

ADDRESSING FACTORS THAT LEAD TO JOB DISSATISFACTION AMONG U.S.  
HOSPITAL NURSES AND POOR HEALTH OUTCOMES IN PATIENTS: AN  
INTEGRATIVE REVIEW

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Folayan Jamila Morehead

Liberty University

Lynchburg, VA

June, 2022

NURSE DISSATISFACTION AND PATIENT OUTCOMES

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Shanna W. Akers, EdD, MSN/MBA, RN, CNE, NEA-BC.

Date:

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

## ABSTRACT

The purpose of this integrative review is to identify factors that lead to job dissatisfaction among nurses working in U.S. hospitals and learn how patients experience poorer health outcomes as a result. Many factors including inadequate staffing, workplace bullying, violence, low pay, and hostile working conditions within hospital systems influence nurses' intent to leave and affect the care quality provided to patients. In turn, the poorer care delivery leads to unsafe working conditions and thus poorer health outcomes in patients. Along with job dissatisfaction, nurses often feel the effects of moral distress and burnout which lessens their resilience. Nurses comprise a large part of the healthcare care delivery system and are often considered the backbone of the hospitals. Nurse leaders need to identify the negative factors and work toward change in addition to implementing new strategies to improve working conditions, retain and recruit quality staff, and strengthen patient health outcomes.

*Keywords:* job dissatisfaction, burnout, nurse staffing, poor patient outcomes, hospitals

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### **Dedication**

This project is dedicated to my family who has supported me from the first day I decided to become a nurse. I would especially like to dedicate my work to my only son who has expressed how proud he is of me. He is the reason why I work as hard as I do to accomplish so much. I pray that he reaps many benefits from my progress thus far.

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### **Acknowledgements**

I would like to acknowledge the nurse leaders, instructors, and preceptors who have helped pave the way for many of us to help change nursing practice and healthcare for the better. I am humbled and grateful for the guidance and prayers that my colleagues and other professional connections have offered me throughout my continuing education and professional development journey.

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### **List of Abbreviations**

CINAHL: Cumulative Index of Nursing and Allied Health Literature

CITI: Collaborative Institutional Training Initiative

DNP: Doctor of Nursing Practice

EBP: Evidence-based Practice

GRADE: Grading of Recommendations Assessment, Development, and Evaluation

ICU: Intensive Care Unit

IRB: Institutional Review Board

PICO: Population/Patient/Problem, Intervention, Comparison, Outcome

QAMUR: Quality Assurance Model Using Research

RN: Registered Nurse



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### Section One: Formulating the Review Question

#### Introduction

A clinical question regarding the factors leading to job dissatisfaction among U.S. hospital nurses was the focus of the question that addressed a specific workplace problem that led to poor patient outcomes. The resulting goal of addressing the clinical question was to achieve better work environments for nurses, increased job satisfaction, and positive health outcomes for patients. A systematic review of literature was conducted to gather as much clinically relevant data and information as possible; the review focused thoroughly on evidence-based research and findings (Morehead, 2020a). When forming a PICO question (stating the “patient problem,” “intervention,” “comparison,” and “outcome”), the Iowa Model served as a guide for the introductory process that benefited the entire research/evidence-based practice project (Morehead, 2020b). The Iowa Model is a widely used framework for the implementation of evidence-based practice (EBP) (Buckwalter et al., 2017).

In U.S. hospitals around the country, many nurses are faced with many distressing factors that lead to burnout, moral injury, and influence their intent to leave. These factors greatly impact patient health outcomes and often lead to unsafe working conditions for all. Factors regarding nurses’ intention to leave may be grouped into two dimensions: (1) demographics, such as age, gender, marital status, educational level, and work tenure; and (2) hospital context, such as inadequate nurse staffing, workload, workplace injustice, workplace violence, interpersonal relationship, burnout, and job dissatisfaction (Chen et al., 2019). Some of the factors were more influential and impactful than others. Chen et al. (2019) also goes on to state that being married, satisfactory workplace justice, nurse–physician relationships, leadership, and participation in hospital affairs were found to correlate negatively with intention to leave (p. 2).

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Barriers compromising compassionate care on the individual level largely revealed workload-related factors, including long working shifts, fatigue, not receiving breaks from work, and hunger (Johnson, 2020, p. 57). Furthermore, exit from the workplace or profession were identified, in addition to the impact those factors posed on clinical outcomes in the patient population. The clinical question addressed these negative factors and outcomes in a high-priority manner with the intent to further evaluate solutions for improvement. A systematic review of literature and the outline of the Iowa Model helped drive the focus of reaching an end goal which was integrating a practice change and sustaining it in hopes of achieving better patient outcomes and nurse job satisfaction (Morehead, 2020b).

### **Defining Concepts and Variables**

Nurse burnout is a widespread phenomenon characterized by a reduction in nurses' energy that manifests in emotional exhaustion, lack of motivation, and feelings of frustration and may lead to reductions in work efficacy (Mudallal et al., 2017). The burnout phase, in turn, led to nurse dissatisfaction with current working conditions within their hospital systems. When nurses were not satisfied or were burned out, often feeling disregarded and undervalued, they might not have had the desire to provide the best care to patients. The impact of those negative influences led to lower quality care practices and thus decreased patient care outcomes. Nurse burnout has been identified as a mediator between the clinical work environment and patient outcomes (Clark & Lake, 2020). As nurses became increasingly overworked and stressed in the workplace, leading to higher rates of burnout, they became less efficient at delivering safe care to patients which often led to harmful results. Shapiro (2020) goes on to report that the absence of well-being and joy were directly related to quality care and patient safety; when clinicians experience cognitive overload or compassion fatigue, it directly impacted the care they delivered

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(p. 482). Avoiding professional exhaustion is an important strategy for improving patient safety (Garcia et al., 2019).

### **Rationale for Conducting the Review**

Hospital nurses in the U.S. are increasingly experiencing dissatisfaction and exhaustion in their workplaces because of negative influential factors like low pay, unsafe environments, poor staffing, and unaffordable benefits packages as mentioned throughout the literature search. Due to current trends in nurses' intent to leave and related staffing shortages, patient health outcomes were impacted as well. One in 5 physicians and 2 in 5 nurses intended to leave their practice altogether. Reducing burnout and improving a sense of feeling valued may allow health care organizations to better maintain their workforces post pandemic (Sinsky et al., 2021). It was helpful to explore options for change in the hospital setting that encouraged nurse recruitment and retention, more positive work environments, and better care delivery methods. Several factors compromised patient safety, such as ineffective teamwork, failed organizational processes, and the physical and psychological overload of health professionals (Garcia et al., 2019). Nurses are burning out, the shortage crisis continues to expand, and patient health outcomes decline in quality. The International Council of Nursing Code of Ethics' (ICN) third code targets nurses and the profession and encourages nurses, nurse leaders, and nurse managers to develop guidelines for workplace issues, such as bullying, violence, sexual harassment, fatigue, safety, and local incident management (p. 17).

### **Purpose and Review Question**

The purpose of this project was to introduce potential changes supported in the literature and evidence-based practice application to the trend in dissatisfaction factors among hospital nurses and the results from the care they provided. Some of the concerns that were addressed

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included low pay, hostile working conditions, lack of training, absent reward systems, and abuse (Morehead, 2021). It was appropriate as part of the project's aim to explore strategies and measures that led to increased satisfaction among the nurses and stronger care outcomes in the patients served. A literature review and examination of the Iowa Model aided in establishing the project's purpose and foundation (Morehead, 2020b).

### **Review Question**

*What are common factors that lead to dissatisfaction among U.S. hospital nurses and poor health outcomes in patients and how can they be addressed and eliminated?*

### **Inclusion Criteria**

In conducting the search strategy for the integrative review, the inclusion criteria consisted of selecting peer-reviewed journal articles published within the past five years of initial search, using the key search terms (nurse job dissatisfaction, burnout, hospitals, patient outcomes). All articles must have been written and published in English with most research conducted in the United States.

### **Exclusion Criteria**

The excluding criteria for the integrative review consisted of omitting articles that were older than five years at the time of the initial search. Articles written in languages other than English were not included. Magazine articles, unpublished manuscripts, blog entries, book entries, and academic dissertations/theses were omitted as well. In addition, research focused on non-acute care or non-hospital settings were avoided.

### **Conceptual Framework**

The Iowa Model is a framework that has helped nurses guide clinical practice based on sound evidence (Morehead, 2020b). The model was developed in the 1990s by a group of nurses

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seeking to enhance the quality of patient care and guiding clinicians in incorporating research results and evidence into practice (Morehead, 2020b). The Iowa Model was based on Roger's (1983) Theory, Diffusion of Innovations, and was an outgrowth of the Quality Assurance Model Using Research (QAMUR) (Buckwalter et al., 2017). Evidence-based practice began to expand and became more utilized over time which led to the revision of the concept model (Morehead, 2020b). The Iowa Model is now used in various roles and disciplines across multiple languages worldwide (Morehead, 2020b).

The Iowa Model served as a firm basis for establishing, evaluating, and answering the clinical question. The model also helped explore measures to enhance nurse job satisfaction and support better patient outcomes. Pressing concerns have led to hospital nurses becoming less satisfied with their jobs and have encouraged decreased outcomes with poorer quality care delivery. This topic was of high priority because its negative impacts led to costly and detrimental effects. Hospital systems and leadership must be careful to gather sufficient evidence to support the need for change that would encourage recruitment and retention of nurses, intent to stay, better pay, more reward programs, positive work environments, and better health outcomes for patients. Systematic and integrative literature searches are a starting point in gathering information, data, and evidence of the negative influential factors. Evaluation measures and needs-based assessments are choice tools that have proved helpful in approaching and compiling any findings. The results should be carefully analyzed and must lead to evidence-based practice changes that support safe and healthy clinical environments for nurses and patients.

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### **Section Two: Comprehensive and Systematic Search**

#### **Search Strategy**

The following were searched through various databases to include the Jerry Falwell Library, CINAHL Plus with Full Text, Ovid, SAGE Research Methods, Wiley Online Library, and ScienceDirect. Across all the databases, a more refined search was conducted using select key descriptors like job dissatisfaction AND hospital nurses AND poor patient outcomes. The key terms were combined for purposes of refining the search to serve as a solid foundation for establishing and answering the clinical question. Additional search phrases used to define the search included “strategies to improve nurse job satisfaction,” “quality of care and patient outcomes,” “factors influencing nurse job dissatisfaction,” and “hospital nurse turnover.” Article filtering was restricted to allow only for work published within the last five years and written in English. A total of 28 articles were found using the inclusion criteria out of 105 articles searched. Twenty-two articles were omitted as they did not include information relevant to all key search terms. Eighteen out of the 28 studies were based on a cross-sectional analysis design or similar. Information from five books, 8 websites, 5 magazine articles, and 3 unpublished manuscripts was used to provide additional depth to the research.

