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Integrating the Concept of Trauma into an Undergraduate Nursing Curriculum

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Abstract

Adverse childhood experiences, or ACEs, are early childhood traumas such as abuse, neglect or household dysfunction that can cause chronic physical and mental health problems across the lifespan. Approximately 61% of the adults in the United States have experienced ACEs. The prevalence of ACEs among nurses is at least comparable to population prevalence, and rates may be higher in subpopulations of individuals who work in helping professions. The stressful and highly interpersonal nature of nursing work may exacerbate and compound the health impacts of a nurse's underlying ACEs, affecting not only the nurse's health, but also his or her work performance. Education regarding the effects of trauma on nurses and patients promotes healthcare safety and quality as well as a resilient nursing workforce. Currently, nursing education lacks a widely recognized approach for teaching the concept of trauma to prelicensure students. This quality improvement project mapped the concept of trauma in an undergraduate nursing curriculum. Key findings included: (1) the concept of trauma was not defined, (2) utilization of the concept was fragmented and lacked sequencing across the entire curriculum, (3) trauma was often presented through a specialty lens, and (4) content focused mostly on trauma experienced by patients. Recommendations for improving concept utilization were: (1) determining a common definition for trauma, (2) scaffolding of the concept based on Bloom's taxonomy throughout the curriculum, and (3) developing content focused on the psychological traumas that nurses themselves experience both before and during their professional development. The findings and recommendations created a foundation for next steps, as faculty works groups will collaboratively develop an integration plan for the concept of trauma.

Keywords: trauma, concept-based nursing, concept evaluation, curriculum mapping

Introduction and Background

In a landmark study, Felitti et al. (1998) examined the relationship between health risk behaviors and chronic disease in adults with childhood traumatic stress, known as adverse childhood experiences (ACEs). Felitti et al. (1998) found that ACEs are prevalent and have a myriad of compounding adverse effects on physical and mental health across the lifespan. According to the Centers for Disease Control and Prevention (CDC, 2020), 61% of adults surveyed across 25 states reported that they had experienced at least one ACE. Based on the original data, ongoing surveillance, and research related to ACEs, there is strong evidence supporting the population-level effects of ACEs, making childhood trauma an important determinant of health and well-being in the United States (CDC, 2020; Crouch et al., 2019; Felitti, 2002; Felitti et al., 1998; Merrick et al., 2019; Sacks & Murphey, 2018).

Nurses comprise the largest component of the healthcare workforce in the United States, with more than 3.8 million registered nurses (American Association of Colleges of Nursing [AACN], 2019). The prevalence of ACEs among nurses is at least comparable to population prevalence, and some contend that rates may be higher in subpopulations of individuals who work in helping professions (Fulford, 2017; Girouard & Bailey, 2017; Maunder et al., 2010). Nonetheless, in electing to work in a helping profession, nurses encounter individuals suffering from the adverse effects of trauma, which contributes to secondary traumatic stress and compassion fatigue (Cieslak et al., 2014; Courtois & Gold, 2009; Foli & Thompson, 2019). Furthermore, the stressful and highly interpersonal nature of nursing work may exacerbate and compound the health impacts of a nurse's underlying ACEs, affecting not only the nurse's health, but also his or her work performance (Behnke et al., 2020; Fulford, 2017; Girouard & Bailey, 2017; Maunder et al., 2010; McKee-Lopez et al., 2019). Thus, the influence of a nurse's

personal trauma history and the traumas experienced in the workplace have important implications for burnout, attrition, patient safety, and quality of care (Cieslak et al., 2014; Fleishman et al., 2019; Foli & Thompson, 2019, Fulford, 2017). Nurses who are unaware of the impact that trauma has on their personal lives and professional practice may overlook resources or opportunities to respond to and mitigate the effects of trauma.

Trauma-informed care (TIC) is a therapeutic framework that can provide both anticipatory guidance and practical applications for nurses. TIC is a patient-centered and strengths-based framework that informs and grounds holistic healthcare for patients with a history of trauma (Boles, 2017; Fleishman et al., 2019). The Substance Abuse and Mental Health Services Administration (SAMHSA, 2014) states that TIC is an approach that acknowledges the signs and impact of trauma and responds by integrating trauma-informed principles in order to prevent retraumatization of either the patient or provider. Given that nurses have an ethical obligation to provide safe and effective care, utilizing TIC embodies the values, duties, and professional ideals set forth in the provisions of the *Code of Ethics for Nurses with Interpretive Statements* (American Nurses Association [ANA], 2015). Applied universally, TIC respects the dignity of patients, creates a safe environment for patients, and promotes self-advocacy as well as resiliency, which improves the quality of care delivered and patient outcomes (Fleishman et al., 2019; Koetting, 2016).

Trauma and its adverse outcomes have been identified as a high-priority public health issue (CDC, 2019; CDC, 2021; Office of Disease Prevention and Health Promotion [ODPHP], n.d.; Wheeler, 2018). In order to meet the challenge of preparing trauma-informed and resilient nurses, integrating content about trauma within nursing education is necessary. As the national voice for academic nursing, the AACN provides guidance and quality standards for nursing

educational content (AACN, n.d.; Burton et al., 2019; Foli & Johnson, 2019). The AACN's *Essentials of Baccalaureate Education for Professional Nursing Practice* identifies nine components for generalist nursing education with a focus on patient-centered care (Burton et al., 2019). These guidelines are used by the nursing accrediting body, the Commission for Collegiate Nursing Education (CCNE), to outline the necessary curriculum content and expected competencies of graduates. While the AACN does not specifically recognize TIC in the *Essentials* document, researchers have demonstrated direct links between each essential and TIC, supporting the need for its integration within prelicensure nursing curricula (Burton et al., 2019; Foli & Johnson, 2019).

Problem Statement

Despite the prevalence of ACEs and the growing awareness of the impact of trauma on health, research is limited about the implementation of trauma-informed content in nursing education, and gaps exist concerning best practices for its integration within nursing curricula (Li et al., 2019; Wheeler, 2018). To ensure that a nursing program is optimizing learning outcomes that reflect the current healthcare environment and evidence-based practice, faculty should practice ongoing curriculum evaluation (Giddens & Morton, 2010; Laverentz & Kumm, 2017). An analysis of Belmont University's School of Nursing (SON) undergraduate concept-based curriculum provided insights regarding its current utilization of the concept of trauma, which could then be compared to recommended trauma-informed content from TIC experts in order to identify and optimize best practices for integration.

Purpose

This quality improvement project was an analysis of the concept of trauma within Belmont University's undergraduate nursing curriculum. Key findings from the analysis

highlighted opportunities for improved systematic integration and scaffolding of the concept of trauma throughout the curriculum.

