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College of Health Sciences

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Crystal Hartis Andrews

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Walden University
2020

Abstract

Improving Suicide Prevention in the Emergency Department

by

Crystal H. Andrews

MSN, University of South Alabama, 2012

BSN, University of North Carolina at Greensboro, 2009

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

August 2020

Abstract

Suicide is a leading cause of death and a significant public health problem in the United States, especially among the youth population. The wide variability of screening practices and limited educational programs for nurses in terms of identification and management of individuals at risk for suicide exists. The purpose of this project was to conduct a systematic review to identify evidence available in support of adequately preparing nurses to conduct suicide screening and inform suicide prevention efforts for youth in emergency departments. Results from the literature review were correlated to formulate recommendations for improving suicide screening practices through the provision of suicide prevention education for nursing staff. The theoretical framework guiding this project is Love's theory of empowered holistic nursing education. It emphasizes treatment of the whole person through accentuation of therapeutic presence and interconnectedness. An analysis and synthesis of 9 peer-reviewed publications was conducted. Results from this systematic review revealed that there continues to be limited and diverse universal suicide screening practices and a high degree of variability in terms of educational offerings related to suicide prevention for nurses. Creating standardized educational programs for nurses pertaining to suicide screening and intervention has the potential for positive social change by empowering nurses to perform timely identification and treatment for youth at risk for suicide in emergency departments.

Improving Suicide Prevention in the Emergency Department

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Section 1: Project Introduction

Suicide is globally recognized as a significant and preventable public health issue that considerably affects every facet of society (World Health Organization [WHO], 2014). Suicide continues to be a noteworthy cause of premature death, especially among youth (Centers for Disease Control [CDC], 2017). For youth between 10 and 14 years of age, suicide is ranked among the top three causes of death (CDC, 2017). Among the 15-24 age group, it is the second primary cause of early death (CDC, 2017). The stigma involving mental health conditions persists; therefore, individuals may not seek timely treatments and present to medical settings such as emergency departments (EDs) for treatment when experiencing emergent mental health issues. The ED provides a safe place for individuals at risk for suicide.

Frontline staff nurses, such as ED nurses, play a crucial role in assessing individuals at risk for suicide, regardless of the person's presenting problem. Inquiring about suicide commonly evokes a feeling of discomfort and awkwardness among nurses working outside of a mental health setting due to the uncertainty of the patient's response and fear that it will exacerbate thoughts of suicide (Antai-Otong, 2016). In actuality, the establishment of rapport through a compassionate and straightforward approach will enhance communication and quality of assessment (Betz & Boudreaux, 2016). Most patients welcome the opportunity to discuss their intense emotional pain, thoughts, and feelings about suicide and are receptive to learning positive coping strategies for overwhelming life stressors (Betz & Boudreaux, 2016). Failure to thoroughly screen

patients regarding suicidal ideations can lead to missed opportunities to save their lives and connect them to valuable resources (Antai-Otong, 2016).

The Doctor of Nursing Practice (DNP) project involved conducting a systematic review of evidence in support of universal youth suicide screening. The main objectives were to promote nurses' awareness of the prevalence of youth suicide and enhance their knowledge related to suicide screening, risk assessment, and referral to the appropriate level of care. Providing evidence that can be translated into clinical practice has the potential to positively influence patient care delivery and outcomes for youth presenting for treatment in the ED who may be at risk for suicide.

Problem Statement

The ED is a prime entry point for patients in search of medical and/or mental health services (Antai-Otong, 2016). Approximately 12 million annual ED visits are a result of a mental health emergency (CDC, 2017). Other individuals seeking medical treatment may present to the ED for a nonmental chief health complaint but may be experiencing suicidal thoughts. In addition, self-inflicted injuries are a common reason for youth to present for ED treatment, with an estimated 157,000 visits per year (CDC, 2017).

At a local hospital in the Pacific Northwest area of the United States, suicide screening was recently implemented for adult patients who present to the ED. The project setting does not currently have a systematic approach to screening youth for suicide. In response to the rising national rates of suicide deaths, the Joint Commission (TJC) issued

patient safety goals, recommendations, and sentinel alerts related to identifying patients at risk for suicide across all healthcare settings. TJC (2016) reported that suicide remains one of the most reported patient safety incidents causing severe transient injury, irreversible disability, or death and not recognizing a patient's risk for suicide is regarded as the primary cause of these unanticipated events.

Interdisciplinary executive leadership team members consisting of nurses, physicians, and public health professionals in the organization met to align current suicide screening practices with the organization's strategic plan, accreditation standards, and patient safety goals. This organization's current practice involves referring youth who present to the ED with a mental health principal complaint or known history of mental health issues to a mental health professional. Currently, the organization does not have a standardized screening process or validated screening tool in the ED; thus, universal suicide screening for youth is not being conducted. One identified barrier to conducting a suicide screening in a medical setting is the staff's lack of knowledge and protocols to effectively manage patients who screen positive (National Institute of Mental Health [NIMH], 2018). Additionally, according to ED leadership at this site, nurses expressed they were ill-prepared to perform youth suicide screenings due to lack of education in this area.

Purpose

The intent of this DNP project was to complete a systematic review of the best available evidence regarding youth suicide prevention in the ED in support of preparing

nurses to conduct suicide screening. The clinical practice gap identified involves nurses' lack of knowledge associated with the identification and management of patients who may be at risk of suicidal behaviors through a standardized screening process. Nonmental nurses do not routinely receive specialized education identifying mental health issues (Rutledge et al., 2013). Furthermore, there is not a standardized process for universal suicide screening in many EDs; thus, screening is not routinely performed (Heyland, Delaney, & Shattell, 2018). The practice question was: What is the current evidence addressing youth suicide prevention in the ED to support the formulation of standardized universal screening practices through nursing education? A presentation of this systematic review to ED nursing leadership has the potential to serve as an underpinning for the development of a nursing education program and the identification of a systematic process for suicide screening.

Nature of the Doctoral Project

An extensive literature search was conducted of peer-reviewed journals using the following databases: Medline, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Cochrane Library, Joanna Briggs Institute, Health Source, PubMed, Google Scholar, and National Guidelines Clearinghouse Databases. Parameters of the literature search included peer-reviewed journals in English and published between 2014 and 2019. In addition, professional nursing organizations such as the American Nurses Association (ANA) and the American Psychiatric Nurses Association (APNA) were searched for

available resources on suicide prevention. This systematic review followed the steps outlined in the *Walden University Manual for Systematic Review*.

The systematic review of existing evidence is vital to successful changes in practice, which is founded on robust empirical evidence through analysis of the clinical issue and extracting knowledge regarding suicide screening. The steps in conducting a systematic review consisted of delineating the clinical practice question, defining specific inclusion and exclusion criteria, selecting search terms, performing a thorough search of the pertinent studies, selecting the studies, and appraising the quality of those identified studies. Organizing, appraising, and analyzing the literature involved the decision-making matrix established by Melnyk and Fineout-Overholt. This grading system was applied to verify that the highest-quality evidence was chosen.

Conducting a systematic review helped in identifying evidence related to suicide screening and its impact on suicide prevention. Literature was synthesized to identify any gaps in nursing practice and how new knowledge can be generated to advance suicide prevention efforts. The results of this systematic review will be used to identify evidence-based processes that can be employed by the nursing administration to develop clinical practice guidelines and a nursing education program regarding youth suicide screening.

