the CCNE emails that did not respond, and invite the remaining 368 CCNE accredited universities *I also propose to extend the response period to 3 weeks in an attempt to obtain more submissions	**Completed:**	05/07/2019
Committee:	Inherited from Study		
Review Type:			
Exempt/Expedited Approval Date:	5/7/2019		

Steps (6) ☑ **Hide Skipped**

Step	Planned	Actual	Complete	Minutes	Micro Note
Amendment received by IRB office	05/07/2019	05/07/2019	Yes		
IRB Office Review	05/07/2019	05/07/2019	Yes		
Notify PI	05/07/2019	05/07/2019	Yes		

Appendix B

Survey Instrument: Unintentional Injury Prevention in Nursing Curricula



Unintentional Injury Prevention in Nursing Curricula

Resize font: Returning?

Please complete the survey below.

Thank you!

Demographics

I have read the consent form for this study, Unintentional Injury Prevention Inclusion in Nursing Curricula, and agree to participate.
* must provide value

- YES

reset

informed_consent

Type of Nursing Program
* must provide value

- Traditional BSN
- Accelerated BSN
- Foreign Educated Physician to BSN
- Medic/Veteran to BSN
- Other

May Seect Multiple Pre-Licensure Program Types. No RN-BSN Tracks/Programs Please

Respondent's Role
Note: Only one submission per university/college. You will have the option to save answers and return to the original survey to update information as it is obtained.
* must provide value

- Dean
- Undergraduate Director/Chair/Supervisor
- Faculty Member
- Curriculum Committee
- Other

Respondent Role (May Select Multiple Answers)

Is your university's nursing program currently CCNE accredited?
* must provide value

- Yes
- No

reset

CCNE Accreditation

The following section will inquire about Injury Prevention on Suffocation and Sudden Infant Death (SIDs) between the ages of 0 to 1.

Is Primary Prevention on Suffocation and SIDS for ages 0-1 included in the nursing curriculum?

Recommendations may include:
***Supine position for all sleep**
***No Bed-Sharing**
***No blankets, pillows or stuffed animals**
***Room temperature set at 68-72 degrees F**
***Promotion of Breastfeeding**
***Avoid exposure to cigarettes, alcohol, and drugs**
***Crib positioned away from window treatments and window/electrical cords.**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Secondary Prevention on Suffocation for ages 0-1 included in the nursing curriculum?

Recommendations may include:
***Time to First-Responder CPR**
***Time to trauma unit/ER**
***Acute care management of Suffocation/SIDS**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Tertiary Prevention on Suffocation and SIDS from ages 0-1 included in the nursing curriculum?

Recommendations may include:
***Prompt notification if complications arise**
***Safe Sleep Practices**
***CPR training for parents and caregivers**
***Risks associated with Suffocation/SIDS**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Primary Prevention on Drowning for ages 1-4 included in the nursing curriculum?

Recommendations may include:
***Proper installation/use of pool fence**
***Adult supervision at all times**
***CPR trained parents and caregivers**
***Swim lessons (especially for ages 2-4)**
***Coast guard approved life vest during clean up**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Secondary Prevention on Drowning from ages 1-4 included in the nursing curriculum?

Recommendations may include:
***Time to First-Responder CPR**
***Time to trauma unit/ER**
***Acute care management for post drowning victim**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Tertiary Prevention on Drowning from ages 1-4 included in the nursing curriculum?

Recommendations may include:
***When to call for post-drowning complications**
***Installation of a pool fence**
***Parental/caregiver supervision**
***Swimming lessons**
***Importance of CPR-trained parents and caregivers**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

The following section will inquire about Injury Prevention on Motor Vehicle Collisions between ages 5-9, 10-14, and 15-24. There are 3 sections due to recommendation variances based on height and weight.

Section 1 Booster Seat Use (5 to 9)
Section 2 Transition to Seat belt (10 to 14)
Section 3 Teenage/Young Adult Driving (15 to 24)

Is Primary Prevention for Motor Vehicle Collisions from ages 5-9 included in the nursing curriculum?

Recommendations may include:
***Proper booster seat type per height and weight**
***Booster seat use for every ride including carpooling**
***Proper lap & shoulder belt fit with booster seat**
***Avoiding front seat until age 13**

* must provide value

- ◯ 0 No (None of the recommendations)
- ◯ 1 Very Little (1 listed recommendation)
- ◯ 2 Somewhat (2 listed recommendations)
- ◯ 3 Quite a Bit (3 or more listed recommendations)
- ◯ 4 Unsure

reset

Is Secondary Prevention on Motor Vehicle Collisions from ages 5-9 included in the nursing curriculum?

