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WORKPLACE BULLYING, NURSE PRACTICE ENVIRONMENT, PATIENT
OUTCOMES: A DESCRIPTIVE STUDY

A Dissertation

Submitted to the School of Nursing

Duquesne University

In partial fulfillment of the requirements for
the degree of Doctor of Philosophy

By

Noreen M. Houck

August 2018

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Noreen M. Houck

2018

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OUTCOMES: A DESCRIPTIVE STUDY

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ABSTRACT

WORKPLACE BULLYING, NURSE PRACTICE ENVIRONMENT, PATIENT OUTCOMES: A DESCRIPTIVE STUDY

By

Noreen M. Houck

August 2018

Dissertation supervised by Alison M. Colbert, PhD, PHCNS-BC, Associate Professor, Associate Dean for Academic Affairs.

Better nursing practice environments are associated with improved patient safety, yet little is known about the nurse's experiences of bullying or flourishing within the practice environment. This study described nurses' experiences of workplace bullying and flourishing and identified associations with patient outcomes.

The study used an exploratory cross-sectional survey design following Donabedian's Quality Framework of structure-process-outcome and informed through critical feminist theory. The study took place at a large medical facility in the northeastern United States. A multi-instrument survey included four sections. The demographic section and the Practice Environment Scale of the Nurse Work Index (PES-NWI) were used to measure structure variables. The process variables were measured using the Negative Acts Questionnaire Revised for the United States (NAQR-US) to measure workplace bullying,

and an investigator designed instrument to measure the workplace flourishing based on Chinn's PEACE and Power model. The online survey results from 138 bedside nurses were correlated with outcome variables patient satisfaction from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys, and unit based patient safety rates. Patient falls, 30-day readmissions, medication errors, pressure injuries, overall patient satisfaction, and whether patients would recommend the hospital were averaged by patient unit and assigned to each nurse based on unit association. Following descriptive analysis, multiple regression models were conducted for each patient outcome.

The respondents were 76% female, 52 % had a bachelor's degree or higher and the average time as an RN was 15 years. Nurse perception of the practice environment was inversely associated with patient falls ($r=-0.21$, $p<.01$) and 30-day readmissions ($r=-0.21$, $p<.01$). Twenty percent of the respondents' report incidents of bullying occur weekly or more. Bullying was significantly and negatively associated with the overall quality of the practice environment ($r=-0.26$, $p <.01$) and with patients' Recommend the Hospital ($r=-0.26$, $p<0.01$). Workplace bullying and flourishing association had very small and not significant associations with patient safety variables. Workplace flourishing had a moderate and significant positive association with the better practice environments ($r=0.44$, $p<0.000$) but had very small associations with all patient outcomes variables and with workplace bullying.

This study contributes to a better understanding of the nurses practice environment by the associations found with bullying and flourishing. Implicit in the PES-NWI description of strong nursing practice environments is nursing control and autonomy of

practice. More work is needed to explore the concept of flourishing and what keeps nurses working in adverse environments. As the practice environment is linked to patient safety, an understanding of nurse's work that includes the practice environments, work satisfaction, the absence of bullying and intentional work flourishing will contribute to better patient outcomes. Further research is needed to understand the complex nature of the nurses' work environment and the impact on nurses and patients.

DEDICATION

This dissertation is dedicated to the many people who have supported and inspired me throughout this journey. First, my husband, Nathan, who has shown his love and encouragement in all areas of our life together; my daughter, Hadley, who grew up with a mom reading, writing, and hushing; she is my greatest joy and the nicest person I know, I am forever your biggest fan; to my mother who passed away during this process, she was both the mother and the nurse I seek to be; my colleagues who believed in me and my topic, especially Anne Watson Bongiorno, Sarah Charles, Faye Grund, Tarsha Jones, and my PhD classmates; and finally the many nurses and colleagues who work under adverse conditions but continue to support each other and strive for the best quality care for their patients.

ACKNOWLEDGEMENT

There are many individuals I must acknowledge who have championed me through this process. I felt their unselfish gift of time and advice. You are each an inspiration to me.

I would like to acknowledge the guidance and support of my committee. Alison Colbert, my committee chairperson and program advisor, who offered me the support of a colleague and mentor, and a persistent belief in the project that carried me through with her confidence when mine lagged. Dr. Bonnie Dean, whose experience in hospital administration helped me frame my requests to clinical sites with an understanding of the importance of the study and the hospital resistance I would meet. Thank you for staying with me. Dr. Melissa Kalarchian, provided meticulous editing, proofing, and an unwavering enthusiasm. Dr. Peggy Chinn provided generous and never failing support, her support of nurse activism and feminism, including her PEACE and Power model and writings in nursing inspired this thesis. The Duquesne nursing program, its faculty and staff, must be acknowledged for the supportive and nurturing environment they provided in the accomplishment of my studies and this work.

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LIST OF ABBREVIATIONS

30: 30-Day Readmissions

AHRQ: Agency for Healthcare Research and Quality

CFT: Critical Feminist Theory

CMS: Centers for Medicare and Medicaid

EX: RN Experience

FL: Flourishing

HCAHPS: Hospital Consumer Assessment of Healthcare Providers and Systems (survey)

HS: Hospital Satisfaction

IOM: Institute of Medicine

ME: Medication Errors

NAQR-US: Negative Acts Questionnaire Revised – United States

PES-NWI: Practice Environment Scale of the Nursing Work Index

PE: Practice Environment

PF: Patient Falls

PI: Pressure Injuries

RH: Recommend Hospital

RN: Registered Professional Nurse

WPB: Workplace Bullying

CHAPTER 1 PROBLEM AND SIGNIFICANCE

Patient safety is central to what it means to be a nurse. Therefore, it is especially disheartening to observe the slow pace of improvement in patient safety since the publication of the seminal Institute of Medicine (IOM) report, *To Err is Human* (2000). Since publication of this report, injuries due to errors in healthcare equaled or exceeded the sixth leading cause of death in the United States in 2012 (Hoyert & Xu, 2012; National Academy of Medicine, 2000). In 2011, the Agency for Healthcare Research and Quality (AHRQ) described a need for significant and steady improvement in patient safety (U.S. Department of Health and Human Services, 2011). Nevertheless, following initial reports, the pace has improved at a sluggish annual rate of 2.3% annually, while overall healthcare quality is described as suboptimal (U.S. Department of Health and Human Services, 2011). The need to ensure continued and accelerated improvements is imperative.

Patients are not safe when nurses are not safe. There is a pressing need to understand nursing's association with patient safety from a broad system perspective that is inclusive of nurses practice environment and interpersonal workplace relationships. Patient safety requires cooperation, collaboration, and respectful working interactions amongst the healthcare team (Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, 2011). Workplace bullying is a pervasive and destructive issue in the work environment of nurses described in the literature over the last thirty years (Roberts, 1983; Vessey, DeMarco, & DiFazio, 2011). Understandably, nurses are reluctant to acknowledge and address the issue of workplace bullying since it does not fit with a strong professional identity (Dunn, 2003; K. Sellers, Millenback, Kovach, & Yingling, 2009). Yet, without self-reflection and critique, nurses fail to create sustainable change in healthcare culture that is resistant to workplace bullying.

The practice environment and interpersonal interactions have an impact on nurses as shown in physical and psychological responses. What has not been well understood is how the practice environment and interpersonal workplace relationships affect patient safety. These factors when viewed through the lens of critical feminist theory make explicit the power dynamics present in the system of care that values of equality, class, race, and gender in the interpersonal relationships that affect the processes of care. There are no studies that examine the associations between and among of the perception of shared power, respect, and equity in the practice environment of nurses with patient safety. This study used CFT to inform our understanding of the relationship between nurses' perception of the practice environment, nurses' perceptions of interpersonal workplace relationships, and patient safety.

Background

Patient safety is about how the organizational system of healthcare works together. It is a phenomenon that requires more than each healthcare employee to do his or her job well but also working together within the multifaceted healthcare system. This is especially evident in the complex social-political environment of hospitals. The level of complexity in the system itself poses a threat to patient safety. Healthcare organizations by their nature are complex systems that lack the predictability and consistency of linear systems. In simple systems, stimulus of one element results in a predictable outcome. This relationship is challenged in complex systems, where small changes in one element may lead to non-predictable results (Paley & Eva, 2011).

In 2003, the Agency for Healthcare Research and Quality (AHRQ) developed Patient Safety Indicators (PSIs) reported as composite scores (AHRQ Publication, 2009). Many of the current PSIs represent multisystem and not nurse specific contributions to patient outcomes. Nursing-sensitive indicators of care are structure, process, and outcomes variables of care that are highly

related to the quality and quantity of nursing care (American Nurses Association, 2011) such as pressure injuries, pneumothorax, sepsis and infections due to medical care, selected postoperative complications and patient falls (AHRQ Publication, 2009).

In the complex system of the hospital, it is a challenge to determine what aspect of patient safety is directly related to nursing care. Associations between organizational or environmental issues in hospitals are associated with patient outcomes. For example, studies on Magnet status have been linked to patient mortality rates (Hickey, Gauvreau, Tong, Schiffer, & Connor, 2012; Kelly, McHugh, & Aiken, 2011; Kutney-Lee, Stimpfel, Sloane, Cimiotti, & Quinn, 2015; McHugh et al., 2013), education level of nurses (Aiken, Clarke, Cheung, Sloan, & Silber, 2003), nurse to patient volume (Wiltse Nicely, Sloane, & Aiken, 2013), unit specialization (Aiken & Sloane, 1997; Wiltse Nicely et al., 2013), and nurse staffing levels (Martsolf et al., 2016; Wiltse Nicely et al., 2013) . Beyond Magnet research the practice environment has been associated with nursing workforce issues such as emotional exhaustion, turnover, and job satisfaction (Gabriel, Erickson, Moran, Diefendorff, & Bromley, 2013; Gillet et al., 2018; Stimpfel, Sloane, McHugh, & Aiken, 2016), patient satisfaction (Boev, 2012), intention to leave (Flinkman, Leino-Kilpi, & Salanterä, 2010; Lansiquot, Tullai-McGuinness, & Madigan, 2012; S. Simons, 2008; Stone et al., 2009), and burnout (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Fuentelsaz-Gallego, Moreno-Casbas, Gomez-Garcia, Gonzalez-Maria, & Consorcio RN4CAST-Espana, 2013; Spence Laschinger, Wong, & Grau, 2012; Stimpfel, Sloane, & Aiken, 2012).

A practice environment issue that has negative implications for the nurse is workplace bullying. Workplace bullying (WPB) is a form of interpersonal violence between individuals in the workplace. While not unique to nursing, it appears persistent and intransigent in the culture of nursing and healthcare. The hospital environment is particularly challenged to address bullying

(An & Kang, 2016; Johnston, Phanhtharath, & Jackson, 2010; Vessey et al., 2011). Trends in healthcare, both political and economic, help create an environment that continues to sustain bullying. In particular, cost containment and outcome driven reimbursement strategies may exacerbate bullying in healthcare environments. Traditional acute care nursing seems very different today from what it was decades ago. Nurses are well aware of the rapid pace of change in the work environment such as; technology and treatments, staffing patterns, length of patient stays, and patient acuity, characterizes modern hospital nursing. As the work of nurses evolves to meet the demands of healthcare, there remains little understanding of how bullying and other factors in the work environment are associated with patient outcomes.

A small number of victims of WPB may experience physical violence and related physical injuries. In this study, the primary focus is non-physical abuse. Victims of WPB express physical symptoms such as severe anxiety, sleep disruption, clinical depression, post-traumatic stress disorder, and with prolonged exposure some victims experience physical effects like decreased immunity, stress headaches, high blood pressure, and digestive problems (Nielsen, Hetland, Matthiesen, & Einarsen, 2012; Yamada, 2000). Serious psychological effects of bullying include stress, depression, loss of sleep, and in severe cases can include Post-Traumatic Stress Disorder, which, untreated, may lead to aggression toward the bully or other persons (Longo, 2010). Further, victims express feelings of helplessness, powerlessness, silence, anger, and job dissatisfaction (Gardezi et al., 2009). These issues can be devastating to the victims of bullying.

Workplace bullying encourages nurses to leave their positions and the profession (S. Simons, 2008) and reduced productivity (Berry, Gillespie, Gates, & Schafer, 2012; Lewis & Malecha, 2011). Victims of bullying have been identified by Namie and Namie as falling into one of three categories: 1) nice people deemed unlikely to confront or stop the bully, 2) vulnerable people

who present as nonthreatening in their actions and words, and 3) the confident and talented (Namie, 2003; Namie, 2008; Yamada, 2000). The victims are often envied by the bully for reasons unknown to the target, they are perceived as more capable, more well liked, and in possession of greater education and skill (Namie, 2008).

To date, nursing research in WPB has been primarily descriptive of a variety of nursing populations. These studies describe WPB effects on the nurse, while very few studies present the effects WPB has on patients. A significant exception is the study by Roche, Diers, Duffield, and Casting-Paul (2009) that correlates the effects of all types of nurse perceived violence on the nurse to working conditions and patient outcomes through secondary data analysis. This study of nurses conducted in two Australian states collected patient safety data over seven days from medical surgical units. This study offers an important addition to our knowledge of the elements in the work environment that contribute to patient safety. However, the study limited the patient outcome measures to patient falls, medication errors, and late medication administration. It also is limited to medical-surgical hospital units. Further, Roche, et al. does not explore interpersonal or environmental factors that are associated with improved patient outcomes.

The presence of WPB in the complex sociopolitical environment of healthcare and its evolution in nursing becomes clear and evident when examined through a critical feminist lens. Chinn and Wheeler (1985) describe feminist theory as a “world view that values women and that confronts systematic injustices based on gender” (p. 74). The critical feminist view focuses on “social change and explanations of prevailing social forces, particularly class and gender that sustain oppression” (Chinn, 1995, p. 269). Through this view, an analysis of the subordination of women for the purpose of changing the power structure and position in social constructs (e.g., institutions, families, political systems) explains the dynamics of the hospital setting. The

sociopolitical environment of nursing in acute care is shaped by the hegemony of medicine, hierarchal designed systems of hospitals, and the predominance of females in nursing (Chinn, 1995; Group & Roberts, 2001; Routledge, 2007). Critical feminist theory (CFT) reveals androcentric bias in the social structures that perpetuate oppression, suppress women, and resolve these constraints through emancipation and liberation (Chinn & Wheeler, 1985). Critical feminist theory uses the concepts of oppression and shared power to explain dynamics of social order. Issues of power, oppression, and autonomy viewed through the lens of critical feminism help explain the dynamic of bullying and its impact on patient safety in the hospital environment.

A work environment in which there is perceived bullying may not support work processes that nurture human growth and well-being. A work environment that places importance on respectful interpersonal interactions and shared power is described in Chinn's model for group process and community building (Chinn, 2013). Chinn, nurse activist, and feminist author developed the PEACE and Power model that describes interpersonal relationships that are empowered, based on meaningful relationships, shared goals, and effective working relationships. The elements of the PEACE principles (praxis, empowerment, awareness, cooperation, and evolvment) creates a context for workplace flourishing derived from feminist thoughts and values. CFT provides a lens to interpret the associations between variables of the work environment and interpersonal relationships with patient safety. This study offers a new tool to measure CFT concepts that promote strong work environments (workplace flourishing) and the effect on patient safety.

The prevalence of workplace bullying in nursing ranges between 26% as perceived by New York State nurse executives (K. F. Sellers, Millenbach, Ward, & Scribani, 2012) to 77% of healthcare workers surveyed in south western, United States (Rosenstein, Russell, & Lauve,

2002). The exact prevalence is difficult to determine due to the wide variety of definitions, terms, and collection methods between studies. A study of Massachusetts Registered Nurses reported 31% of respondents perceived themselves to be bullied (S. Simons, 2008). Sellers, Millenback, Kovach, and Yingling (2009) surveyed a sample of nurse executives in New York and found 26.3 to 29.4 % of respondents reported being “often” or “frequently” a victim of horizontal violence (K. Sellers et al., 2009). Stanley, Martin, Michel, Welton, and Nemeth (2007) examined the prevalence or perceived prevalence of bullying in 35 nursing units in the southeastern United States and found 65% of their sample reported observing lateral violence among coworkers (Stanley, Martin, Michel, Welton, & Nemeth, 2007). However, one Australian study found one third of nurse respondents perceived emotional abuse in the last five shifts (Roche et al., 2010), another Australian study reports 65% of respondents experienced some form of aggression in the four weeks prior to the study (Farrell, Bobrowski, & Bobrowski, 2006). Studies that look at WPB across health disciplines found nurses the most common target or reporters of WPB (Evans, 2017; Rosenstein & O'Daniel, 2005)

These findings contribute to an understanding that workplace bullying in nursing is a reality of the nursing environment. The concept has appeared in the nursing literature and nomenclature for many years. Susan Jo Roberts introduced Pablo Freire’s model of oppressed group behavior and the term horizontal violence to nursing in 1983 (Freire, 1971; Roberts, 1983). In 1986, J.E. Meissner challenged nurses with the accusation that we “eat our young”. Yet, few inroads have been made in changing the prevalence and dynamics that support WPB. Further, despite the prevalence of WPB in the workplace, few studies make an association with patient safety. This study helps fill a gap in the research by adding to what is known about

associations among these variables and moving what is known from primarily descriptive studies to a correlation with objective safety variables.

Purpose

The primary purpose of this study was to describe associations between and among variables of the practice environment, workplace bullying, workplace flourishing, and patient safety as informed by critical feminist theory. This study identified significant correlations among variables and adds to an understanding of how phenomena in the acute care practice environment impacts patient safety.