Significance

Achieving the greatest impact on reducing suicide involves supporting efforts involving transforming health systems and communities while also changing dialogue regarding suicide. Clinicians from a wide variety of professions and settings, including

nurses, will encounter individuals at risk for suicide. A primary suicide prevention objective to reduce suicide rates is to ensure that a proficient and resilient clinical staff is sufficiently educated and equipped to conduct suicide screening and risk assessment, appropriate interventions, and adequate monitoring and follow up.

Nurses who are adequately prepared to observe and evaluate suicidal behavior can facilitate interventions to assist patients who may be at risk for suicide. Many nurses do not feel confident in dealing with apparent challenges due to having limited to no training in terms of competently assessing for the presence of suicidal behavior. Such situations can pose a significant burden if nurses feel unprepared.

A proactive approach to identify those individuals at risk for suicide is a national priority for reducing suicide rates, saving lives, and connecting individuals at risk to resources (Horowitz, Boudreaux, Schoenbaum, Pao, & Bridge, 2018). The causative factors related to suicide are multifactorial and research suggests reducing suicide rates is best achieved across individual, relational, familial, communal, and societal levels. The approach of raising awareness of suicide while simultaneously fostering prevention, resiliency, social support, and commitment is paramount to promote human connectedness and in creating positive social change.

Evidence-based information obtained from a systematic literature review that influences changes in the suicide screening process can have the potential for positive social change for patients, nurses, and the hospital system. Identifying youth at risk for suicide has the potential to facilitate referrals to appropriate mental health resources within local

communities to provide the youth with crisis intervention services and additional treatment. The ED management team may use the evidence obtained from this project to design an evidence-based curriculum focused on increasing nurses' knowledge of suicide screening and intervention in addition to establishing a framework to promote similar programs throughout the hospital system. As a result, nurses will become knowledgeable about early identification of youth at risk for suicide and be empowered to apply appropriate interventions to maintain patient safety. The potential transferability of this project exists for a variety of practice areas involving implementing evidence-based suicide prevention education and can be tailored to specific clinical settings.

Summary

Section 1 identified the clinical practice problem, purpose, nature, and significance of this DNP project. To address suicide, healthcare organizations are tasked with early identification of patients at risk for suicide. With youth suicide deaths increasing by 30% from 2000 to 2016 (CDC, 2018), it is crucial to identify and support those at risk to save lives. The goal of this project was to synthesize existing evidence related to nursing education in the timely recognition and management of youth at risk for suicide in the ED.

The project consisted of a systematic review to evaluate the existing body of knowledge regarding preparing ED nurses to screen youth who may be in danger of taking their own life. The results of this systematic review may be used by the ED to guide the formulation of nursing education for validated age-specific screening tools,

referral processes, and appropriate nursing interventions. Section 2 includes concepts, models, and theories relevant to the staff development program and nursing practice. In addition, Section 2 provides background and context along with my role in the doctoral project.

Section 2: Background and Context

The prevalence of suicide is a significant public health issue, especially among youth (Oregon Health Authority, 2016). The DNP project's practice-focused question was: What is the current evidence involving youth suicide prevention in EDs to support the formulation of standardized universal screening practices through nursing education? Suicide is a leading cause of death in youth between the ages of 10 and 19 and the national rate has been steadily increasing since 1990 (CDC, 2016). In a longitudinal study conducted from 2000-2010, Ahmedani et al. (2014) discovered that over 40% of insured individuals who died by suicide received healthcare services in the 12 months prior to their death. The highest percentage were middle-aged males; however, the analysis of 5,894 charts and insurance claims reviews included all age groups (Ahmedani et al., 2014).

Suicide screening has often not been routinely conducted in healthcare settings such as the ED on individuals presenting with a primary medical issue. The lack of universal suicide screening for nurses in healthcare settings involving validated tools, coupled with discomfort in asking about suicide, hinders recognition and timely intervention of youth at risk for suicide. The purpose of this DNP project was to complete a systematic review of the best empirical evidence regarding youth suicide screening in the ED. The ED is often a primary source of treatment for individuals suffering from mental health conditions due to accessibility of care and its status as a less stigmatizing

way to seek treatment. The systematic review will be presented to ED leadership for the development of a clinical practice guideline and nursing education.

Section 2 includes applicable concepts, models, and theories that were used to inform the project, as well as existing literature on suicide prevention for youth. Finally, local background and context and the role of the DNP student will be explained.

Concepts, Models, and Theories

The theory that will guide this project is empowered holistic nursing education (EHNE) developed by Dr. Katie Love. Dr. Love proposed this theory to assist nurse educators in terms of a holistic, student-centered classroom approach to teaching. The complexity of patient care requires a holistic nursing care approach that does not involve compartmentalizing physical, mental, and spiritual care.

The five fundamental principles of this theory are the use of prior knowledge, contextual teaching-learning, interconnectedness, self-care, and meeting individuals where they are (Love, 2014). Prior knowledge involves exploring backgrounds, experiences, and perspectives. Contextual teaching-learning includes the operational environment consisting of individual values, beliefs, worldviews, and readiness to learn. Interconnectedness fosters modeling of professional communication and caring boundaries. Self-care involves performing deliberate actions for the promotion of caring for one’s mental, emotional, and physical wellbeing so that individuals can take care of others. The principle that guided this project was interconnectedness.

A foundational component of the nurse-patient relationship is interconnectedness and development of a therapeutic rapport. Multiple factors converge and culminate into a person feeling distressed and contemplation of suicide as a solution. Conducting universal suicide screening promotes a dialogue between nurses and patients at risk for suicide.

In today's ever-changing healthcare environment, training and education are paramount for nurses to stay abreast of advancements in research and technology. The principles of the EHNE theory provides the tools to incorporate disease prevention, health promotion, nurses' therapeutic presence, and interconnectedness of the patient-nurse relationship into nursing education. This theory embodies viewing individuals as complex mind-body-spiritual beings and the clinical application of holistic care concepts into the delivery of direct patient care.

Relevance to Nursing Practice

The World Health Organization [WHO] (2014) estimated that one person every 40 seconds takes their life around the world every year, and suicide is the second leading cause of death among 15 to 29-year olds. Furthermore, for every person who dies by suicide, another 20 make an attempt (WHO, 2014). Despite these statistics, there continues to be a lack of standardization in terms of suicide screening practices in healthcare settings, most notably universal screening. A myriad of factors contribute to the lack of universal suicide screening across healthcare settings, and subsequently, suicide risk goes undetected, and deaths continue to increase.

A person's suicide risk can fluctuate with time and circumstance (Betz et al., 2016), making a strong case for universal suicide screening at each visit to a healthcare setting. Furthermore, an estimated 40% of individuals who died by suicide had visited an ED for a non-mental health chief complaint (Da Cruz et al., 2011). Unfortunately, these patients' suicide risks frequently go undetected unless they are explicitly asked, as they will not volunteer information about their mental health issues or the presence of suicide ideations (Betz et al., 2016).