Review of Evidence

The Need for Curriculum Reform

In the information age of the 21st century, healthcare is constantly and rapidly changing. In response, nursing faculty have attempted to cover all relevant material resulting in content saturation of curricula and a widening of the education-practice gap (Giddens & Brady, 2007; Repsha et al., 2020). Nursing students struggle to determine what content is essential within a curriculum that saturated with content (Repsha et al., 2020). When all content is presented as essential for competent and safe nursing practice, novice nursing students may have diminished self-confidence and doubt their capacity to successfully master a nursing curriculum. To address the issues of content saturation and prepare nurses for complex healthcare environments, the Institute of Medicine (IOM) and the National League for Nursing (NLN) called for curriculum reform and innovation in nursing education that is responsive to changes in the healthcare system (Giddens & Brady, 2007; Higgins & Reid, 2017; Repsha et al., 2020).

Concept-Based Nursing Curricula

The concept-based nursing curriculum is one innovative strategy implemented by nursing programs to address the call for curriculum reform. Concepts provide the organizational framework for the curriculum (Higgins & Reid, 2017). Concepts are presented across the life span and in a variety of clinical settings while being threaded throughout the curriculum to promote understanding and application (Giddens & Brady, 2007; Repsha et al., 2020). Utilizing an active learner-centered approach, nursing faculty create learning experiences that promote a deep understanding of the concept, demonstrate how concepts are interrelated, and build on prior

knowledge to enhance concept application to new situations (Higgins & Reid, 2017). This process develops the essential skills of critical thinking and lifelong learning, which are both necessary for nurses in today's complex and dynamic healthcare environment (Giddens & Brady, 2007; Repsha et al. 2020).

TIC in Undergraduate Nursing Curricula

The IOM (2012) supports the need for integrating TIC in healthcare education and reports there is a lack of training. Additionally, the ANA and the American Psychiatric Nurses Association (ANA & APNA, 2014) support TIC, identifying trauma as a phenomena of utmost concern. Currently, nursing education lacks effective and reliable trauma-informed content, and a systematic integration of TIC within nursing curricula has not been documented (Gill et al., 2019a; Gill et al., 2019b; Li et al., 2019). In a review of 22 articles describing trauma-informed education courses in the health sciences, Li et al. (2019) found no articles in nursing literature.

In response to the lack of nursing education concerning trauma, a panel of trauma-informed experts from nursing education, practice and research developed the "Trauma and Resilience Competencies for Nursing Education" (Wheeler & Phillips, 2019). Wheeler and Phillips (2019) state these competencies are the minimal entry-level trauma-informed skills needed for nursing practice and can serve as a guide for curriculum development. Additionally, Gill et al. (2019b) developed an ACEs Curriculum Integration (ACI) Model, based on the Robert Wood Johnson Foundation's Culture of Health Action Framework, to systematically integrate ACEs knowledge across an undergraduate nursing curriculum. The ACI Model proposes a scaffolded approach to teaching and learning as five conceptual constructs are threaded through five semesters of the curriculum (Gill et al., 2019b). The conceptual constructs are: develop ACEs awareness and prevention, reduce toxic stress and improve socio-ecological conditions,

build resiliency and enable care providers, implement TIC, and inform policy (Gill et al., 2019b). While both initiatives demonstrated effectiveness within those studies, further research is needed to support and evaluate these findings across a diversity of nursing curricula (Gill et al., 2019b; Wheeler & Phillips, 2019).

Curriculum Evaluation

A universal understanding and consistent use of concepts among faculty promotes curriculum success (Giddens & Brady, 2007; Higgins & Reid, 2017). Evaluating a concept within a concept-based curriculum establishes if content is structured around a universal definition of the concept, provides exemplars based on the concept, and has learning objectives based on understanding and application of the concept (Giddens & Brady, 2007; Hendricks & Wangerin, 2017; Laverentz & Kumm, 2017). It also reveals potential curriculum drift, which are incremental changes that occur over time, diminishing the internal consistency of concepts while generating additional content (Laverentz & Kumm, 2017; Murray et al., 2015). Evaluation identifies opportunities for improvement, prevents redundancy, and ensures program quality (Laverentz & Kumm, 2017; Murray et al., 2015). It is an ongoing process and is considered a competency for nurse educators (Giddens & Brady, 2007). Additionally, accrediting agencies require that nursing programs demonstrate continuous quality improvement (Laverentz & Kumm, 2017). Conversely, a gap remains in the nursing literature related to evaluation methods, program outcomes, and sustaining curriculum quality (Giddens & Morton, 2010; Laverentz & Kumm, 2017).

Evaluation Strategies

The nursing literature lacks specific templates for concept-based curriculum evaluation, and accrediting agencies do not stipulate how to conduct evaluations; therefore, various

strategies were used to ensure systematic and comprehensive curriculum evaluations (Laverentz & Kumm, 2017; Murray et al., 2015). Some nursing faculty developed their own evaluation tools including checklists, conceptual grids, concept mapping, and concept analysis diagrams (Gill et al., 2019a; Higgins & Reid, 2017; Murray et al., 2015; Patterson et al., 2016). Others used the Plan-Do-Study-Act (PDSA) cycle for quality improvement as it is a sequential, iterative, and continuous approach to evaluation (Laverentz & Kumm, 2017; Murray, 2018; Oliver et al., 2017). While there were limitations and benefits to each approach, the common themes identified regarding the evaluation strategies were that they provided organizational structure and an iterative process.

Evaluation Outcomes

The evaluation strategies generated a range of results that were utilized to improve the concept-based nursing curricula. Laverentz and Kumm (2017) found that concept evaluation created common definitions and attributes of concepts, resulting in concept clarity for faculty and students. Other faculty identified gaps in their curricula. These outcomes prompted an enhanced life span focus within the curriculum and ensured that concepts were taught in a sequential and logical order (Giddens & Morton, 2010; Patterson et al., 2016). While some studies found that evaluations increased faculty engagement and collaboration, others noted challenges within faculties which included difficulty reaching consensus on core concepts, protecting content within clinical expertise, and uncertainties related to student outcomes (Giddens & Brady, 2007; Laverentz & Kumm, 2017; Murray et al., 2015; Patterson et al., 2016).

Research has consistently demonstrated the need for concept-based curricula and TIC in nursing education. Concept-based curricula are believed to develop nursing students' critical thinking and prepare them for an ever-changing healthcare environment. Integrating the concept

of trauma enhances the knowledge and skills of the generalist nurse when providing safe, effective, and competent care. Studies are emerging regarding the integration of trauma-informed content within prelicensure nursing curricula and concept evaluation within concept-based curricula. However, gaps remain in the nursing literature for both trauma-informed content and evaluating concept-based curricula. This project would add to the current body of evidence concerning both subjects.