#### **Terminology**

The Jerry Falwell Library, CINAHL Plus with Full Text, Ovid, SAGE Research Methods, Wiley Online Library, and ScienceDirect were searched using the key terms job dissatisfaction, burnout, nurse staffing, patient outcomes, and hospitals.

#### **Article Synthesis**

Within the past few years, several studies have been conducted and research initiated to explore the different influential factors that lead to hospital nurses being dissatisfied with their

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jobs. Clark and Lake (2020) mentioned that an association between burnout, job dissatisfaction and missed care among nurses has been noted in a number of studies (p. 2). Their results showed the correlation between burnout and missed care. Although a cross-sectional secondary analysis was used for the study design, the researchers were unable to show causality based on the study conclusions. Nantsupawat et al. (2017) also investigated job dissatisfaction and burnout among nurses, highlighting the factors that led to nurses' intent to leave. Those researchers used a cross-sectional survey method on 1,351 nurses in 43 hospitals. Their results showed that "nurses working in university hospitals with better work environments had significantly less job dissatisfaction, intention to leave, and burnout" (Nantsupawat et al., 2017, p. 91). However, the study showed limitations related to design considering the data was collected from self-reports.

Both Chen et al. (2019) and Chen et al. (2020) conducted comparisons of 2 cross-sectional surveys for each team. Chen et al. (2019) used data collected from 2013 and 2014 "to investigate the effects of the patient-nurse ratio on nurses' intention to leave and considered the mediating roles of burnout and job dissatisfaction" (p. 1). However, their study seemed more limited than the latter considering ratio standards warranted further review and discussion. Chen et al. (2020) went on to investigate negative workplace factors and their effect on patient outcomes. In their cross-sectional comparison, they evaluated 1,376 nurses and 904 patients across 10 hospitals. Their research showed a correlation between satisfied nurses and improved patient outcomes, trending upward from 2009 to 2016. Still, the results showed no true causality in or generalized findings across all of the selected hospital settings.

Mudallal et al. (2017) and Senek et al. (2020) each used cross-sectional designs to examine nurse burnout and job dissatisfaction factors. Mudallal et al. (2017) also focused on using those factors to work towards improvements in the workplace and ultimately for nurse

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outcomes. The Senek et al. (2020) study remained focused on highlighting the issues that led to intent to leave. However, despite limitations in sampling and generalizability, both studies showed results that would be effective in promoting a practice change to improve work conditions in favor of nurses and patients.

Of all the cross-sectional studies reviewed, most of them focused on highly specific topics or themes in their research. Although the underlying focus was on nurse dissatisfaction, Carthon et al. (2021) centered their study on dissatisfaction among Black nurses using a very large sample size of 11,778 participants. Although results showed high rates of dissatisfaction among this group, disparities would persist despite improvements with other factors. More research would be needed on this subject to account for bias and to work toward stronger improvements within the Black nursing community. Labrague (2021) focused specifically on the effects of toxic behavior in the workplace among nursing leadership. The author used a multi-center, cross-sectional approach with results that would be helpful in making new practice changes. Of all the cross-sectional studies, all were found to provide some form of evidence that would lead to effective changes to support dissatisfied nurses.

One out of 2 of the studies was a systematic review with a meta-analysis. Garcia et al. (2019) conducted two searches across the PubMed and Web of Science databases “to analyze the relationship between burnout and patient safety” (p. 1). They only used 21 studies and did not mention any limitations in their research. However, the findings provided relevant background information that supported the clinical question and related practice changes. Lu et al. (2019) compiled a literature review consisting of 59 papers that sought to analyze job satisfaction factors among nurses. They go on to report that “in the last five years, many theoretical models have been developed to explain and guide the study of the complex relationships and interactions



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between job satisfaction and other factors” (Lu et al., 2019, p. 25). Furthermore, “the limited body of knowledge regarding nurses’ job satisfaction” along with the need for “longitudinal and interventional studies to further validate the proposed structural models” (Lu et al., 2019, p. 30) were two primary study limitations. However, the studies provided evidence that would support a practice change.

Two additional articles were not as define in terms of study design. The Lockhart (2020) study was an expert opinion, non-experimental work that aimed “to define strategies that reduce nurse turnover” (p. 56). No limitations were provided in this article; however, the author did provide insight on information relevant to answering the clinical question. Lastly, Nauman and Jamshed (2020) used a survey technique to explore the influence of leader emotional intelligence on the working culture in teams that impact nurses’ intent to leave (p. 1). Data was only collected from self-reports from the hospital nurses and the findings would not prove helpful in supporting a change due to unclear purpose, limitations in study design, and lack of true representation based on the chosen sample. This would be the only study selected from all 28 articles that would not be helpful in providing evidence to support a practice change. However, in its *2017 Adverse Event Alert*, the Joint Commission (TJC) makes a recommendation for the use of teams in creating a safety culture: “Embed safety culture team training into quality improvement projects and organizational processes to strengthen safety systems; team training derived from evidence-based frameworks can be used to enhance the performance of teams in high-stress, high-risk areas of the organization—such as operating rooms, ICUs and emergency rooms” (Katz, 2020, p.429).

Al Sabei et al. (2020) presented a cross-sectional study sampling 207 nurses working in a public hospital in Muscat, Oman. Though the research was not conducted in the U.S., the results

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were comparable to those discovered in American-based hospital systems. The researchers found that participation in hospital affairs, a foundation for quality of care, and staffing adequacy were predictors of burnout among nurses and perceived quality of care (Al Sabei et al., 2020, p. 95). Study limitations centered on lack of causal relationships between work environment, turnover, burnout, and care quality due to a cross-sectional study design. Furthermore, Al Sabei et al. (2020) only used one site and a small sample size in the study which might have introduced bias. However, there was enough evidence to support change which included encouraging the use of quality monitoring strategies to discourage nurse dissatisfaction and poor work environments. Brewer et al. (2020) presented a similar approach with a cross-sectional study design using a convenience sampling method to target a sample of U.S. nurses. Like Al Sabei et al. (2020), the Brewer team's sample population was not defined enough to represent a true population. The Brewer et al. (2020) research explored the prevalence and effects of bullying and organizational betrayal. Results showed that the prevalence of weekly/daily bullying was 31% and that organizational support decreased the odds of job dissatisfaction and absenteeism (Brewer et al., 2020). Fortunately, the researchers revealed evidence to support future changes by presenting background information that highlighted the factors that contributed to organizational issues that negatively impacted nurses and why they must be eradicated to improve nurse well-being.

An additional cross-sectional study by Chen et al. (2022) sought to identify factors responsible for hospital health care workers' intention to leave their jobs during the COVID-19 pandemic (p. 1). The authors sampled a total of 1,209 nurses with a mean age of 36.3 years. They learned that COVID-19 concerns greatly influenced nurses' intent to leave due to health risks, gaps in social relationships, and increase patient loads which introduced higher rates of

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workplace stress. Study limitations were based on potential response bias due to a cross-sectional design approach.

The Crabtree-Nelson et al. (2022) cross-sectional, exploratory study using the self-reported survey method also found limitations centered on response bias. The authors noted that only 318 out of 1000 nurses recruited in a large Texas health system completed the study survey resulting in a response rate of only 31.8%. They aimed to examine compassion satisfaction, compassion fatigue, and burnout in nurses at a large nonprofit, Catholic-based health-care system in southern Texas (Crabtree-Nelson et al., 2022, p. 1). Although the study was conducted during a limited time period, with a low response rate, the article still identified relevant factors that influence nurse dissatisfaction and intent to leave so that organizations can pose more targeted methods for improvement.

Gong et al. (2022) included a sample of 315 newly graduated nurses working in five Chinese hospitals. The purpose of their cross-sectional study was to assess the levels of professional quality of life dimensions and turnover intention, to examine the predictors for turnover intention, and to explore the mediating roles of professional quality of life dimensions on the associations between these predictors and turnover intention in Chinese newly graduated nurses (Gong et al., 2022). As a result, they found that average levels of burnout, stress, and compassion satisfaction were prevalent among the nursing staff. Besides the findings, Gong et al. (2022) revealed several limitations within their research including a lack of causal relationships due to a cross-sectional study design, a sample collected from a single area leading to limited generalizability, and failure to consider all organizations in that region. Nevertheless, the findings could influence a practice change as they presented strategies such as developing a

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supportive work and family environment and cultivating empathic capacity as effective methods to mitigate against intention to leave their jobs in newly graduated nurses (Gong et al., 2022).

Kim et al. (2021) incorporated three cross-sectional surveys in their research to explore the changes in nurses' mental health from the early pandemic to the early vaccination period over a 1-year time span and examined vaccination and coping mechanisms as predictors of nurses' poor mental health and burnout (p. 1). The authors' first survey was based on a sample of 320 nurses responding from an early pandemic perspective; the second survey was based on 228 nurse responses for the pre-vaccination cohort and the third survey cohort did not specify a specific number of nurses, but they were nursing school alumni from schools in California and the Midwest. The study results revealed significant decreases in anxiety and depression among the nurses involved in the pre-vaccination cohort. They also showed higher rates of resilience, spirituality, and family functioning compared to other cohorts that showed poorer mental health and higher burnout rates. In terms of limitations, the associations between COVID-19 vaccination or coping mechanisms with poor mental health should not be considered a cause-and-effect relationship in this observational study (Kim et al., 2021). Furthermore, the authors did not use a longitudinal study design to follow the same subjects; instead, they used a convenience sampling approach that might have introduced bias (Kim et al., 2021, p. 7). The study results might be useful for encouraging change as they help nurses better understand the possible challenges that could arise in future crises, thus giving them opportunities now to plan.