Specific Aims and Research Hypothesis

The specific aims were to:

1. Describe nurses' perceived exposure to workplace bullying, flourishing and practice environment.
2. Examine the associations between selected demographic variables and perceived workplace bullying, flourishing, and practice environment.
3. Explore the associations between and among the variables of perceived exposure to workplace bullying, flourishing, the practice environment, and patient safety.
4. Explore the associations between the variables of flourishing in the workplace and patient safety and satisfaction.

Definition of Terms

Patient Safety

Patient safety is influenced by multiple organizational factors in the hospital that contribute to patient well-being. The emphasis on patient safety and health care containment costs this past decade have led to an increase in reporting of patient safety variables to oversight agencies like

the Joint Commission and Centers for Medicare and Medicaid Services. Patient safety is “the absence of the potential for, or occurrence of, health care-associated injury to patients” (Pronovost, Thompson, Holzmueller, Lubomski, & Morlock, 2005, p. 3). Frequently cited errors and adverse events include medication errors, injury due to medical care, hospital acquired infections, and patient falls (U.S. Department of Health and Human Services, 2017). In this study, patient safety was measured by rates of patient falls (all falls and falls with injury), medication errors, mortality rates, infection rates, pressure injury rates, and 30-day readmission rates (all readmissions and readmissions related to original hospitalization). This information was collected using an honest broker at the agency. The statistics were collected and reported to oversight agencies at periodic intervals in the course of normal operations. This data was collated from reported data over the six months preceding the survey.

Patient satisfaction

Patient satisfaction measures are a response to the IOM’s reports calling for healthcare cost containment incentives that align citizen expectations and satisfaction with health services with reimbursement and quality improvement measures (Committee on Quality of Health Care in America, National Academy of Medicine, 2001). These measures are collected and reported on eight dimensions through the Hospital Consumer Assessment of healthcare Providers and Systems (HCAHPS fact sheet.2013). Each subscale and a global scale are reported as a percentage of responses that selected the most favorable response.

Workplace bullying

Workplace bullying occurs when an individual perceives they are the target of negative actions from one or more persons. The behavior continues over time and the target has difficulty defending against these actions. Further, the target perceives a power gradient, present or

evolving, between themselves and the perpetrator (Einarsen, Hoel, & Notelaers, 2009; Yamada, 2000). This definition does not limit discussion to horizontal violence, as hostility between members of the same group (Duffy, 1995), and is inclusive of bullying nurses, nurse managers, charge nurse, and physician or new nurse and experienced nurse. WPB was measured on the four-item Negative Acts Questionnaire Revised – U.S. Instrument.

Workplace Flourishing

Workplace flourishing measures the nurse's perception of the respectful and empowering interactions amongst colleagues. Similar to workplace bullying, the behavior must continue over time, involve more than one person, the individual must perceive their efforts are supported by the work group, and they have the opportunity to grow and thrive in the work setting. Flourishing was measured on a newly developed four-item instrument that trialed and assessed for reliability and validity as part of this study.

Socio-demographic variables

Selected socio-demographic variables were collected based on prior studies. Those variables included age, gender, race, educational background, educational level at entry to practice, employment, income, number of years as a nurse, length in current position, and length of time at institution.

Assumptions and Limitations

Efforts to address assumptions and limitations were addressed in the design and methods section of this study. Several assumptions were made in the design of this study. First, we were relying on the agencies to accurately collect and report patient safety and patient satisfaction data. There is the assumption is that subjects were willing to participate in the study and honestly answer the questions.

Limitations

There are some limitations to this study that may affect generalizability. First, the size and lack of a random sample. The subject of this study is unsettling to some nurses and to some administrators so participants may have elected to not be involved. The subjects self-select to participate in the study and the selected hospital was based on geographic location. It was not possible to measure patient directly to the nurse, so the nurses were applied the mean score based on unit affiliation. It was a challenge to control for extraneous variable as may be handled with a randomization, within subject designs. The assessment of the practice environment, workplace bullying, and workplace flourishing are based on self-reports. These factors were assessed based on the nurse's perceptions of events that are not actually measured. This study asked respondents to consider the past six months and examined patient safety data over the prior six months. Generalizability might be strengthened with a longitudinal data collection design not practical and not used in this study.

CHAPTER 2 LITERATURE REVIEW

This chapter includes two manuscripts that describe the relationship between and among variable in this study, 1) *Feminism and Patient Safety: A Theoretical Exploration of Quality and Nursing Practice*, and 2) *Patient Safety and Workplace Bullying: An Integrative Review (In press, JNCQ)*. The first manuscript provides an example of the use of Critical Feminist Theory (CFT) as a lens to explain how examples of effective workplace studies have made improved patient safety. This study explains how embracing concepts evident through a CFT framework provides a foundation to effective changes that protects nurses and patients. When CFT values are used it favors organization change that result in more equitable work environments. The second manuscript is an integrative review of studies that link workplace bullying to patient safety. The results of the integrative review demonstrate the need for more objective and empirical examinations of the work environment, workplace bullying, workplace flourishing, and patient safety.

Manuscript 1: Patient Safety and Feminism

Authors: Noreen M. Houck, Alison M. Colbert

Manuscript formatted for submission

Abstract

Nursing quality of care is inseparably linked to patient safety and, in hospitals, the quality of nursing care is connected to organizational values and culture. This paper proposes a feminist theory perspective is key to achieving patient safety goals. Practice environments that support an autonomous and powerful nursing workforce have better patient safety outcomes.

Patients enter into a nurse's care with the expectation that the nurse will keep them safe from harm. Still, more than twelve years after publication of the Institute of Medicine (IOM) report, *To Err is Human*, (2000) injuries due to healthcare errors equal or exceed the sixth leading cause of death in the United States for 2012.(Hoyert & Xu, 2012;) The Agency for Healthcare Research and Quality (AHRQ) describes a need for significant and steady improvement in patient quality and safety.(U.S. Department of Health and Human Services, 2011) Changes since 2000 reveal initial progress toward improved quality of care; however the 2011 report states "urgent attention is warranted to ensure continued improvements in quality"(U.S. Department of Health and Human Services, 2011, p. 1) and highlights a need to accelerate progress if the nation is to achieve equitable care in the near future. Despite attention over the past ten years, health care quality only improved 2.3% annually. Quality and access are reported as "suboptimal", and the need for continued improvements are imperative.(U.S. Department of Health and Human Services, 2011) The IOM highlights the importance of nurses both as active participants in the system and at the point of care.(National Academy of Medicine, 2004) A significant body of research links the nursing practice environment and organizational determinants of care to patient outcomes.(Aiken, Clarke, Sloane, Lake, & Cheney, 2008; Aiken, Clarke, & Sloane, 2002; Flynn, Liang, Dickson, Xie, & Suh, 2012; Kutney-Lee et al., 2009) Still, the pace of change is slow and the risks to patients remain high.

The explicit application of critical feminist perspective to hospital environment improves patient safety, improves the quality of the work environment, and provides a perspective supports a trajectory of improvement that avoids vacillations in quality of care. This paper offers a critical appraisal of nursing practice environments that contribute to patient safety. Principles evident in successful patient safety models are consistent with critical feminist theory. The

authors illustrate how improved patient outcomes are present when feminist values are evident and offers an alternate perspective from which to view patient safety within the complex hospital environment.

Patient Safety.

Patient safety is an essential element of any health care quality program. The IOM describes patient safety as “freedom from accidental injury.”(National Academy of Medicine, 2000, p. 4) Commonly reported nurse-sensitive safety events include medication errors, hospital acquired infections, and patient falls.(AHRQ Publication, 2009) While not the only measure of quality healthcare, patient safety is certainly critical in improving healthcare. The Quality Framework, first presented by Donabedian (1980), and promoted by the Joint Commission, posits that structure and process directly affect outcomes.(Donabedian, 1980; The Joint Commission, 2009) Further, an understanding of quality necessitates an understanding of the relationship between structure, process, and outcome variables.(Donabedian, 1983) These variables evidenced in a nurses’ practice environment where structure and process has an effect on the workforce, are seen in studies on nurse satisfaction, recruitment, and retention.(Buffington, Zwink, Fink, Devine, & Sanders, 2012; Toh, Ang, & Devi, 2012) However, it is nursing’s essential role in patient assessment, monitoring, and surveillance as defense against errors that is critical to patient safety. For example, we know nurses intercept the majority of medication errors made by all members of the healthcare team(Flynn et al., 2012; National Academy of Medicine, 2004). Increased nurse staffing results in lower patient lengths of stay, lower nosocomial infection rates, and lower occurrence of pressure injuries. (Ausserhofer et al., 2013) Multiple organizational factors in the hospital influence patient safety including values, beliefs, and behaviors .

Cultures of safety and patient safety climates are separate and distinct concepts often used interchangeably. Together these terms refer to the values and beliefs related to patient safety. Patient safety climate is the employees, managers, and executive leadership's commitment to patient safety.(Ausserhofer et al., 2013) The culture of safety encompasses the employees' perception of organizational norms around, management decision-making, safety practices, and policies and procedures.(Weaver et al., 2013) It is the shared recognition of the importance of safety to the organization as demonstrated through communication, attitudes, and behaviors in the work environment that creates a climate of safety.(Hughes, Chang, & Mark, 2012) Evidence of a culture of safety is most explicitly seen in the approach to error identification and response. A culture of safety emphasizes evidence-based improvement efforts that are proactive and focus on error prevention versus the retrospective placement of blame. It is important to understand which values, beliefs, attitudes, and behaviors are evidenced in successful patient safety models.

A Critical Feminist Theory Interpretation of Patient Safety Evidence

Feminism is a collection of social theories, political movements, moral philosophies, and critical worldviews.(Chinn, 1995; Kagan, Smith, Cowling, & Chinn, 2009) Critical feminist theory (CFT) is the intersection of critical social theory, a focus on reflective assessment and social critique, and feminism.(Routledge, 2007) Three fundamental principles shape CFT: (a) first, it is a value-based social-justice ethic driven by self-reflection, and emphasizing equality and justice; (b) the individual is both influence on and influenced by their response to the social-political context and imbalance of power that shape ways of knowing and being; and (c) the appeal for social change by means of critique, consciousness raising, and political action.(Kagan et al., 2009; Routledge, 2007) These principles provide a lens through which we can view current

issues in healthcare that relate to nursing and patient safety such as equality in power structures and leadership, voice, and presence at all layers of the organization.

A predominate source of nurse practice environment research falls under the umbrella of the Magnet Model®. While not an explicitly feminist model, the framework embraces feminist concepts of empowerment, autonomy, control of practice, equality, and collaboration; and provides evidence of practical applications of CFT. The American Nurses Credentialing Center (ANCC, 2012) defines organizational attributes of Magnet Hospitals to include (a) a nurse executive is a member of the decision-making team, (b) flat organizational design, (c) decentralized decision-making at the unit level, (d) nurses have autonomy and control over patient-care decisions, and (e) strong communication between nurses and physicians.

Within The Quality Framework, structure and process factors of job satisfaction, burnout, empowerment, collaboration, and leadership are associated with nursing outcomes. Nurses in Magnet hospitals have greater job satisfaction and lower levels of burnout.(Aiken, Clarke, Sloane, Lake, & Cheney, 2009) Further, nursing leadership that empowers nurses and encourages collaboration contributes to healthy work environments.(Kramer, Maguire, & Brewer, 2011) While the magnet model was not developed from CFT, the values of equality, shared power, and collaboration, foundational to CFT, are evident. The connections between structure and process factors in the nurse work environment that affect patient safety are difficult to determine. A few important studies identify an association between magnet hospital characteristics and patient-safety outcome variables such as lower predicted mortality rates,(Aiken, Smith, & Lake, 1994; Friese, Lake, Aiken, Siber, & Sochalski, 2008; McHugh et al., 2013) lower odds of dying,(Scott, Sochalski, & Aiken, 1999) and lower fall rates. While

these studies support positive nursing and patient outcomes, an understanding of the principles evident in these environments is needed.

The American Academy of Nursing and the American Nurses Association examined hospitals known for their successful nurse recruitment and retention practices.(American Association of Colleges of Nursing, 2002) From these studies the American Association of Colleges of Nursing (AACN) identified eight hallmarks of the professional nursing practice environment that apply to all nurse practice (See table 1). These hallmarks, while not a feminist model, confront systemic injustices that CFT would suggest remain in a nurse’s hospital work environment. Feminist values infuse the hallmarks and describe foundational principles of CFT that strive to bring equity to the work of nurses as part of the healthcare team. Practice environments that support feminist values of equity, empowerment, and autonomy are linked to better patient outcomes. This suggests that removal of oppressive conditions in the nursing hospital environment and supporting systems that empower nurses would be beneficial for nurses and patients. Logically, an explicit feminist perspective applied to the practice environment, provides a context quality of patient care.

Table 2 1 AACN Hallmarks of Professional Practice Environments as Viewed Through a Critical Feminist Lens.

AACN Hallmarks of the Professional Nursing practice Environment	Feminist values
<ol style="list-style-type: none"> 1. Manifest a philosophy of clinical care emphasizing quality, safety, interdisciplinary collaboration, continuity of care, and professional accountability 	<p>Cooperation is a behavior necessary for inter- and intra-disciplinary teamwork, behaviors needed between health care professions. This language does not indicate hierarchal power between disciplines but suggests equity in terms of professional accountability. Further, it moves the focus of all health care practitioners away from professional power struggles and changes the focus back to the patient.</p>
<ol style="list-style-type: none"> 2. Recognize contributions of nurses’ knowledge and expertise to clinical care quality and patient outcomes 	<p>Acknowledge the nurse’s unique expertise and contribution to patient outcomes based on distinctive professional knowledge and translation into praxis.</p>

3. Promote executive level nursing leadership	In order to strive for power balance in the organizational hierarchy nursing representation is essential at influential levels.
4. Empower nurses' participation in clinical decision-making and organization of clinical care systems	Representation means nurses have a fully respected voice in the executive level. Presence and visibility is not enough. The hospital executive team must esteem nursing's value to the organization. Encourage and respect nursing accountability and ownership for knowledge. The need for empowerment can only be present when an individual does not have power or the ability to use power. While nurses need power within the organization this hallmark affirms the need for nurses to have power as part of the patient care team.
5. Maintain clinical advancement programs based on education, certification, and advanced preparation, and	Place value on the unique contribution of nurses based on knowledge attainment. Treating all levels of nursing education and standardized achievement without value or recognition dehumanizes and devalues the complexity and value to nurse's work and contribution to patient outcomes. These two standard demonstrate value for advancing nursing knowledge and experience.
6. Demonstrate professional development support for nurses	
7. Create collaborative relationships among members of the health care provider team	Nurses and other healthcare professions must engage across disciplines. A collaborative relationship requires each member to understand and value the contributions of other disciplines. Healthcare professionals must enter into collaborative arrangements based on equal valuing of nurses' perspectives.
8. Utilize technological advances in clinical care and information systems	Nurses are encouraged to be forward thinking and acting. Nurses must embrace new advances and systems demonstrating mastery at change and visionary thinking to meet future demands.
American Association of Colleges of Nursing (AACN) (2002). Hallmarks of the professional nursing practice environment.	

Improve Patient Safety through Critical Feminist Lens

The marginalization of feminist values in healthcare needs to be reconsidered as national reports call for greater collaboration and teamwork.(NAM & Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, 2011) IOM reports de-emphasize values associated with a masculine culture such as, competition, power hoarding, and prizing individual achievement(Group & Roberts, 2001). In contrast, feminist values of shared power, collaboration, diversity, and teamwork are viewed as characteristics of a modern health system accountable for safe patient care.(Chinn, 2013) The landmark report *The Future of Nursing, Leading Change, Advancing Health* by the Robert Wood Johnson Foundation and the Institute of Medicine (2011) recommends four key areas to improve the health needs of diverse populations

in the U.S; nursing education level, the education system, equity with physicians in healthcare redesign, and gaining the information and tools necessary for workforce planning and policymaking.(Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, 2011) The report redresses issues that suppressed nursing practice during periods of overt repression. Table 2 lists the four key messages from the report and an interpretation when viewed through CFT.

Many strategies to improve patient safety may be viewed as stopgap measures to address specific outcomes, such as patient falls or medication errors. For example, hourly patient rounds, the visits each patient every hour, has been shown to reduce patient falls rates.(Ellis, 2013; Studard Group, 2009) Tactics to reduce interruptions of the nurse in the process of preparing and administering medication reduce errors.(Fore, Sculli, Albee, & Neily, 2013) The solutions are very specific, or linear, they do not show a deeper understanding of the complexity of the problem. Without a shared set of beliefs and values, the changes are not sustainable and have or will have limited results. CFT offers an evaluation of the broader value-based context in which nursing care occurs and how that affects patient safety. This perspective and the solutions it offers align the respective values of nursing, the healthcare team, the patient, and the hospital resulting in sustainable change.

Table 2. 2 Key Messages *from The Future of Nursing Report* Interpreted Within a Critical Feminist Context

Key Message # 1: Nurses should practice to the full extent of their education and training
<ul style="list-style-type: none"> The regulation and scope of practice is limited by State regulatory agencies for medicine and nursing. The definitions of the scope of nursing practice vary widely by state; this is especially true for advance nursing practice. Medicine has a history of aggressive legislative agendas that seek control over and restraint of nursing practice through the addition of language like “under physician supervision” added to practice statements.

- Nursing is often described as a supportive profession; where nurses take direction from physicians. This type of hierarchal narrative influences nurses' self-perceptions, limits nursing's scope of practice, and interferes with the attainment of full professional autonomy.
- The report recommends the expansion of Medicare program to include coverage of advance practice registered nurse service should equate to physician service in the payments made directly to the provider. While the report limits discussion of payments to advance practice nurses, we offer all nursing care, within the scope of practice under applicable state law, should receive direct reimbursement.

Key Message # 2: Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression.