Recommendations may include:
***First-Responder treatment**
***Time to trauma unit/ER**
***Acute care management of motor vehicle injuries**

* must provide value

- ◯ 0 No (None of the recommendations)
- ◯ 1 Very Little (1 listed recommendation)
- ◯ 2 Somewhat (2 listed recommendations)
- ◯ 3 Quite a Bit (3 or more listed recommendations)
- ◯ 4 Unsure

reset

Is Tertiary Prevention on Motor Vehicle Collision for ages 5 to 9 included in the nursing curriculum?

Recommendations may include:
***When to call for possible complications**
***Proper use of Booster seat**
***Common errors and misconceptions about car seats**
***Avoiding front seat until age 13**
***Replacement of booster seat/seat belt post vehicle collision**

* must provide value

- ◯ 0 No (None of the recommendations)
- ◯ 1 Very Little (1 listed recommendation)
- ◯ 2 Somewhat (2 listed recommendations)
- ◯ 3 Quite a Bit (3 or more listed recommendations)
- ◯ 4 Unsure

reset

Section 2 will inquire about Transitioning to Seat Belt between the Ages of 10 and 14

PROPER SEAT BELT FIT

Is Primary Prevention on Motor Vehicle Collisions for ages 10 to 14 included in the nursing curriculum?

Recommendations may include:
***Booster seat use until 80-100 lbs and/or 4'9"**
***Proper lap and shoulder seat belt fit before transition**
***Avoid front seat until age 13**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Secondary Prevention on Motor Vehicle Collisions for ages 10 to 14 included in the nursing curriculum?

Recommendations may include:
***First-Responder treatment**
***Time to trauma unit/ER**
***Acute care management of motor vehicle injuries**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Tertiary Prevention on Motor Vehicle Collision for ages 10 to 14 included in the nursing curriculum?

Recommendations may include:
***When to call for possible complications**
***Proper use of Booster seat if warranted**
***Proper use of seat belt if if ready for transition**
***Avoiding front seat until age 13**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Section 3 will inquire about injury Prevention on Motor Vehicle Collisions for teenagers and young adults between the ages of 15 and 24.

Is Primary Prevention on Motor Vehicle Collision for ages 15 to 24 included in the nursing curriculum?

Recommendations may include:
***Proper use of a vehicle seat belt**
***Minimize distractions (texting, loud music, phone conversations, teen co-passengers).**
***Driving lessons and practice before driving independently**
***Avoidance of alcohol/elicit drug consumption (Designated drivers)**
***Avoidance of night time driving until experienced**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Secondary Prevention on Motor Vehicle Collisions for ages 15 to 24 included in the nursing curriculum?

Recommendations may include:
***First-Responder treatment**
***Time to trauma unit/ER**
***Acute care management of motor vehicle injuries**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Tertiary Prevention for Motor Vehicle Collisions for ages 15 to 24 included in the nursing curriculum?

Recommendations may include:
***Proper use of a vehicle seat belt**
***Minimize distractions (texting, loud music, phone conversations).**
***Avoid/minimize multiple vehicle occupants (until driving skills well established)**
***Avoidance of alcohol/elicit drug**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

The following section will inquire about Injury Prevention on Poisoning for ages 25-64

Is Primary Prevention on Poisoning for ages 25 to 64 included in the nursing curriculum?

Recommendations may include:
***Drug addiction prevention counseling**
***Education on risks factors associated with prescription drug use.**
***Education about proper storage of prescription medications in the home.**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Secondary Prevention on Poisoning for ages 25 to 64 included in the nursing curriculum?

Recommendations may include:
***First-Responder actions (Recognition of overdose)**
***Appropriate use of Narcan (Naloxone)**
***Acute care management of poisoning related injuries**

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Tertiary Prevention on Poisoning for ages 25 to 64 included in the nursing curriculum?

Recommendations may include:
***Discharge to rehabilitation center if warranted**
***Discharge teaching including recources for addiction counseling**
***Follow-up home health evaluation with social services for ongoing care and prevention**

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

The following section will inquire about Injury Prevention on Falls for ages 65 and older

Is Primary Prevention on Falls for ages 65 and older included in the nursing curriculum?