An additional cross-sectional study conducted by Labrague and Obeidat (2021) aimed to determine the influence of work-family conflict (WFC) on patient safety outcomes and job engagement via the intermediary role of transformational leadership (TL) (p. 1). Although this study was based in the Philippines and not the U.S., there were several similarities related to the

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design, purpose, and results of those studies conducted in the States in this review. For instance, as mentioned previously, using the cross-sectional approach revealed that nurses included in the study were confined to one region which introduced generalization of the findings (Labrague & Obeidat, 2021). In addition, since the authors used self-reported scales, they may have introduced bias into the study and likely did not account for contextual factors (Labrague & Obeidat, 2021). However, the study results showed that nurse leader behaviors should be assessed regularly to gather more information and knowledge needed to make practice improvements.

The Tomietto et al. (2019) cross-sectional study did not focus on family aspects as related to nurses' work experiences, but it did test a model aimed to estimate the impact of work engagement on work ability as it is perceived by nurses and to test the parameters between work ability and job satisfaction and between job satisfaction and turnover intention (p. 1933). The authors used a sample of 1,024 nurses over a period of about five months in 2018, and, at the end of the study, confirmed an association between their test model parameters. Study limitations highlighted the inference on community nurses as a limiting factor because the design targeted only hospital nurses. Furthermore, the authors did not account for nurses out of duty due to health problems which might have limited the sample. Even so, in terms of using the results to influence change, the study highlighted ways to address nursing management to improve nurses' motivation and work ability and to improve organizational outcomes (Tomietto et al., 2019).

In contrast to several of the previously mentioned cross-sectional studies in this literature review, Viscardi et al. (2022) used a larger sample size comprising 23,629 RNs in 503 hospitals from a four-state survey collected in 2005-2008 (p. 5). Despite using a larger sample size than the previous studies mentioned, the cross-sectional design still presented similar limitations

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including the inability to determine causation and the presence of bias and reduced validity based on self-reported data. The authors' aim was to evaluate if better work environments or staffing were associated with improvements in care quality, patient safety, and nurse outcomes across hospitals caring for different proportions of patients who were economically disadvantaged (Viscardi et al., 2022). Although the researchers sought to explore the nurse experience related to patient outcomes, the patient population in question was not as general since they only looked at those who were poorer than others. Study results showed that each 10% increase in the proportion of patients who were economically disadvantaged was associated with 27% and 22% decreased odds of rating unit-level care quality as excellent and giving an "A" safety grade; each 10% increase was also associated with 9%, 25%, and 11% increased odds of job dissatisfaction, intent to leave, and burnout, and that the work environment had the largest association with each outcome (Viscardi et al., 2022). These findings would be helpful in influencing practice changes by fostering new ideas to improve the work environment, allowing for safer practice measures for nurses, introducing new health policies, and enhancing quality care strategies to improve patient outcomes.

The final cross-sectional study presented in the literature review used a sample of 778 experienced nurses from seven hospitals over a 2–3-month period in 2017 to assess turnover intention and explore the effects of work environment, job characteristics, and work engagement on turnover intention (Wan et al., 2018). The results showed that 35.9% of those experienced nurses had higher rates of intent to leave compared to any other (or less experienced) nurses. As with most cross-sectional studies, the research presented several limitations. Wan et al. (2018) found that the self-report method and common method variance could bias the results; they obtained their data from only tertiary public hospitals which made the sample less diverse, and

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they were unable to examine causal relationships (p. 1332). The authors still found evidence to support change as they revealed that theory-driven strategies to improve work environment, enhance job characteristics, and promote work engagement are needed to address the nursing shortage and high turnover intention among experienced nurses (Wan et al., 2018).

Shapiro et al. (2022) used a survey and comparison method to understand whether nurses 20 to 29 years of age experienced burnout and intent to leave in higher proportions than more senior nurses and the possible reasons behind those experiences (p. 60). Although the exact number nurses used in their sample was not mentioned, the authors noted that the workers were hospital-based bedside nurses at 11 hospitals in Pennsylvania and Rhode Island prior to the pandemic (Shapiro et al., 2022). The graphed data revealed a swooping line showing that the younger nurses were more likely to burnout and turnover than the older, more experienced nurses. The study did not discuss the affect that the turnover and burnout rates posed on patient outcomes but did mention recommendations to mitigate these issues in the young nurse population for future practice changes. Study limitations showed that the self-report study was subject to bias and that, because the survey was not mandatory, there was a response rate of less than 50% (Shapiro et al., 2022, p. 68).

Whitman et al. (2014) also presented their research using a survey method examining three rounds of matched data from 460 nurses and 220 working adults to establish a link between abusive supervision and feedback avoidance through emotional exhaustion (p. 38). The authors found that feedback avoidance was associated with subsequent exhaustion, representing a loss spiral; in addition, a link was revealed between a subordinate's reactions (exhaustion) and coping behavior (feedback avoidance) when supervisory abuse was perceived (Whitman et al., 2014). Even though their sample size consisted of nearly 700 nurses, the authors noted a low survey

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response rate. Further limitations included the introduction of gender bias since most of the respondents were female, not accounting for several variables, and little to no causality found in the study. However, the research still presented evidence to support future practice changes. Organizations might consider modifying their selection process by testing potential candidates for certain traits that have been linked to abuse, providing ongoing training to ensure that all members are aware of the specific actions and behaviors that constitute abuse, and consider providing their members with training on effective coping strategies (Whitman et al., 2014).

The last survey method study design presented in this literature review used a snowball sampling approach to investigate two forms of passion, harmonious and obsessive passion, as resources that may indirectly predict two forms of burnout, disengagement, and exhaustion, through the mediator of job stress (Landay et al., 2022). The authors presented a small sample size of 71 nurses who completed surveys which introduced variance and allowed for an unrealistic depiction of a true population. On the other hand, results showed that harmonious passion indirectly decreased disengagement and exhaustion by decreasing job stress and that obsessive passion decreased both disengagement and exhaustion by decreasing job stress (Landay et al., 2022). Furthermore, the study results presented useful background information that support the research question and influence change by presenting new ideas for coping in possible future pandemics.

The next project was based on a literature review design involving semi-structured interviews consulted from seven databases, two websites, and 43 articles. The authors, Bakhamis et al. (2019), examined the causes and consequences of burnout syndrome among registered nurses (RNs) in U.S. hospitals and its role in the nursing shortage in hospitals (p. 3). The authors' findings indicated that burnout syndrome in RNs can be analyzed in terms of four



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clusters of characteristics—individual, management, organizational, and work, and that the consequences of burnout syndrome have increased RN turnover rates, poor job performance, and threats to patient safety (Bakhamis et al., 2019, p. 3). Although there were limited search strategies and publication bias noted, the authors were able to present relevant information within their review to support the clinical question and evidence for change.

Niskala et al. (2020) employed a quantitative systematic review and meta-analysis approach using 20 articles to identify current best evidence on the types of interventions that have been developed to improve job satisfaction among nurses and on the effectiveness of these interventions (p. 1498). As a result, they learned that two interventions (spiritual intelligence training and their Professional Identity Development Program) significantly improved nurses' job satisfaction. The only limitations in the research centered on heterogeneity affecting the results and possible variation concerns due to the meta-analysis method. Regarding future practice changes, the authors noted strategies to improve nurse job satisfaction going forward; the strategies involved human resource interventions and proposing extrinsic factors such as salary increases and rewards (Niskala et al., 2020).

The last project included in this review was non-experimental and did not provide a sample or description of limitations. The information presented was based on expert opinion and aimed to discuss ways to shift the burnout culture to a wellness culture. The author, Melnyk (2020) provided insight on implementation tactics that foster senior leaders' commitment and investment; appointing a chief wellness officer with sufficient resources; creating an exciting team vision and strategic plan; developing a comprehensive multi-component strategy that targets individuals in the grassroots of the organization, manager/supervisors, and top leaders;

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and cultivating a culture of caring and connection where healthy lifestyle behaviors are the norm (p. 84).

### **Section Three: Managing The Collected Data**

#### **Methodology**

##### ***Design***

The project study design was based on an integrative literature review that targeted various factors that influence hospital nurses to become burned out and potentially led to leave their positions and organizations. In addition, the review included key elements that described the impact of job dissatisfaction factors on patient care outcomes. Literature databases for the search included PubMed, ScienceDirect, and Ovid MEDLINE, limited only to the English language (Morehead, 2020b). Inclusion criteria for eligibility included studies that highlighted the stressors and job dissatisfaction factors that negatively impact both nurses and patients. Key factors that included in the articles were poor staffing, hostile work environment, unfavorable working conditions, low pay, missed care, poor health outcomes, and burnout. All magazine and tutorial articles were excluded from the review and any duplications were removed (Morehead, 2020b). The literature search was restricted to the target population of dissatisfied hospital nurses working in the United States along with evidence of the care quality received by patients they serve. The DNP nurse leader acted as Principal Investigator and reviewed data collection methods and verified all extracted data for accuracy and completeness. The data was organized into tables where elements and characteristics were easily viewed (Morehead, 2020b).

##### ***Measurable Outcomes***

The Principal Investigator expected to devise new improvement strategies surrounding the negative factors that led nurses to become dissatisfied by the end of the project. The

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investigator also expected to promote implementation of those new strategies into practice to encourage more positive work environments for nurses in the future. Furthermore, the Investigator sought to discover at least fifty percent improvement in nurse perception and patient outcomes by the end of the project.

### *Setting*

The ideal setting of choice was an intensive care or medical surgical unit within a large U.S. hospital. Although the study design was a literature review process, the target location for the clinical question was primarily the hospital setting. Patient satisfaction levels were lower in hospitals with more nurses who are dissatisfied or burned out—a finding that signals problems with quality of care (Tailored Healthcare Staffing [THS], 2015). This further led to the question in finding out what the dissatisfaction factors were, how they impacted patient outcomes, and what was done to alleviate the problem. It was likely that various concerns arose within the confines of the hospitals that negatively impacted nurses and patients. Using data from the American Nurses Association's National Database of Nursing Quality Indicators, researchers discovered that a 25 percent increase in nurse job enjoyment over a two-year span was linked with an overall quality of care increase between 5 and 20 percent (Walker, 2018).

### *Population*

The target population consisted of staff nurses within general hospital settings (primarily medical surgical units and ICUs) and patient groups experiencing lower quality care due to dissatisfaction and nurse burnout in those workplaces. The hospitals were U.S. facilities employing the nursing population in question. According to the U.S. Bureau of Labor Statistics (2020), registered nurses was by far the largest occupation in hospitals in May 2019, with over 1.8 million jobs, which was 30 percent of total hospital employment. The large force of hospital

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nurses was the primary reason for choosing this population for the scholarly project. The DNP investigator was then able to gather more than enough information and evidence using this population to support the clinical question.