- At one time (1920s and 1930s), the American Medical Association (AMA) considered nursing education and practice their responsibility. They offered limits to the scope and education of nursing excluding professional nursing organizations from these deliberations.
- There are structural barriers that impede progression through the education system, like transfer credit, unique institutional requirements and progression requirements. While the ability to enter the profession at multiple levels is viewed as unique, the path to higher education has not been seamless and has had many barriers.
- The rapid change and transformation occurring in healthcare requires new approaches to education that is inclusive and cooperative with other healthcare professionals.

Key Message # 3: Nurses should be full partners, with physicians and other health professionals, in redesigning health care in the United States.

- Nursing viewed as handmaiden to physicians is not the reality of nursing practice. A nurse's work is not under a physician's supervision and is seldom performed side-by-side. Yet, this misconception persists in many areas where States or licenses impose practice restrictions have not kept pace with changes in the healthcare system.
- Being a full partner in healthcare requires greater responsibility for identifying problems and solutions, involvement in health care policy decision-making.
- Nurses are needed in shaping healthcare policy and must have the necessary skill set to be effective in these roles. Nurses need to be accountable to the delivery of high quality care while working collaboratively with other health professions. The concept of full partnership requires nurses have leadership skill, competencies in collaboration, and a voice in policy decision-making. The report encourages nurses to serve on committees, commissions, and boards where policy decisions are made.

Key Message # 4: Effective workforce planning and policy making require better data collection and an improved information infrastructure.

- The report recommends removal of scope-of-practice barriers; expand opportunities for nurses to lead improvement efforts; and prepare and enable nurses to lead change to advance health.
- The report recognizes that the workforce mix must accelerate the percentage of nurses with baccalaureate and doctorate degrees and suggests actions that will reduce barriers and promote professional advancement. Nurses must have access to data to understand healthcare workforce needs (across professions) around supply, education, skills, and specialties.
- Nurses need to be involved in workforce data analysis and assessment to be responsive to changes and adjust to the needs of our patients. These actions put nursing as an independent and autonomous profession with its own agency on the healthcare team.

Notes: Committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing (2011). The future of nursing: leading change, advancing health. Washington, DC: national Academies Press.

The Advantage of a Critical Feminist Approach

The broad perspective of CFT directs the focus of interventions to improve patient safety by calling attention to impediments in the social constructs of the organization, and embracing strategies to assure equity. Critical feminist scholars seek social justice through change by means of consciousness-raising; to make visible, ideas, thoughts, values, and behaviors that perpetuate suppression and inequity. To reveal what is hidden or taken-for-granted creates opportunity for greater awareness of how beliefs and actions limit or encourage creativity and opportunity. For example, Croft and Cash (2012) make the argument that the medical values of “curing” are dominant over nursing values of “caring”. They note patients are admitted under the physician’s name who gives orders carried out by a nameless nurse. Here, the outcome is valued over the process of caring. Improved patient outcomes found in Magnet hospital studies are attributed to environments that value nursing in a balance of power. Yet, without a critical perspective, there is diminished ability to sustain shared power.

Sustainability of shared power is a critical issue in advancing change from the old system to new that embraces a more equitable work environment. Achievement of Magnet status includes an emphasis on decentralized governance structures, participatory management, and self-governance. These are distinguishing characteristics of magnet hospitals that are considered essential to improved outcomes. A criticism of the Magnet model is that practice councils and shared governance structures are established that do not reflect a firm commitment to valuing nurses or sharing power, but instead are shells to create the image of nurse-valued restructuring.(Wagner, 2004) Alternatively, there is an early movement toward nurse participation in management and decision-making. However, as the initial excitement fades it is all too easy to move back to the old way of doing things. Without vigilance and critical appraisal,

the slide away from power sharing strategies is evident and these structures do not fulfill the intent.(Bogue, Joseph, & Sieloff, 2009)

Resisting Power Slips

The perspective of CFT requires nurses and administrators to critique and reflect upon the underlying dynamics that support old power structures and social order. Nurses and administrators must explore the interplay of social-political power to determine who is advantaged and disadvantaged in a shared power environment, and how nurse behaviors help perpetuate the old social order.

Modern healthcare developed during the late nineteenth century, a period characterized by Victorian ideals of female fragility and male supremacy. As healthcare evolved to the commercial and organized institutions of today male power and privilege was openly discussed including ways to limit women's participation in medicine and limit the scope of nursing practice through legislative activities.(Ashley, 1976) Evidence nineteenth century ideals persist is found in the structure of hospitals with hierarchal designs and androcentric cultural norms, the process of the patriarchy in the medical model,(Group & Roberts, 2001; Witz, 1992) and the continuation of a subordinate nursing culture.(Ashley, 1976) The systematic oppression of nursing has been equated to an oppressed group who, through the process of oppression, learn to prize the values of the oppressor, and diminish their own cultural values.(Roberts, Demarco, & Griffin, 2009)

Oppressed group socialization is evident in nursing behaviors that are silenced.(Canam, 2008; Gardezi et al., 2009) Bartholomew (2006) identifies a nursing culture that unconsciously seeks invisibility, which serves to perpetuate the position of nursing as subordinate and oppressed.(Bartholomew, 2006) Many nurses are not comfortable with the responsibility and

accountability of shared power.(Beglinger, Hauge, Krause, & Ziebarth, 2011) The ability to take greater responsibility for the system of care is a challenge for nurses. This requires self-reflection, the ability to engage in shared decision-making, and a change in how nurses think about themselves.(Cronholm et al., 2013)

Chinn's (2013) *Peace and Power, New Directions for Building Community*, offers a process for shared power. Peace is an acronym for group process that includes praxis, empowerment, awareness, cooperation, and evolvment.(Chinn, 2013) Her model embraces feminist ideals that offer a framework to create autonomy, responsibility, and open communication within the work group.(Grams & Christ, 1992) Application of this model into a clinical setting offers an opportunity to remain vigilant on issues of equity in inter and intra-professional interactions. Evidence suggests where nurses have greater involvement in the system of care, patients are safer.(Gunnarsdottir, Clarke, Rafferty, & Nutbeam, 2009; Hanrahan, Kumar, & Aiken, 2010; Purdy, Spence Laschinger, Finegan, Kerr, & Olivera, 2010) Beyond the structural evidence of nursing involvement in decision-making, a closer examination of nursing's actual power and continued equity in the healthcare environment is required. The deliberate application of CFT necessitates continued critique. Reflective and proactive examination of the practice environment is needed to sustain power sharing and avoid slippages. Vigilance is crucial to identify oppressive influences and embrace power-sharing strategies.

Nursing's journey has been fraught with the struggle for independence and recognition where physician hegemony and organizational hierarchy are prized. Recognition of nursing's contribution to patient safety needs the political and social import gained through well researched evidence. The overlay of CFT on patient safety helps to focus the impact of the nurse experience within the context of complex organizations. Deeper consideration of the nursing

experience within the structure and process of care may provide new directions for study and more stable solutions to safeguard patients.

Manuscript 2. Patient Safety and Workplace Bullying: An Integrative Review

This is a non-final version of an article published in final form in the *Journal of Nursing Care Quality*.

Houck, N. M., & Colbert, A. M. (2017). Patient safety and workplace bullying an integrative review. *Journal of Nursing Care Quality*, 32(2), 164-171.

Link to final peer-reviewed manuscript:

https://journals.lww.com/jncqjournal/Abstract/2017/04000/Patient_Safety_and_Workplace_Bullying__An.12.aspx

Workplace bullying is emerging as an important component of the broader work environment, and there is a growing body of evidence that links a nurse's work environment to the quality and safety of care in hospitals. Although there is a perceived logical connection, it is unclear how workplace bullying (WPB) as an aspect of the nurse's work environment affects patient safety. Patient falls, errors and readmission rates, nurse sensitive indicators of patient safety in the hospital, cause harm and even may contribute to death of patients, they also pose an economic burden to the hospital. To tackle this pervasive problem, researchers and administrators require data to connect the specific environmental issues that may be associated causative factors, including workplace bullying.

Bullying is symptomatic of broken professional relationships within the work environment and its consequences extend far beyond the individuals involved. The prevalence of bullying varies across nursing studies between 26% to 77%²⁻⁶ and the cost is estimated at \$11,582 per nurse per year⁷ making this a significant challenge for nursing leadership. Professional organizations, such as The Joint Commission, describe bullying, intimidation, and disruptive behaviors, as factors that may contribute to errors that negatively affect patient care, though studies are unclear as to what aspects of patient care and safety are affected.⁸

Workplace bullying is the umbrella term for most types of workplace aggression and violence from emotional abuse, physical violence, and the threat of violence. Terms that appear frequently in nursing literature that fall under this umbrella include horizontal violence, lateral violence, and incivility. The subject is extensively studied internationally, across disciplines, and especially in health care⁹. Workplace bullying occurs when an individual perceives they are the target of negative actions from one or more persons over time.⁹

Victims of WPB report physical, emotional, and psychological symptoms such as; severe anxiety, sleep disruption, feelings of trauma, helplessness, powerlessness, silence, anger, clinical depression, post-traumatic stress disorder. Prolonged exposure may lead to physical effects like decreased immunity, stress, headaches, high blood pressure, and digestive problems.¹⁰⁻¹² These effects can be devastating to the victims. The effect of WPB on the nursing profession can be profound. WPB reduces productivity^{7,13} and causes an increased desire to leave the profession.¹⁴ Most studies describe the effects of bullying on the nurse such as intention to leave,^{15,16} and job strain or burnout.^{17,18} Less well understood is the association between WPB and patient safety.

The effect of nurses' education level¹⁹ and hospital staffing levels²⁰ affect a nurse's work environment and there is evidence the quality of the work environment affects the nursing workforce in the areas of nurse retention and turnover,²¹ burnout and emotional exhaustion,²² and job satisfaction.²³ This review examines studies that describe a primary association with patient safety and those studies that impair the nurse's ability to perform in the presence of WPB. There are several studies that assess WPB and a nurses perceived association with patient safety^{24,25} this review will appraise the quality of the association found in the literature.

METHODS

An integrative literature review was performed according to Whitemore and Knaf's methodology.²⁶ The approach of an integrative literature review allows the inclusion of studies with diverse methodologies and a comprehensive understanding of the phenomenon under review. This process includes a well-defined, multi-step literature search strategy, and the inclusion of all relevant theoretical and empirical articles. The steps used in this integrative review were the following: (1) identify the research problem; (2) collect data; (3) data evaluation and analysis; (4) data integrations; (5) presentation of results.

The problem and data collection

The objective of this study was to discover what is known about the association between workplace bullying directed toward the nurse and the effect on patient safety from published studies. Data collection was performed through electronic search on the databases PubMed, CINAHL (Cumulative Index to Nursing & Allied Health Literature), PsychINFO (PsycINFO), Cochrane and Ovid/Medline between 1995-March 2016. In addition, a search of resources used in policy statements by The Joint Commission and reference lists of all studies and related policy statements were searched for related studies.

Multiple search strategies were used to find connections between the following terms: nurs* AND (horizontal violence, OR bullying, OR lateral violence, OR workplace aggression, OR disruptive behavior, OR intimidation) AND (patient safety, OR patient care, OR patient outcomes, OR errors). The search was limited to English language studies conducted in the last twenty years (1995-March 2016). The initial search combining patient safety terms and WPB terms yielded 474 articles.

Evaluation and analysis

The data evaluation and analysis of selected articles were reviewed by title and abstract for primary studies that linked WPB and patient safety, reducing the review to 36 studies. These studies were assessed for the quality of the research and the quality of the link to patient safety. The reviewers sought evidence of the harmful effects of bullying to patient safety as present or a potential hazard. Articles that examined staff retention, patient to nurse aggression, and physician to nurse aggression are excluded except where patient outcomes or patient safety were stated. Qualitative and quantitative scholarly studies were included.

RESULTS

Method and Origin of Reviewed Studies

Through careful comparison and assessment, the final analysis yielded eleven studies that made an association between perceived WPB with patient safety. The terms for WPB assessed in these studies included horizontal hostility, disruptive behaviors, violence, vertical violence, bullying, incivility, mistreatment, workplace aggression, physical violence, threat of violence, emotional abuse, and verbal abuse.

The countries of origin for the final studies include the United States (7), Canada (1), United Kingdom (1), and Australia (2). In the Supplemental Digital Content Table 1, provides the aims, design and sample of each study in the final review. The majority, 9 studies, used surveys in descriptive and correlation designs. One case study²⁷ was included and one content analysis of narrative description²⁸. The Sample sizes varied from 1, in the case study, to 4,530 health care professionals in a large multisite health network (see Supplemental Digital Content Table 1). In each study, WPB was determined as a perceived variable. From the final studies, 7 themes were identified in table 1 that harmed patients or pose a risk to patients these are: (1) patient falls; (6)

errors in treatments or medications; (1) delayed care; (4) adverse event or patient mortality; (2) altered thinking or concentration; (5) silence, or inhibits to communication; and (2) patient satisfaction or patient complaints. (See supplemental digital content Table 1 and 2).

Table 2.2. 1 Summary of Findings related Patient Safety Themes Associated with Workplace Bullying

Year/ Country	Theme	Findings
1. 2014 Canada ³⁵	Patient Satisfaction/ Complaints	Complaints from patients were the highest rated event associated with bullying.
	Adverse Event/Patient Mortality	Found all sources of bullying significant for nurses assessed adverse events ($B=-0.234, p < 0.05$).
2. 2013 United States ²⁹	Silences or Inhibits Communication	11.6-30% report they would not seek help or clarify an order due to inhospitality in the workplace.
	Errors in Treatment or Medications	30% report giving a medication or treatment they were unsure about due to a hostile work environment.
3. 2013 United States ³²	Silences or Inhibits Communication	77% reluctant or refuse to return calls, 69% experienced impatience or hanging up on phone; 33 % would assume an order was correct rather than interact with intimidating prescriber.
	Errors in Treatment or Medications	11% reported a medication error due to intimidation.
4. 2012 United States ²	Altered Thinking	51.8% felt their ability to concentrate was impaired; 35.4% believed altered thinking was linked to medical error.
	Adverse Event/Patient Mortality	18% observed disruptive behavior that led to an adverse event; 12.3% linked to patient mortality. 18% could cite a specific event that led to patient mortality.
	Silences or Inhibits Communication	55.6% reduced communication, 44.7% found it impaired the nurse/physician relationship.
	Patient Satisfaction/ Complaints	55.2 % linked disruptive behavior to patient satisfaction.
5. 2010 Australia ⁴	Delayed Care	Physical violence and a threat of violence were positively associated with delayed medication administration.
	Patient Falls	Physical violence and a threat of violence were positively associated with patient fall rates.
	Errors in Treatment or Medications	Physical violence, threat of violence, and emotional abuse were positively associated with medication errors.
6. 2009	Silences or Inhibits Communication	Students describe intimidation by nurses and nurses who refused to listen or clarify information.

Year/ Country	Theme	Findings
United States ²⁸		
7. 2008 United States ³⁰	Adverse Event/Patient Mortality	67% of all respondents agree that disruptive behaviors were linked to adverse events and 27% believed linked to patient mortality.
	Errors in Treatment or Medications	71% of all respondents believed disruptive behavior linked to medication error.
8. 2007 United Kingdom ²⁷	Altered Thinking/ Concentration	Client reports altered thinking, and a negative impact upon cognition of future thinking when returning to work following the incident.
9. 2006 Australia ⁶	Errors in Treatment or Medications	2/3 rd s reported that aggression frequently or occasionally contributed to their potential to make errors.
10. 2005 United States ³¹	Adverse Event/Patient Mortality	67% agreed adverse events were linked to disruptive behavior and 27% agreed disruptive behavior linked to patient mortality.
	Errors in Treatment or Medications	71% agree medical errors were linked to disruptive behavior.
11. 2005 United States ³⁷	Silences or Inhibits Communication	In the presence of aggression, respondents acknowledge they coped by attempting to clarify the situation. Others became silent with the abuser, blamed themselves, and withdrew from the workgroup.

Patient Falls

An association between the nurse's perception of physical violence, threat of violence and emotional abuse was found in a study to all correlated with a rise in patient falls over the 7 days of data collection.⁴ This study examined the impact of violence on unit operations, the nursing skill mix (percentage of RNs) and degree level (percentage with BSN) were associated with fewer perceptions of emotional violence but did not have an effect on the threat of violence or an actual assault.

Error in Treatment or medication

Error in treatment or medication was the most frequently identified theme associated with WPB. In 5 studies the subjects perceived WPB contributed to error in treatment or medications.^{6,29-32} In 1 study patient safety data was directly measured over a week and found a

positive association with medication errors in the presence of physical violence, the threat of violence, and emotional abuse.⁴

Delayed Care

The only study that found care delayed in the presence of WPB directly collected patient safety data for a week. In this study, all 3 types of violence assessed, physical violence, threat of violence, and emotional abuse, were associated with delays in care.⁴

Adverse Event or Patient Mortality

Patient mortality rates and adverse events are key measures of effective care and were identified in 3 final studies. A series of studies on disruptive work environments have had significant impact on policy and are used to describe the effect on patient safety. The growing nursing shortage in 2010 led to an investigation on the relationship between disruptive behaviors by physicians and the impact on nurse satisfaction, retention, recruitment, and turnover.³³ Later studies sought to connect all sources of disruptive behaviors to patient safety³⁰ and more recent studies sought to link the perception of disruptive behaviors to patient satisfaction, patient complaints, and malpractice.^{2,30,34}

This series of studies involve a large multisite health care network and a non-randomized cross-sectional survey with open-ended questions. The 2005 survey found 94% of the respondents believed WPB could have a negative impact on patient outcomes, 60% were aware of an adverse event as a result of disruptive behavior, and 17% were aware of a specific adverse event that occurred as a result of the behavior.³¹ The 2008 survey found similar results where 67% felt there was a linkage between disruptive behavior and an adverse event, 27% believed there was a link to patient mortality, and 18% were aware of a specific adverse event that was the result of disruptive behavior.³⁰ The 2012 survey continues to support these perceptions finding

32.8% of respondents perceive disruptive behavior could be linked to patient safety; however, 13% state they were aware of an adverse event that occurred due to disruptive behaviors.² Nurses assess and physicians perceive a connection between bullying and v adverse events and patient safety risks.³⁵ Each of these studies mentions patient safety or risk factors; however, they do not directly measure patient outcomes.