Theoretical Framework

Constructive alignment is a design for teaching that was developed by John Biggs. In this outcomes-based approach to teaching, the constructivism theory of learning is combined with an aligned instructional design (Biggs, 1996; Biggs, 2014). Constructivism describes how individuals acquire knowledge and learn (Croy, 2018). The theory suggests that learning is constructed through a process in which new knowledge is added to a foundation of prior learning and experiences (Bada, 2015; Brandon & All, 2010; Krahenbuhl, 2016). In this process, the learner is an active agent in knowledge acquisition (Bada, 2015). Application of this theory enriches a learner's critical thinking, personal inquiry, and collaboration with others, all of which are foundational to nursing practice (Rolloff, 2010).

Alignment signifies the intentional instructional design that supports this process of knowledge acquisition. In constructive alignment, student learning outcomes are defined first; then teaching methods, learning activities, and assessments are aligned to those learning outcomes (Biggs, 1996; Biggs, 2014). Alignment also represents the development of learning outcomes and creation of learning experiences that have a hierarchical structure (Biggs, 1996). Bloom's taxonomy, as depicted in Figure 1, is a framework for classifying learning outcomes based on a cumulative hierarchy of cognitive skills (Krathwohl, 2002). Additionally, Bloom's

taxonomy can be used to develop congruent outcomes, activities, and assessments for a course or curriculum (Krathwohl, 2002).

For this quality improvement project, constructive alignment was used in conjunction with Bloom's taxonomy, as depicted in Figure 2, first to analyze the concept of trauma within Belmont University's undergraduate nursing curriculum. Following analysis, constructive alignment and Bloom's taxonomy will then be used to organize outcomes, teaching methods, learning activities and assessments that are both aligned and scaffolded according to hierarchical cognitive skills to optimize student learning.

Project Design

The Improvement Process

The PDSA cycle, as depicted in Figure 3, provides a systematic and iterative process for quality improvement and has been used to improve teaching pedagogies and evaluate nursing curricula (Laverentz & Kumm, 2017; Murray, 2018). The first step of the PDSA cycle is *plan* in which objectives and goals are identified, data is collected and evaluated, and an implementation plan is created (Institute for Healthcare Improvement [IHI], n.d.; Murray, 2018). The second step, *do*, involves implementing the plan, monitoring for problems, and collecting data related to the change (IHI, n.d.; Murray, 2018). During the *study* phase, outcome data is analyzed to determine if the change had a desired effect (Laverentz & Kumm, 2017). Based on the findings, modifications and plans for the next iteration are developed during the *act* phase (IHI, n.d.; Murray, 2018).

This project worked through the first step of the PDSA cycle for the quality improvement. During the *plan* phase, analysis of the existing curriculum determined how the concept of trauma was taught within Belmont University's undergraduate nursing program.

Results from the analysis will be shared with the faculty during the *do* phase. This phase will also consist of creating faculty work groups for the collaborative development of strategies to systematically integrate the concept of trauma. Since curriculum evaluation occurs cyclically with an academic calendar and requires approval from the curriculum committee and leadership, implementation of the new curricular concept will occur in the fall 2021. Following implementation, the integration of the concept will be evaluated during the *study* phase. Based on the results of the *study* phase, changes will be made to the integration plan during the *act* phase and the PDSA cycle will begin again.

Project Setting

The project focused on the Belmont University's Bachelor of Science in Nursing (BSN) curriculum. Belmont University is a private four-year university located in Nashville, Tennessee that combines the liberal arts with professional education in a Christian community of service and learning. Belmont University's SON is part of the Gordon E. Inman College of Health Sciences and Nursing, which has undergraduate and graduate programs in nursing, occupational therapy, physical therapy, social work, public health and exercise science. With approximately 600 students currently enrolled, Belmont University's BSN program has a four-year traditional track, an accelerated 2nd degree track, a track for students from partner schools, and a joint-degree option with Trevecca Nazarene University. Analysis of the curriculum and reporting of results followed the SON's four-year traditional track, as depicted in Table 1.

The Belmont SON transitioned to a concept-based curriculum in the fall of 2017 and completed its first iteration in the fall of 2019. Its curriculum framework is based on seven core concepts, which are care management, Christ-centered perspective, inquiry, leadership, population health, professional identity formation, and teamwork including collaboration and

communication. Approximately 80 sub concepts, that are more specific, support and expand the broader core concepts. At present, the concept of trauma is not included as a sub concept within Belmont's curriculum framework. One current sub concept, interpersonal violence, is closely associated with the concept of trauma because interpersonal violence can be physically or emotionally harmful to an individual and have lasting effects on physical or mental well-being. Therefore, the project leader included the concept of interpersonal violence, as indicative of trauma-informed content, during the analysis of the curriculum.

Participants

The project leader is a full-time lecturer within the SON faculty who is committed to supporting collaborative work for continuous quality improvement of the curriculum. While the primary focus of the quality improvement was Belmont University's undergraduate nursing curriculum, the project also considered and included the views and teaching strategies of the SON faculty. All 45 full-time faculty members, including lecturers, teaching in the BSN program were eligible to participate. Initially, faculty identified as course coordinators were invited to participate during the analysis of the curriculum. Course coordinators supervise a given course, creating content for the course according to the course objectives and overall curriculum plan. At Belmont University, faculty have some degree of academic freedom within their courses, and certain faculty have already been teaching the concept of trauma. These early adopters were identified as content champions and actively participated in the concept analysis. The total number of faculty invited to participate in the initial analysis of the curriculum was 21.

Ethical Approval

This quality improvement project was verified as exempt by the Belmont University Institutional Review Board in August 2020. Prior to the collection of data, the project leader

informed faculty that their participation was voluntary, that their comments were anonymous, and that the data collected was for quality improvement purposes only.

Curriculum Documents

Data gathered in the *plan* phase focused on how Belmont University's undergraduate nursing program taught the concept of trauma and came from multiple sources. Belmont's undergraduate nursing curriculum consists of 28 core nursing courses, which are required for successful completion of the program. Documents from the 28 courses were surveyed during the *plan* phase. The SON's undergraduate course syllabi and calendars, stored in a shared database, offered a broad overview of content potentially related to the concept of trauma. Due to the Covid-19 pandemic, academic calendars were adjusted, and courses were delivered in alternative formats during the spring and fall 2020 semesters. To account for this variability, both course syllabi and calendars from the traditional spring and fall 2019 semesters and the adapted spring and fall 2020 semesters were reviewed. When the SON transitioned to concept-based curriculum, it developed course objective analysis grids to track and evaluate curriculum content and program outcomes. These are completed annually by course coordinators. Course objective analysis grids from the 2019-2020 academic year provided data related to student learning outcomes, course concepts, learning activities, assessments, and evaluation measures.