### **Section Four: Quality Appraisal**

#### **Critical Appraisal**

The DNP critical appraisal method of choice involved the application of an integrative literature review. Diverse sources were gathered to examine a specific phenomenon while comparing empirical and theoretical research sources. The chosen articles were reviewed and assessed for strengths and weaknesses and the ability to influence a practice change.

#### **Sources of Bias and Validity**

Several of the articles selected for the literature review focused on identifying factors that led to job dissatisfaction among nurses. Few of them were more defined in their approach, highlighting bias, toxic leadership, and adverse effects on patients. Most of the articles centered on a cross-sectional design, while one of the articles was that of expert opinion, lacking any form of experimental model. All but one of the studies proved to provide evidence for practice changes despite various limitations across all projects. Furthermore, using the revised Iowa Model was beneficial in addressing “sustainability of EBP changes that improve outcomes” (Buckwalter et al., 2017). There were very few articles included that might present significant bias that would negatively impact believability of the results.

#### **Appraisal Tools**

The tools that were used for evaluation and appraisal included the Levels of Evidence Toolkit and the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) method. The level of evidence tool assisted in methodically grading the design

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quality and validity of research results across the selected articles. The GRADE approach assisted in evaluating the evidence's certainty. In GRADE, certainty of the effect estimated for each outcome is ultimately assigned one of four categories: high, moderate, low, or very low (Montgomery et al., 2019). The Levels of Evidence toolkit helped narrow search results and the GRADE approach helped provide health and quality improvement recommendations for future purposes.

### **Applicability of Results**

While there is considerable variability in the construction of critical appraisal tools, most include items or description of the following: preamble (title, text abstract), introduction, design, sampling, data collection, ethical matters, results, discussion, and relevance to the guiding question (Toronto & Remington, 2020). The results of each appraised article or study add reliability to the findings of the integrative review.

### **Reporting Guidelines**

Reporting guidelines such as the Preferred Reporting Items for Systematic Reviews and Meta- Analyses (PRISMA) is used to minimize bias in the reporting of the final review, focusing on how the final review should be written (Toronto & Remington, 2020). Each appraised article or study contribute to the entire review, revealing transparency and consistency throughout the research process.

## **Section Five: Data Analysis and Synthesis**

### **Data Analysis Methods**

Clear and adequate data analysis, interpretation, and presentation were crucial for the rigor of integrative reviews, which in turn affected the drawn conclusions and inferences (Younas et al., 2021). The more common data analysis methods that were used for this project

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included non-specific approaches, content analysis, thematic analysis, and the comparison method. These inductive methods encouraged synthesis of the information to maintain valuable data. A more deductive approach assisted in applying conceptual and theoretical framework comparisons to the outcomes.

### **Descriptive Results**

The results of the IR are presented in a fully integrated report (Toronto & Remington, 2020). Without strict guidelines, the results were organized into a matrix format with brief narratives to describe each sample or literature piece. Review results were displayed in a table (Appendix A) to assist the reader in clearly seeing the details of included sources and the linkages to synthesized results (Toronto & Remington, 2020).

### **Project Synthesis**

The integrative type of review often requires a more creative collection of data, as the purpose is usually not to cover all articles ever published on the topic but rather to combine perspectives and insights from different fields or research traditions (Snyder, 2019). The selected research articles and information gathered from them further expounded on the project's conceptual framework. The DNP investigator collected all articles across select databases listed within the Jerry Falwell Library and the Wiley Online Library.

### **Ethical Considerations**

The student submitted the project to the Liberty University Institutional Review Board (IRB). The IRB responded with an email stating the project is exempt. The student archived the email from the IRB and included it as an appendix in the final project write up. The student continued to develop the project while awaiting the response from the IRB. The DNP graduate student and Project Chair have completed research ethics training for human subject protection.

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The investigator holds a master's degree at minimum and is currently a DNP graduate student with research training. Permission to use the Iowa Model was obtained in advance. Retrieved articles from literature search were written in English for better understanding of most participants (nurses) in the U.S. hospital setting.

### **Section Six: Discussion**

#### **Implications for Practice and Future Research**

There was significant supporting evidence for both research and practice changes found when conducting the integrative review. Environmental triggers that have been identified as contributors to stress included mandatory overtime, long work hours, fast turnover of patients, coworker arguments/pettiness, inadequate training for advanced technical procedures, staffing issues, and navigating high acuity patient loads in a unit with new, inexperienced nurses (Mealer, 2020, p. 21). The information gathered from the literature review sources revealed a more robust understanding of the underlying problem that supported the research question while offering solutions in the discussions to help solve it. The Carthon et al. (2021) results could prove useful in adding strength to the current hospital work environment by bridging racial and cultural gaps among the nurses. Furthermore, the Chen et al. (2019) and Clark and Lake (2020) research articles provided evidence that support positive change in the areas of nurse staffing ratios and patient safety. The research evidence and results revealed by Lu et al. (2019) and Senek et al. (2020) encouraged change related to empowering staff and fostering more support from leadership personnel. While most of the literature review research evidence focused on positive practice changes, one of the articles authored by Nauman and Jamshed (2020) failed to present a clear research question in addition to critically limiting the target sample required to represent a true population.

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Further research is needed regarding nurse job dissatisfaction, especially considering the rapidly changing climate within the healthcare arena. Search strategies must not be limited to the point where selection quality is negatively impacted. Reviewers must work to decrease any publication bias when gathering information. When bias is allowed, reviewers must expand their research strategy efforts to examine the bias on a deeper level. Generalization constraints were a common limitation due to the status of the nurses who were satisfied with their jobs or to those who provided self-reported concerns. One way that hospitals can keep their finger on the pulse of nurse job satisfaction and outcomes is with data, like that collected by ANA's National Database of Nursing Quality Indicators (NDNQI); the program collects information from approximately one-third of U.S. hospitals, allowing hospitals to compare unit-by-unit statistics and enabling them to figure out where they can make improvements (Larson, 2017). Researchers must also carefully select the appropriate study design for their research purposes so that the appropriate conclusions can be drawn. After identifying gaps in knowledge, it is possible to set research priorities for future studies (Toronto & Remington, 2020).

### **Dissemination**

The DNP graduate (investigator) conducted an integrative review of literature across several databases between Fall of 2021 and Spring of 2022. The literature complied with select key words and was written in English. Prior to initiation, the project was reviewed by the University IRB and received approval during the Spring semester. Data was gathered from the integrative search using the Level of Evidence toolkit and evaluated using the GRADE approach. The investigator proposed outcomes and measured them by the project's conclusion. Several ideas were posed to promote practice changes and decreases in rates of burnout including improved staffing ratios, removing pay gaps, provisions for additional training, and measures to



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make the overall work environment safer. The scholarly project manuscript will be completed and published at the end of the project term.

### **Conclusion**

Nurses enter the profession to provide quality care for people and improve their health outcomes. Their goal is to somehow make a small (or large) contribution toward improving the overall health of patients and their families (Hatcher, 2018). Nursing workloads influence the potential for conflict between management and nursing staff, staff turnover rates, sick leave, patient satisfaction, patient safety, the quality of care provided, length of stay, the number of hospital-acquired adverse events, staff wellbeing and overall organizational performance (Hovenga & Lowe, 2020, p. 14). After 16 years of study, researchers from the University of Pennsylvania School of Nursing's Center for Health Outcomes & Policy Research in Philadelphia found that better work environments were linked to lower odds of negative nurse outcomes, poor safety or quality ratings, and negative patient outcomes (Bean, 2019).

According to Zysk (2019), many nurses feel they have already been stretched too far; pulled between a commitment to excellent patient care and the perception that they can never keep up with increasing demand, 70% of nurses have experienced burnout, and nearly half have considered leaving the profession entirely (p. 14). McCoy (2019) notes that nurses experiencing a disconnect from their work environment are more likely to display a decrease in efficiency and productivity; subsequently, patients suffer when nurses are disengaged and dissatisfied in the workplace (p. 8). Teoh et al. (2020) believe that an important factor that encourages action is accessibility, so staff must be given sufficient time and opportunity to take up training opportunities or to access interventions and support (p. 28). The DNP leader will be an integral

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part of the change process that would encourage nurse job satisfaction and improve patient health outcomes.

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## Appendix A

## Level of Evidence Matrix

Article Citation	Purpose	Sample	Methods	Results	Melnick Level of Evidence	Limitations	Evidence to Support a Change?
Al Sabei, S.D., Labrague, L.J., Ross, A.M., Karkada, S., Albashayreh, A., Al Masroori, F., & Al Hashmi, N. (2020). Nursing work environment, turnover intention, job burnout, and quality of care: The moderating role of job satisfaction. <i>Journal of Nursing Scholarship</i> , 52(1), 95-104. DOI: 10.1111/jnu.12528	To (a) assess predictors of the turnover intention, burnout, and perceived quality of care among nurses working in Oman, and (b) to examine the potential moderating role of job satisfaction on the relationship between work environment and nurse turnover intention (Al Sabei et al., 2020).	207 nurses working in a public hospital in Muscat, Oman (Al Sabei et al., 2020).	Cross-sectional design	Participation in hospital affairs, a foundation for quality of care, and staffing adequacy were predictors of burnout among nurses and perceived quality of care (Al Sabei et al., 2020).	Level 4- Case-control or cohort study	Cross-sectional design did not allow for causal relationship to be revealed between work environment, turnover, burnout, and care quality; single-site study with small sample size; possible sample bias due to using convenience sampling; too many questionnaires with different foci	Yes; evidence to support change include future use of quality monitoring strategies to use job dissatisfaction reasons and turn them into satisfaction-based elements that enhance the work environment and care delivery methods