Altered Thinking

WPB changes the way the victim thinks and poses a threat to patient safety. Altered thinking may affect decision-making, assessments, and reactions that have the potential to impair the delivery of safe care. 2 studies report victims of WPB noted alterations in thinking as a result of the trauma they experience. A case study by shared the experiences of a nurse victim of WPB suffered posttraumatic stress disorder (PTSD) after the event.²⁷ The narrative expression of the therapy experience revealed the victim retained suppressed creativity and freezing thoughts following therapy. In a large multi-site study with 370 nurse respondents found 51.8% of nurses reported they perceived WPB impaired their ability to concentrate within the range of sometimes, frequently, and constant.

Silence or Inhibits to Communication

Silence and inhibitions to communication pose a significant threat to patient safety. This threat was identified in 5 of the final studies. A startling results surfaces from a repeat survey of 2003 survey with more than double the number (4,884) of health care professionals including nurses, pharmacists, and others health care administrators that showed intimidating behaviors persist in health care.³⁶ The respondents stated their past experiences with intimidation altered the way they handled clarifications or questions about medication orders.³²

Not seeking clarification, using silence, and avoiding communication is a serious problem for the function of the health care team. The breakdown in communication or nurses not speaking up poses a real threat to patients. This problem is seen again and again in other studies in the review. For example, in 2013, respondents would seek clarification from a colleague rather than interact with an intimidating prescriber and nearly half (45%) felt pressured to administer a medication despite their concerns.³² The study at a teaching hospital in Philadelphia of 213 RNs and LPNs identified their response to WPB was first, adaptive coping and second, silence and passivity.³⁷ A third study of 130 nurse in Southwestern United States found in the presence of horizontal hostility, nurses avoid asking for help clarifying an order (30%) or lifting a patient (10%).²⁹

A web-based survey of a large multisite health care network had physicians, nurses, and administrations share their perception of the impact of the disruptive behaviors of nurses and physicians on patient outcomes identified disruptive behaviors reduced communication (55.6%). The personality of the aggressor was the primary barrier to communication (66.3%) followed by training (31.3%), gender (22.3%), age (22.1%), and culture (16.5%).² Barriers to effective communication pose a clear risk to patient safety.

Patient Satisfaction/Complaints

There is some evidence in studies unrelated to WPB that better patient experience is associated with better patient safety in hospitals.³⁸ The nature or causal relationship between these measures has not been determined. Patient satisfaction was measured in one study and 55.6% of the participants perceived a linkage between WPB and patient satisfaction³¹ and in another study complaint from patients were found to be the highest factor associated with WPB³⁵

DISCUSSION

These results indicate WPB in the nurse's work environment jeopardizes patient safety. In 9 of 11 of the final studies the participants perceived WPB as a patient safety issue (see table 1). Other studies identified WPB silenced or inhibited communication. The Joint Commission established a policy that is consistent with these finding. By stating that a relationship exists between intimidation and poor communication, as our findings confirm, WPB is believed to be detrimental to patient safety.⁸

This review offers managers and nurses the opportunity to view their patient safety data through a new lens. Bullying in the workplace creates a disruptive work environment and undermines management credibility and trust.^{27,39,40} Yet, nurses continue to identify bullying as a persistent problem in the nursing workforce. The ubiquitous nature of bullying in nursing culture perhaps desensitizes nurses and managers to the destructive nature of the problem.⁴¹ The acceptance of incivility in the workplace leads to escalation in the intensity of WPB from verbal abuse to physical threats or actual physical abuse. It is imperative that nurses and managers partner to create and sustain healthy work environments free from bullying¹. The Australian study also found emotional abuse was higher when the patient acuity level was high, and low when nurse autonomy is high and nursing leadership favorable.⁴

The failure of nursing to change its culture to one characterized by respectful and equitable inter and intra-professional relationships poses a real threat to patients and to nurses. The findings from these study support policies that seek a change in culture of health care and in policies that support civil and respectful work environments. Nursing leaders can assure systematic processes are in place to identify and intervene in the presence of WPB. Managers can raise awareness of the types of behaviors that may be perceived as bullying and have open discussion about strategies to change behaviors, however additional strategies are need to resolve

this issue. At the root of bullying is the need for power over another individual.⁴² Exposing the darker motivations that allow these behaviors to persist may help nurses and managers to address the behaviors.

Hospitals have the responsibility to include WPB issues as part of their continuous quality improvement assessments. While nurses may not want to accept the presence of bullying in the workplace, as they perceive it makes nursing appear weak, denying its existence poses a threat to patients and nurses.

Limitations

The effect of bullying on nurses' work has not been sufficiently explored to reveal all risks or hazards to patients. It is possible that the search methodology failed to discover all relevant studies; however, few studies examined this experience and the effect on the work environment or patients. The number of participants in the studies ranged from one case study of one, to larger survey studies of 130 nurses to 3,099 nurses. Various methods, tools, and regions and countries were included. The search criteria limited inclusion to English language and this may have excluded relevant studies. Inconsistent definitions and methodologies are used in these studies for WPB. Further, patient safety measures are primarily reported as staff perceived outcomes and seldom related to direct patient measures.

CONCLUSION

This review affirms the presence of WPB in the hospital environment however, finds only one study in the past fifteen years directly sought to measure the effect on patient safety. However, all studies that met the review criteria reveal significant risks to patient safety. A nurse's work often occurs in hostile and unsafe conditions. While conventional wisdom might assume that hostile work environments translate into substandard patient care, this data is

difficult to capture and correlate. Nursing leaders face a significant challenge to develop and sustain organizational systems that support quality care.

The broad scope of the harmful effects of WPB should ignite the health care industry to make positive changes in nursing's work environment. Bullying and hostility are inconsistent with a profession that has caring as a core defining value, action, and intention of work. Bullying may well be so ingrained in the culture of nursing it undermines credibility, professional values, and nursing's self-identify. It is critical to understand the association between WPB and patient safety so that effective policies and interventions are developed that supports a change in the culture of health care to one that is respectful of all individuals.

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Supplemental Digital Content

Table 2.2. 2 Characteristics of Studies in Review: Authors, Aims, Design, and Samples

Year, Country	Aim of the study	Design, sample, setting
2014 Canada ³⁵	Investigate impact of workplace mistreatment (bullying and incivility) on nurses' perceptions of patient safety risk	Mailed questionnaire, response rate of 52% (n=336) included the Negative Acts Questionnaire-Revised, Cortina's Workplace Incivility Scale (modified), and nurse assessed frequency of quality of care and adverse events.
2013 United States ²⁹	Determine the perceived level of horizontal hostility and whether the threat or experience influenced nurse behavior as directly related to patient safety.	Survey of 500 nurses 26% response rate (n=130) in Magnet-aspiring hospital in the Southwest.
2013 United States ³²	Explore the impact of disrespectful behaviors on patient safety	Survey of health care professionals (4,884 respondents), Nurses (68%), pharmacists, physicians, administrators, quality improvement staff.
2012 United States ²	Assess the frequency, circumstances, and impact of disruptive behaviors in the emergency department.	Descriptive, web-based survey of physicians, nurses, and other staff in Multisite health care system. A 38% response rate (n=370).
2010 Australia ⁴	Relate nurse self-reports of violence in the workplace and primary data collection of patient outcomes.	Non-randomized cross-sectional surveys and secondary analysis of data, with 80.3% response rate (n=3,099).
2009 United States ²⁸	Explore vertical violence toward student nurses as incidents of injustice.	Content analysis of Junior level nursing students on incidents of injustice by staff RNS in their clinical experiences collected over four years (n=221).
2008 United States ³⁰	Examine the perceived impact of disruptive behavior by physicians and nurses upon nurses, physicians, and administrators and provider's and its impact on clinical outcomes.	Survey of a large multisite health care network's nurses, physicians, administrators, and other health professionals. Non-randomized cross-sectional survey with open-ended responses (n=4,530).

Year, Country	Aim of the study	Design, sample, setting
2007 United Kingdom ²⁷	Explore post incident review process for victims of workplace aggression through a case study.	A case study presentation of a post-incident review process used to support the victim of WPB.
2006 Australia ⁶	Identify occurrences of workplace aggression by nurses.	Non-randomized cross-sectional survey of Tasmania Nursing Board with a 38% response rate (n=2,407).
2005 United States ³¹	Examine prevalence and perceived impact of disruptive behavior on clinical outcomes.	Non-randomized cross-sectional survey with open ended of a large multisite health care networks. Sample of physicians, registered nurses, and administrators (n= 1,509).
2005 United States ³⁷	Explore the characteristics, consequences, types, frequency and effects of verbal abuse of nurses by other nurses in the work environment.	Non-randomized cross-sectional surveys at single large metropolitan teaching hospital, with a 69% return rate (n=213 RNs and LPNs).

Table 2.2. 3 Key Themes Identified in Studies That Connect Workplace Bullying to Patient Safety

Theme	Total	2014 Canada ³⁵	2013 United States ²⁹	2013 United States ³²	2012 United States ²	2010 Australia ⁴	2009 United States ²⁸	2008 United States ³⁰	2007 United Kingdom ²⁷	2006 Australia ⁶	2005 United States ³¹	2005 United States ³⁷
Patient satisfaction/ complaints	2	X			X							
Silences or inhibits communication	5		X	X	X		X					X
Altered thinking/ concentration	2				X				X			
Adverse event/ patient mortality	4	X			X			X			X	
Delayed care	1					X						
Error in treatment or medication	6		X	X		X		X		X	X	
Patient falls	1					X						

CHAPTER 3 METHODS

Design

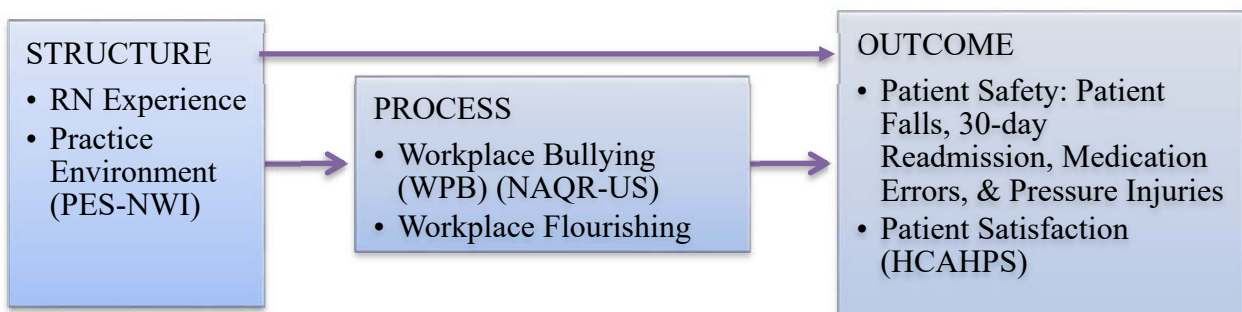
This study used a cross sectional correlational design to examine the relationships between and among variables in the work environment of nurses and the association to patient safety. The design method asks participants to reflect on their experience over the prior six months. This allows a single point of data collection with participants giving accounts to events in the past (Creswell, 2009). The criticism ascribed to a retrospective design is that it relies on an individual's recall of events which may not provide an accurate measure (Polit & Beck, 2008). The experience of workplace bullying and workplace flourishing is based on the nurses' perception of these events over time (Einarsen et al., 2009). For example, workplace bullying is an evolving and perhaps escalating hostile work environment rather than a single or few discrete events. The emphasis is on perceived frequency and duration as much as the nature of the events. To capture this perception of the work environment nurses were asked to recall their experience of the workplace during the prior six months. This study explored the nurses' perception of the work environment and is not an exact measurement of incidents or events. This minimizes the shortcomings associated with a retrospective design.

The variables examined include nurses' perception of workplace: bullying, flourishing, and the practice environment related to rates of patient safety and satisfaction measurements (See figure 3.1 Conceptual Model of Relationship between Study Variables). The data for this study was gathered through on-line surveys and hospital measurement databases. Polit (2008) identifies several advantages of survey research that worked well for our study questions. The survey method provided an efficient method to reach participants, and was useful to obtain self-

reports (Polit & Beck, 2008). In addition, there is greater privacy with computer assisted surveys (Lauder, Mummery, & Sharkey, 2006). One of the challenges with an online survey design is the lack of personal interviews with participants. Participants were able to easily decline participation at any step in the process.

For comparison, both safety event data and nurse data was based on unit association however the response rate by unit was not sufficient to make unit based generalizations. The researcher obtained administrative support for the study and employed vigorous recruitment strategies. Patient outcome data was obtained from records maintained by the hospital as a part of its daily operations and only aggregated was used in the analysis. Patient safety and satisfaction data was provided as rates per nursing unit. Each nursing response used in the final analysis was given patient safety and satisfaction rates based on the assigned unit. Descriptive, correlation, and multivariate statistical techniques were used to analyze the data.

Figure 3. 1. Conceptual Model for Study



Note: Study variables presented in Donabedian’s Quality Framework

Setting

The principle investigator has a professional relationship with the hospital in this study. The hospital is a large (over 500 beds) medical facility associated with a university medical center, accredited by the Joint Commission. Hospital description and characteristics are detailed

in table 3.1 Study Site Description and Units. Institutional review board approval for this study was obtained through the Human Subjects Review Board at Duquesne University and at the study hospitals.

Table 3. 1 Study Site Composition and Descriptions

Hospital	Size (approximations)	Units
North-Eastern United States Regional Hospital with Medical Center, Level 1 trauma center, and Children’s hospital Not for profit Joint Commission accreditation	12,544 admissions 100,570 patient days 970 births per year 700 RNs in non-administrative positions	Inpatient units: Intensive care, Progressive care, Oncology, 2 mental health (adult and children), 3 general medical-surgical, Children’s and women’s center (Labor & delivery, nursery, postpartum, pediatrics), Emergency care center, Ambulatory surgery center, Renal center, Rehabilitation center

Sample

The population of interest was non-managerial registered nurses. Non-managerial was identified as those who work less than fifty percent of hours in an administrative capacity. The study was open to all registered nurses at the institution, however; the following nurses were excluded from the study. Nurses for whom:

- Fifty percent or more of assigned work hours are spent in an administrative capacity.
- Work less than 40 hours per two-week pay period.
- Have worked less than six months on at the facility.

Data from nurses in the float pool, nurses who do not work on a designated unit, or nurses who have worked less than six months on a single unit but more than six months at the facility, were used in institutional related correlations. Internal event reports were collected by an *honest broker* within the hospital quality departments on patient safety and patient satisfaction. Included in patient safety data are variables considered to be nurse-sensitive by the National Quality Forum and the National Database of Nursing Quality Indicators® (NDNQI®). Results included

patient satisfaction surveys, patient fall rates (all and those with injury), medication errors, mortality rates, infection rates, pressure ulcer incidents, and 30-day readmission rates (for admissions and for all causes) over the preceding 6 months.

Data Collection Instruments

Demographic and predictor variables were collected through a combined instrument survey. The nurses answered the four- item Negative Acts Questionnaire Revised-US (NAQR-US) (S. R. Simons, Stark, & DeMarco, 2011), the four- item flourishing environment survey (Chinn, 2013), the 31-item Practice Environment Scale of the Nursing Work Index (PES-NWI) (Lake, 2002), and a 16- item author designed demographic data survey. Tables 3.4, 3.5, and 3.6 depict demographic, independent and dependent variables in more detail.

Demographics survey.

A researcher developed demographic survey (Appendix A) adapted from an AHRQ nurses survey is part of the combined survey. The demographics questions included areas such as gender, age, credentials, year of initial license, education level, years in present position, and description of employment setting.

Practice Environment Scale Nursing Work Index (PES-NWI).

The PES-NWI is a public domain instrument recognized by the National Quality Forum (NQF) and The American Nurses Association (ANA) as a nurse-sensitive measure of patient care (American Nurses Association, 2011; NQF, 2007). The 31-item PES-NWI (Appendix B) was developed from a prior Nursing Work Index based on research on nursing job satisfaction and the assessment of hospitals successful in recruiting nurses during a period of nursing shortage (Kramer & Hafner, 1989). Later, Aiken and Patrician revised to a 46-item measure of professional practice models, the Nurse Work Index Revised (NWI-R) (2000). The NWI

identifies organizational attributes in the environment that attracts nurses and is used in the development of the Magnet Model designation used by the ANCC to identify organizational and leadership characteristics of the nursing practice environment of designated facilities (ANCC, 2012). Lake (2002) developed the practice environment scale (PES) portion of the final PES-NWI. The purpose of the addition of the PES was to provide measures linking the practice environment to nurse and patient outcomes (Lake, 2002). The final PES-NWI has 31-items and five subscales components named and conceptually describe by Lake:

1. *Nurse participation in hospital affairs.* This subscale reveals the valued status and participation of nurses in hospital and departmental governance, policy decisions, and committees. Nurses have opportunity for advancement and nursing administration is responsive, powerful, and visible, including an accessible nurse executive.
2. *Nursing foundations for quality of care.* This subscale emphasized nursing commitment to high standards of patient care, evidence of a pervasive nursing-oriented philosophy and model of care, and a commitment to clinical competence. Quality care is measured through a formal quality assurance program.
3. *Nurse manager ability, leadership, and support of nurses.* This subscale focuses on the qualities of the nurse manager's ability to lead and manage by supporting the nurse, conflict with a physician, through mistakes, and through praise and recognition.
4. *Staffing and resource adequacy.* This subscale has to do with adequate staffing to provide quality care defined as being able to spend time with patients and time to discuss patient needs with other nurses.
5. *Collegial nurse-physician relations.* This is the smallest subscale is based on nurses' desire for collegial relationships with physicians as is emphasized in magnet hospitals findings.