Confidence and self-efficacy of nurses outside of a mental health setting in conducting suicide screening and assessment is often identified as a barrier for engaging in preventive detection. Another significant barrier that hinders universal suicide screening practices is related to providers' attitudes and personal beliefs regarding suicide. Among the health care staff there is a common perception that screening all patients will be time-consuming and negatively impact workflow (Betz et al., 2013). Additionally, the American Association of Colleges of Nursing (2008) outlines competencies that emphasize the importance of a holistic patient care delivery approach, including conducting thorough assessments focused on safe patient-centric clinical care, interdisciplinary communication, and collaboration. However, specific nursing educational components regarding suicide prevention interventions are omitted from baccalaureate curriculums (Puntil, York, Limandri, Greene, Arauz, & Hobbs, 2013).

Due to the high prevalence of suicide, the United States Surgeon General's national initiative in 2012 urged credentialing agencies to ensure healthcare professionals

complete core competencies related to suicide prevention strategies (US Department of Health and Human Services, 2012). The educational offerings for health care professionals have increased since 2017, with 10 states requiring mental and behavioral health professionals to complete mandated suicide prevention training. Only three states, Nevada, West Virginia, and Washington include mandatory suicide prevention training for nurses and physicians.

Specifically, in the Pacific Northwest region of the United States, Washington state legislation was passed in 2014, requiring all health professions to have required training for suicide prevention. On January 1, 2016, the Washington State Department of Health instituted mandatory training for all nurses regarding suicide prevention. The training consists of 6 hours of instruction in the following areas: suicide assessment, treatment, and management, imminent risk of harm via lethal means or self-injurious behaviors, and content related to veterans.

The American Association for Suicidology (AAS, 2013) published a policy paper identifying the need for suicide assessment and management training of mental health professionals since historically, there has been limited educational offerings for this healthcare profession. Mental health professionals are often consulted to provide suicide risk assessments and treat patients at risk for suicide; thus, education in suicide prevention strategies are indicated. However, the largest number of health care staff members, nurses, who are often the frontline staff providing initial, direct care for suicidal patients have often been omitted from educational offerings. Standard

competencies did not exist at the registered nurse (RN) level of education until the American Psychiatric Nurses Association (APNA) developed competencies for assessment and management of in-patient suicide risk in 2014.

This DNP project advances nursing practice by synthesizing and translating empirical evidence related to adequately preparing ED nurses to conduct suicide screenings and provide appropriate interventions for youth identified at risk for suicide. The evidence collected will be disseminated to ED leadership at the practicum site for consideration in the development of nursing education. A serious gap in nursing education has been identified in the provision of care to youth who may be at risk of suicide and will ultimately increase patient safety.

Local Background and Context

The prospect of conducting my project in the context of an emergency department of a large hospital within the Pacific Northwest initiated a more in-depth conversation about the importance of suicide screening for all youth. Even though there have been hundreds of studies examining suicide behaviors, the death rates from suicide have not decreased over the past 50 years (National Action Alliance for Suicide Prevention, 2014). There continues to be a fragmented approach to suicide prevention within healthcare.

To promote preventative identification of suicide behaviors in youth, my practicum experiences and the DNP project accentuates the ED's leadership efforts of enhancing knowledge translation and robust utilization of available evidence to facilitate incorporation of the research into existing clinical practices. This systematic review can

be considered an essential resource to align EBP, TJC guidelines, and organizational policies in the care of youth who may be at risk for suicide and present to the ED. The development of this systematic review served to appraise and synthesize the best evidence related to suicide screening of youth to provide recommendations for developing clinical protocols and nursing education.

Establishing the importance of screening all youth is imperative to achieve buy-in and ownership of the initiative. The Oregon Health Authority (OHA, 2016) indicated that suicide is the second leading cause of death for youth between the ages of 10 and 24. There has been a rise in the number of suicides in Oregon since 2011, with Oregon ranking higher than national averages.

Data collected between 2012-2013 ranked youth suicide 14th among all the states at 11.0 per 100,000. In addition, self-inflicted injury/attempted suicide account for annual hospitalizations of over 500 Oregon youth between the ages of 10 to 24 years (OHA, 2016). In 2014, there were 566 hospitalizations, which equates to 75.2 per 100,000 people (OHA, 2016). This data surveillance does not capture the number of youths who endorse suicidal ideations. Figure 1 illustrates middle and high school student responses from the Oregon student wellness survey related to the prevalence of suicide ideations in the preceding 12 months.

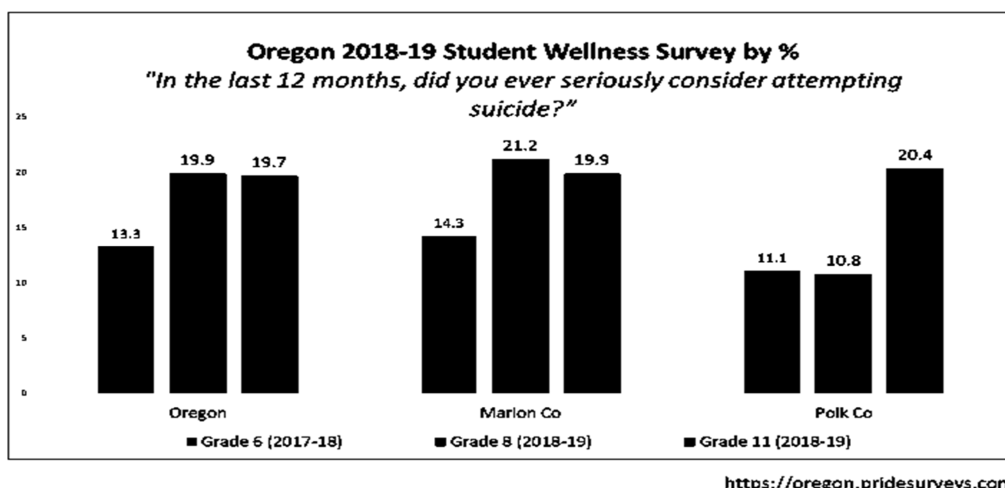

Figure 1. Oregon Student Wellness Survey results for 2018-2019.

Role of the DNP Student

Having worked in the mental health field for most of my nursing career, I have seen the significant impact of suicide deaths on individuals, families, and communities. The practicum experiences have allowed me to be an advocate for this initiative and as an interdisciplinary consultant to provide subject matter expert guidance as the hospital develops strategic goals. My motivation for pursuing this topic as my project has been the significant impact suicide has had on both my personal and professional life. The inadequate number of mental health providers throughout the US commands that all healthcare professionals identify and intervene to address this public health concern; thus, saving lives.

Summary

At any pivotal point in healthcare delivery, a nurse could encounter an individual who may be at risk for suicide. Early identification and intervention are imperative to

saving lives. The impact of suicide on individuals, communities, and society are far-reaching.

Section 2 introduced evidence relevant to this clinical practice problem, empowered holistic nursing education theory and the related concepts, and the importance of this project to the institution and nursing practice. Section 3 will reintroduce the local problem, the purpose of the project, and the practice question. The process of exploring the literature to complete the systematic review will be outlined. The method of analyzing and synthesizing the evidence to complete a systematic review will be introduced.