Faculty Interviews

Following the survey of course documents, the project leader invited the 21 faculty members identified as course coordinators and content champions to discuss how the concept of trauma related to their course content and to describe associated instructional content, student learning outcomes, learning activities, and assessments. Prior to the discussions, the project leader emailed standardized definitions for trauma, ACEs and TIC along with general topics that

would be covered to prepare the faculty member for the interview. During the interviews, the project leader invited faculty to share any missing or additional content, such as lecture notes, that detailed their application of the concept of trauma within their courses.

Curriculum Mapping

Giddens & Morton (2010) recommended designing a comprehensive plan that outlined the data to be collected and the methods to analyze and interpret findings because this would prompt faculty to make curriculum recommendations based on evidence rather than personal preferences or content expertise. Therefore, the project leader utilized a curriculum map during the *plan* phase, which provided a graphic display of course content related to the concept of trauma during the examination of the existing curriculum (Landry et al., 2011; Neville-Norton & Cantwell, 2019). The curriculum mapping tool was developed by the project leader based on the tenets of the constructive alignment theory and Bloom's taxonomy. An example of the tool is depicted in Figure 4. Curriculum analysis began with a survey, completed by hand, of the SON course syllabi and calendars for content related to concept of trauma. The analysis continued with reviewing the course objective analysis grid for each relevant course. Finally, the faculty interviews completed the analysis process, and applicable data from the documents and interviews were entered into the curriculum mapping tool.

Outcomes

Curriculum Documents

Of the 28 core nursing courses, one course was excluded from the survey because it was an apprenticeship in which nursing students are individually paired with a practicing nurse in a healthcare setting without standardized instruction. Curriculum revision related to integrating the concept of trauma would not impact this course since learning outcomes are individualized for

each nursing student. From the remaining 27 courses, the project leader reviewed a total of 163 course documents, comprised of syllabi, calendars, and course objective analysis grids.

Reporting of these results followed the SON's four-year traditional track, as depicted in Table 1.

Findings from the curriculum documents are summarized in Table 2.

A total of five courses out of the 27 surveyed clearly named trauma, ACEs or TIC in their course documents. Four of these courses mentioned the term trauma or ACEs in their course calendars. One of the courses was in the second year (semester three) and three of the courses were in the third year (semesters five and six) of the nursing curriculum. Two uses of the term trauma related to mental health disorders, while the other use related to the physical and psychological trauma of abuse. Additionally, ACEs was identified as a topic covered in one course. Another course clearly stated trauma, ACEs and TIC in both its syllabus and course calendar. It was a focused experiential learning course that students take during their fourth year (semester seven) of the nursing curriculum. In the focused experiential learning courses, nursing students complete 96 hours of experiential learning in either lab, simulation or clinical settings, concentrating on a specific patient population. In the fall of 2020, one focused experiential learning course specifically considered caring for patients across the lifespan through a trauma-informed lens. Trauma, ACEs and TIC were not found in any other curriculum documents surveyed.

Two additional courses mentioned the concept of interpersonal violence within either the course calendar or course objective analysis grid. These courses were in the second year (semester three) and third year (semester six) of the nursing curriculum. The second-year course (semester three) linked interpersonal violence to health promotion and the utilization of screening tools. The course in the third year (semester six) related the concept of interpersonal

violence to physical and psychological abuse. Finally, three courses listed terms that are also associated with trauma in their course calendars. A third-year course (semester six) specified workplace and lateral violence, while courses in the fourth year (semester seven and eight) mentioned elderly abuse and violence.

Faculty Interviews

During the *plan* phase, 21 faculty members were identified as course coordinators or content champions and invited to participate. All 21 faculty members participated in the quality improvement and shared requested course documents. Faculty members indicated that in eight out of the 27 courses, they taught about the concept of trauma, ACEs or TIC. These courses were in the second year (semester three), third year (semesters five and six), and the fourth year (semester seven) of the nursing curriculum. Five courses had previously been identified in the curriculum document survey as containing content about trauma, ACEs, or TIC. During the interviews, faculty members expounded on the information found in the document survey. Findings from the faculty interviews are summarized in Table 3.

The second-year course (semester three) defined ACEs and related it to the concepts of development and levels of prevention. Based on Bloom's taxonomy, defining a topic is classified as the cognitive process *remember* (Figure 1). Learning activities included textbook readings, lecture, class discussion, and viewing a TED talk about ACEs. According to the faculty member, student learning was evaluated with exam questions from the *remember* category of Bloom's taxonomy (Figure 1). The courses in the third year (semesters five and six) referred to trauma and ACEs in a variety of ways. Content and learning activities for these courses could be classified as the *remember*, *understand* and *apply* levels of Bloom's taxonomy (Figure 1). Trauma was identified as a cause of mental health disorders, an influential factor in the

development of a fetus, and an experience that can be reactivated during prenatal care and the birth process. ACEs was defined, identified as a risk factor for or cause of mental health disorders, related to family dysfunction, and recognized as a potential outcome of substance abuse during pregnancy. Learning activities included textbook readings, lecture, class discussions, and the Stewards of Children training. This training is a nationally recognized training that teaches individuals how to prevent, recognize, and respond to child sexual abuse. This training combined the cognitive levels *remember* and *apply* of Bloom's taxonomy because it equipped the learner with both identification and application skills (Figure 1). Courses in the fourth year (semester seven) identified ACEs as a risk factor for chronic disease and discussed how ACEs increase the individual's risk of developing health-harming behaviors during lectures and class discussions. According to Bloom's taxonomy, this content and the learning activities could be classified as *remember* and *understand* cognitive levels (Figure 1). In another fourth-year course (semester seven), trauma was associated with dangerous occupations, natural disasters, and exposure to violence or addiction, thus posing a risk factor for suffering. Additionally, in this course, the faculty member emphasized protective factors that promote a transition from the adverse effects of trauma to health and resilience. This trauma-focused content and the associated learning activities could be classified as the *understand* cognitive level of Bloom's taxonomy. Finally, the focused experiential learning course in the fourth year (semester seven) focused on TIC and utilized learning modules, case studies, virtual simulations, and reflective journals, which are classified as the *understand*, *apply*, and *analyze* cognitive levels of Bloom's taxonomy (Figure 1).

Faculty members also described their use of the concept, interpersonal violence, within two courses. Both of these courses were previously mentioned in the analysis of curriculum

documents. The course in the second year (semester three) linked interpersonal violence to health promotion and the utilization of screening tools. Textbook readings, lecture and a simulation were utilized for student learning. During the simulation, students were evaluated on the correct use of a screening tool for women displaying signs of domestic violence. A course in the third year (semester seven) also utilized a simulation related to the concept of interpersonal violence. During this simulation, students were evaluated on their communication strategies with and focused assessment of a patient suffering from physical and psychological abuse. Both simulations are classified as the *apply* cognitive level of Bloom's taxonomy (Figure 1).