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
Bakhamis, L., Paul, D.P., Smith, H., & Coustasse, A. (2019). Still an epidemic: The burnout syndrome in hospital registered nurses. <i>The Health Care Manager</i> , 38(1), 3-10. DOI: 10.1097/HCM.0000000000000243	To examine the causes and consequences of burnout syndrome among RNs in US hospitals and its role in the RN shortage in hospitals (Bakhamis et al., 2019).	Seven primary databases, 2 websites, and 43 articles were consulted in this project (Bakhamis et al., 2019).	Literature review involving semi structured interviews	Findings indicated that burnout syndrome in RNs can be analyzed in terms of 4 clusters of characteristics: individual, management, organizational, and work (Bakhamis et al., 2019).	Level 5: Systematic review of descriptive and qualitative studies	Limited search strategies and database qualities' researcher bias; publication bias	Yes; the information in the articles help set a sound foundation of understanding surrounding the problem and offer solutions to fix it
Brewer, K.C., Oh, K.M., Kitsantas, P., & Zhao, X. (2020). Workplace bullying among nurses and organizational response: An online cross-sectional study. <i>Journal of Nursing Management</i> , 28, 148-156. DOI: 10.1111/jonm.12908	To examine prevalence of bullying among nurses and explore associations of organizational betrayal and support with well-being	A convenience sample targeting a population of registered nurses in the United States	Cross-sectional study	Prevalence of weekly/daily bullying was 31%; organizational support decreased odds of job dissatisfaction and absenteeism	Level 4- Case-control or cohort study	Sample population was not very well defined	Yes; information highlights the reasons behind organizational betrayal and provides background on how to change these concerns to more supportive measures that influence nurse well-being

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
	among nurses exposed to bullying (Brewer et al., 2020).			(Brewer et al., 2020).			
Carthon, J.M., Travers, J.L., Hounshell, D., Udoeyo, I., & Chittams, J. (2021). Disparities in nurse job dissatisfaction and intent to leave. <i>The Journal of Nursing Administration, 51</i> (6), 310-317. DOI: 10.1097/NNA.0000000000001019	To determine if Black nurses are more likely to report job dissatisfaction and whether factors related to dissatisfaction influence differences in intent to leave (Carthon et al., 2021).	Sample of 11,778 nurses working in community-based settings	Cross-sectional analysis	Black nurses were more likely to report job dissatisfaction and intent to leave (Carthon et al., 2021).	Level 4- Case-control or cohort study	Disparities persisted even when intent to leave decreased; other dissatisfaction measures not captured in study; more research needed to examine bias	Yes; the information might be helpful in strengthening the work environment by bridging cultural/racial gaps as well
Chen, Y., Guo, Y.L., Chin, W., Cheng, N., Ho, J., & Shiao, J.S. (2019). Patient-nurse ratio is related to nurses' intention to leave their job through mediating factors of burnout and job dissatisfaction. <i>International Journal of Environmental</i>	To investigate the effects of the patient-nurse ratio on nurses' intention to leave and considering the	Data of two pooled cross-sectional surveys collected in 2013 and 2014	Comparison of 2 cross-sectional studies	Appropriate patient-nurse ratio standards may be further discussed by selecting personal burnout, client-	Level 4- Case-control or cohort study	Constrained generalization due to healthy worker effect; standardized ADPNR had an indirect	Yes; information found here would encourage leaders to examine patient-nurse ratios and improve staffing and outcomes

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
<i>Research and Public Health</i> , 16, 1-14. DOI: 10.3390/ijerph16234801	mediating roles of burnout and job dissatisfaction (Chen et al., 2019).	(Chen et al., 2019).		related burnout, and job dissatisfaction as indicators (Chen et al., 2019).		effect on nurses' intention to leave through personal burnout, client-related burnout, and job dissatisfaction (Chen et al., 2019); ADPNR an antecedent variable	
Chen, Q., Gottlieb, L., Liu, D., Tang, S., & Bai, Y. (2020) The nurse outcomes and patient outcomes following the High-Quality Care Project. <i>International Nursing Review</i> , 67, 362–371. DOI: 10.1111/inr.12587	To assess the long-term changes in nurse and patient outcomes in the context of the High-Quality Care Project; To explore the potential influences of primary nursing on nurse and patient	1376 nurses and 904 patients from 40 units of 10 tertiary hospitals	Comparison of 2 cross-sectional studies	Nurses in 2016 were more satisfied than nurses in 2009 with most dimensions of nurse work environment and job satisfaction and reported better quality of patient care and	Level 4- Case-control or cohort study	Researchers unable to generalize findings across all hospital settings; study design not conclusive of causal relationships	Yes; relevant, concrete information that could support a potential practice change

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
	outcomes based on this study and broader existing evidence (Chen et al., 2020).			patient safety (Chen et al., 2020).			
Chen, Y., Wu, H., Kuo, F., Koh, D., Guo, Y.L., & Shiao, J.S. (2022). Hospital factors that predict intention of health care workers to leave their job during the COVID-19 pandemic. <i>Journal of Nursing Scholarship</i> , 00, 1-6. DOI: 10.1111/jnu.12771	To identify factors responsible for hospital health care workers' intention to leave their job during the COVID-19 pandemic (Chen et al., 2022).	1209 health care workers (mean age, 36.3 years)	Cross-sectional study	Intention to leave the job was found to be related to factors relating to COVID-19, including perceived risk, affected social relationships, and increased workload and job stress, after adjustment for demographic and work factors	Level 4- Case-control or cohort study	Study design was cross-sectional; results showed only the risk factors associated with the intention of health care workers to leave their job; response bias was possible (Chen et al., 2022).	Yes, because it was found that supportive administration/management were protective factors against leaving the job (Chen et al., 2022).

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnik Level of Evidence	Limitations	Evidence to Support a Change?
				(Chen et al., 2022).			
Clark, R.R. & Lake, E. (2020). Burnout, job dissatisfaction and missed care among maternity nurses. <i>Journal of Nursing Management</i> , 28, 2001-2006. DOI: 10.1111/jonm.13037	To examine the prevalence of job dissatisfaction and burnout among maternity nurses and the association of job dissatisfaction and burnout with missed care (Clark & Lake, 2020).	2015 RN4C AST survey data and the American Hospital Association's 2015 Annual Survey	Cross-sectional secondary analysis	One-quarter of nurses screened positive for burnout, and almost one-fifth reported job dissatisfaction (Clark & Lake, 2020).	Level 4- Case-control or cohort study	Cross-sectional nature of this study does not allow for conclusions to be drawn about causality (Clark & Lake, 2020).	Yes; various elements and factors mention contribute to the need for improvement in the workplace and for patient care
Crabtree-Nelson, S., DeYoung, P.M., Vincent, N.J., Myers, T.P., & Czerwinskyj, J. (2022). Compassion fatigue, compassion satisfaction, and burnout: A study of nurses in a large Texas health-care system. <i>Journal of Nursing Scholarship</i> , 00, 1-8. DOI: 10.1111/jnu.12780	To examine compassion satisfaction, compassion fatigue, and burnout in nurses at a large nonprofit, Catholic-	1000 nurses at a large health-care system in Texas, USA received a survey; 318	Cross-sectional, exploratory study using a self-report survey	The results find low mean levels of compassion fatigue (CF) and burnout and high mean levels of compassion	Level 4- Case-control or cohort study	The measurement of CS, CF, and burnout was completed at a single period in time; low response rate for the administr	Yes; the article identifies relevant factors that influence nurses intent to leave and job dissatisfaction which help to identify more precise measures to improve retention



## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
	based health-care system in southern Texas (Crabtree-Nelson et al., 2022).	completed the survey for a response rate of 31.8%		satisfaction (CS) among the nurses (Crabtree-Nelson et al., 2022).		ation of the ProQOL 5; the study was conducted pre-COVID-19 pandemic (Crabtree-Nelson et al., 2022).	
Garcia, C., Abrue, L., Ramos, J., Castro, C., Smiderle, F., Santos, J., & Bezerra, I. (2019). Influence of burnout on patient safety: Systematic review and meta-analysis. <i>Medicina</i> , 55(9), 553. DOI: 10.3390/medicina55090553	To analyze the relationship between burnout and patient safety (Garcia et al., 2019).	2 searches across PubMed and Web of Science databases	A systematic review with a meta-analysis	Twenty-one studies were analyzed, most of them demonstrating an association between the existence of burnout and the worsening of patient safety (Garcia et al., 2019).	Level 5- Systematic review of descriptive & qualitative studies	None mentioned	Yes; provides background information relevant to clinical question and helpful for practice change
Gong, S., Li, J., Tang, X., & Cao, X. (2022). Associations among professional quality of life dimensions,	To assess the levels of professional quality	315 newly graduated nurses	Cross-sectional study	The prevalence of average levels of	Level 4- Case-control or	A cross-sectional design was adopted,	Yes; Strategies such as developing a supportive work and family

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
burnout, nursing practice environment, and turnover intention in newly graduated nurses. <i>Worldviews on Evidence-Based Nursing</i> , 19(2), 138-148. DOI: 10.1111/wvn.12568	of life dimensions and turnover intention, to examine the predictors for turnover intention, and to explore the mediating roles of professional quality of life dimensions on the associations between these predictors and turnover intention in Chinese newly graduated nurses (Gong et al., 2022).	selected from five tertiary hospitals and five secondary hospitals in Sichuan province, China (Gong et al., 2022).		burnout, secondary traumatic stress, and compassion satisfaction was 43.2%, 57.1%, and 81.3%, respectively (Gong et al., 2022).	cohort study	which could not analyze the causal mechanisms between these variables; samples were only chosen from tertiary and secondary hospitals in one province of China, which might limit generalizability of the findings; only organizational, external, internal, and attitudinal factors were examined (Gong et al., 2022).	environment, and cultivating empathic capacity can be effective methods to mitigate against intention to leave this job in newly graduated nurses (Gong et al., 2022).

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnik Level of Evidence	Limitations	Evidence to Support a Change?
Kim, S.C., Rankin, L., & Ferguson, J. (2021). Nurses' mental health from early COVID-19 pandemic to vaccination. <i>Journal of Nursing Scholarship</i> , 00, 1-8. DOI: 10.1111/jnu.12760	To explore the changes in nurses' mental health from the early pandemic to the early vaccination period over a 1-year time span and examine vaccination and coping mechanisms as predictors of nurses' poor mental health and burnout (Kim et al., 2021).	320 nurses for the Early Pandemic Cohort survey; 228 nurses for the Pre-Vaccination Cohort; alumni who graduated from two nursing schools in southern California and Midwest, USA for the third survey (no number specified) (Kim et al., 2021).	Three cross-sectional surveys	There were significant decreases in moderate/severe anxiety and moderate/severe depression for the early-vaccination cohort compared to the other cohorts; high resilience, family functioning, and spirituality were associated with two-to five-fold lower odds of poor mental health and burnout (Kim et al., 2021).	Level 4- Case-control or cohort study	The associations between COVID-19 vaccination or coping mechanisms with poor mental health should not be considered cause-and-effect relationship in this observational study; was not a longitudinal study following the same subjects; convenience sampling may have introduced bias (Kim et al., 2021).	Yes; the evidence gathered over 1 year of the pandemic may be helpful for a better understanding of the challenges facing frontline nurses and preparing for future healthcare crises (Kim et al., 2021).