Section 3: Collection and Analysis of Evidence

This systematic review involved appraising current evidence related to youth suicide screening in the ED. This evidence may be used in the development of nursing education related to universal suicide screening for youth in the ED by a hospital in the Pacific Northwest region of the US. Section 3 will include the scope of this systematic review, inclusion and exclusion criteria, the practice-focused question, methodology, and sources of evidence. In addition, an explanation of the methods for chronicling, tracking, classifying, and evaluating studies and practices for maintaining the integrity of evidence will be presented.

Practice-Focused Question

The practice-focused question for this project was: What is the current evidence addressing youth suicide prevention in the ED to support the formulation of standardized universal screening practices through nursing education?

Sources of Evidence

A comprehensive literature search was conducted using the following databases: Medline, CINAHL, Cochrane Library, Joanna Briggs Institute, Health Source, PubMed, Google Scholar, and National Guidelines Clearinghouse Databases. All sources were from peer-reviewed journals in English and published between 2014 and 2019. Articles not in the English language, or those including age groups outside of the young adult population, and letters to editors or publications based on opinions were excluded from the study.

Professional nursing organizations, such as the ANA, APNA, and NIMH were also searched for current resources regarding suicide screening. The key search terms included *suicide prevention*, *suicide reduction, suicide intervention, youth*, *adolescents*, *young people*, *teen, young adult*, *nurses, nursing, nurse, nurses', nurse's, education, training, program,* and *curriculum.* This systematic review followed the steps outlined in the *Walden University Manual for Systematic Review*. These steps included the delineation of exclusion and inclusion criteria for the evidence, execution of a broad search of all relevant empirical evidence, selection of the studies, and application of established standards to appraise the study quality. Additional actions consisted of collection of all known information on the topic and identification of the basis for the knowledge, extraction, analysis, and synthesis of the relevant studies with translation of the results to determine applicability and limitations. The last steps in the systematic review process comprised the identification of recommendations for future studies and implications for clinical practice and presentation of the results.

The purpose of the systematic review was to collect pertinent evidence to answer a specific clinical practice question. This process involved identifying all primary research relevant to the defined question, conducting a critical appraisal of this research, and synthesizing the findings. A quality systematic review is essential to inform healthcare practitioners and researchers in existing evidence-based clinical practices to remain current with the large and rapidly emerging body of evidence. Even though there has been extensive research conducted on suicide, there continues to be a gap in clinical

practice related to identifying, managing, and intervening with patients presenting with suicidal behaviors in medical settings. Conducting this systematic review will help provide ED leadership and practitioners with robust and up-to-date evidence to support formulating clinical practice guidelines and nursing education.

Ethical Protections

This project involved synthesizing literature and did not include the direct participation of human subjects, an examination of patient records, or conducting clinical interventions. Therefore, consent was not required. Permission from the Walden University IRB was obtained before moving forward.

Analysis and Synthesis

The selected evidence was reviewed using the Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0). SQUIRE was designed to enhance the comprehensiveness and transparency of quality improvement efforts while serving as a guide for reporting. Organizing the literature consisted of using a summary table (see table A1) developed from the criteria outlined in the SQUIRE guidelines. In addition, the Preferred Reporting Item for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram documented the studies included in the systematic review (see figure B1). This flow diagram incorporates the number of records identified through the database search, the number of records screened to remove any duplicates, the number of eligible articles, and the number of studies included in the synthesis.

The grading of the evidence used a well-known evidence-based grading evaluation model by Melnyk and Fineout-Overholt. This rating system was used to ensure the highest quality evidence was chosen during the literature review. Melnyk and Fineout-Overholt's evidence grading scale is comprised of seven levels based on the study design. The systematic review and meta-analysis of randomized controlled trials and clinical guidelines are graded as level I, the highest possible level of evidence (Melnyk & Fineout-Overholt, 2015). Level II represents one or more randomized controlled trials (Melnyk & Fineout-Overholt, 2015). Level III consists of controlled trials without randomization and case-control or cohort studies signifies level IV (Melnyk & Fineout-Overholt, 2015). Level V is a systematic review of descriptive and qualitative studies, level VI is a single descriptive or qualitative study and level VII is expert opinion (Melnyk & Fineout-Overholt, 2015).

Summary

In this section, I reintroduced the practice-focused question, defined inclusion and exclusion criteria for the literature review, and identified sources, analysis, and synthesis of evidence regarding the topic of youth suicide screening in the ED. The purpose of this project was to report up-to-date empirical evidence regarding youth suicide screening efforts to support the development of clinical practice guidelines and nursing education. In Section 4, I discuss the literature findings and implications, including the synthesis of selected studies and recommendations for establishing a clinical practice guideline and development of nursing education regarding suicide prevention for youth. Strengths and

limitations of the systematic review will be reviewed as they relate to addressing the identified clinical practice question.

Section 4: Findings and Recommendations

The goal of this systematic review was to identify and summarize the highest quality available evidence regarding youth suicide prevention in the ED in support of adequately preparing nurses to conduct suicide screening. Suicide of youth remains a leading cause of death, and the rate has steadily increased since 1990 (CDC, 2016), gaps in clinical practice regarding universal screening practices persist. Numerous factors contribute to this lack of standardization, most notably limited educational opportunities to prepare nurses in performing the screening adequately. This systematic review addressed the following practice-focused question: What is the current evidence addressing youth suicide prevention in the ED to support the formulation of standardized universal screening practices through nursing education?

A methodical approach to searching the literature using distinct concepts and terms of interest related to the topic of suicide prevention was used. Conjunctions were used to link the terms. This specific approach allows for exploration of various aspects of a subject or shifts the direction of an inquiry without duplicating long series of synonyms. Guidance from an expert librarian was sought to ensure this technique yielded the most results.

The search yielded a total of 170 articles. After removing duplicates and reviewing abstracts using predetermined inclusion criteria, I narrowed the search to 68, with nine articles meeting all inclusion criteria. The selected articles were ranked according to Melnyk and Fineout-Overholt's hierarchical level of evidence (see Table 1).

Articles were collated in terms of identified level of evidence with an exploration of their strengths and limitations along with implications for nursing practice and additional research.

Table 1

Hierarchical Level of Evidence for Selected Studies

Level of Evidence	Study Type	Studies *N*
I	Systematic review or meta-analysis	1
II	Randomized controlled studies	0
III	Controlled trials without randomization	3
IV	Case-controlled trials and cohort studies	2
V	Systematic review of qualitative or descriptive studies	0
VI	Qualitative or descriptive studies	3
VII	Expert opinions or census	N/A

NA – not applicable – excluded category

Section 4 consists of the evaluation and synthesis of selected articles for this systematic review. Strategies used to obtain relevant research articles using chosen inclusion and exclusion criteria are provided. Inclusion criteria for this search involved key terms limited to the English language and articles published between 2014 and 2019 in peer-reviewed journals. This study omitted any article that did not include youth populations and any expert opinions or letters to the editor.

Findings and Implications

Many of the identified studies involved qualitative or descriptive evidence related to suicide screening, self-efficacy of nurses in terms of suicide prevention and care, and assessment of nurses' attitudes towards youth who may be at risk for suicide. The

evidence is compelling that more emphasis should be placed on preparing frontline nursing staff to address negative beliefs or biases and boost their confidence when working with vulnerable patient populations at risk for suicide. Primary focus areas include providing suicide prevention education to nursing staff to improve knowledge of suicide risk and fostering therapeutic responses in support of at-risk individuals. Another essential aspect to consider in the implementation of suicide prevention efforts involves the selection of a validated and reliable screening tool that is easily integrated into the busy clinical setting.