Additional faculty members discussed topics or learning activities that are associated with trauma but did not label them as trauma. A therapeutic nutrition course in the third year (semester five) presented a patient case study that demonstrated the impact emotional stress can have on hospitalized patients and their nutritional status while healing. In a fourth-year course (semester eight), the faculty member lead a class discussion on the intensive care unit (ICU) environment and its impact on the patient, family and nurse. The faculty member encouraged nursing students to practice self-care as experiences in the ICU environment can be a traumatic and stressful for everyone involved. Finally, faculty members from two courses in the first year (semesters one and two) of the nursing curriculum acknowledged that while the concept of trauma was not directly identified in the courses, it was embedded in other topics such as social determinants of health, vulnerable populations, and health disparities. A summary of the current utilization of the concept of trauma is depicted Figure 5.

Discussion

This quality improvement project began with an analysis of the concept of trauma within Belmont University's undergraduate nursing curriculum. Evidence of concept utilization was

discovered in both the curriculum documents and through faculty interviews. The curriculum documents provided a general overview of the utilization, while the faculty interviews supplemented the information from the documents, provided new insights regarding the use of the concept, and revealed areas where the concept was applied in a course but not reflected in the curriculum documents. Utilization of a curriculum map ensured that each curriculum document and faculty interview was analyzed and recorded with a systematic and uniform process.

Benefits

The curriculum mapping process produced several benefits for this quality improvement, which were also demonstrated in previous research studies. It provided structure and reduced the complexity of analyzing 163 course documents and interviewing 21 faculty members (Neville-Norton & Cantwell, 2019). The curriculum map provided a visual blueprint of the existing curriculum. It presented an overall picture of the current utilization of the concept of trauma, identified redundancies, and discovered gaps in the content as well as untapped opportunities for student learning (Landry et al., 2011; Neville-Norton & Cantwell, 2019). The concise table formats easily communicated findings, validated that the analysis was based on evidence and not opinion, and created the foundation for developing a concept integration plan (Levin & Suhayda, 2018; Murray et al., 2015).

Opportunities for Improvement

The curriculum map revealed opportunities for improving the current utilization of the concept of trauma. The project leader noted during the curriculum analysis that trauma was not defined in any course. A variety of terms were used to describe psychological trauma, although their connection and relationship to trauma were missed or unclear. Examples of terms used in courses included interpersonal violence, emotional stress, emotional pain, childhood trauma,

violence and abuse. Previous studies noted that concepts provide the foundational infrastructure of a concept-based curriculum and developing a definition for collective understanding and consistent use are keys to curriculum success (Giddens & Brady, 2007; Laverentz & Kumm, 2017). Therefore, determining and utilizing a common definition could enhance both faculty and student understanding of trauma and facilitate learning at higher levels of Bloom's taxonomy.

While Figure 5 illustrates that content and learning activities were structured within courses, the curriculum map revealed that the use of the concept of trauma was fragmented across the entire curriculum and lacked sequencing. Intentional scaffolding of a concept throughout a curriculum allows students to apply prior knowledge of the concept and enhances the breadth and depth of understanding (Laverentz & Kumm, 2017; Murray et al., 2015). Furthermore, the constructive alignment theory proposes that an aligned instructional design supports the process of knowledge acquisition (Biggs, 1996; Biggs, 2014). However, it was challenging to identify an overall hierarchical structure for the content, learning experiences, and assessments during the curriculum analysis.

Another opportunity for improvement related to a broader use of the concept of trauma, as it was often taught through a specialty lens. Courses considered the impact of trauma in mental health, pediatrics, obstetrics, and community health. However, evidence supports the population-level effects of ACEs and TIC promotes a universal application of its principles regardless of a patient's trauma history (CDC, 2020; Crouch et al., 2019; Felitti, 2002; Felitti et al., 1998; Fleishman et al., 2019; Merrick et al., 2019; Sacks & Murphey, 2018). Therefore, a broader understanding of the concept across the lifespan applied in all care settings prepares the generalist nurse to provide safe, effective, and quality healthcare.

Although the impact of trauma on patients was explored in several courses, the project leader found little about the impact of trauma on nurses. One course identified lateral violence in its course calendar and one faculty member discussed the need for self-awareness in the ICU environment due to the potential for traumatizing experiences. However, previous research has demonstrated that a nurse's personal trauma history or experiencing trauma while caring for patients influences burnout, attrition, and quality of care (Cieslak et al., 2014; Fleishman et al., Foli & Thompson, 2019). While Belmont's current curriculum contains concepts that focus on professional identity formation and resiliency, these learning activities are not currently linked to the concept of trauma. Demonstrating how the concept of trauma is connected to professional identity formation and resiliency may help nursing students recognize personal or potential professional traumas, as well as facilitate resiliency prior to entering the workforce.

Next Steps

After mapping the concept of trauma in the existing curriculum and summarizing the findings, the project leader will present these findings and recommendations during faculty work groups. All full-time undergraduate faculty members, including lecturers, will be invited to participate in these sessions focused on integrating the concept of trauma throughout Belmont's undergraduate nursing curriculum. Previous researchers have found similar work groups encouraged faculty discussions about teaching methodologies, increased collaboration, and promoted engagement in the curriculum evaluation process (Laverentz & Kumm, 2017; Murray et al., 2015; Neville-Norton & Cantwell, 2019). Initial recommendations for the faculty work groups include establishing a common definition of trauma and linking trauma to the existing sub concepts of interpersonal violence, professional identity formation, and resilience, as well as eliminating redundancies in the current content. Additional recommendations include utilizing

Bloom's taxonomy to create a scaffolded integration of the concept across the curriculum and developing content focused on the psychological trauma that nurses themselves experience both before and during their professional development. Furthermore, to identify and optimize best practices for integration, the proposed plan should be compared to trauma-informed content from TIC experts.

Limitations

There were limitations to analyzing the existing curriculum for the use of the concept of trauma. One limitation was that trauma is not a currently recognized concept in Belmont's undergraduate nursing curriculum, and information regarding its use was challenging to identify. The curriculum mapping tool (Figure 4) was created prior to the analysis of the curriculum documents and faculty interviews, and the findings did not correlate well with all of the categories on the proposed map. However, this tool was developed based on tenets from the constructive alignment theory and Bloom's taxonomy. Therefore, what seemed like inconsistencies between the map and findings could potentially be gaps in the curriculum and opportunities for improvement. As previously mentioned, the project leader is a current faculty member, who has collegial relationships with participating faculty members. These relationships could have potentially promoted a social desirability bias during the faculty interviews. Despite the project leader's passion and commitment to integrating the concept of trauma, this view may not be shared by all faculty, especially with the recent shift to a concept-based curriculum. Neville-Norton and Cantwell (2019) found that faculty buy-in regarding curriculum changes supported by mapping was a gradual process, but the willingness of faculty increased as student learning improved. Additionally, the project leader determined that the work of curriculum analysis is better suited for groups of faculty members instead of one individual. Laverentz and

Kumm (2017) discovered that continuous quality improvement of a curriculum promotes faculty collaboration and enhances the mutual respect for each members' knowledge. Finally, the curriculum map was developed for and findings were based on one BSN curriculum, and the results were not intended to be generalizable. However, the process of curriculum mapping for concept analysis can be replicated and customized by other nursing schools to ensure that the areas analyzed and the data gathered for curricula or concept revisions reflect their unique goals and values (Murray et al., 2015).