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnik Level of Evidence	Limitations	Evidence to Support a Change?
Labrague, L.J. (2021). Influence of nurse managers' toxic leadership behaviors on nurse-reported adverse events and quality of care. <i>Journal of Nursing Management</i> , 29, 855-863. DOI: 10.1111/jonm.13228	To assess the impact of toxic leadership behaviours among nurse managers on nurse-reported adverse events and quality of care (Labrague, 2021).	Sample of 1053 nurses across 20 hospitals in Philippines	Multi-center, cross-sectional study	96.2% of nurses graded quality of care in their units as good-excellent; toxic manager behavior strongly linked to patient AEs, nurse complaints, medication errors, and reduced quality of care	Level 4: Case control or cohort study	Exclusion of nurses from other provinces and countries; difficulty generalizing findings; most data based on RN self-reports and not EMR data; only AEs measured in the study; future studies needed	Yes; information can be used to implement a practice change in U.S. hospitals over time
Labrague, L.J., & Obeidat, A.A. (2021). Transformational leadership as a mediator between work-family conflict, nurse-reported patient safety outcomes, and job engagement. <i>Journal of Nursing Scholarship</i> , 00, 1-8. DOI: 10.1111/jnu.12756	To determine the influence of work-family conflict (WFC) on patient safety outcomes and job engagement via the	754 nurses from 10 acute care hospitals in the Philippines	Cross-sectional study	A higher perception of WFC was associated with increased adverse events, reduced quality of care and decreased job	Level 4: Case control or cohort study	Nurses included in the study confined to one region which allows for generalization of findings; use of self-	Yes; study results highlight the importance of periodic assessment of leadership behaviors in nurse managers to gain more knowledge on needs and areas for improvement

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnik Level of Evidence	Limitations	Evidence to Support a Change?
	intermediary role of transformational leadership (TL) (Labrague & Obeidat, 2021).			engagement (Labrague & Obeidat, 2021).		reported scale could create bias; individual and contextual factors might not have been accounted for (Labrague & Obeidat, 2021).	(Labrague & Obeidat, 2021).
Landay, K., Arena Jr., D.F., & King, D.A. (2022). Passion in the pit: The effects of harmonious and obsessive passion on nurse burnout. <i>Journal of Managerial Psychology</i> , 37(3), 192-205. DOI: 10.1108/JMP-03-2021-0181	To investigate two forms of passion, harmonious and obsessive passion, as resources that may indirectly predict two forms of burnout, disengagement, and exhaustion, through the mediator of job stress	71 nurses who completed surveys at three specific timepoints	Survey method using snowball sampling approach	Harmonious passion indirectly decreased disengagement and exhaustion by decreasing job stress; obsessive passion decreased both disengagement and exhaustion by decreasing job stress (Landay	Level 6- Single descriptive or qualitative study	Sample size was not ideal; use of self-reported measures which introduce variance	Yes; results highlight useful background information and results that influence the engagement of new and updated measures to help nurses to better cope in future pandemics

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
	(Landay et al., 2022).			et al., 2022).			
Lockhart, L. (2020). Strategies to reduce nursing turnover. <i>Nursing Made Incredibly Easy!</i> DOI-10.1097/01.NME.0000653196.16629.2e	To define strategies that reduce nurse turnover	Sample not given	Non-experimental	Non-experimental	Level 7: Expert opinion	None	Yes; author provided insight on the factors that influence turnover so improvement strategies can be implemented
Lu, H., Zhao, Y., & While, A. (2019). Job satisfaction among hospital nurses: A literature review. <i>International Journal of Nursing Studies</i> , 94, 21-31. DOI: 10.1016/j.ijnurstu.2019.01.011	To identify a more comprehensive and extensive knowledge of the job satisfaction of qualified general nurses working in acute care hospitals and its associated factors drawing upon empirical literature published in the last five years (Lu et al., 2019).	59 total papers	Literature review	The impact of job satisfaction upon sickness absence, turnover intention, as well as the influencing factors of job satisfaction such as working shift and leadership, job performance, organizational commitment, effort, and reward	Level 5: Systematic review of descriptive and qualitative studies	Limited body of knowledge regarding nurses' job satisfaction; longitudinal and intervention studies are needed to further validate the proposed structural models (Lu et al., 2019).	Yes; information is helpful in identifying factors and solutions from a leadership perspective

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
				style has been identified in a number of research studies yielding equivocal findings (Lu et al., 2019).			
Melnyk, B.M. (2022). Shifting from burnout cultures to wellness cultures to improve nurse/clinician well-being and healthcare safety: Evidence to guide change. <i>Worldviews on Evidence-Based Nursing</i> , 19(2), 84-85. DOI: 10.1111/wvn.12575	To discuss ways to shift a culture of burnout to one of wellness	Sample not given	Non-experimental	Non-experimental	Level 7: Expert opinion	None	Yes; author provided insight on implementation tactics that foster senior leaders' commitment and investment; appointing a chief wellness officer with sufficient resources; creating an exciting team vision and strategic plan; developing a comprehensive multi-component strategy that targets individuals in the grassroots of the

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							organization, manager/supervisors, and top leaders; and cultivating a culture of caring and connection where healthy lifestyle behaviors are the norm (Melnyk, 2022).
Mudallal, R.H., Othman, W.M., & Al-Hassan, N.F. (2017). Nurses' burnout: The influence of leader empowering behaviors, work conditions, and demographic traits. <i>The Journal of Health Care Organization, Provision, and Financing</i> , 54, 1-10. DOI: 10.1177/0046958017724944	To assess the level of burnout among Jordanian nurses and to investigate the influence of leader empowering behaviors (LEBs) on nurses' feelings of burnout in an endeavor to improve nursing work outcomes (Mudallal	407 registered nurses, recruited from 11 hospitals in Jordan	Cross-sectional and correlational design	Jordanian nurses exhibited high levels of burnout as demonstrated by their high scores for Emotional Exhaustion (EE) and Depersonalization (DP) and moderate scores for Personal Accomplishment (PA) (Mudallal	Level 4: Case control or cohort study	Use of nonprobability sampling rendering sample size insufficient for revealing statistical results; generalizability limited; coefficients showed weak effects	Yes; evidence and results sufficient to clearly identify problem and pinpoint relevant solutions



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Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
	et al., 2017).			et al., 2017).			
Nantsupawat, A., Kunaviktikul, W., Nantsupawat, R., Wichaikhum, O. A., Thienthong, H., & Poghosyan, L. (2017). Effects of nurse work environment on job dissatisfaction, burnout, intention to leave. <i>International Nursing Review</i> , 64(1), 91–98. DOI: 10.1111/inr.12342	To investigate how work environment affects job dissatisfaction, burnout, and intention to leave among nurses in Thailand (Nantsupawat et al., 2017).	1351 nurses working in 43 inpatient units in five university hospitals across Thailand (Nantsupawat et al., 2017).	Cross-sectional survey method	Nurses working in university hospitals with better work environments had significantly less job dissatisfaction, intention to leave, and burnout (Nantsupawat et al., 2017).	Level 4- Case-control or cohort study	Data collected from self-reports; inaccurate reports; limitations on generalizing results	Yes; the study purpose encourages leaders to strengthen recruitment and retention efforts
Nauman, M., & Jamshed, S. (2020). Nursing turnover intentions: The role of leader emotional intelligence and team culture. <i>Journal of Nursing Management</i> , 00, 1-11. DOI: 10.1111/jonm.13144	To explore the influence of leader emotional intelligence on the working culture prevailing in teams that ultimately impacts nurses'	313 substantial responses	Survey technique	Findings revealed that leader emotional intelligence impules critical constructive effects by fulfilling the needs of nurses and has an impact on their turnover	Level 6- Single descriptive or qualitative study	Data collected from only hospital nurses and via self-reports	No; study purpose not clear enough and target sample possibly not representative of true population

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

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	intent to leave the job (Nauman & Jamshed, 2020).			intentions simultaneously (Nauman & Jamshed, 2020).			
Niskala, J., Kanste, O., Tomietto, M., Miettunen, J., Tuomikoski, A., Kyngas, H., & Mikkonen, K. (2020). Interventions to improve nurses' job satisfaction: A systematic review and meta-analysis. <i>Journal of Advanced Nursing</i> , 76(7), 1498-1508. DOI: 10.1111/jan.14342	To identify current best evidence on the types of interventions that have been developed to improve job satisfaction among nurses and on the effectiveness of these interventions (Niskala et al., 2020).	20 articles	Quantitative systematic review and meta-analyses	Two interventions significantly improved nurses' job satisfaction	Level 5: Systematic review of descriptive and qualitative studies	Heterogeneity affecting the findings; variation introduced with meta-analysis approach	Yes; the authors noted strategies to improve nurse job satisfaction going forward; the strategies involve human resource interventions and proposing extrinsic factors such as salary increases and rewards (Niskala et al., 2020).
Senek, M., Robertson, S., Ryan, T., King, R., Wood, E., Taylor, B., & Tod, A. (2020). Determinants of nurse job dissatisfaction – Findings from a cross-sectional survey analysis in the UK.	To explore determinants that impact nurse job dissatisfaction and intent to leave	1742 nurses	Cross-sectional mixed methods survey	2/3 of the nurses found to be demoralized and disempowered	Level 4 - Case-control or cohort study	Few variables; lacking age, gender, and experience factors in	Yes; it would be beneficial to know the reasons for disempowerment in order to seek ways to improve here