Recommendations may include:
*Promotion of safe environment (No throw rugs & cords, ensuring clear pathways between rooms
*Use of the CDC's STEADI toolkit and the MORSE risk assessment tool
*Proper assessment of medication lists affecting fall risk
*Ability to call for help in the event of a fall (Life-Alert
*Daily check-ins from family/caregivers to assess status

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset

Is Secondary Prevention on Falls for ages 65 and older included in the nursing curriculum?

Recommendations may include:
*First-Responder actions
*Time from fall injury to trauma unit/ER department
*Acute care management of fall related injuries

* must provide value

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

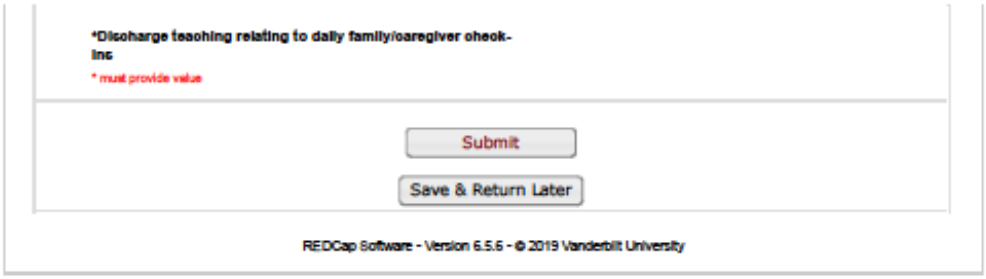
reset

Is Tertiary Prevention on Falls for ages 65 and older included in the nursing curriculum?

Recommendations may include:
*Discharge to rehabilitation center if warranted
*Discharge teaching related to safe environment by removing throw rugs, cords, and ensuring clear pathways between rooms
*Assessment of fall risks using validated tools such as the CDC's STEADI tool kit
*Assessment of medication lists affecting fall risk
*Discharge teaching regarding the ability to call for help in the event of a fall (Life-Alert)

- 0 No (None of the recommendations)
- 1 Very Little (1 listed recommendation)
- 2 Somewhat (2 listed recommendations)
- 3 Quite a Bit (3 or more listed recommendations)
- 4 Unsure

reset


*Discharge teaching relating to daily family/caregiver check-
ins
* must provide value
Submit
Save & Return Later
REDCap Software - Version 6.5.6 - © 2019 Vanderbilt University

Appendix C

Invitation to Participate Letter and Consent Form

Invitation to Participate in Anonymous Study: (Link Below)

Dear Chief Nursing Administrator,

My name is Ali Marie Galindo, a PhD in Nursing candidate at Nova Southeastern University in Fort Lauderdale, Florida. I am corresponding to invite you to participate in a study entitled INJURY PREVENTION INCLUSION IN PRE-LICENSURE BACCALAUREATE NURSING CURRICULA.

A recommendation to include injury prevention content in nursing curriculum was suggested by AACN (2008; 2013) and the IOM (2011), and has prompted me to conduct this study. The study will utilize Haddon's Matrix, a widely utilized and well-respected framework for injury prevention studies in health care.

The link provided in this email will take you directly to the survey. Feel free to respond yourself or consult with and/or delegate to a member of your faculty. However, only one respondent should complete the survey to avoid multiple submissions.

When gathering data, you are able to save your answers and return at a later time to complete the survey. To do so, click on the 'save and return' icon. You will be given a 'Return Code' for later use. When ready to return to the survey, click on the survey link again, and click the blue "returning" icon on the top right corner of your screen. Enter the Return Code you were given and you will be taken back to the section of the survey where you left off.

Thank you for participating in this study to help advance the science of nursing education. Your participation is greatly appreciated. Please submit the survey on or before MAY 2nd. Below the reference list is the official consent form with more details about the study. No signature is requested in order to maintain anonymity. Once you enter the survey by clicking on the link, you will be prompted to agree to the study. Your final submission verifies your consent. The link is provided at the bottom of this email correspondence.

Warm regards,

Ali Marie Galindo PhD(c), ARNP-FP, MSN

agalindo@mynsu.nova.edu

(M) 954-682-4949

REFERENCES

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CONSENT: INJURY PREVENTION INCLUSION IN PRE-LICENSURE BACCALAUREATE NURSING CURRICULA STUDY

WHO IS DOING THIS RESEARCH STUDY?

The individual doing this study is Ali Marie Galindo, PhD in Nursing Candidate with The Ron and Kathy Assaf College of Nursing.

Mrs. Galindo will be helped by Dr. Linda Evans (Chair & Advisor),

Dr. Diane Whitehead & Dr. Dana Mills (Committee Members).