Conclusion

Despite the prevalence of ACEs and growing awareness of the impact of trauma on health, research concerning the integration of trauma-informed content within nursing curricula is limited. In order to develop a systematic plan for integrating the concept of trauma into Belmont's undergraduate nursing curriculum, the project leader began with an analysis of the existing curriculum's utilization of the concept. The curriculum map developed for the analysis provided structure for surveying the course documents and faculty interviews, identified redundancies, and discovered gaps in the existing curriculum as well as untapped opportunities for student learning. Findings clearly demonstrated utilization of the concept of trauma within the existing curriculum. However, opportunities for improvement exist, including a common definition for trauma, linking existing sub concepts to trauma, intentional scaffolding of the concept throughout the curriculum according to Bloom's taxonomy, and content focused on the psychological traumas that nurses may themselves experience. The findings have created a foundation for the next steps in this quality improvement project, as faculty works groups will collaboratively develop an integration plan for the concept of trauma. Furthermore, the curriculum map used during the analysis can also be used in the development of the integration

plan. Curriculum mapping is an ongoing process, as continuous quality improvement is needed in nursing curricula to ensure that programs reflect the current healthcare environment and optimize student learning outcomes. This project demonstrates a systematic approach for analysis of a concept to promote best practices for subsequent concept integration.

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Figure 1
Bloom's Taxonomy

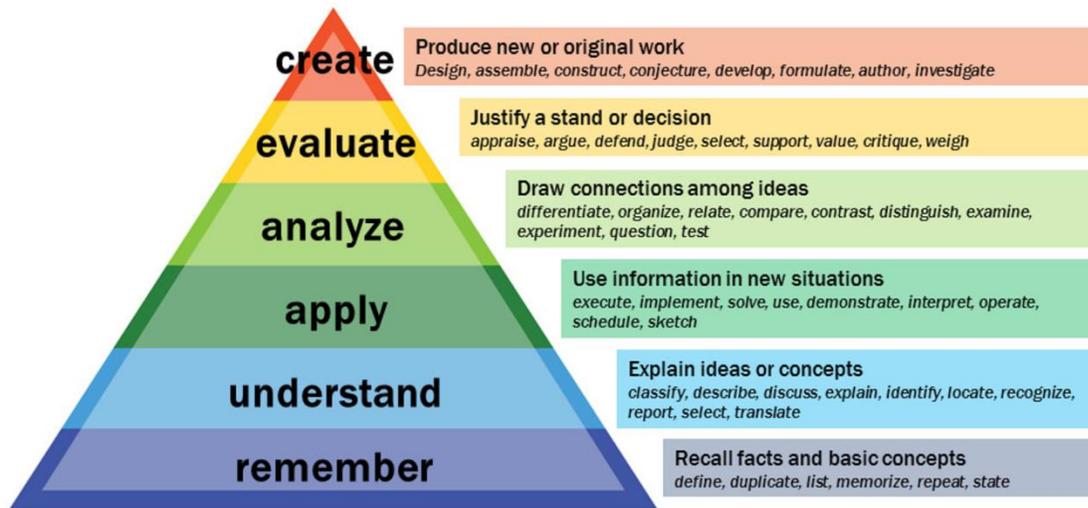


Figure 1. Bloom's taxonomy is a framework for classifying learning outcomes based on a cumulative hierarchy of cognitive skills (Krathwohl, 2002). Image retrieved from: Armstrong, P. (2010). *Bloom's taxonomy*. Vanderbilt University Center for Teaching. <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>

Figure 2
Model of Concept Integration

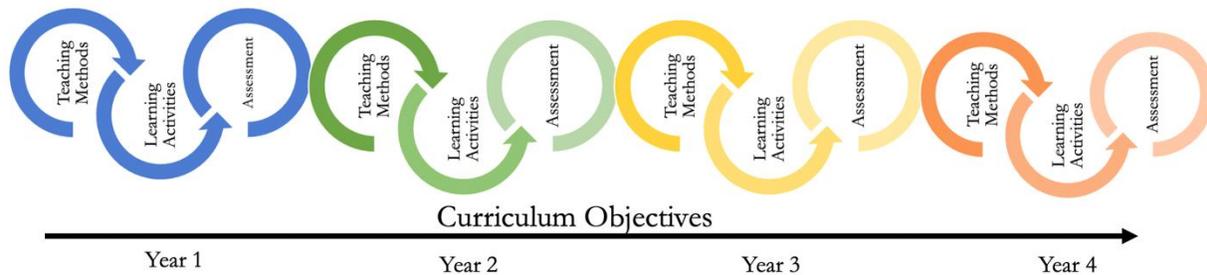


Figure 2. Model depicting how constructive alignment and Bloom's taxonomy were used during analysis of Belmont's undergraduate nursing curriculum. The model also depicts how, following analysis, constructive alignment and Bloom's taxonomy will then be used to organize outcomes, teaching methods, learning activities and assessments. Model created by project leader.

Figure 3
Plan-Do-Study-Act (PDSA) Cycle

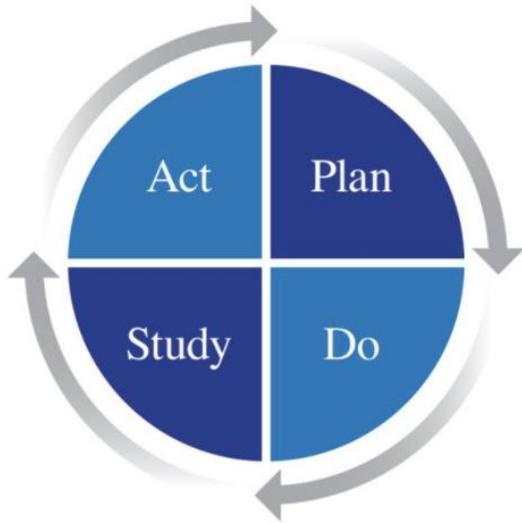


Figure 3. Model of PDSA cycle for quality improvement. Image retrieved from: PDSA cycle. (n. d.). The W. Edward Deming Institute. Retrieved April 24, 2021 from <https://deming.org/explore/pdsa/>

Figure 4
Example of Curriculum Mapping Tool

Course Number	Course Name	Placement Within Program (Example: Semester 1)	Summary of Content Covered	Related Curricular Concept	Related Curricular Exemplar	Learning Objectives that Reflect the Concepts of Trauma & TIC	Learning Activities Related to the Concepts of Trauma & TIC	Evaluation of Learning Objectives	Level on Bloom's Taxonomy
NUR 3010	Care Management 1	Semester 5	ACEs predispose individuals to mental health disorders.	Maladaptive Coping	Addiction	1. Discuss how ACEs affect mental health.	None	None	Understand

Figure 4. Example of curriculum mapping tool used during the survey of course documents and faculty interviews. Tool developed by the project leader.