This review was intended to examine available evidence in support of adequately preparing nurses through education to screen youth for suicide in the ED. One of the overarching approaches to suicide prevention that recurred throughout this review was inclusion of nursing educational programs regarding early identification of individuals at risk for suicide through screening. The intent of screening practices is to improve human connectedness and engagement through therapeutic and supportive interactions.

By providing suicide prevention education, research supports positive changes that often occur in terms of nurses' confidence level, self-efficacy, competence, knowledge, and attitudes related to youth suicide screening. There continues to be a wide variation in clinical practices related to conducting suicide screening for youth and the use of a standardized screening tool. Implementing universal suicide screening practices does not significantly impact workflow; however, it has been successful in detecting patients at risk of suicide apart from their presenting complaints (Boudreaux et al., 2016).

The results from this systematic review may help in increasing ED leadership's awareness in terms of establishing educational programs for nursing staff focused on early detection of youth at risk for taking their own lives. Additionally, it could help improve youth suicide screening rates and implementation of universal suicide screening practices by bolstering nurses' confidence in initiating conversations about this sensitive issue. Further, emphasis should prioritize long term and sustainable clinical practice changes to positively impact patient care delivery and outcomes related to suicide prevention initiatives and the expansion of universal suicide screening.

Level I

The only level I study involved a systematic review of the effectiveness of educational programs for nurses in suicide prevention. All studies in this systematic review included ethical principles and no conflicts of interest with an appropriate level of approval obtained by the Institutional Review Board. Specific limitations acknowledged consisted of small sample sizes, lack of generalization of results, use of a single institution, and the possibility of underreporting among the number of patients identified as having suicidal ideations during the screening process.

Ferguson et al. (2018) conducted a systematic review of peer-reviewed articles to determine the efficacy of suicide prevention education programs designed specifically for nurses. The authors identified 11 articles based on their specified inclusion criteria. Their systematic review was comprised of studies that were conducted in several different

countries, including China, Taiwan, Brazil, Japan, The Netherlands, Norway, Portugal, and the United States.

Across all studies, there was a wide range in sample sizes, varying from 16 to 561 participants, and included various work settings of the nurses, predominately in-patient units. Other variations included the duration of the educational intervention, ranging from 1.5 to 21 hours, who presented the training, the primary focus of the training, and the resources offered to each participant. Many of the articles included in the systematic review by Ferguson et al. (2018) did not provide specifics on these variations. The findings from this systematic review propose and validate that educational interventions can be efficacious in strengthening competence, knowledge, self-efficacy, and improved attitudes of nurses who work with patients at risk for suicide. Ferguson et al. (2018) recommended applying more rigorous study designs, prioritization of clinical practice changes, and extended follow-up periods to ascertain the sustainability of those changes while also maintaining professional development support.

Level II

The grade of level II involves evidence obtained from at least one randomized clinical trial (RCT). RCT is a study design that indiscriminately designates participants into an experimental group or a control group. During the process of reviewing and evaluating the available body of evidence, there were no studies identified that met grading criteria for level II.

Level III

Blair, Chhabra, Belonick, and Tackett (2018) analyzed the results from a pre- and post-intervention survey used to measure the self-efficacy of non-psychiatric nurses after receiving education focused on suicide risk assessment and implementation of prevention strategies. The educational curriculum was delivered by a nurse and comprised the best evidence-based practices in suicide care. The specific components of the module included Suicide Assessment Five-Step Evaluation and Triage (SAFE-T) suicide inquiry tool; Chronological Assessment of Suicide Evaluation (CASE), which is an interviewing strategy to elicit the presence of suicide ideations and plans; and Question-Persuade-Refer (QPR), which is a training designed to teach individuals within a community in the detection, intervention, and management of someone at risk for suicide.

One in-patient unit setting, neuro-trauma, was selected based on the frequency of patient safety concerns and rates of continuous suicide observation. A total of 50 nurses volunteered to participate in the training intervention, with 49 of those answering all survey questions. The homogeneity of the sample demographics reduces the ability to generalize the results. The data analysis revealed a statistically significant increase (p-value of ≤ 0.05) in the postintervention nurses' confidence level in caring for patients suffering from suicide ideations when compared to the survey results before education occurred. The authors' recommendations included standardizing mandatory educational programs focused on suicide prevention and care across health care settings. Additionally, ongoing evaluation of quality improvement efforts on what impact

educational programming has on patient-related suicide behaviors, and deaths should be conducted. Further, a recommendation for periodic postintervention surveys to evaluate the sustainability of the retention and confidence level of the nurses over time should be considered.

Manister, Murray, Burke, Finegan, and McKiernan (2017) also analyzed the effectiveness of a staff education program aimed to increase the confidence and knowledge of nurses on assessing suicidal ideations and intervening after a patient had been identified at risk for suicide. The sample size included 577 in-patient nurses who attended the mandatory one-hour class with 461 completing the pretest survey and only 200 completing the posttest survey. The additional analysis yielded the exclusion of participants that had previous behavioral health experience. The final data analysis yielded 117 cases that met all inclusion criteria. The results confirmed that a focused educational program could improve nurse's confidence in inquiring about suicidal ideations and increases their knowledge of preventative measures on in-patient units, which could potentially lead to improved patient outcomes. The authors' recommendations included the development of on-line training, comparative evaluations with in-person training, and broaden the offering of the training to new employees during orientation.

Boudreaux et al. (2016) presented the results from their three-phased interrupted time series landmark study, which examined the feasibility and effectiveness of performing universal suicide screening in the emergency department (ED). This study

comprised of eight emergency departments across seven states from 2009-2014. Phase one included only treatment as usual. Phase two incorporated universal suicide screening and phase three added intervention to universal suicide screening. Nurses were provided training on the screening tool and interventions either by the specific site's clinical staff or via webinar. The researchers concluded that not only was universal suicide screening achievable and did not contribute significantly to workflow, but it led to approximately a two-fold increase in risk detection. Chart reviews of 236,791 ED patient visits indicated a rise in documented screenings from 26% in phase one to 84% in phase three.

This ED Safety Assessment and Follow-up Evaluation (ED-SAFE) sought to establish and evaluate a standardized approach to universal suicide screening within the ED setting. The second objective was to trial an intervention, which involved follow-up telephone contact in an effort to decrease the likelihood of suicidal behavior among those who screened positive for suicide risk. This study has the potential to serve as a foundation for further studies in improving suicide screening with use of other validated screening tools and targeted intervention across all EDs. The screening tool used was the Patient Safety Screener-3, which assesses for the presence of depressed mood, active suicidal ideations in the past two weeks, and any lifetime suicide attempts.