Each of the subscale and the composites exhibited high reliability at both the individual and hospital levels (Table 3.2). The individual level internal consistency was high ($\alpha \geq .80$) in all except Collegial Nurse-Physician Relations which was moderate ($\alpha \geq .71$), explained by its small size. Exploratory factor analysis was used to determine the items from the NWI used in the PES-NWI against the original magnet studies through principal axis factoring and then again from a contemporary sample of hospital nurses in Pennsylvania. The result was the reduction to 31 of the original 48 items selected.

The reliability indices for this study compare favorable to those from Lake's (2002) original study as show in Table 3.2.

Table 3. 2. Reliability Indices for the Practice Environment Scale of the Nursing Work Index (PES-NWI) Cronbach's alpha

<i>Subscale or Composite</i>	<i>This study Composite (n = 138)</i>	<i>Lake's 2002 results</i>		<i>Number of items</i>
		<i>Individual level (n=1,610)</i>	<i>Hospital level (n=16)</i>	
Nurse participation in hospital affairs	.84	.83	.64	9
Nursing foundations for quality of care	.75	.80	.67	10
Nurse manager ability, leadership, and support	.86	.84	.81	5
Staffing and resource adequacy	.87	.80	.91	4
Collegial nurse-physician relations	.83	.71	.72	3
Composite	.82	.82	.69	5

The theoretical considerations that underlie the construct of the PES are based on decision-making control factors and work coordination factors. The PES is based on a goal-centered or professional model that supports greater nurse presence with patients and greater decision-making authority with the nurse. Lake (2002) describes the subscales as matching the original magnet study descriptions of the practice environment suggesting content validity. The first two subscales. Nurse Participation in Hospital Affairs and Nurse Foundations for Quality of Care, reflect the broad hospital-wide environment whereas the other three are more specific to the unit

level environment. Construct validity of the scale was supported through comparison with nurses in non-magnet hospitals. This instrument is in the public domain for fair use.

Negative Acts Questionnaire Revised (NAQR-US).

The Negative Acts Questionnaire Revised for the United States (NAQR-US) is a four-item instrument that measures total levels of bullying. The instrument has been tested on Massachusetts nurses in 2004 (n=511). This instrument was revised from the Negative Acts Questionnaire Revised (NAQ-R), a 22-item instrument developed by Einarsen and Hoel (Einarsen et al., 2009). The original Negative Acts Questionnaire was reliable and valid for Nordic countries. The successful revision to the NAQ-R created a more universal tool and translated to English. The NAQ-R has been tested extensively in Europe and in non-healthcare related settings.

Simmons, Stark, and DeMarco (2011) tested the NAQ-R on Massachusetts nurses to find the most parsimonious set of indicators that strongly relate the extent of bullying experienced to job satisfaction and the intent to leave one's job. Their findings produced the NAQR-US, a four-item instrument (appendix C). This tool was assessed for validity and reliability by the authors. The indicators tested for validity include an overall score of items (for overall bullying level) and the logged sum of the four items in the new instrument as well as the logged sum of the 21 items in the original instrument. The four items were selected through stepwise regression according to the variable intent to leave and an examination of unweighted means for each item. Validation of indicators was analyzed through stepwise regression and R^2 estimation. The Cronbach's alpha for these four items was .75 in Simons, Stark, and DeMarco's study. The authors found similar results when these items were compared to other combinations supporting reliability (measured through projected alpha estimates) and validity (as measured by R^2 with criterion variables) (S.

R. Simons et al., 2011). The authors have provided permission to use this tool in an online survey format (see appendix D). Each item was weighted based on frequencies associated with the number of work days in the preceding six months (never, 0; now and then, 2; monthly, 6; weekly, 25; and daily, 125). The items were then summed to create an interval-level scale. Reliability verified in this study with a Cronbach's alpha ($\alpha = 0.72$) was moderate in this study.

Flourishing Survey.

A researcher developed four-item survey was developed for trial with this study. It is based on the theoretical work of Peggy Chinn's (2013) group processes for building community (Chinn). The concept of bullying has been discussed extensively in nursing has been shown to have a harmful effect on nurses. A work environment that does not have bullying may or may not support work processes that nurture human growth and well-being. The intent of these questions was to capture elements of a work environment that are perceived to fosters shared power and growth among the work team. The development of a new tool is not ideal however, another instrument does not exist that measures the concepts embodied by the PEACE and Powers model. The construct validity of a new instrument maybe determined by review of an expert (Polit & Beck, 2008). The new instrument on workplace flourishing has been reviewed and approved for content validity by the author of the PEACE and Powers model (Chinn, 2013). Some consideration was given to assess the psychometric properties of the new instrument. The scale and target population are intentionally the same as those found in the NAQR-US. With this instrument, researchers have developed a parsimonious set of items that collectively measure a global variable over the prior six months. Each item is weighted based on frequencies associated with the number of work days in the preceding six months (never, 0; now and then, 2; monthly, 6; weekly, 25; and daily, 125). The items were then summed to create an interval-level scale. The

reliability was assessed as part of the study. The standardized Cronback's Alpha on the flourishing scale was 0.71 ($n=138$) is considered an adequate indicator of reliability (Lance, Butts, & Michels, 2006).

The addition of these four items allowed the researchers to assess for correlations between environments that are perceived to have high levels of bullying and those that perceive the work environment as supporting empowerment and flourishing among the nurses. These exploratory items are based on the same scale used in the NAQR-US. The new instrument has been reviewed by a content expert for content validity. Analysis of the new instrument is included in this study. The scale of the Flourishing instrument was scored the same as the NAQR-US and the Cronbach's alpha was about the same for both instruments in this study ($\alpha = 0.72$ and $\alpha = 0.71$ respectively).

Patient safety data.

Patient outcome measures were collected through the agencies internal event reporting mechanisms. An honest broker (a neutral mediator) provided data retrieval and analysis of patient events. This individual helped assured accurate bias free reporting of events and unit associations during the targeted timeframe. The events of interest included patient fall rates, pressure ulcers rates, hospital-acquired infections including pneumonia, medication errors, mortality rates, and thirty-day readmission rates during the prior six-month period as the initiation of the nurses' survey. Patient safety data was presented as a rate based on the number of patient admissions over the prior six months. These numbers were collected by individual units and then the collective unit rate was applied to nurse responses based on unit affiliation.

Patient satisfaction.

Patient satisfaction was determined using Press Ganey® surveys and Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. HCAHPS is a 32-item, national, standardized survey of patients’ perspectives of hospital care (appendix E). As an agent for the hospital, Press Ganey® will contact a percentage of patients for survey via mail, phone, or interactive voice recognition phone forty-eight hours to six weeks following discharge. The survey describes the patient’s perception of how often they experienced aspects of care, measured by eight domains and two global rating on the overall hospital and whether they would recommend it to family and friends. Each hospital reports these survey results to Centers for Medicare and Medicaid (CMS). The HCAHPS Survey asks recently discharged patients about aspects of their hospital experience. The core of the survey asks “how often” or whether patients experienced a critical aspect of hospital care. The eight HCAHPS measures: Communication with Nurses, Communication with Doctors, Staff Responsiveness, Pain Management, Communication about Medicines, Discharge Information, a composite that combines the Cleanliness and Quietness items, and one global item (Overall Rating of Hospital). The percentage of a hospital’s patients who chose the most positive survey response is the only item used to calculate the Patient Experience of Care Domain score.

Table 3. 3 Demographic Variables, Data Sources, Scale, and Items

Demographic variables			
Variable category	Data source	Scale	Items/sub categories
Nurse demographics	16-item, author designed based on AHRQ nurses survey	N, I mixed	Age, gender, race, educational background, length of employment, years in present position, years with RN license, employment setting, intention to leave position/profession.

N=nominal, R=ratio, I=interval

Table 3. 4 Independent Variables, Data Source, Scale, and Items

Independent Variables			
Variable category	Data source	Scale	Items/sub categories
Workplace Bullying	NAQR-US 4-item survey	I Never (0), now and then (2), monthly (6), weekly (25), daily (125)	<ul style="list-style-type: none"> · Someone withholding information which affects your performance. · Being humiliated or ridiculed in connection with your work. · Being ignored or excluded. · Being exposed to an unmanageable workload. · Overall bullying score
Workplace Flourishing (Chapter 5)	Author designed 4-item survey	I Never (0), now and then (2), monthly (6), weekly (25), daily (125)	<ul style="list-style-type: none"> · Given support by colleagues in improving your work performance. · Recognized for your contribution to the work. · Being asked for your opinion or consultation. · Offered help or support with challenging workloads · Overall flourishing score
Practice Environment	PES-NWI 31- item survey	I Strongly agree, agree, disagree, and strongly disagree (1-4)	<ul style="list-style-type: none"> · Nurse participation in hospital affairs · Nursing foundations for quality of care · Nurse manager ability, leadership and support of nurses · Staffing and resource adequacy · Collegial nurse-physician relations · Composite score as a mean of subcategories

N=nominal, R=ratio, I=interval

Table 3. 5 Dependent Variables, Data Source, Scale, and Items

Dependent Variables			
Variable category	Data source	Scale	Items/sub categories
Patient Safety	Frequency data from hospital central outcomes database (monthly)	R, I	By unit: Patient falls, medication errors, pressure injuries, 30-day readmission rates.
Patient Satisfaction	Press-Ganey® Surveys & HCAHPS (monthly and reported quarterly)	R, I Never, sometimes, usually, always (1-4) and other scales	By unit: 2 Global Dimension used in this study: Global items <ul style="list-style-type: none"> • overall rating. • recommend the hospital

N=nominal, R=ratio, I=interval

Permissions, Approvals, and Protections

The researcher gained administrative cooperation for the study through the Institutional Review Board (IRB) approval process. The recruitment strategy was to encourage participation from a large group of the available population. The goal was an adequate sample size and representation of the population. The recruitment plan invited all eligible nurses to participate in the survey. However, Polit (2008) lists several factors that can facilitate the recruitment plan. The recruitment plan included primarily email notification, face-to-face recruitment the researcher visited units to encourage participation by speaking with nurses and managers, and by hanging posters (Polit & Beck, 2008; Redmond et al., 2013). A multi focus strategy of using posters, and email recruitment announcements were used to encourage participation. During the open timeframe, a series of request to participate invitations were sent to the target population.

The recruitment strategy followed a multi focus strategy of using posters, and email recruitment announcements to encourage participation (Kobayashi, Boudreault, Hill, Sinsheimer, & Palmer, 2013; Leblanc, Lodato, Currow, & Abernethy, 2013). During the open timeframe, a series of request to participate email invitations were sent to the target population. The agency's nursing research consortium endorsed the study and helped encourage participation. They were available to help participants access the survey or the PI when questions arose.

The use of online survey helps make the survey convenient, accessible, and private. Participants completed the survey at work, at a library or at home; wherever they had the convenience and internet access (Kraut et al., 2004). While assurance of anonymity and confidentiality was made through the invitation to participate and the initial screen of the survey, the recruitment team offers an additional opportunity to address concerns about who will see the data.

Following IRB approval, the principle investigator (PI) met with hospital nursing leadership to establish the study timeframe and engage recruitment leaders. The PI solicited support for the study and explain the role and responsibilities of the recruitment leaders. The hospitals sent the request to participate through their email system to all registered nurses employed at the institution. Each nurse was sent an invitation to participate in the study. The invitation included information with respect to consent, privacy, anonymity, risks and contact information. Nurses received a link to the study via a third party online survey system, Survey Monkey®, through the employer email system. The invitation was sent four times during the three-week window the survey was open.

Data on patient outcomes and from the prior six months was collected during open survey time by the hospital through ongoing internal quality assurance systems. Hospital units collect and reports patient fall data through incident reports. Medication errors were collected and reported through internal reporting systems. The hospital also collects and reports on 30-day readmission rates, pneumonia, decubitus ulcer, and hospital acquired infection rates. This data was measured for the preceding six-month period. The hospitals use Press Ganey® surveys to gather patient satisfaction information, as required by the Centers for Medicare and Medicaid (CMS), meeting the standards for the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS).

Protection of human subjects.

The principle investigator (PI) sought to assure minimal risk to all participants in this study. For the nurses involved a primary source of concern was confidentiality, anonymity, and access. Steps were taken to assure anonymity of nurses involved in the study and their responses. Data was not identified to an individual nurse or patient. Employers did not have access to nurse

survey results in primary forms and in aggregate form as published by the PI. The design, and recruitment process was intended to assure the participants safety, peace of mind, and willingness to participate.

Institutional review board (IRB) approval for this study was obtained through the Human Subjects Review Board at Duquesne University and the hospital. All data used in this study is anonymous. The data collected did not have identifying patient or nurse information and met the criteria for IRB exempt status. The data was collected and examined electronically through online survey. The survey results and employee data are confidential from the employer. The agency names are excluded in publication materials. Patient data was used only in aggregate form. No actual patient identification data was obtained, published or shared.

The data was collected and stored on a secured data storage unit with restricted access. Nurse participants gave consent for the participation in the study as criteria for completing the survey. The online survey format allowed participants to complete the study outside their work environment and the scrutiny of coworkers.

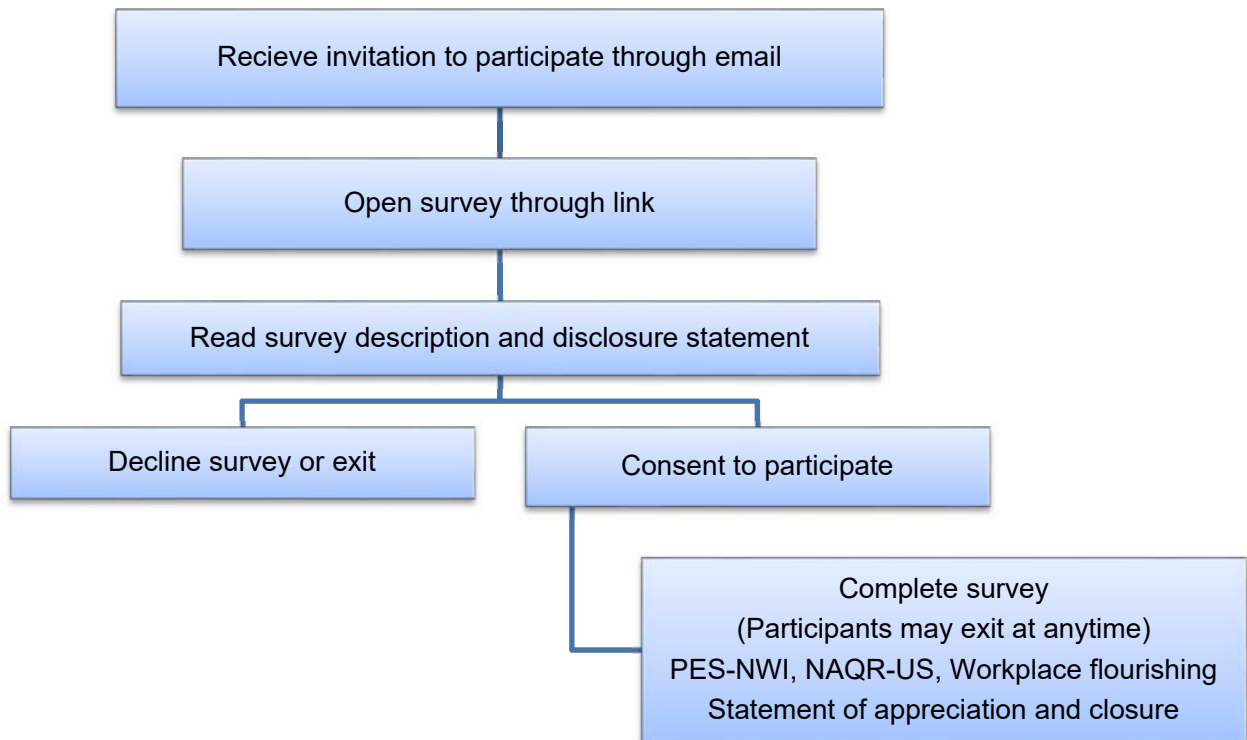
Data Collection Procedures

The data used in this study was obtained during the data collection session, a three-week period where the survey was open to subjects, and the agency honest broker collected patient data from the prior six months. The participants were instructed on how to access the survey, expected length of time, assured of their anonymity, and rights. Posters and email notifications of the study included measures for contacting the PI to answer any questions. The surveys were administered via Survey Monkey® where participants can access the survey URL link on their own. The use of Survey Monkey, a professional survey company's service, has an added layer of security that is familiar to many of the participants as an outside. Survey Monkey assures the

surveys meet Federal standards for use with people with disabilities. See Figure 3.2 Process and Decision Tree for Participants and the general steps used in conducting this study were:

1. Obtained IRB approval from Duquesne University and the hospital site.
2. Sent email link and invitation and distribute posters.
3. Opened the survey tool to research participants.
4. Collected criterion data from hospital database for the prior six months.
5. Collected data from survey once closed.
6. Began data analysis

Figure 3. 2 Process and Decision Tree for Participants



Data Analysis

To avoid a false positive result, a Type I error, a post hoc Bonferroni correction was applied to those variables identified with significance levels p ($\alpha_{\text{altered}} = .05/3$ predictor variables) ≤ 0.017 by the regression analysis. A power analysis was performed to assess the likelihood of a Type II error, or false negative (Polit, 2010). The sample size of 138 is adequate for a power based on values of r between 0.17 and 0.26, with a power level between 0.40 to 0.80, medium to high, before the correction (Polit, 2010). This was verified in a post hoc power analysis after correcting the $\alpha \leq 0.017$, for our sample size ($n=138$) based on three predictors and an effect size based on the regression results ($R^2=f^2=0.01-0.06$) yielded a power between 0.17-0.75, low to moderately high (Faul, Erdfelder, Buchner, & Lang, 2009).