Figure 5
Summary of Concept Utilization

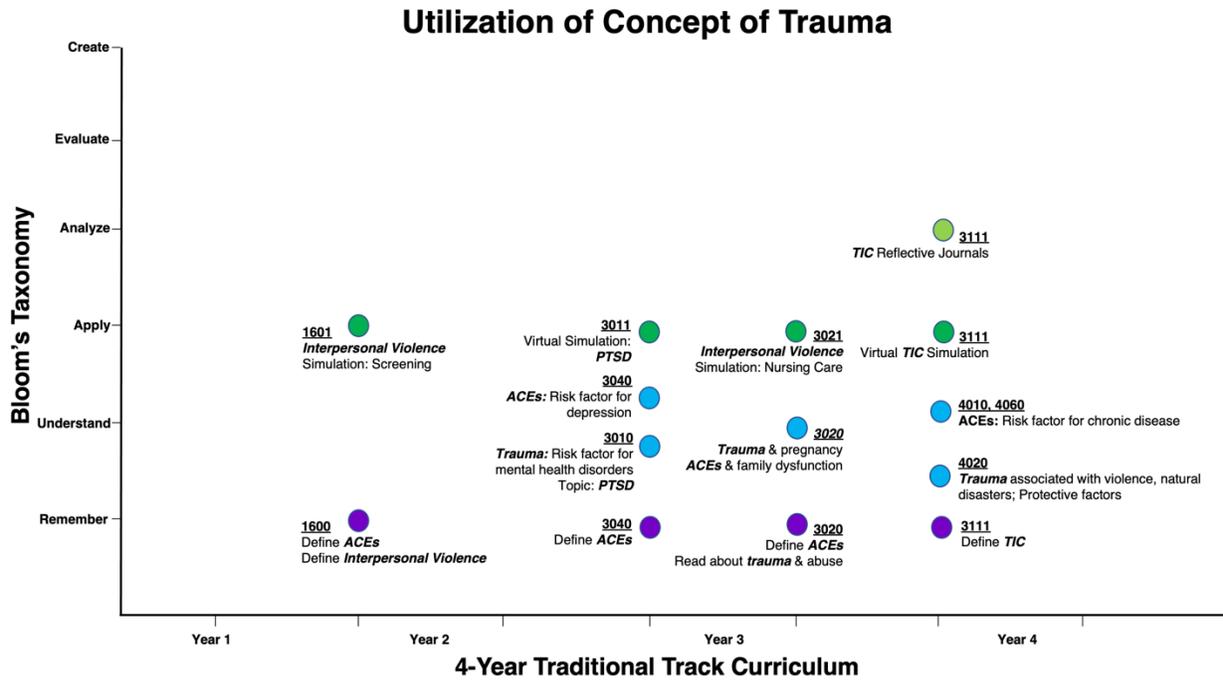


Figure 5. Summary of concept utilization across Belmont’s undergraduate nursing curriculum according to Bloom’s taxonomy.

Table 1

Belmont University's School of Nursing 4-Year Traditional Track

Year 1	
<u>Semester 1</u>	<u>Semester 2</u>
<ul style="list-style-type: none"> • NUR 1010 <i>Perspectives in Healthcare</i> 	<ul style="list-style-type: none"> • NUR 1020 <i>Diversity in Healthcare</i>
Year 2	
<u>Semester 3</u>	<u>Semester 4</u>
<ul style="list-style-type: none"> • NUR 1600 <i>Wellness, Assessment & Health Promotion</i> • NUR 1601 <i>Lab: Assessment & Foundation Skills</i> 	<ul style="list-style-type: none"> • NUR 2270 <i>Foundations of Care Management</i> • NUR 2271 <i>Foundations of Experiential Learning</i> • NUR 2030 <i>Introduction to Pharmacology</i> • NUR 2250 <i>Lifespan Nutrition</i> • NUR 2290 <i>Nursing Research</i>
Year 3	
<u>Semester 5</u>	<u>Semester 6</u>
<ul style="list-style-type: none"> • NUR 3010 <i>Care Management I</i> • NUR 3040 <i>Patho/Pharm I</i> • NUR 3011 <i>Experiential Learning I</i> • NUR 3100 <i>Nurse as Scholar</i> • NUR 3350 <i>Therapeutic Nutrition</i> 	<ul style="list-style-type: none"> • NUR 3020 <i>Care Management II</i> • NUR 3050 <i>Patho/Pharm II</i> • NUR 3021 <i>Experiential Learning II</i> • NUR 3200 <i>Nurse as Team Member</i>
Year 4	
<u>Semester 7</u>	<u>Semester 8</u>
<ul style="list-style-type: none"> • NUR 4010 <i>Care Management III</i> • NUR 4060 <i>Patho/Pharm III</i> • NUR 4011 <i>Experiential Learning III</i> • NUR 4020 <i>Populations & Their Contexts</i> • NUR 3111 <i>Focused Experiential Learning</i> 	<ul style="list-style-type: none"> • NUR 4030 <i>Care Management IV</i> • NUR 4031 <i>Experiential Learning IV</i> • NUR 4200 <i>Nurse as Leader</i> • NUR 4015 <i>Senior Capstone</i> • NUR 4220 <i>Preceptorship</i>