Level IV

Weatherly and Smith (2019) sought to evaluate the use of two screening tools, the Columbia-Suicide Severity Rating Scale (C-SSRS) and the Patient Health Questionnaire-9 (PHQ-9) modified for teens to assess the presence of depression symptoms and to

identify adolescents who may be a higher risk for suicidal behaviors. The C-SSRS is a 6-question scale used to recognize suicidal ideation and behavior. The PHQ-9 modified for teens is a 9-question screening tool used to assess for the presence of depressive symptoms and determine severity. The small, convenience sampling size of 13 adolescents, coupled with only one provider in one emergency department administering the tools, limits the generalizability of the findings; however, the results provided a basis to conduct future studies with a larger sample size. The utility of using two screening tools simultaneously to identify the presence of depression symptoms as well as suicide risk cannot be underscored as an efficient method to improve adolescent safety with timely access to the appropriate level of mental health services. The two validated screening tools used in this study yielded a 62.2% accuracy of identifying patients with either severe depressive symptoms or high suicide risk who would require in-patient care services (Weatherly & Smith, 2019).

In a retrospective cohort study, Ballard et al. (2017) analyzed nursing compliance with the administration of a brief suicide screening tool, the Ask Suicide Screening Questions (ASQ), for youth in a pediatric emergency department (ED). The use of a single site review limits the generalization of the results. Statistical analysis of the data included a 79% compliance rate for screening, with 58% of youth screening positive. Fifty-three percent of those youth screening positive did not present to the ED with a suicide-related chief complaint (Ballard et al., 2017). The results suggest that suicide screening tools can be incorporated into workflow and routine care delivery with a

reasonably high nursing compliance level. The use of the screening tool embedded in the electronic health record emphasizes the ease of implementation and the added benefit of detecting suicide risk in patients who may have otherwise gone unnoticed.

Level VI

A descriptive study conducted in a hospital's accident and emergency department in Kenya by Maina, Bukusi, and Kumar (2019) focused on the assessment of nurses' self-efficacy in assessment and management of suicide risk. A convenient sampling of 64 nurses was used in this study. A questionnaire was administered and yielded an unexpected result of despite having a low mean score in suicide risk assessment; the nurses had a slightly higher mean score in risk management and an even higher score in the referral process. These findings indicated that nurses could benefit from an educational program focused on suicide assessment and management of patients at risk for suicide to improve self-efficacy, especially in the use of brief suicide screening tools designed for the setting. Additionally, formalized clinical practice procedures and policies in the assessment and management of patients at risk for suicide could be beneficial. Limitation of only one setting and a small sample size precludes the generalization of the study results.

An analysis of the quantitative and qualitative data received from an electronic questionnaire mailed to 10,000 Royal College of Nursing in the United Kingdom was conducted in 2015 by Rebair and Hulatt (2017). The response rate was only 4%, with receipt of a total of 415 responses. Most of the respondents had over 15 years of general

nursing experience. The findings revealed that 96% of respondents considered knowledge about suicide prevention and awareness as necessary for nurses. Additionally, 95% felt it was essential to have time to explore their personal feelings, thoughts, and attitudes about suicide, whereas 93% believed this should be included in the training.

This survey confirmed that nurses need and desire development in increasing knowledge and skills in suicide prevention through training and education. The nurses identified several barriers to engagement in conversations about suicide. These included limited time and available resources; lack of skill, training, and knowledge; stigma; and insufficient mental health services. The author recommended the development of mandatory training with annual updates encompassing a multidimensional approach to learning and to generate compassion to reduce the stigma surrounding suicide.

Pullen, Gilje, and Tesar (2016) presented results on their multi-method descriptive study to illicit baccalaureate nursing students' responses to an identified suicide prevention gatekeeper training, QPR. A convenience sample of one hundred and fifty senior nursing students enrolled in a psychiatric nursing course during their first semester participated in this study. The training was provided at the end of the semester, and pre- and post-surveys were completed. The data analysis revealed that there was a significant increase in understanding and confidence with suicide prevention after taking the training. The qualitative results confirmed that students felt more comfortable intervening with someone who was considered at risk for suicide after receiving the training. The

homogenous group consisted of mainly female, Caucasian students. The authors recommended expanding the study to include more ethnically, diverse groups.

Findings Summary

Analysis and synthesis of the articles included in this review demonstrate the utility for nursing education programs, albeit formal curriculum or on-the-job. These educational programs can serve to strengthen nurses' confidence, self-efficacy, and comfort in screening for the presence of suicidal thoughts or behaviors and intervening with youth who may be at risk for suicide. There continues to be a wide array of approaches to provide this information, but it continues to be limited in its offerings. The small sample sizes in the studies do not allow for generalization of the study findings. The studies concerning suicide screening demonstrate the multitude of available screening tools and methods.

The search of the literature confirmed the existence of the identified gap in educating nurses outside of the psychiatric setting in suicide prevention strategies. Additionally, in a clinical practice setting, the timely recognition of suicide risk can be vital in connecting the vulnerable individual with the appropriate level of treatment and potentially save a life. The summary of findings presented in table 2 provides current evidence-based approaches that address suicide screening practices within the ED. Table 3 provides an overview of the evidence in support of suicide prevention education. The results from this systematic review can serve as a guide for EDs to design specific

educational programs and processes to prepare nurses in identifying and intervening when a youth presents to the ED and may be at risk for suicide.

Table 2

Evidence Supporting Suicide Screening

Studies	Findings
Boudreaux et al., 2016. *Improving Suicide Risk Screening and Detection in the Emergency Department*	Universal use of the Patient Safety Screener-3 (PSS-3-3 question scale) in the ED led to significant increase in nursing staff risk detection, from 2.9% to 5.7%. This three-phased interrupted time series study resulted in documented screenings rising from 26% in phase 1 to 84% in phase 3.
Weatherly & Smith, 2019. *Effectiveness of Two Psychiatric Screening Tools for Adolescent Suicide Risk*	Use of an adolescent suicide screening tool (C-SSRS, a 6-question scale) along with a depression screening tool (PHQ-9, a 9-question scale), in the ED identified 62% who required in-patient psychiatric treatment. Both tools were administered in less than 5 minutes and decreased assessment time needed to determine disposition for the adolescents.
Ballard et al., 2017. *Identification of At-Risk Youth by Suicide Screening in a Pediatric Emergency Department*	Universal suicide screening, such as the Ask Suicide Screening Questions (ASQ 4-question instrument), identified positive screens in 53% of ED patients who did not have a primary suicide-related complaint. Brief universal suicide screening is feasible as a standard nursing care practice and has the potentiality to guide suicide prevention strategies in pediatric ED settings

Table 3

Evidence Supporting Suicide Prevention Education

Studies	Findings
Ferguson et al., 2018. *The Effectiveness of Suicide Prevention Education Programs for Nurses: A Systematic Review*	There is sufficient evidence in support of the efficacy of suicide prevention education programs for nurses. Educational interventions for nurses can improve competence, knowledge, and attitudes when working with individuals at risk for suicide. *(table continues)*