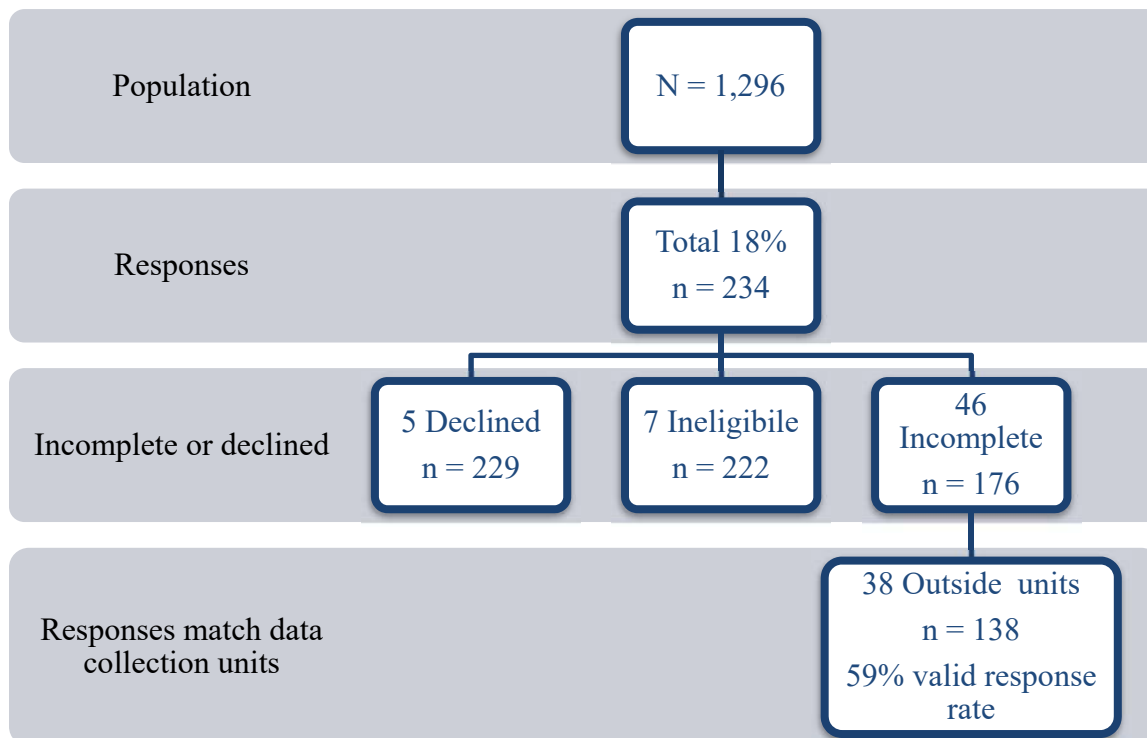
The minimum sample size was determined for each question using G*Power 3.1.3 (Faul, Erdfelder, Buchner, & Lang, 2009) yielded a minimum sample size of 14 for analysis of unit based data and a minimum of 62 participants for nursing survey data. Based on the following test predictions:

- Aim 1: Descriptive statistics were explored on demographic data and survey results to assess measures of central tendency, means, medians, skewness, frequency, scatter plots, and histograms.
- Aim 2: To determine minimum sample size for correlations using Pearson's product moment or Spearman's rank correlation and a priori analysis computed sample size of 8 ($df=6$, $n=8$) based on an effect size of 0.71, $p < .05$ on a one-tailed test, a power of 0.80.
- Aims 3 and 4 Should positive correlations be found in aim 2, regression models will be explored: fixed model, R^2 increase. Effect size $f^2=0.3$, α err probability = 0.05 computes a priori sample size of 62 ($n=62$, $df=57$) with total predictors of 4 (critical $F=2.77$).

Data collection and data screening.

Following data collection and before analysis, careful data screening and review was performed. The original survey data was visually examined for missing data and randomly sampled for accuracy. Descriptive and graphic analysis of data revealed participants who were removed due to their administrative or management position. Missing data was found related to where the individual left exited the survey usually before the demographic data. Based on the pattern and impact of the missing data the researcher based decisions using guidelines found in Tabachnick and Fidell (2007). The data analysis included individual assessments for accuracy. The basic descriptive information includes measures of central tendency and frequency distributions. See list of variables in tables 3.4-3.6.

Figure 3. 3. Flow Diagram of Sample Inclusion



Note: Eligibility exclusions for length of time in position and time spent in administrative role.

Normality was assessed using histograms and scatter plots to assess, symmetry, skewness, and kurtosis. Composite bullying and flourishing scores were positively skewed, bullying strongly skewed. The practice environment measures presented normal distributions. Means and standard deviations (SD) were used to assess normally presented variables and median and range (minimum-maximum) were used for non-normally distributed variables. Measure of central tendency variability and relative standing were described through measures and comparisons of the mode, mean, and median. The variability was assessed through measure of range, interquartile range, standard deviations and variance. Outliers were assessed using boxplot and various graphs and tables will display central tendency and variability indexes. Further exploratory assessments were determined using histograms, frequency charts, percentages and a 95% confidence interval was used for descriptive analysis (Polit, 2010). Some variables were transformed to adjust for non-normal distributions (skewness) and outliers. Data was assessed for multicollinearity and singularity. Where issues of normality could not be corrected, or violated parametric assumptions, non-parametric tests were used.

The NAQR-US was recoded and weighted based on frequencies of workdays in the preceding six months (never, 0; now and then, 2; monthly, 6; weekly, 25; and daily, 125) (S. R. Simons et al., 2011). The composite NAQR-US has a severe positive skew and was transformed using the inverse method. The PES-NWI was scored as strongly agree 1; agree 2; disagree 3; and strongly disagree as 4 then the mean of each subscale and the composite was determined. The patient safety and satisfaction rates were applied to each nurse response based on work unit association. IBM[®] SPSS[®] Statistics Version 22 was used for the majority of the data analysis (IBM Corporation, 2013). A *p* value of $\leq .05$ was used to define statistical significance in the bivariate and multivariate analysis.

All data was screened for accuracy using frequency reports, means, and standard deviation. Associations were determined using one way Analysis of Variance (ANOVA) or Kruskal-Wallis for comparing more than two groups (aim 2). Where two groups were compared t-test, or Wilcoxon rank-sum tests were used. Bivariate associations were examined by scatter plots, Pearson's R for parametric measures, and Spearman's rank correlations coefficients (r) for non-parametric measures. Multivariable regressions were used to determine the relationship between bullying and the practice environment and patient outcomes (aim 3). The multiple regression model assessed the portion of variance the practice environment and bullying accounted for in predicting patient safety and satisfaction following verification of assumptions for normality, homoscedasticity, linear relationships, independence of residuals, and collinearity (Tabachnick & Fidell, 2013). Some variables like NAQR-US composite scores were transformed for severe positive skew with good results using an inverse formula, $X=1/(X+1)$.

Each instrument was assessed for reliability and validity through use of Cronbach's alpha and comparison with prior studies. The Flourishing scale scored an acceptable and moderate Cronbach's alpha ($\alpha = 0.72$). The inter-item correlation scores indicated a good reliability with a range between 0.31 – 0.54. The corrected item total correlations were all less than the total alpha indicating item reliability.

NAQR-US Cronbach's alpha was found reliable ($\alpha = 0.72$) in this study and compares favorably to the results from Simons, Stark and DeMarco original study with Massachusetts nurses ($\alpha = 0.75$) (S. R. Simons et al., 2011) . The PES-NWI was found reliable for all subscales and the composite ($\alpha =0.82$) displayed in table 3.2.

The Specific Aims and Associate Analysis

1. Describe nurses' perceived exposure to workplace bullying, flourishing and practice environment.

Exploratory data analysis included detailed graphical exploration of the data appropriate to describe the sample under study (aim1). Means and standard deviations (SD) were used to assess normally presented variables and median and range (minimum-maximum) were used for non-normally distributed variables. Further exploratory assessments were determined using histograms, frequency charts, percentages and a 95% confidence interval was used for descriptive analysis (Polit, 2010).

2. Examine the associations between perceived workplace bullying, flourishing, and practice environment and selected demographic variables of the nurses.

Pearson's product moment correlations assess the degree of relationship between two continuous variables as found in hypotheses. Following the assessment for correlations the researcher will then assess for linear relationships. Pearson's r will be used to test the correlation between variables once the assumptions for use are explored as follows:

- *Random and independent sample.* To address the assumptions that the sample is randomly and independently drawn from the population a rigorous recruitment campaign will help achieve as large and diverse a sample as is feasible to obtain.
- *Distribution of the variables are bivariate normal.* This is a difficult assumption to test, however with an adequate sample size, greater than 128, bivariate normality will have only a small effect on the validity of the statistical test.
- *Homoscedasticity.* This assumption will be assessed by an analysis of the variance of the variables for similarity. A plot of residuals versus time or predicted values may reveal a bow

line if this assumption is violated. This may be corrected by working with the shorter intervals of data (Duke University, May 16, 2005).

The report of Pearson's r , r -value, the sample size, level of significance ($\alpha=.05$), and the direction of the relationship. A linear regression will be performed to further analyze the variables and make predictions for scores where initial correlations reveal significant results. This will include a visual examination of scatter plots for linear relationships. The bivariate linear regressions will examine the correlation indices r and r^2 once the four main assumptions of linear regression are addressed as follows:

- *Linearity.* According to researchers at Duke University (2005), linearity can be assessed in the plot graph of observed (or residual) versus predicted values with points distributed symmetrically around a diagonal or horizontal line. The researcher may address by applying a log transformation, or another regression with a nonlinear function (Tabachnick & Fidell, 2013p. 202).
- *Independence of error.* Violations of independence can be found through an auto-correlation plot of the residuals. The corrections should fall within the 95% confidence interval.
- *Homoscedasticity and Normality of error distribution.* Homoscedasticity and normality are assessed with Pearson r . Normality violations by probability plot exhibiting a bow shaped pattern will indicate skewness.

A bivariate linear regression will examine the correlation indices r and r^2 . The coefficients will range from negative one to positive one. For example, in statement 3.1, *There is an association between perceived to workplace bullying and patient safety*, perceived workplace bullying (WPB) is the predictor variable and patient safety is the criteria variable. The direction of the relationship (indicated by the + or – sign) will tell the researcher the following:

- A positive result will indicate that as WPB increases so does patient safety.
- A zero value indicates that as WPB increases, patient safety neither increases or decreases
- A negative result will indicate an inverse relationship between perceived WPB and patient safety i.e. that is, as WPB increases, patient safety decreases.

The strength of the relationship or effect size is determined by the absolute value of the correlation coefficients, 0.10 (small), 0.30 (medium), and 0.50 (large) (Cohen, 1992). These values are also dependent on the context of the research. The r^2 value will inform the researcher of the proportion of the variance in patient safety that is accounted for by its linear relationship with WPB. The researcher will also examine the standard error of the estimate, indicating how large the typical error is in predicting patient safety from WPB. The results will include a 95% confidence interval for the slope. If the confidence interval range does not include zero, we will conclude patient safety is significantly related to levels of perceived WPB. Additional visual depictions of the relationship will be provided including a scatter plot and fit line, predicting the relationship between the perceived level of bullying and medication errors.

3. Explore the associations between and among the variables of perceived exposure to workplace bullying, flourishing, the practice environment, and patient safety.

Based on the results of correlations found in aims above, researchers will develop modeling to aid in exploring additional important associations among variables.

4. Explore the associations between the variables of flourishing in the workplace and patient safety and satisfaction.

This aim will be addressed through the same processes as described in Aim 3. The researcher will posit additional associations and explore modeling of variables associations if correlations are found as described in aim two.

CHAPTER 4 FINDINGS

The findings from this study are presented as a manuscript for publication, titled:

Associations between the Nurses Practice Environment and Workplace Bullying to Patient Safety and Patient Satisfaction. The following chapter (Chapter 5) is a summary of the flourishing results that were not part of this results manuscript but are interesting and deserve continued exploration.

Associations between the Nurses Practice Environment and Workplace Bullying to Patient
Safety and Patient Satisfaction

Manuscript formatted for submission

Abstract

Purpose: The purpose of this study was to explore the associations of work place bullying and the work environment to assess the influence these factors have on patient safety and patient satisfaction.

Design and Method: This was an exploratory cross-sectional survey design from an academic medical center in the northeastern United States. Donabedian's Quality Framework was used to determine associations between study variables. The 138 nurse responses were measured for their perception of the practice environment over the prior six months using the Practice Environment Scale of the Nurse Work Index (PES-NWI), workplace bullying (WPB) using the Negative Acts Questionnaire Revised for the United States (NAQR-US) and nurse experience. The patient satisfaction data from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys, and patient safety data including patient falls, 30-day readmissions, medication errors, and pressure injuries were obtained as a rate per unit and assigned to each nurses based on unit association. Associations and multiple regressions were assessed between the practice environment, workplace bullying and patient safety and satisfaction.

Findings: Twenty percent of the respondents' report incidents of bullying occur weekly or more. Bullying was significantly and negatively associated with the quality of the practice environment, and with patient satisfaction in the areas of Recommend the Hospital. The practice environment was negatively associated with patient falls and 30-day readmissions. Experienced nurses had lower 30-Day readmissions even after holding for WPB and the practice environment. Positive practice environments were associated with fewer patient falls and lower 30-day readmission rates.

Conclusions: This study contributes to the development of a better understanding of the important role of the nurse in providing quality healthcare. The nurses practice environment has a strong inverse association with WPB, Patient Falls, and 30-day readmission. WPB was associated with Patient Satisfaction. As Patient Satisfaction, Patient Falls and 30-Day Readmission rates are tied to the financial wellbeing of hospitals through reimbursements, these findings support prior research associating the nurse practice environment to patient safety and satisfaction.

Clinical relevance: Workplace bullying remains a significant problem. The connection between the practice environment, patient safety, and patient satisfaction suggests improvements to the practice environment should be a priority for nurses, patients, administrators, and policy makers. It is imperative we identify ways to improve the practice environment and reduce WPB as the hospital's financial well-being is tied to these patient outcomes.

Workplace bullying (WPB) is endemic in nursing. Across international studies, nurses report bullying in the range of 26-70 percent (Houck & Colbert, 2017). Since Meissner (1986) first asked, “are we eating our young?” a growing body of evidence across the globe has explored the nature of workplace bullying on the nurse, on nursing issues, and on the hospital organization. Yet, few studies have examined the impact of WPB on the practice environment or on patients. This study explores the associations between the nurse practice environment and WPB with patient safety and satisfaction.

Background

Practice environment. Considerable evidence links the nurses’ practice environment with nurse and patient outcomes. In a period of nursing shortage there were few hospitals that seemed able to recruit and retain nurses. Nurse researchers explored the characteristics of better or more attractive hospitals and developed the Magnet criteria and later Magnet® designation (Aiken, Havens, & Sloane, 2000). Quality nurse practice environments are characterized by nurse autonomy, unit leadership, nurse involvement in organization governance, adequate resources, and collegial physician relationships (Siger et al., 2017). These better practice environments, like those often associated with Magnet® hospitals, have been found to have better nurse outcomes in nurse retention rates (Buffington, Zwink, Fink, Devine, & Sanders, 2012; Spence Laschinger, Wong, & Grau, 2012), job satisfaction (Boev, 2013; Toh, Ang, & Devi, 2012) and empowerment (Armstrong, Laschinger, & Wong, 2009). Conversely, poor practice environments are associated with negative nurse outcomes in the area of burnout and emotional exhaustion (Gabriel, Erickson, Moran, Diefendorff, & Bromley, 2013; Van Bogaert et al., 2014), job dissatisfaction, and intent to leave or turnover (Gillet et al., 2018; Kutney-Lee, Stimpfel, Sloane, Cimiotti, & Quinn, 2015; Wan, Li, Zhou, & Shang, 2018).

Studies find associations between the practice environment and better patient outcomes like improvements in 30-day readmission rates and patient mortality rates (Kutney-Lee et al., 2015; McHugh et al., 2013), patient falls (Swiger et al., 2018), medication errors (Chiang, Hsiao, & Lee, 2017; Swiger et al., 2018), pressure injuries (Ma & Park, 2015). However, fewer studies have explored the association between the practice environment and patient satisfaction (Boev, 2012; Swiger et al., 2018).

Workplace bullying. WPB, the repetition of offensive behaviors with the intent to harm, often escalating in intensity and occurring over time, is dependent on the target's perception of the event (Einarsen, Hoel, & Notelaers, 2009). There are multiple descriptions of behaviors that fall under the overarching term bullying including incivility, harassment, horizontal hostility, lateral violence, physical intimidation, mobbing and violence (Giorgi, Arenas, & Leon-Perez, 2011; Vessey, DeMarco, & DiFazio, 2011). The many forms of bullying range from physical violence, name calling, bickering, fault finding and criticism, intimidation, humiliation, gossip, eye-rolling, unfair assignments, withholding information, ostracization, exclusion, and sabotage (Einarsen, Hoel, Zapf, & Cooper, 2011; Vessey et al., 2011).