Table 2
Mapping of Curriculum Documents

Course Number Name	Placement Within Program	Document Source	Reference to Trauma	Related Curricular Concept/s
NUR 1600 Wellness, Assessment, & Health Promotion	Year 2 Semester 3	Course Calendar & Course Objective Analysis Grid (COAG)	<ul style="list-style-type: none"> •Topics covered in course: ACEs, elderly abuse •Concept of interpersonal violence addressed by course objectives 	<ul style="list-style-type: none"> •Multiple concepts/sub concepts listed •Interpersonal violence included •Unable to determine interrelationships of the concepts from documents
NUR 1601 Lab: Assessment & Foundational Skills	Year 2 Semester 3	Course Calendar & COAG	<ul style="list-style-type: none"> •Concept of interpersonal violence listed as interrelated with health promotion •Topics covered in course: Intimate partner violence and associated screening tools •Concept of interpersonal violence addressed by course objectives 	<ul style="list-style-type: none"> •Multiple concepts/sub concepts listed •Interpersonal violence included
NUR 3010 Care Management I	Year 3 Semester 5	Course Calendar	<ul style="list-style-type: none"> •Topic covered in course: Post-traumatic stress disorder (PTSD) 	<ul style="list-style-type: none"> •Maladaptive coping/behavior
NUR 3011 Experiential Learning I	Year 3 Semester 5	Course Calendar	<ul style="list-style-type: none"> •Virtual simulation: Care of patient with PTDS 	<ul style="list-style-type: none"> •Not indicated on calendar
NUR 3020 Care Management II	Year 3 Semester 6	Course Calendar	<ul style="list-style-type: none"> •Textbook readings about trauma and abuse •Concept of interpersonal violence addressed by course objectives 	<ul style="list-style-type: none"> •Interpersonal violence
NUR 3021 Experiential Learning II	Year 3 Semester 6	COAG	<ul style="list-style-type: none"> •Learning activity to support course objectives: Interpersonal violence simulation 	<ul style="list-style-type: none"> •Multiple concept/sub concepts listed •Interpersonal violence not included •Unable to determine interrelationships of the concepts from documents
NUR 3200 Nurse as Team Member	Year 3 Semester 6	Course Calendar	<ul style="list-style-type: none"> •Topics covered in course: Workplace violence, bullying, lateral violence 	<ul style="list-style-type: none"> •Not indicated on calendar
NUR 3111 Focused Experiential Learning	Year 4 Semester 7	Syllabus Course Calendar	<ul style="list-style-type: none"> •Multiple references in syllabus and course calendar 	<ul style="list-style-type: none"> •Not indicated on syllabus or calendar
NUR 4010 Care Management III	Year 4 Semester 7	Course Calendar & COAG	<ul style="list-style-type: none"> •Topic covered in course: Elder abuse •Learning activity to support course objective: Elder abuse case study 	<ul style="list-style-type: none"> Population Health •Social determinants of health •Health disparities •Vulnerable populations •Levels of prevention
NUR 4020 Populations and Their Contexts	Year 4 Semester 7	Course Calendar	<ul style="list-style-type: none"> •Topic covered in class: Violence 	<ul style="list-style-type: none"> •Not indicated on calendar

Table 3
Mapping of Faculty Interviews

Course Number Name	Placement Within Program	Reference to Trauma or Interpersonal Violence	Learning Activities/Assessments	Bloom's Taxonomy Cognitive Level
NUR 1600 Wellness, Assessment, & Health Promotion	Year 2 Semester 3	<ul style="list-style-type: none"> •ACEs defined •ACEs related to levels of prevention •Topic covered in course: Elderly abuse 	<ul style="list-style-type: none"> •Textbook readings •Lecture •In-class discussion/TED talk •Exam questions 	<ul style="list-style-type: none"> •Remember
NUR 1601 Lab: Assessment & Foundational Skills	Year 2 Semester 3	<ul style="list-style-type: none"> •Interpersonal violence related to health promotion/screening tools 	<ul style="list-style-type: none"> •Textbook readings •Lecture •Simulation •Creighton Competency Evaluation Instrument 	<ul style="list-style-type: none"> •Apply
NUR 3010 Care Management I	Year 3 Semester 5	<ul style="list-style-type: none"> •Trauma can be a risk factor for or cause of mental health disorders 	<ul style="list-style-type: none"> •Textbook readings •Lecture •In-class discussion 	<ul style="list-style-type: none"> •Understand
NUR 3040 Patho/Pharm I	Year 3 Semester 5	<ul style="list-style-type: none"> •ACEs defined •ACEs are risk factor for depression •Opioids misused for emotional pain 	<ul style="list-style-type: none"> •Lecture •In-class discussion 	<ul style="list-style-type: none"> •Remember •Understand
NUR 3350 Therapeutic Nutrition	Year 3 Semester 5	<ul style="list-style-type: none"> •Topic covered in course: Metabolic stress •Emotional stress can impact nutritional status of hospitalized patient 	<ul style="list-style-type: none"> • Case study 	
NUR 3020 Care Management II	Year 3 Semester 6	<ul style="list-style-type: none"> •Trauma is an influential factor in development of fetus. •Trauma can be reactivated during prenatal care or birth process. •ACEs defined •ACEs related to family dysfunction •ACEs as a potential outcome of substance abuse in pregnancy 	<ul style="list-style-type: none"> •Textbook readings •Lecture •In-class discussion •Stewards of Children training •Exam questions 	<ul style="list-style-type: none"> •Remember •Understand •Apply
NUR 3021 Experiential Learning II	Year 3 Semester 6	<ul style="list-style-type: none"> •Topic covered in course: Interpersonal violence 	<ul style="list-style-type: none"> •Simulation •Creighton Competency Evaluation Instrument 	<ul style="list-style-type: none"> •Apply
NUR 3111 Focused Experiential Learning	Year 4 Semester 7	<ul style="list-style-type: none"> •Entire course focused on care of patients across the life span through a trauma-informed lens 	<ul style="list-style-type: none"> •Article readings •Learning modules from Trauma-Informed Oregon •Case studies •Virtual simulations •Reflective journals 	<ul style="list-style-type: none"> •Remember •Understand •Apply •Analyze
NUR 4010 Care Management III	Year 4 Semester 7	<ul style="list-style-type: none"> •ACEs increase individual's risk of developing health-harming behaviors 	<ul style="list-style-type: none"> •Lecture •In-class discussion 	<ul style="list-style-type: none"> •Understand
NUR 4060 Patho/Pharm III	Year 4 Semester 7	<ul style="list-style-type: none"> •ACEs are a risk factor for chronic disease 	<ul style="list-style-type: none"> •Lecture •In-class discussion 	<ul style="list-style-type: none"> •Understand
NUR 4020 Populations and Their Contexts	Year 4 Semester 7	<ul style="list-style-type: none"> •Trauma associated with dangerous occupations, natural disasters, exposure to violence/addiction •Protective factors that mitigate the impact of traumas 	<ul style="list-style-type: none"> •Textbook readings •Lecture •In-class discussion 	<ul style="list-style-type: none"> •Understand
NUR 4030 Care Management IV	Year 4 Semester 8	<ul style="list-style-type: none"> •ICU environment as traumatic experience for patient, families, and nurse •Nurses should develop and practice self-care strategies to mitigate impact of ICU experiences 	<ul style="list-style-type: none"> Lecture •In-class discussion 	