Studies	Findings
	Clinical practice changes for nurses should be emphasized. Sustainability of changes should be explored.
Blair et al., 2018. *Non-Psychiatric Nurses' Perceived Self-Efficacy after an Educational Intervention on Suicide Prevention and Care*	Statistically significant improvement was noted in nurses' perceived self-efficacy across all areas of suicide education after an in-person educational module was presented. The researcher recommends live educational intervention for all nurses.
Manister et al., 2017. *Effectiveness of Nursing Education to Prevent Inpatient Suicide*	Clinical nurses' knowledge relating to self-confidence to assess in-patients' suicidal risk significantly increased after participating in a 1-hour suicide prevention education class. The researcher recommends on-line education for suicide prevention for all new nurses to the institution.
Maina, Bukusi, & Kumar, 2019. *Suicide Prevention by Emergency Nurses: Management and Referral at Kenyatta National Hospital in Kenya*	ED nurses in Kenya reported below average self-efficacy related to suicide assessment, management, and referral due to limited training. The researchers recommend training nurses in use of brief suicide screening tools and suicide management within busy clinical settings.
Rebair & Hulatt, 2017. *Identifying Nurses' Needs in Relation to Suicide Awareness and Prevention*	An electronic survey identified nurses' self-reported barriers to engaging in conversations about suicide include stigma, limited skills, knowledge and training, and constraints of time and available resources. Development of knowledge through an educational curriculum can prepare nurses across all practice settings in addressing suicide.
Pullen, Gilje, & Tesar, 2016. *A Descriptive Study of Baccalaureate Nursing Students' Responses to Suicide Prevention Education*	Senior level baccalaureate nursing students reported increased confidence in their ability to intervene with patients at risk for suicide after receiving QPR gatekeeper training. Further research is recommended to expand the training within more culturally diverse areas.

Recommendations

Universal suicide screening in the ED has the potential to improve preventative detection for youth who may be at risk but have otherwise gone undiscovered. Evidence

presented universal suicide screening in the ED identified patients at risk despite the absence of risk for suicide in their presenting chief complaint. This timely identification and intervention can save a life. Furthermore, identification and use of validated screening tools are paramount to evidence-based clinical practice and suicide prevention initiatives.

To fully achieve universal screening for suicide, educational programs in suicide assessment and management are vital. Standardization of these educational interventions in suicide prevention and intervention is imperative to establish best practices in the care of individuals at risk for suicide. Educational programs provided to nurses have shown positive outcomes in confidence levels, increased knowledge, improved self-efficacy and attitudes regarding suicide screening and management of an at-risk individual. The ED is a dynamic and often hectic environment. Stigma and personal biases can influence suicide screening compliance, but with increased knowledge and self-efficacy, the negative feelings towards suicide can decrease.

I recommend the implementation of an educational program for nursing staff regarding the processes of screening for suicide and appropriate interventions based on the screening outcome of every youth who presents to the ED. Roaten et al. (2018) noted a significant finding from their implementation of a universal suicide screening program, one-third of the patients endorsed a positive response to the screening item about having a history of suicidal behavior. Even though this is a non-acute risk indicator, the patient could still benefit from a brief intervention, such as informing them of available resources

for additional support. The educational program should be standardized and founded on the highest level of evidence provided.

Strengths and Limitations of the Project

The strengths of this project included a comprehensive and systematic review of the highest level of evidence available. Even though a broad approach to searching relevant terms was used, a limited date range consisted of gathering the most up-to-date information from 2014-2019. Limitations included a lack of evidence related to specific components of the educational programs available for nurses and the use of a variety of suicide screening tools. Assistance was sought by collegial library staff for search criteria; however, all available articles were collated solely by me and there was not a review by another researcher. The data was extracted by me and is limited by my personal interpretation.

Future projects can expand this systematic review to include evidence of specific validated screening tools and the impact these screening tools have on screening compliance rates. Inclusion of specific educational components for nurses could provide a basis for further studies in boosting confidence and knowledge acquisition in suicide prevention strategies for all clinical settings and how this education impacts suicide death rates. A paradigm shift must occur in health care settings to combat suicide, promote prevention, and decrease stigma. Not only should the focus be on saving lives but providing support to individuals who are at risk for suicide, the establishment of therapeutic rapport, and connecting them to valuable resources.

Section 5: Dissemination Plan

Introduction

Suicide is a complex and dynamic public health issue, and a comprehensive approach to suicide prevention efforts is necessary. Strategies should include the timely identification of individuals at risk for suicide through screening practices and education regarding early risk detection, supportive interventions, and referral to the appropriate level of care. In this systematic review, I focused on evidence that supports suicide screening and suicide prevention education. This final section outlines the dissemination plan and an analysis of self.

Dissemination Plan

The dissemination of the results from this systematic review will emphasize current practice gaps among suicide prevention efforts of youth in EDs related to screening practices and the provision of nursing education. Nursing education is an essential component of suicide prevention because it provides nurses with information about the prevalence of suicide, increases knowledge regarding screening for at-risk individuals, and appropriate interventions to provide support for individuals who are identified as at risk. Initially, the results of the systematic review will be shared using a PowerPoint presentation with the ED leadership team at the local practicum site. Second, an abstract will be submitted for inclusion into a peer-reviewed journal, *the Journal of Emergency Nursing.* Lastly, the presentation of the findings from this systematic review will be submitted for a poster/podium presentation at local and regional nursing

conferences. Additionally, I hope to contribute to the development of an educational curriculum focused on educating nurses on suicide prevention and management in the ED.

Analysis of Self

Conducting this systematic review required a firm grasp of the research topic, an awareness of the process of conducting a systematic review, enhanced skills in terms of analyzing and synthesizing evidence, and knowledge of the specific components of a high-quality literature review. This has been a formidable task that has fostered additional skills involving nursing scholarship and translating evidence into clinical practice, which I can integrate into my daily practice as a psychiatric nurse practitioner. I have gained advanced leadership skills through this project implementation and my practicum experiences that I will incorporate into my current position as I develop an advanced practice provider program within my organization.

My long-term goal is to secure a faculty position where I hope to influence the inclusion of suicide prevention education into nursing curricula. Through collaboration with other disciplines, my expertise as a practitioner has lent credibility to my efforts and allowed me to articulate the importance of suicide screening and prevention strategies throughout all healthcare settings. The completion of this project symbolizes the culmination of many years of experience in mental health nursing and dedication to the completion of this monumental academic achievement.

I have devoted my nursing career to making a difference in the lives of patients who seek help or may be suffering in silence. One of the main challenges I have faced in my scholarly journey was time constraints due to work demands, but my perseverance to achieve my professional goals has helped motivate and inspire me to see this through. This academic endeavor has provided additional insight into the benefit of translating evidence into practice and broadened my knowledge of project management and scholarly writing.

Summary

This final section of the project provided an opportunity to highlight my plan for dissemination of the evidence presented in my systematic review and skills acquired regarding nursing practice addressing youth suicide prevention. Additionally, I explained the necessity of change related to suicide prevention care of youth who present to the ED and may be at risk for suicide. The results of this systematic review can serve as a guide for EDs to inform evidence-based practices addressing suicide screening practices and youth suicide prevention.

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Appendix A: Summary of Systematic Review Inclusion Articles

Table A1

Systematic Review Article Summaries

Author(s) Year	Level of Evidence	Study Design	Setting	Sample Size *N*	Outcomes
Ballard et al. (2017)	IV	Retrospective cohort/chart review	Single hospital pediatric ED	*N* 970 patients	18-month study, use of the ASQ resulted in a 79% suicide screening compliance rate by pediatric ED nurses. Screening identified 53% of youth who did not have a primary suicide-related complaint. Brief universal suicide screening is achievable and can guide suicide prevention strategies in pediatric EDs
Blair et al. (2018)	III	Quasi-experimental/ quality improvement	Single hospital neuro-trauma unit	*N* 49 nurses	Educational module provided to 50 nurses. A pre- and post-intervention assessment measured self-efficacy related to suicide prevention. Paired *t* test results yielded an increase in individual mean confidence related to caring for patients with suicide behaviors.