The target of bullying feels powerless and unable to defend themselves against the bully's actions. The perpetrator perceives she or he has something to gain by intimidating or oppressing the target (Einarsen et al., 2011). The perceived power imbalance exists, perhaps legitimized by position (charge nurse, manager, supervisor, or physician), seniority, or personal characteristics. Patients and their families have also targeted nurses with violence, incivility, and harassment (Speroni, Fitch, Dawson, Dogan, & Atherton, 2014). The cultural and structural foundations in nursing and medicine are similar to those found in the military, law enforcement, higher education, and government bureaucracies where hierarchal power structures are supported

through aggression. An organizations culture may help maintain systems that allow bullying behavior to be supported through indoctrination and ritual behaviors (Berry, Gillespie, Fisher, & Gormley, 2016)

Exposure to WPB is often detrimental to the victims' psychological and physiological health. Studies link WPB to moderate stress leading to sleep problems, depression, post-traumatic stress disorder (PTSD), substance abuse and suicide (Bonner & McLaughlin, 2007; Einarsen et al., 2011). Prolonged exposure to WPB may lead to chronic health problems often associated with stress, cardiovascular and gastrointestinal disease from hypertension and ischemia, chronic fatigue, fibromyalgia and skin disorders, pain, reduced memory, and overwhelming anxiety (Namie & Namie, 2011).

WPB can have a significant financial burden on the victim in lost work time and treatment for physical and psychological health. There is a financial cost to the nurse and the institution as the result of WPB in absenteeism, sick time, turnover, and decreased productivity (Einarsen et al., 2011). Considerable evidence from international studies and studies among new nurses link turnover or intention to leave with WPB (Choi & Lee, 2017; Flinkman, Leino-Kilpi, & Salanterä, 2010; Kovner et al., 2016; Oh, Uhm, & Yoon, 2016). Patient outcomes impact reimbursement as well. Hospitals absorb the costs of many patient safety events. One study in Quebec explored the economic impact of nurse sensitive patient safety events, including patient falls, and estimated the cost to 22 agencies in the study to be in excess of \$600,000 Canadian dollars for the 166 patient's involved in an adverse event (Tchouaket, Dubois, & D'Amour, 2017). Hospital reimbursement in the United States from the Medicare and Medicaid System (CMS) is based on quality and performance. The Affordable Care Act authorized CMS to reduce payments based on

an institutions performance measures in hospital acquired conditions, patient readmissions rates, and patient satisfaction scores (Medicare.gov, 2017).

The effects of WPB on the nurse and the institution are considerable, however, research is limited about the association between the practice environment and WPB or WPB and patient safety and satisfaction. Little has been explored about the association between WPB and patient outcomes. An integrative review of reports published over a twenty-year period found eleven studies with measures that range from risky behaviors to direct measures patient safety (Houck & Colbert, 2017). Nurses perceived associations of WBP to patient safety were found in the areas of patient falls (Roche, Diers, Duffield, & Catling-Paull, 2010), errors in treatments (ISMP, 2013; Wilson & Phelps, 2013), delayed or incomplete care (Roche et al., 2010), adverse events and patient mortality (Laschinger, 2014; Rosenstein & Naylor, 2012). In addition, changes to the nurses' behavior in the presence of WPB pose a threat to patient safety through inhibitions to communication or silencing the nurse (ISMP, 2013; Wilson & Phelps, 2013), alterations in thinking and concentration (Rosenstein & Naylor, 2012) . One study suggests a link between WPB and patient satisfaction described as family complaints (Rosenstein & O'Daniel, 2005; Rosenstein & Naylor, 2012). The strongest associations between WPB and patient safety was found in one study when physical violence was measured (Roche et al., 2010). However, none of these studies have explored the association between the practice environment, WPB, patient safety, and patient satisfaction.

Conceptual Model

The objective of this study was to investigate the associations between the practice environment, and WPB, to patient safety and patient satisfaction. These relationships were examined using the Quality Framework develop by Donabedian (1980) and used in quality

circles such as the Agency for Healthcare Research and Quality (AHRQ), CMS, and The Joint Commission. The framework defines three components: structure, process, and outcomes measures (AHRQ, 2012; Donabedian, 1980). The relationships between these variables are pictured in **Figure 1**.

Structure

Structure variables refers to the physical and organizational setting, characteristics of providers and the tools and resources available (Donabedian, 1980). Nursing structural factors center on the presence and influence of nursing in the organizational structure of the hospital and patient care unit. A nursing practice environment support quality care, meaning the environment supports the nurses ability to function at the highest level of clinical practice, work effectively in an interdisciplinary team, and mobilize resources (Lake, 2007) . These qualities need to occur at the nurse level, the unit level, and organizationally. The structure and environment of care can influence patient outcomes directly or through an influence on the process variables (Agency for Healthcare Research and Quality, 2014). The experience of the nurse and presence of nursing's influence on the work environment were used in this study as structure variables.

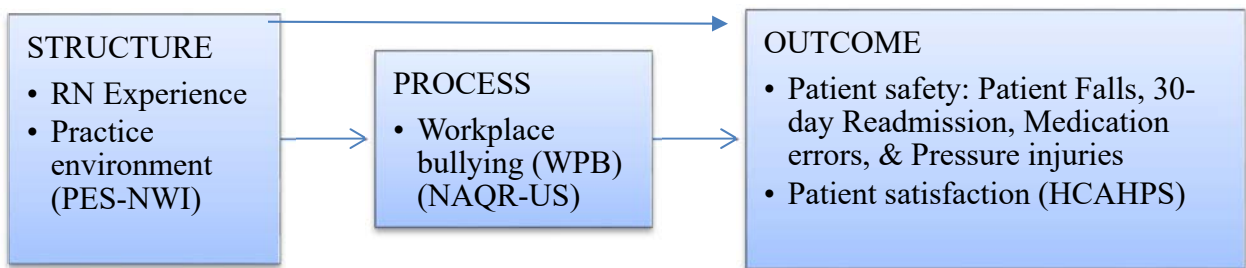
Process

Process variables measure the actions of providers to deliver care in a way that achieves the desired aims and avoids actions that predispose harm, such as treatment components, interpersonal aspects of care, and technical skill in the delivery of services (Donabedian, 1980). Process variables include communication, decision-making, and interpersonal relationships among clients and providers (Salzer et al., 1997). These variables may influence outcomes independently or be influenced by structure variables and thereby influence outcomes. In this study, workplace bullying (WPB) is examined as a process of care using.

Outcome

Outcome variables are the ultimate validators of effective quality care as they are usually concrete and allow precise measurement; they are changes in the patient's future health that are attributed to healthcare. Common measures are mortality rates, complications, and patient-centered variables including patient attitudes, patient satisfaction, and patient safety. In the quality framework, outcomes are influenced by the structure and process variables of care.

Figure 4. 1. Conceptual Model for Present Study



Note: Study variables presented in Donabedian's Quality Framework

Aims

Aim 1: Describe the nurses' practice environment, WPB, patient safety, and patient satisfaction.

Aim 2: Examine the associations between the practice environment, WPB, patient safety, and patient satisfaction.

Aim 3: Explore the degree to which the practice environment and WPB explain variations in patient safety and patient satisfaction.

Methods

An exploratory cross-sectional survey research design was used to collect data related to the nurses, their practice environment, and WPB. Institutional data on patient safety and patient

satisfaction by nursing unit was associated with the nurse surveys based on unit association. Approval from Duquesne University Institutional Review Board (IRB) and the agency's IRB was secured prior to initiating the study. Further permissions were obtained through the agency's nursing research consortium, and the hospital's quality and safety department. The quality and safety department provided an honest broker to assure all patient and agency data did not include identifiable patient information. The honest broker also provided data retrieval and analysis of patient events. This individual helped assure bias free reporting of events and unit associations within the targeted timeframe.

Procedures

Email invitations, with the study's URL internet-based survey collector, were sent to all agency nurses. The website invited participants to read a description of the study that noted participants could opt out at any time during the survey. Informed consent was included in the electronic invitation and appeared as the first page with the option to opt out or continue with the survey. Data used for the analysis included nurses who met the inclusion criteria; non-managerial RNs employed more than 6 months, with more than half time employment, and worked on a unit which correlated with patient safety and satisfaction data. The survey results were downloaded into the Statistical Package for the Social Sciences (SPSS, IBM Corporation, 2013).

Sample and setting.

Registered nurses recruited for this study were in practice on their respective units for more than six months, with the majority (>50%) of their time in direct patient care activities. Excluded from the survey were nurses who worked less than one day per week, administrators, nurses who worked less than six months at the facility. The survey was delivered electronically to agency nurses and a convenience sample was based on the eligible responses from the

agencies internal mailing list of all RNs (N=700). The selection criteria were based on responses to qualifying questions. Nurse responses included in the study were from the 15 units with patient safety and satisfaction data.

The setting for the study was a large (over 500 bed), not-for-profit, regional medical facility associated with a university medical center in the North-Eastern United States. The facility has approximately 13,000 annual admissions. Fifteen inpatient units across many discipline areas were included in the sample. The hospital is accredited by the Joint Commission. The sample includes non-managerial registered nurses (RNs) who work more than half time.

Measurement

Structure: Nurse characteristics and the practice environment.

Nurse characteristics.

Nurse variables were measured with a researcher developed demographic survey. The survey measured nurse characteristics including gender, sexual identity, education, licensure, and length of time as a registered nurse (RN Experience).

The practice environment.

The Practice Environment Survey of the Nursing Work Index (PES-NWI), is a reliable and valid instrument in the public domain and recognized by the National Quality Forum (NQF) and the American Nurses Association as a nurse-sensitive measure of the patient care environment (American Nurses Association, 2011; NQF, 2007; University of Pennsylvania, Center for Health Outcomes and Policy Research, 2017). The 31-item instrument describes a set of organizational characteristics in the nurses practice environment that are supportive of a professional nursing practice. On a 4-point Likert scale from “strongly disagree” to “strongly agree”, nurses indicated the degree to which each statement is present in their practice environment. The statements were

then grouped on the following five subscales (1) Nurse Participation in Hospital Affairs, (2) Nursing Foundations for Quality of Care, (3) Nurse Manager Ability, Leadership, and Support of Nurses, (4) Staffing and Resource Adequacy, and (5) Collegial Nurse-Physician Relations (Lake, 2002). An overall score was calculated by averaging the five subscales to produce a single composite score ranging from 1.50 to 3.75. The PES-NWI had similar reliability as found in other studies with Cronbach's α subscales range from .75 to .87; the composite score was .80 (Lake, 2002; Swiger et al., 2018).

Process: Workplace bullying.

In this study, workplace bullying (WPB) is examined as a process of nursing care using The Negative Acts Questionnaire Revised for the United States (NAQR-US), a four-item instrument that measures total levels of workplace bullying. The instrument was tested with Massachusetts nurses in 2004 (n=511) and was found reliable and valid when compared to similar instruments (Simons, Stark, & DeMarco, 2011). The instrument showed content validity when compared with other indicators of workplace distress and it has a high reliability, with Cronbach's α for all four items of .75 in the original study. The items on the NAQR-US use behavioral terms to describe bullying and does not use terms like bullying, harassment, or incivility. Nurses responding to the instrument indicated the degree of frequency each behavior occurred in their practice environment over the prior six months as, never, now and then, monthly, weekly, and daily. Each item is weighted based on frequencies associated with the number of workdays in the preceding six months (never, 0; now and then, 2; monthly, 6; weekly, 25; and daily, 125). The items were then summed to create an interval-level scale between 0-252 (Marateb, Mansourian, Adibi, & Dario, 2014).

Outcomes: Patient safety and satisfaction.

Patient safety.

We identified patient outcomes events and perceptions that are associated with nursing care. The patient safety and patient satisfaction data was collected through the hospital's internal event reporting mechanisms. The events of interest were nurse-sensitive measures of nursing care identified by the National Quality Forum, the National Database of Nursing Quality Indicators, and the Centers for Medicare and Medicaid Services (Centers for Medicare and Medicaid (CMS), 2011; NQF, 2007). The patient safety variables selected for this study included patient falls, 30-day readmission rates, medication errors, and pressure injuries, during the six-month period prior to the initiation of the nurse surveys. Patient safety data was presented as an incident rate per 1000 patient days over the prior six months and reported by inpatient units.

Patient satisfaction

Patient satisfaction was determined using the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. The HCAHPS Survey asks recently discharged patients about aspects of their hospital experience. HCAHPS is a 32-item, national, standardized survey of patients' perspectives of hospital care. As an agent for the hospital, Press Ganey® contacts a random sample of patients for survey via mail, phone, or interactive voice recognition by phone forty-eight hours to six weeks following discharge. The survey asks the patient about their perception of how often he or she experienced aspects of care, measured by eight domains and two global ratings; overall hospital rating and whether they would recommend the hospital. Each hospital reports the survey results to Center for Medicare and Medicaid (CMS). The core of the survey asks how often or whether patients experienced a critical aspect of hospital care. The percentage of a hospital's patients who chose the most positive survey response is the only item

used to calculate the score and is reported by inpatient unit. (Kennedy, Tevis, & Kent, 2014). In this study, the global scores of Overall Hospital Rating and Recommend Hospital were used for analysis.

Data Analysis

The data set was checked for errors and missing data prior to analysis. The data from the NAQR-US was recoded and weighted based on workday frequencies in the preceding six months with five possible responses; never (0), Now and Then (2), Monthly (6), Weekly (25), Daily (125) (Simons et al., 2011). The patient safety and satisfaction rates were supplied as unit level rates. The rates were applied to each nurse's response based on work unit association. Unit level patient safety rates were summarized to create an event rate per unit. Each nurse response was given the mean patient safety and satisfaction response based for the unit.

The first aim was to describe the variables of interest. Descriptive statistics were used to characterize study participants with variable means, standard deviations, frequencies, and sums. Analysis of variance or Kruskal-Wallis tests for comparing more than one group and Wilcoxon rank-sum test for comparing two groups were used. Our second aim was to explore bivariate associations with scatter plots and Pearson's *r*. All demographic data was explored but only those of interest to the study variables are reported. Following verification of assumptions, the WPB composite variable was severely and positively skewed and responsive to logarithmic transformation (Tabachnick & Fidell, 2013). Our third aim was to explore associations amongst the variables. Regression analyses were performed to explore the relationship between RN experience, practice environment and WPB on the outcome variables patient safety and patient satisfaction.

To avoid a false positive result, a Type I error, a post hoc Bonferroni correction was applied to those variables identified with significance levels p ($\alpha_{\text{altered}} = .05/3$ predictor variables) ≤ 0.017 by the regression analysis. A power analysis was performed to assess the likelihood of a Type II error, or false negative (Polit, 2010). The sample size of 138 is adequate for a power based on values of r between 0.17 and 0.26, with a power level between 0.40 to 0.80, medium to high, before the correction (Polit, 2010). This was verified in a post hoc power analysis after correcting the $\alpha \leq 0.017$, for our sample size ($n=138$) based on three predictors and an effect size based on the regression results ($R^2=f^2=0.01-0.06$) yielded a power between 0.17-0.75, low to moderately high (Faul, Erdfelder, Buchner, & Lang, 2009).

Results

Nurses' Practice Environment, Workplace Bullying, Patient Safety and Satisfaction

Of the 1,296 possible nurse participants, 234 nurses (18%) accessed the survey, of which 176 responses were eligible or complete. Of those, 138 (11% of all nurses) were from the 15 units where patient safety and satisfaction data was collected. The survey was open and available for three weeks. Seventy-six percent of the final sample primarily identified as female (76%), white (less than 1% non-white), between the ages of 25 and 44 (51%), and with a Bachelor's degree or higher (52.3%). See **Table 1** for complete participant characteristics. The region's race and ethnic population is predominately white with non-white in the associated counties less than 4%.

Table 4. 1. Nurse Characteristics

Variable	<i>N=138</i>	<i>n</i>	%
Age	18 to 24	6	4.3
	25 to 34	37	26.8
	35 to 44	34	24.6
	45 to 54	24	17.4
	55 to 64	22	15.9
	65 to 74	5	3.6
Gender	Female	105	76.1
	Male	18	13.0
Sexual Identity	Bisexual	3	2.2
	Gay	4	2.9
	Heterosexual	113	81.9
	Other sexual identity	1	0.7
	Not reported	17	12.3
Race/Ethnicity	Non-white		<1
Education	Diploma	7	4.0
	Associate degree	75	42.6
	Bachelor's degree	89	50.6
	Master's or above	3	1.7
Experience as RN	Less than 2 years	14	10.2
	2 to 5 years	31	22.5
	6 to 10 years	35	25.4
	11-20 years	25	18.1
	21 to 30 years	15	10.9
	years31 or more	18	13.1

Note: RN=registered nurse, nr=not reported

On the PES-NWI, the mean of each subscale was above 2 and below 3, indicating a generally positive practice environment (**Table 2**). The strongest subscale was a collegial nurse physician relationship ($m=2.97$, $SD\pm 0.42$) and the lowest was nurse participation in hospital affairs ($m=2.45$, $SD\pm 0.49$). The composite score based on the mean of the subscale scores indicates nurses positively view the practice environment ($m= 2.77$, $SD\pm 0.40$).

Table 4. 2. The Practice Environment Scale of the Nursing Work Index

Subscale	<i>m</i>	SD	min	max	α
Nurse Participation in Hospital Affairs	2.46	0.47	1.33	3.89	.84
Nursing Foundations for Quality of Care	2.86	0.37	2.00	4.00	.75
Nurse Manager Ability, Leadership and Support of Nurses	2.87	0.60	1.20	4.00	.86
Staffing and Resources Adequacy	2.67	0.64	1.00	4.00	.87
Collegial Nurse-Physician Relations	2.98	0.52	1.00	4.00	.83
Composite Score	2.77	0.40	1.50	3.79	.80

Notes: *m*= mean, *SD* = standard deviation, min=minimum, max=maximum, α =Cronbach's alpha; Possible answers were: Strongly agree (4), Agree (3), Disagree (2), Strongly disagree (1), (n=138).