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
<i>BMC Nursing</i> , 19:88, DOI: 10.1186/s12912-020-00481-3						analysis; qualitative data may not be accurate depiction	
Shapiro, D., Duquette, C.E., Zangerle, C., Pearl, A., & Campbell, T. (2022). The seniority swoop: Young nurse burnout, violence, and turnover intention in an 11-hospital sample. <i>Nursing Administration Quarterly</i> , 46(1), 60-71. DOI: 10.1097/NAQ.0000000000000502	To understand whether nurses aged 20 to 29 years burnout and intend to turnover in higher proportions than more senior nurses, and if so, why (Shapiro et al., 2022).	Sample of hospital-based bedside nurses at 11 hospitals in Pennsylvania and Rhode Island prior to the pandemic (Shapiro et al., 2022).	Survey and comparison method	In a pattern that appears like a swooping line when graphed, nurses aged 20 to 29 years reported higher burnout and intention to leave than more senior nurses (Shapiro et al., 2022).	Level 6- Single descriptive or qualitative study	Self-report study subject to bias; survey was not mandatory and had response rates of less than 50% (Shapiro et al., 2022).	Yes; the authors mention recommendations to reduce burnout and turnover in young nurses
Tomietto, M., Paro, E., Sartori, R., Maricchio, R., Clarizia, L., De Lucia, P., Pedrinelli, G., & Finos, R. (2019). Work engagement and perceived work ability: An evidence-based	To test a model developed to estimate the impact of work engagement on work	1,024 nurses from January-May 2018	Cross-sectional study	Parameters confirmed the association between work engagement	Level 4 - Case-control or cohort study	Inference on community nurses is limited (study only focused	Yes; the study highlights how to address nursing management to improve nurses' motivation and work ability and

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
<p>model to enhance nurses' well-being. <i>Journal of Advanced Nursing</i>, 75(9), 1933-1942. DOI: 10.1111/jan.13981</p>	<p>ability as it is perceived by nurses and to test the parameters between work ability and job satisfaction and between job satisfaction and turnover intention (Tomietto et al., 2019).</p>			<p>nt and work ability and between work ability and job satisfaction and turnover intention (Tomietto et al., 2019).</p>		<p>on hospital nurses); out of duty nurses (due to health issues) not recruited which could affect the sample (Tomietto et al., 2019).</p>	<p>to improve organizational outcomes (Tomietto et al., 2019).</p>
<p>Viscardi, M.K., French, R., Brom, H., Lake, E., Ulrich, C., &amp; McHugh, M.D. (2022). Care quality, patient safety, and nurse outcomes at hospitals serving economically disadvantaged patients: A case for investment in nursing. <i>Policy, Politics, &amp; Nursing Practice</i>, 23(1), 5-14. DOI: 10.1177/15271544211069554</p>	<p>To evaluate if better work environments or staffing were associated with improvements in care quality, patient safety, and nurse</p>	<p>23,629 RNs in 503 hospitals from a four-state survey collected in 2005-2008 (Viscardi et al., 2022).</p>	<p>Cross-sectional study</p>	<p>Each 10% increase in the proportion of patients who are economically disadvantaged was associated with 27% and 22% decreased odds of rating unit-level</p>	<p>Level 4 - Case-control or cohort study</p>	<p>Inability to determine causation due to use of cross-sectional design; use of self-reported measures which introduce bias and reduce validity;</p>	<p>Yes; authors mention strengthening nurse work environments as a way to improve quality, safety, and nurse outcomes; they also encourage better policies that will improve nurse and patient experiences</p>

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Meln k Level of Evide nce	Limitatio ns	Evidence to Support a Change?
	outcomes across hospitals caring for different proportions of patients who are economically disadvantaged (Viscardi et al., 2022).			care quality as excellent and giving an “A” safety grade; each 10% increase was also associated with 9%, 25%, and 11% increased odds of job dissatisfaction, intent to leave, and burnout; the work environment had the largest association with each outcome (Viscardi et al., 2022).		some evidence noted was still too novel	(Viscardi et al., 2022).
Wan, Q., Li, Z., Zhou, W., & Shang, S. (2018). Effects of work environment and job characteristics on the turnover intention of	To assess turnover intention among experienced nurses	778 experienced nurses from seven	Descriptive, cross-sectional	35.9% of experienced nurses had high-level turnover	Level 4 - Case-control or	Self-report method and common method	Yes; authors note that theory-driven strategies to improve work environment,

## NURSE DISSATISFACTION AND PATIENT OUTCOMES


Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
<p>experienced nurses: The mediating role of work engagement. <i>Journal of Advanced Nursing</i>, 74(6), 1332-1341. DOI: 10.1111/jan.13528</p>	<p>and explore the effects of work environment, job characteristics and work engagement on turnover intention (Wan et al., 2018).</p>	<p>hospital's surveyed between March and May of 2017</p>	<p>survey design</p>	<p>intention (Wan et al., 2018).</p>	<p>cohort study</p>	<p>variance could bias the results; data obtained were only from tertiary public hospitals which made sample less diverse; cross-sectional design, did not allow an examination of causal relationship (Wan et al., 2018).</p>	<p>enhance job characteristics and promote work engagement are needed to address the nursing shortage and high turnover intention among experienced nurses (Wan et al., 2018).</p>
<p>Whitman, M.V., Halbesleben, J.R.B., &amp; Holmes IV, O. (2014). Abusive supervision and feedback avoidance: The mediating role of emotional exhaustion. <i>Journal of Organizational</i></p>	<p>To establish a link between abusive supervision and feedback avoidance through emotional</p>	<p>Three rounds of matched data from 460 nurses and 220 working adults</p>	<p>Survey method</p>	<p>Feedback avoidance was associated with subsequent exhaustion, representing a loss</p>	<p>Level 6- Single descriptive or qualitative study</p>	<p>Low response rate to the survey; sample comprised mostly female respondents which introduces</p>	<p>Yes; Organizations may consider modifying their selection process by testing potential candidates for certain traits that have been linked to abuse;</p>

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Article Citation	Purpose	Sample	Methods	Results	Melnyk Level of Evidence	Limitations	Evidence to Support a Change?
Behavior, 35, 38-53. DOI: 10.1002/job.1852	exhaustion (Whitman et al., 2014).	(Whitman et al., 2014).		spiral; link revealed between a subordinate's reactions (exhaustion) and coping behavior (feedback avoidance) when supervisory abuse is perceived (Whitman et al., 2014).		gender bias; possible variables not accounted for; more causal relationship needs to be explored	organizations may provide ongoing training to ensure that all members are aware of the specific actions and behaviors that constitute abuse; organizations also may consider providing their members with training on effective coping strategies (Whitman et al., 2014).

**Appendix B**

**CITI Completion of Biomedical and Health Science Researchers Course**



Completion Date 06-Dec-2021  
Expiration Date 05-Dec-2024  
Record ID 40803227

This is to certify that:

**Folayan Morehead**


Has completed the following CITI Program course:

**Biomedical Research - Basic/Refresher**  
(Curriculum Group)  
**Biomedical & Health Science Researchers**  
(Course Learner Group)  
**1 - Basic Course**  
(Stage)

Under requirements set by:

**Liberty University**

Not valid for renewal of certification through CME.



**CITI**  
Collaborative Institutional Training Initiative

Verify at [www.citiprogram.org/verify/?w50e243c4-f7c2-4af5-87b2-247fcd94e90b-40803227](http://www.citiprogram.org/verify/?w50e243c4-f7c2-4af5-87b2-247fcd94e90b-40803227)



**Appendix C****Permission to Use Iowa Model**

## NURSE DISSATISFACTION AND PATIENT OUTCOMES

Firefox

<https://outlook.office.com/mail/inbox/id/AAQkADljZWMwOTFILTA1...>**Permission to Use The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care**

Kimberly Jordan - University of Iowa Hospitals and Clinics <survey-bounce@survey.uiowa.edu>

Sat 10/30/2021 9:52 PM

To: Morehead, Folayan Jamila <fmorehead@liberty.edu>

You have permission, as requested today, to review and/or reproduce *The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care*. Click the link below to open.

[The Iowa Model Revised \(2015\)](#)

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**Reference:** Iowa Model Collaborative. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing*, 14(3), 175-182. doi:10.1111/wvn.12223

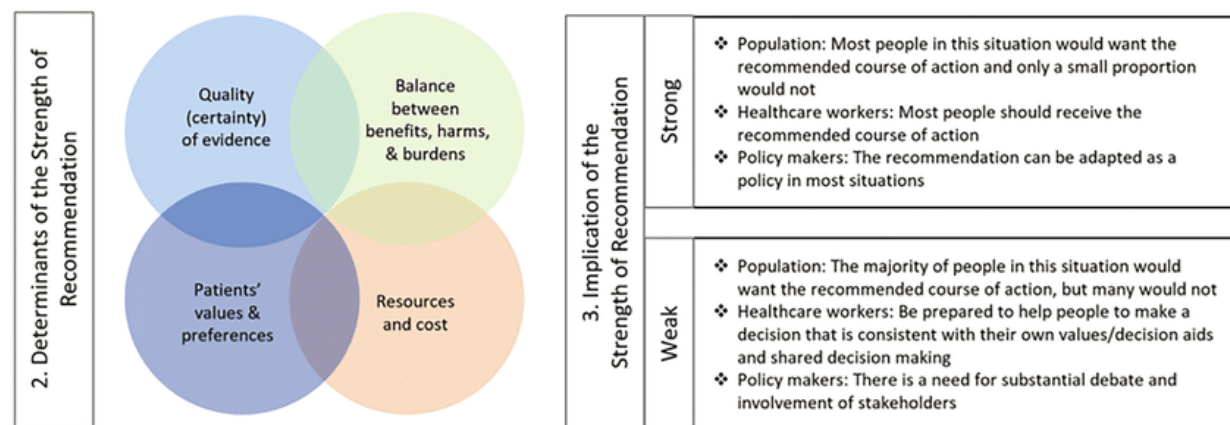
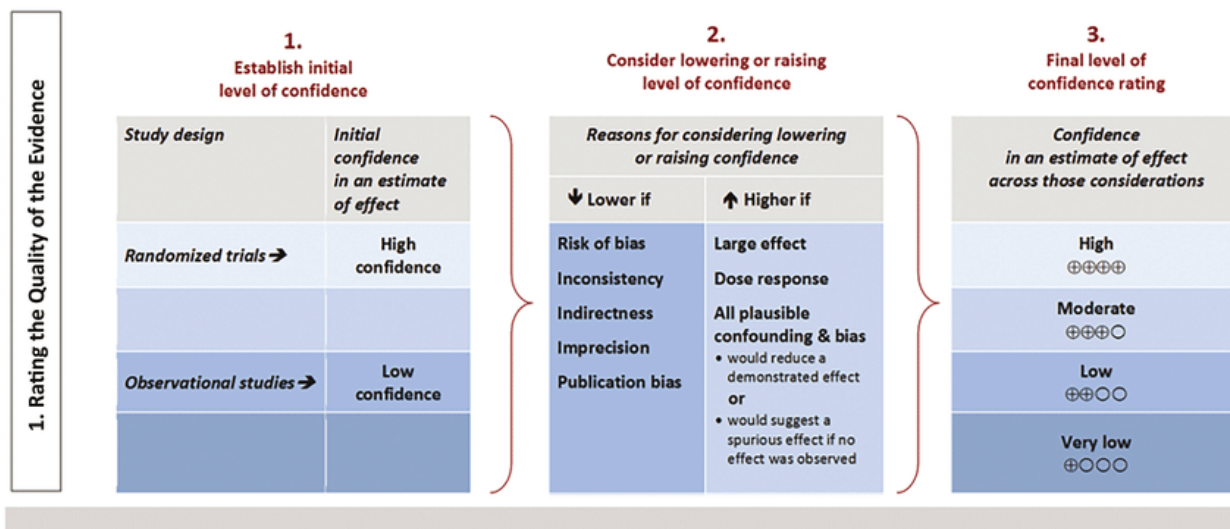
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Please contact [UIHCNursingResearchandEBP@uiowa.edu](mailto:UIHCNursingResearchandEBP@uiowa.edu) or 319-384-9098 with questions.