(table continues)

Author(s) Year	Level of Evidence	Study Design	Setting	Sample Size *N*	Outcomes
					Recommend in person suicide prevention educational interventions for nurses.
Boudreaux et al. (2016)	III	Interrupted time series/chart review	Eight hospital EDs in seven states	*N* 236,791 patient visits	Two-fold increase in suicide risk detection; screenings increased from 26% in phase 1 to 84% in phase 3. Foundation for further studies to improve suicide screening by using validated screening tools and targeted suicide prevention interventions.
Ferguson et al. (2018)	I	Systematic review	Studies collated from eight countries	*N* 11 articles	Variations in sample sizes, work settings, duration of educational intervention, presenter, primary focus of training, and resources offered to participants. Recommend more rigorous study designs, prioritize practice changes, and follow-up to determine sustainability.

(table continues)

Author(s) Year	Level of Evidence	Study Design	Setting	Sample Size *N*	Outcomes
Maina, Bukusi, & Kumar (2019)	VI	Descriptive	ED in Kenya	*N* 64 nurses	Questionnaire results yielded low mean score in suicide risk assessment, slightly higher mean score in risk management, and even higher score in referral process. Recommend suicide prevention educational programs for nurses, clinical practice procedures and policies relating to assessment and management of suicide risk.
Manister et al. (2017)	III	Quasi-experimental	Single hospital-in-patient unit	*N* 117 nurses	One-hour suicide prevention class resulted in increase of nurses' confidence and knowledge level related to suicide assessment and intervention. Recommend offering trainings during nurse orientation.

(table continues)

Author(s) Year	Level of Evidence	Study Design	Setting	Sample Size *N*	Outcomes
Pullen, Gilje, & Tesar (2016)	VI	Descriptive	One nursing school	*N* 150 senior RN students	Undergraduate nursing students reported increased confidence to intervene with patients at-risk for suicide after attending an hour QPR class. Recommend further studies to expand the class offerings to culturally diverse students.
Rebair & Hulatt (2017)	VI	Descriptive	Mailed surveys	*N* 415 nurses	Results identified nurses' reports of significant barriers to engaging in a dialogue about suicide including limited skills, knowledge, and training, time constraints and limited resources. Recommend develop educational programs to prepare nurses in all practice areas in addressing suicide.

(table continues)

Author(s) Year	Level of Evidence	Study Design	Setting	Sample Size *N*	Outcomes
Weatherly & Smith (2019)	IV	Cohort/pilot study	One ED/one provider	*N* 13 patients	Use of 2 screening tools for suicide risk and presence of depression in youth (C-SSRS & PHQ-9) yielded 62.2% accuracy of early identification of suicide risk or severe depression symptoms and appropriate level of care. Recommend expand use of these tools in the ED.

Appendix B: Literature Review Flow Chart

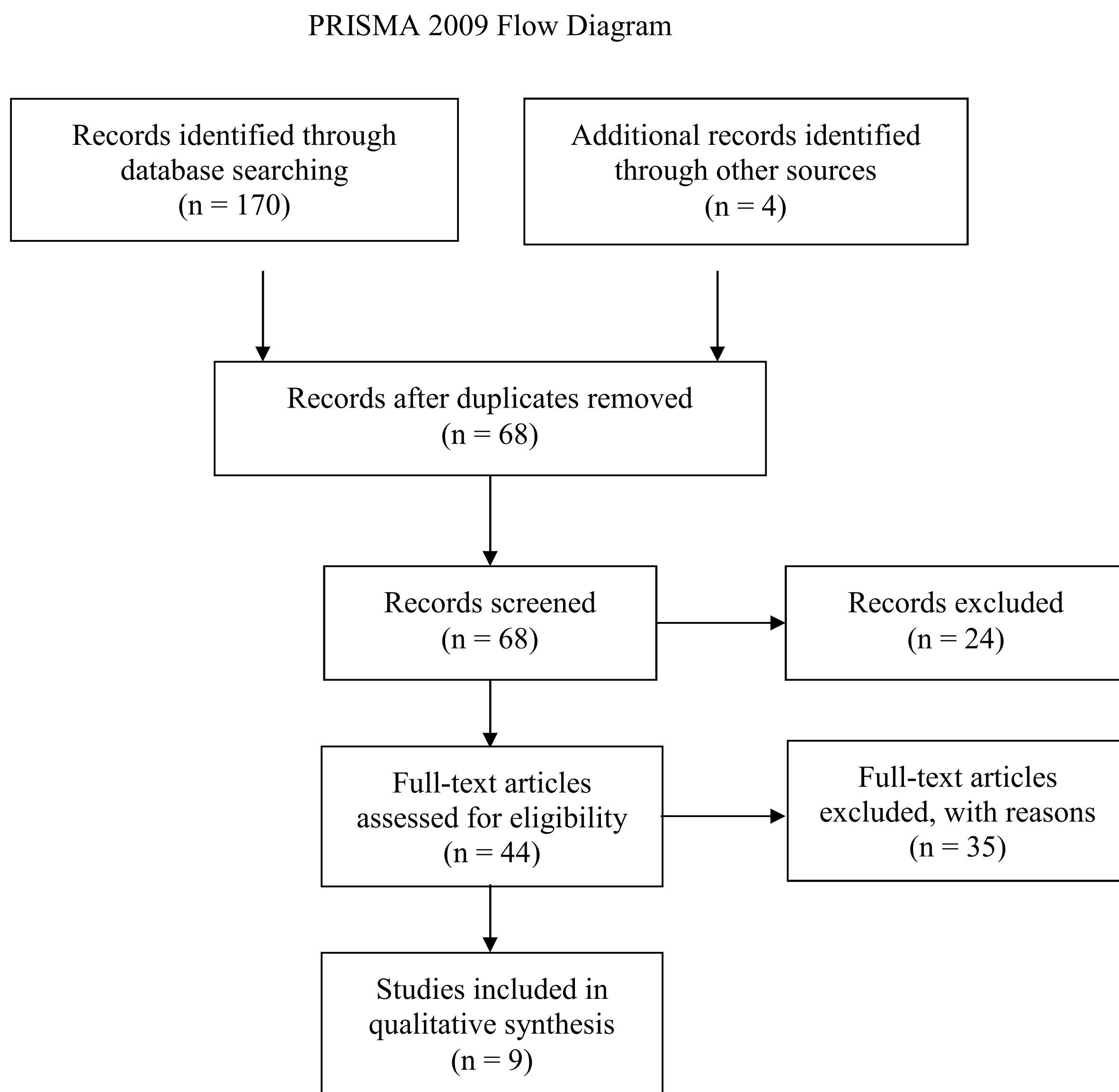

Figure B1. PRISMA Flow Chart. Adapted from "The PRISMA statement for reporting systematic reviews and metanalyses of studies that evaluate health care interventions: Explanation and elaboration," Liberati et al., 2009, *PLoS Medicine, 6*(7). Available from http://prisma-statement.org/