WHY ARE YOU ASKING ME TO BE IN THIS RESEARCH STUDY?

You are being asked to take part in this research study because you have been randomly selected and are:

• A baccalaureate pre-licensure program which holds current CCNE-accreditation.

• A pre-licensure baccalaureate program with a traditional, accelerated, foreign-educated

physician to BSN, or veteran/medic to BSN program track, or other.

• A respondent able to read and write in English.

• A respondent with internet access, to receive emails and to complete and submit the survey.

WHY IS THIS RESEARCH BEING DONE?

The purpose of this study is to describe the current state of injury prevention inclusion in CCNE accredited pre-licensure baccalaureate-nursing curricula and the state to which injury prevention skills and theory is integrated into academic curriculum, as recommended by the Baccalaureate Essentials and other professional organizations. Understanding the degree to which content is being covered, whether with primary, secondary and/or tertiary preventative measures, will help address the state of the science related to unintentional injury prevention.

WHAT WILL I BE DOING IF I AGREE TO BE IN THIS RESEARCH STUDY?

You will be taking a one-time, anonymous survey. The survey will take approximately 10-20 minutes.

ARE THERE POSSIBLE RISKS AND DISCOMFORTS TO ME?

This research study involves minimal risk to you. To the best of our knowledge, the things you will be doing have no more risk of harm than you would have in everyday life.

WHAT HAPPENS IF I DO NOT WANT TO BE IN THIS RESEARCH STUDY?

You can decide not to participate in this research and it will not be held against you. You can exit the survey at any time.

WILL IT COST ME ANYTHING? WILL I BE PAID TO BE IN THE STUDY?

There is no cost for participation in this study. Participation is voluntary and no payment will be provided.

HOW WILL YOU KEEP MY INFORMATION PRIVATE?

Your responses are anonymous. Information we learn about you in this research study will be handled in a confidential manner, within the limits of the law. No identifying information will be asked to protect your privacy. In the demographic section, nursing program names and individual names will not be collected. This data will be available to the researcher, the Institutional Review Board and other representatives of this institution. All confidential data will be kept securely. The protected data will include the demographic information, consisting of the consent to participate by clicking yes in the demographic section of the survey, the type of program, the respondents' role, and confirmation that the program is currently CCNE accredited. The data from the survey tool, Injury Prevention Inclusion in Pre-Licensure Baccalaureate Nursing Curricula, will also be collected and stored securely utilizing REDCap (Research Electronic Data Capture), a secure, web-based application intended to gather data for research, including multisite data collection. The data will be exported to the dissertation researcher's password-protected computer and as per Nova Southeastern University's IRB requirements, held in a secured storage for a period of three years. Only the researcher

will have access to the data.

All data will be kept for 36 months from the end of the study and destroyed after that time by deleting the SPSS documents both from the documents folder and from the computer trash files. Also, the RedCap document will be deleted.

WHO CAN I TALK TO ABOUT THE STUDY?

If you have questions, you may contact Ali Marie Galindo at Mobile # 954-682-4949 (dialing *67 prior to the mobile number will block the caller ID feature). The researcher will be readily available during and after normal work hours. If you happen to reach the researcher's message box, you do not need identify yourself, simply state you are a participant of the Injury Prevention Study and have a question and will call again. Dr. Linda Evans (Chair) will also be available at her work number 561-805-2236.

If you have questions about the study but want to talk to someone else who is not a part of the study, you can call the Nova Southeastern University Institutional Review Board (IRB) at (954) 262-5369 or toll free at 1-866-499-0790 or email at IRB@nova.edu.

DO YOU UNDERSTAND AND DO YOU WANT TO BE IN THE STUDY?

If you have read the above information and voluntarily wish to participate in this research study, please refer to the survey link provided and follow the directions on how to complete the survey.

Thank you!