**Appendix D****GRADE Approach**

NURSE DISSATISFACTION AND PATIENT OUTCOMES



(He et al., 2020).

# NURSE DISSATISFACTION AND PATIENT OUTCOMES

## Appendix E

### Institutional Review Board Approval

IRB #: IRB-FY21-22-818

Title: Addressing Factors That Lead to Job Dissatisfaction Among U.S. Hospital Nurses and Poor Health Outcomes in Patients

Creation Date: 3-1-2022

End Date:

Status: **Approved**

Principal Investigator: Folayan Morehead

Review Board: Research Ethics Office

Sponsor:

### Study History

Submission Type	Initial	Review Type	Exempt	Decision	No Human Subjects Research
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### Key Study Contacts

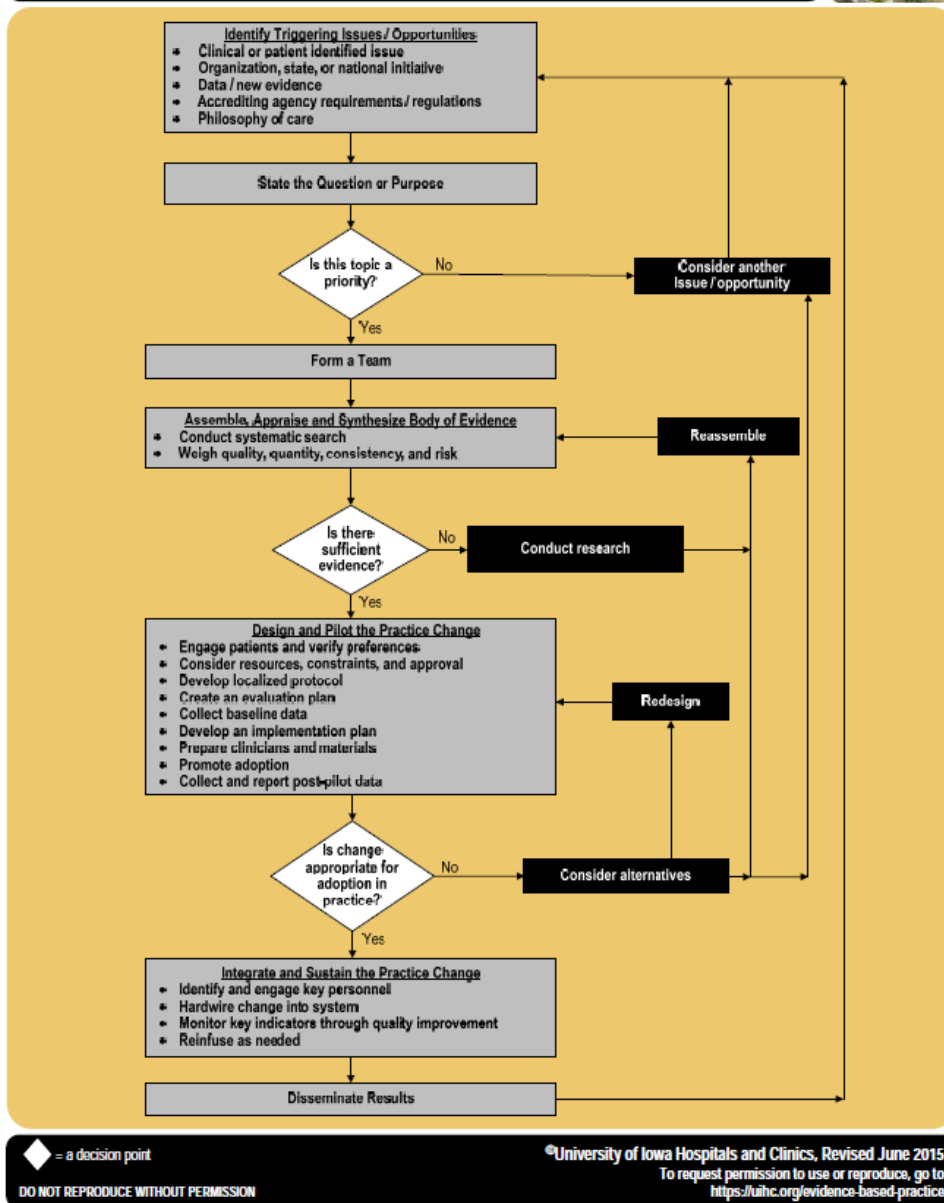
Member	Shanna Akers	Role	Co-Principal Investigator	Contact	[REDACTED]
Member	Folayan Morehead	Role	Principal Investigator	Contact	[REDACTED]
Member	Folayan Morehead	Role	Primary Contact	Contact	[REDACTED]

NURSE DISSATISFACTION AND PATIENT OUTCOMES

Appendix F

Iowa Model

**The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care**



(Iowa Model Collaborative, 2017).

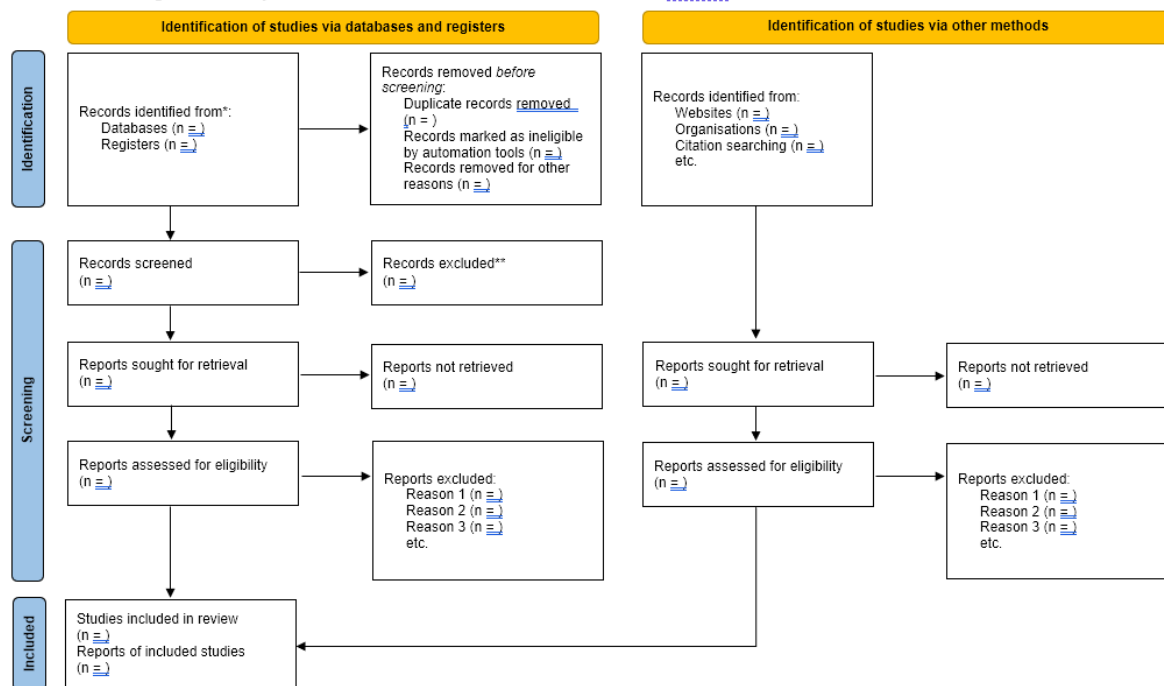
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## NURSE DISSATISFACTION AND PATIENT OUTCOMES

## Appendix G

## PRISMA 2020 Flow Diagram

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources



\*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

\*\*If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: <http://www.prisma-statement.org/>

(Page et al., 2021).


## NURSE DISSATISFACTION AND PATIENT OUTCOMES

## Appendix H

## Melnyk's Level of Evidence Toolkit

## Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is from *Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice* (2<sup>nd</sup> ed.) by Bernadette Mazurek Melnyk and Ellen Fineout-Overholt.

<p>Strongest Evidence</p>  <p>Weakest Evidence</p>	Level I:	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)
	Level II:	Evidence obtained from well-designed RCTs
	Level III:	Evidence obtained from well-designed controlled trials without randomization
	Level IV:	Evidence from well-designed case-control and cohort studies
	Level V:	Evidence from systematic reviews of descriptive and qualitative studies
	Level VI:	Evidence from single descriptive or qualitative studies
	Level VII:	Evidence from the opinion of authorities and/or reports of expert committees

Modified from Guyatt, G. & Rennie, D. (2002). *Users' Guides to the Medical Literature*. Chicago, IL: American Medical Association; Harris, R.P., Hefland, M., Woolf, S.H., Lohr, K.N., Mulrow, C.D., Teutsch, S.M., et al. (2001). *Current Methods of the U.S. Preventive Services Task Force: A Review of the Process*. *American Journal of Preventive Medicine*, 20, 21-35.

(Melnyk & Fineout-Overholt, 2011).