You may open the survey in your web browser by clicking the link below:

Injury Prevention Inclusion in Pre-Licensure Baccalaureate Nursing Curricula

If the link above does not work, try copying the link below into your web browser:

https://redcap.nova.edu/redcap/surveys/?s=4WNA3727c6

Appendix D

Leading Causes of Unintentional Injury Deaths

10 Leading Causes of Injury Deaths by Age Group Highlighting Unintentional Injury Deaths, United States – 2017

	Age Groups										
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Total
1	Unintentional Suffocation 1,106	Unintentional Drowning 424	Unintentional MV Traffic 327	Unintentional MV Traffic 428	Unintentional MV Traffic 6,697	Unintentional Poisoning 16,478	Unintentional Poisoning 15,032	Unintentional Poisoning 14,707	Unintentional Poisoning 10,581	Unintentional Fall 31,190	Unintentional Poisoning 64,795
2	Homicide Unspecified 139	Unintentional MV Traffic 362	Unintentional Drowning 125	Suicide Suffocation 280	Unintentional Poisoning 5,030	Unintentional MV Traffic 6,871	Unintentional MV Traffic 5,162	Unintentional MV Traffic 5,471	Unintentional MV Traffic 5,584	Unintentional MV Traffic 7,667	Unintentional MV Traffic 38,659
3	Unintentional MV Traffic 90	Homicide Unspecified 129	Unintentional Fire/Burn 94	Suicide Firearm 185	Homicide Firearm 4,391	Homicide Firearm 4,594	Suicide Firearm 3,098	Suicide Firearm 3,937	Suicide Firearm 4,219	Suicide Firearm 5,996	Unintentional Fall 36,338
4	Homicide Other Spec., Classifiable 76	Unintentional Suffocation 110	Homicide Firearm 78	Homicide Firearm 126	Suicide Firearm 2,959	Suicide Firearm 3,458	Suicide Suffocation 2,562	Suicide Suffocation 2,294	Unintentional Fall 2,760	Unintentional Unspecified 5,125	Suicide Firearm 23,854
5	Undetermined Suffocation 56	Unintentional Fire/Burn 95	Unintentional Suffocation 36	Unintentional Drowning 110	Suicide Suffocation 2,321	Suicide Suffocation 3,063	Homicide Firearm 2,561	Suicide Poisoning 1,604	Suicide Suffocation 1,631	Unintentional Suffocation 3,920	Homicide Firearm 14,542
6	Unintentional Drowning 43	Unintentional Pedestrian, Other 88	Unintentional Other Land Transport 25	Unintentional Other Land Transport 66	Unintentional Drowning 469	Undetermined Poisoning 887	Suicide Poisoning 1,089	Homicide Firearm 1,447	Suicide Poisoning 1,459	Adverse Effects 2,902	Suicide Suffocation 13,075
7	Undetermined Unspecified 37	Homicide Other Spec., Classifiable 49	Homicide Suffocation 15	Unintentional Fire/Burn 56	Suicide Poisoning 463	Suicide Poisoning 788	Undetermined Poisoning 792	Unintentional Fall 1,248	Homicide Firearm 824	Unintentional Poisoning 2,871	Unintentional Suffocation 6,946
8	Homicide Suffocation 26	Homicide Firearm 44	Homicide Cut/pierce 14	Suicide Poisoning 39	Undetermined Poisoning 280	Unintentional Drowning 479	Unintentional Fall 522	Undetermined Poisoning 887	Unintentional Suffocation 811	Unintentional Fire/Burn 1,278	Unintentional Unspecified 6,606
9	Unintentional Natural/ Environment 18	Unintentional Natural/ Environment 34	Unintentional Firearm 14	Unintentional Poisoning 39	Homicide Cut/pierce 266	Homicide Cut/Pierce 404	Unintentional Drowning 397	Unintentional Drowning 451	Adverse Effects 773	Suicide Poisoning 1,111	Suicide Poisoning 6,554
10	Three Tied 16	Unintentional Firearm 31	Two Tied 13	Unintentional Suffocation 35	Unintentional Fall 212	Unintentional Fall 351	Homicide Cut/Pierce 337	Unintentional Suffocation 441	Undetermined Poisoning 732	Suicide Suffocation 919	Adverse Effects 4,459

Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

CDC's 10 leading causes of death by age group, United States-2017

Centers for Disease Control (2018a). *10 leading causes of death by age group highlighting unintentional injury deaths, United States-2016.* Retrieved from https://www.cdc.gov/injury/images/lc-

Appendix E

Evidenced-Based Injury Prevention Strategies & References

SUID/Suffocation and Strangulation

SUID/suffocations and strangulation are the leading causes of death in the pediatric population from birth to 1 year of age. Strategies for primary prevention of SUID and suffocation, also referred to as safe sleep practices, include supine position for sleep, avoiding bedsharing; avoiding loose items in the crib such as blankets, pillows, toys, and plush items; avoidance of smoking; encouraging breastfeeding; maintaining room temperatures between 68-72 degrees Fahrenheit and moving cribs away from window treatments and cords (American Academy of Pediatrics, Health Children, 2019). Strategies for secondary prevention of SUID and suffocation include: prompt first responder CPR, prompt transfer to a trauma unit, and acute care management of the surviving infant (Bledsoe, 2008). Strategies for tertiary prevention of SUID and suffocation/strangulation include proper identification of complications related to these conditions (Alliance for Hope International, 2019; Lambert et al., 2019).

Drowning

Strategies for the prevention of pediatric drownings, the leading cause of death in the pediatric population aged 1-4, include use of pool fence, adult supervision, swimming lessons, and CPR training (Brennan et al., 2018; Griffin et al., 2005; Valdes et al. 2013; Wallis et al., 2015; Wilding et al., 2008;). Strategies for secondary prevention of drowning include: prompt CPR implementation, timely arrival to trauma units, and acute care management of drowning victims (Chandy & Weinhouse, 2017). Strategies for tertiary prevention of drowning include: prompt notifications of post discharge drowning complications, implementation of primary prevention measures training (Brennan et al.,

2018; Chandy et al., 2017; Griffin et al., 2005; Valdes et al. 2013; Wallis et al., 2015; Wilding et al., 2008).

Motor Vehicle Collisions

The leading cause of death from ages 5-24 involves motor vehicle collision. Strategies for the prevention of unintentional injury death related to motor vehicle injuries varies according to age. Primary prevention for children aged 5-9 includes: proper booster seat use for every ride, appropriate shoulder/lap seatbelt fit, and avoiding the front seat during travel (Macy et al., 2011). Primary prevention for children aged 10-14 includes: booster seat use until the height of 4 feet 9 inches and 80-100 pounds per car seat manufacturer instructions and avoiding the front seat during travel until age 13 (Anderson et al., 2017). Primary prevention for children/adults age 15-24 includes use of seatbelt for every ride, minimization of distractions while driving, driving lessons/practice prior to driving unsupervised, avoidance of alcohol and illicit drug use while driving, avoidance of multiple passengers while driving, and decreased night-time driving until properly prepared (CDC 2017a; CDC 2017b; Caird, et al., 2014; Doud et al., 2017; Foss et al., 2014; Gliklich et al., 2016; Gunst et al. 2010; Heaton et al., 2011; Viano et al., 2017). Secondary and primary prevention related to injuries caused by motor vehicle collisions include prompt notification of complications associated with motor vehicle injuries and appropriate discharge instructions reverting back to primary prevention strategies. In particular, car seats and seatbelts involved in a motor vehicle collision must be replaced (NHTSA, 2019).

Poisoning

The leading cause of unintentional injury death between the ages of 26-64 involves poisoning. A growing number of poisoning deaths involve opioid overdose. Strategies for poison primary prevention include: drug addiction prevention counseling, patient education on pain management of prescription medications, and proper storage of prescription medications (ANA, 2016; ANA, 2018; CDC,2018b; CDC, 2017e; Kaye et al., 2017; Volkov et al., 2014; Volkov et al., 2016). Secondary prevention includes first-responder action, timely administration of Narcan (naloxone), and acute management of overdose to opioids (ANA, 2016; ANA, 2018; ENA, 2016; Kaye et al., 2017; Volkov, et al., 2014; Volkov et al., 2016). Tertiary prevention includes discharge to rehabilitation center when applicable, referral to counseling, and follow-up healthcare via social services (ANA, 2016; ANA, 2018; ENA, 2016; Volkov et al. 2014; Volkov et al., 2016).

Falls

Strategies for fall prevention, the leading cause of death for individuals 65 years and over, include: promotion of safe environments for fall prevention, the use of fall-risk assessment tools during health care interactions, inquiry of medication lists associated with potential fall risk, ability for elders to call for help in the event of a fall, and supervision when needed (Child et al., 2012; ENA, 2017a; Lach et al., 2018; Phelan et al., 2016; Zhao et al., 2018). Secondary prevention measures include: first responder action, time to trauma unit, and acute care management of injuries related to falls (Hawk, et al., 2012; Krishnamoorthy et al., 2018). Tertiary prevention measures related to falls include: discharge to rehabilitation center if warranted, safe environment with minimal risks for falls, the use of fall-risk assessment tools during health care interactions, proper

patient discharge education related to medications related to increased risk for falls, educating on the importance of ability for elders to call for help along with proper supervision when warranted (ENA, et al., 2017a; Murray et al., 2018; Zhao et al., 2018).