Nurse responses per unit ranged from 2 nurses in orthopedics and 23 nurses in surgical ICU (**Table 3**). The units with the most experienced nurses were Labor and Delivery ($m=24.00$ years, SD 16.1) and Neonatal ICU ($m=22.3$ years), followed by Psychiatry ($m=18.9$ years) and Pediatrics ($m=18.8$ years). The units with the least nurse experience were Orthopedics ($m=4$ years) and Surgery ($m=5.8$ years). The nursing units with the highest average practice environment scores, indicating the best practice environments and a strong nursing presence, were Labor and Delivery ($m=3.2$) and Neonatal ICU ($m=3.1$) (**Table 3**). The least favorable practice environments were Surgery ($m=2.5$) and Medicine ($m=2.6$). The units with the lowest rates of WPB were Labor and Delivery ($m=3.7$) and Orthopedics ($m=4.0$). The units with the greatest WPB rates were Pediatrics ($m=43.4$) and Psychiatry ($m=34.3$).

The units with the highest overall patient safety events were Psychiatry ($\Sigma=9.5$), Medicine ($\Sigma=8.9$), and Oncology ($\Sigma=6.1$). The lowest or safest units were Maternity ($\Sigma=1.2$) and Labor and Delivery ($\Sigma=1.5$). The units with the highest combined average patient satisfaction scores were Cardiothoracic ($\Sigma=0.8$), Neuroscience ($\Sigma=0.8$), and Medical ICU ($\Sigma=0.8$), these were the most satisfied units. The lowest patient satisfaction scores were Cardiology ($\Sigma=0.5$) and Labor and Delivery ($\Sigma=0.7$).

Table 4. 3. Responses on Nurse Survey and Patient Data by Patient Care Units

Nursing Unit	Nurse survey					Unit level measures	
	Nurses		Structure	Process		Patient Outcomes	
	<i>f</i>	%	Yrs. Exp. <i>m</i>	PE (PES-NWI) <i>m</i>	WPB (NAQR-US) <i>m</i>	Patient Safety Σ	Patient Satisfaction <i>m</i>
Cardiology	16	11.6	4.0	2.79	24.94	4.79	0.50
Cardiothoracic	9	6.5	17.0	2.89	34.33	3.92	0.83
Labor & Delivery	6	4.3	18.8	3.17	3.67	1.49	0.66
Maternity	7	5.1	5.8	2.62	13.43	1.15	0.78
Medical ICU	13	9.4	7.1	2.71	27.92	5.34	0.80
Medicine	7	5.1	18.9	2.58	34.29	8.87	0.66
Neonatal ICU	11	8.0	14.1	3.05	4.55	4.23	0.68
Neurosciences	9	6.5	17.9	2.77	6.33	4.85	0.80
Oncology	7	5.1	17.7	2.73	15.00	6.13	0.75
Orthopedics	2	1.4	16.5	2.80	4.00	4.62	0.78
Pediatrics	10	7.2	7.5	2.84	43.40	4.58	0.74
Psychiatry	9	6.5	8.8	2.64	34.33	9.54	0.77
Surgery	9	6.5	22.3	2.50	25.11	4.23	0.74
Surgical ICU	23	16.7	24.0	2.74	9.43	4.58	0.70

Note: $N=138$, f =frequency of nurse responses per unit, m =mean, Yrs. Experience= nursing experience as an RN in years, Practice Environment is the PES-NWI composite score, WPB=Workplace bullying composite score from the NAQR-US, Σ =Composite safety score is the sum of patient falls, 30-day readmission rates, medication errors, and pressure injuries rates per 1000 patient days. Σ =Composite patient satisfaction is average of the two universal patient satisfaction scores; overall rating and recommend the hospital.

Nine respondents representing nearly 7% of the sample reported daily incidents of WPB.

Approximately 20% indicated WPB frequencies of weekly or greater (Table 4). Most respondents experienced some degree of bullying. Only 12% ($n=16$) of the participants did not experience any bullying behaviors. Nearly 30% experienced bullying at least once a month. The results indicate approximately 3,233 incidents of bullying in six months; a total incident rate of 25.9 per day. It can be inferred nurses in this study experienced 21 non-workload related incidents per day. The most frequent bullying behavior was Being Exposed to an Unmanageable Workload (79%) followed by Being Ignored or Excluded (47.8%).

Further exploration of nurse characteristics and bullying between all nurses found significant differences between groups classified by experience and gender. Analysis with the Wilcoxon rank sum test found new nurses employed less than two years experienced significantly less bullying than all other age groups ($n_{<2\text{yrs}}=37$, $m=0.5$, $p=0.03$). The Kruskal-Wallis test was used to analyze the population distribution of gender and WPB, found men perceived significantly less bullying than women ($n_{\text{male}}=26$, $m=1.0$, $p=0.03$).

Table 4. 4. Workplace Bullying Frequency from the NAQR-US

	<i>f</i> (%)	Never	Now & Then	Monthly	Weekly	Daily	Total
Withholding information	75(54.3)	52(37.7)	2(1.4)	6(4.3)	3(2.2)	138	
Being humiliated or ridiculed	100(72.5)	31(22.5)	3(2.2)	3(2.2)	1(0.7)	138	
Being ignored or excluded	72(52.2)	46(33.3)	10(7.2)	9(6.5)	1(0.7)	138	
Unmanageable workload	29(21.0)	69(50.0)	12(8.7)	19(13.8)	9(6.5)	138	
Total (percentage)	276(50.0)	198(36.9)	27(4.9)	37(6.7)	14(2.5)	552	
Rate or incidents over prior 6 months		0	396	162	925	1750	3233

Note: The rate multiplier to each response is based on associated days in the prior six months, never (0), Now and Then (2), Monthly (6), Weekly (25), Daily (125). Rate is the total number of incidents perceived over the prior six months ($n=138$).

Associations between Nurses' Practice Environment, Workplace Bullying, and Patient Safety and Satisfaction.

The correlation matrix shown in **Table 4.5** includes the means, standard deviations, and correlations between nurse experience, the practice environment, WPB, patient safety, and patient satisfaction. The associations are small ($r \leq 0.10$) to moderate ($r = 0.10-0.30$) in this study with few strong ($r \geq 0.50$) associations found between some patient safety and satisfaction variables (Cohen, 1992; Hemphill & Fraser, 2003; Kraut et al., 2004).

Nurse experience had a small negative correlation with the practice environment ($r = -0.02$, $p > 0.017$) and with WPB ($r = 0.01$, $p > 0.017$). Nurse experience had a small negative correlation with all patient safety variables except Medication Errors, where there was a moderate positive correlation ($r = 0.21$, $p < 0.017$). The other structural variable, the Practice Environment, had a

moderate and significant negative association with WPB ($r = -0.26, p < 0.003$). The Practice Environment was negatively associated with all patient safety variables, the largest associations were with Patient Falls ($r = -0.21, p < 0.017$) and 30-Day Readmissions ($r = -0.21, p < 0.017$). The practice environment and patient satisfaction showed mixed results, a slight negative association with the Overall Hospital Satisfaction ($r = 0.09, p > 0.017$), and a moderate negative association with Recommend the Hospital ($r = 0.17, p > 0.017$).

The process variable WPB, in addition to a negative association with nurse experience and the Practice Environment, had a positive association with all patient safety variables the strongest association was with 30-day readmissions ($r = 0.19, p > 0.017$). The two patient satisfaction variables had mixed results when associated with WPB. WPB was negatively associated with Recommend this Hospital ($r = -0.24, p < 0.017$), and positively associated with the overall Hospital Rating though the association is very small and not significant ($r = 0.02, p > 0.017$).

The highest associations were between the outcome variables. Patient safety variables, especially pressure injuries and 30-Day Readmissions ($r = 0.69, p < 0.0005$), were moderately to strongly correlated. Medication Errors were negatively associated with all patient safety variables and positively associated with the patient satisfaction variables. The two patient safety variables showed a strong positive correlation to each other ($r = 0.42, p < 0.0003$)

Table 4. 5. Correlation of Study Variables

Variables	<i>m</i>	<i>SD</i>	EX 1	PE 2	WPB 3	PF 4	30 5	ME 6	PI 7	HS 8	RH 9
STRUCTURE											
1. RN Experience (EX)	14.74	12.18	1								
2. Practice Environment (PE)	2.78	0.40	-0.02	1							
PROCESS											
3. WPB	0.93	0.55	-0.01	-0.26 **	1						
OUTCOME: Patient Safety											
4. Patient Falls (PF)	2.44	1.99	-0.08	-0.21 *	0.14	1					
5. 30-Day Readmissions (30)	0.09	0.04	-0.26 *	-0.21 *	0.19	0.47 ***	1				
6. Medication Errors (ME)	1.92	0.98	0.21 *	0.13	0.02	-0.32 ***	-0.16	1			
7. Pressure Injuries (PI)	0.35	0.40	-0.16	-0.15	0.14	0.34 ***	0.69 ***	-0.45 ***	1		
OUTCOME: Patient Satisfaction											
8. Hospital Satisfaction (HS)	0.73	0.09	-0.12	-0.09	0.02	0.25 **	0.25 **	0.28 **	-0.24 *	1	
9. Recommend Hospital (RH)	0.78	0.03	0.05	0.17	-0.24 *	-0.22 *	-0.48 ***	0.07	-0.63 ***	0.42 ***	1

Note: Pearson correlation (2-tailed), *m*=mean, *SD*=Standard Deviation, *P values* after Bonferroni correction ($p/3_{predictor}$) * $p < 0.017$, ** $p < 0.003$, *** $p < 0.0003$.

Associations of Nurse Experience, Practice Environment, and Workplace Bullying with Patient Safety and Patient Satisfaction

Only a small amount of variance in the patient safety and satisfaction variables were attributed to the variables in this study as the adjusted R^2 reveals. The adjusted R^2 ranged from 0.003 for Overall Patient Satisfaction and 0.129 on 30-Day Readmissions, indicating less than a half percent to nearly thirteen percent variance is accounted for by these variables.

30-Day Readmission model was significant with nearly 13% ($R^2=0.129$, $F[3,137]=6.59$, $p=0.000$) of the variance accounted for from the three variables; RN Experience, Practice Environment, and WPB. RN Experience was the only statistically significant factor in that model ($p<0.003$). RN Experience was again the only statistically significant factor for Medication Errors where the overall model including all three variable, RN Experience, Practice Environment, and WPB accounts for nearly 7% variance ($R^2=0.068$, $F[3,137]=3.240$, $p=0.024$)(Table 4.6).

Table 4. 6. Multiple Regression Models

Models	<i>b</i>	<i>SE</i>	β	<i>t</i>	Sig.
Patient Safety Models					
1. Patient Falls: $R^2=.059$, Adjusted $R^2=.038$, $F(3,137)=2.792$, $p=.043$					
(Constant)	4.999	1.338		3.736	.000 ***
RN Experience	-.014	.014	-.086	-1.022	.309
Practice Environment	-.951	.435	-.190	-2.187	.030
WPB	.310	.311	.086	.997	.321
2. 30-Day Readmission: $R^2=.129$, Adjusted $R^2=.109$, $F(3,137)=6.590$, $p=.000$					
(Constant)	.145	.029		5.100	.000 ***
RN Experience	-.001	.000	-.258	-3.200	.002 *
Practice Environment	-.019	.009	-.174	-2.087	.039
WPB	.011	.007	.141	1.688	.094
3. Medication Errors: $R^2=.068$, Adjusted $R^2=.047$, $F(3,137) = 3.240$, $p=.024$					
(Constant)	.528	.658		.803	.423
RN Experience	.017	.007	.216	2.591	.011 *
Practice Environment	.379	.214	.153	1.774	.078
WPB	.102	.153	.057	.664	.508
4. Pressure Injuries: $R^2=.058$, Adjusted $R^2=.037$, $F(3,137) = 2.772$, $p=.044$					
(Constant)	.699	.267		2.615	.010 *
RN Experience	-.005	.003	-.161	-1.918	.057
Practice Environment	-.125	.087	-.125	-1.435	.154
WPB	.074	.062	.104	1.197	.233
Patient Satisfaction Models					
5. Overall Satisfaction: $R^2=.025$, Adjusted $R^2=.003$, $F(3,137)=1.134$, $p=.338$					
(Constant)	.801	.061		13.139	.000 ***
RN Experience	-.001	.001	-.126	-1.478	.142
Practice Environment	-.022	.020	-.098	-1.115	.267
WPB	-.002	.014	-.010	-.115	.908
6. Recommend Hospital: $R^2=.071$, Adjusted $R^2=.051$, $F(3,137)=3.439$, $p=.019$					
(Constant)	.763	.021		35.855	.000 ***
RN Experience	.000	.000	.053	.633	.528
Practice Environment	.009	.007	.115	1.338	.183
WPB	-.012	.005	-.208	-2.410	.017

Notes: *b*=unstandardized beta coefficients, *SE*=standard error, β =Standardized beta coefficients, Sig.=significance, * $p<0.017$, ** $p<0.003$, *** $p<0.0003$

Discussion

This is the first study to examine WPB, nurses' practice environment, and patient outcomes. Our data suggest that WPB remains a significant issue in the practice environment of nurses and on patient outcomes. The practice environment is associated with WPB and patient safety. WPB is associated with patient satisfaction, however the combination of the two variables does not account for a larger or significant portion of the variance in patient safety or satisfaction variables. This was not a causal study, however, we did find WPB and the practice environment were associated with each other and with patient outcomes.

Workplace Bullying

More nurses in this study experience some form of bullying than no bullying. Nurses were bullied at a rate nearly 25 incidents per workday among the 138 nurses. Each day 18% of the sample was bullied. Only 12% of the respondents experienced no bullying incidents. These levels are high but also consistent with those found in other studies (Pfeifer & Vessey, 2017). The findings in this study show WPB was inversely and moderately associated with the practice environment and with patient satisfaction but only a negligible correlation was found between WPB and patient safety. This suggests the presence of WPB may contribute to the quality of the practice environment, but there are other factors in the overall practice environment that may be more closely associated with patient safety.

Conversely, WPB was moderately and inversely associated with one global patient satisfaction variable, Recommend the Hospital. Few other studies have looked at WPB and patient satisfaction and those that did, did not examine HCAHPS. One study alluded to a connection to patient satisfaction by identifying family complaints (Laschinger, 2014), another explored nurses' perceptions that there is a connection to patient safety (Rosenstein & O'Daniel,

2005). Patients, however, as in the prior studies, patients seem to recognize when the nurses is bullied and the response is a negative impression of the hospital.

The most common bullying behavior experienced in this study was Being Exposed to an Unmanageable Workload (79%) and Being Ignored or Excluded (47.8%) similar to the findings by other investigators (Simons et al., 2011). The behaviors measured by the bullying instrument (NAQR-US) includes elements that relate to workload, communication, and interpersonal relationships. The pattern of WPB rates among the units did not reveal associated types of units with high WPB rates which suggests other factors like unit culture and leadership may be more influential in determine the prevalence of WPB over the type of unit.

WPB had a moderate negative association with the practice environment. This reveals better quality work environments had lower experiences of WPB. There is considerable evidence to support improved patient outcomes are associated with better quality practice environments including improved patient mortality rates (Aiken, Clarke, Sloane, Lake, & Cheney, 2009; McHugh et al., 2013), fewer medication errors (Gaffney, Hatcher, Milligan, & Trickey, 2016); fewer patient falls (Lake, Shang, Klaus, & Dunton, 2010), improved 30-Day readmissions (Ma et al., 2015), and fewer pressure injuries (Lake & Cheung, 2006; Ma & Park, 2015). Yet, this study the associations were small to low moderate and found no significant bivariate associations between bullying and patient safety.

The Practice Environment

The quality of the practice environment was significantly associated with patient safety. The practice environment was negatively associated with patient falls and 30-day readmissions, consistent with the findings of other investigators (Lake & Cheung, 2006; Ma, McHugh, & Aiken, 2015). Studies on Magnet[®] designated hospitals find better nursing practice environments

have higher scores on the PES-NWI while the results of this study were similar to the lower scores found in non-Magnet[®] hospitals (Desmedt, De Geest, Schubert, Schwendimann, & Ausserhofer, 2012; Kutney-Lee et al., 2015; Lake, 2002; McHugh et al., 2013).

The practice environment had very slight correlations with patient satisfaction unlike prior studies across Europe and the United States that found better practice environments associated with higher global patient satisfaction scores (Aiken et al., 2012). There is strong evidence in prior research that supports the association between the practice environment and patient safety (Gaffney, Hatcher, Milligan, & Trickey, 2016; Kirwan, Matthews, & Scott, 2013) and one study in Japan assessed the practice environment with WPB and found noteworthy associations (Yokoyama et al., 2016).

The practice environment as measured by the PES-NWI gauged nurse influence in the organization and at the unit level of the practice environment. The PES-NWI measure factors like communication, staffing and resources (Lake et al., 2015) similar to the concepts measured by the bullying instrument NAQR-US (Einarsen et al., 2011; Simons et al., 2011). However, this moderate and significant association between WPB and the practice environment suggests a relationship to patient safety that, while not found in this study, needs to be further explored.

The Nurse

Individual characteristics of the nurse, including gender and experience, were associated with study variables. Similar to prior reports, men experienced less bullying than women (Chatziioannidis, Bascialla, Chatzivalsama, Vouzas, & Mitsiakos, 2018). In our study, experienced RNs perceived higher levels of bullying than nurses with less than two years' experience, however overall experience as an RN did not have a significant association with bullying. The effect of RN experience on WPB was different from prior studies where

experience made no difference to the context of the work environment (Vessey et al., 2011) or studies that found RN's with less experience perceived greater levels of bullying (Budin, Brewer, Chao, & Kovner, 2013). Further, we found RN experience was associated with Medication Errors and with 30-Day Readmission rates as compared to a systematic review of 27 qualified studies that found RN experience was not associated with mortality and adverse events (Audet, Bourgault, & Rochefort, 2018). Notably, RN experience was the only significant variable in the regression models for Medication Error and 30-Day Readmissions when the practice environment and WPB were included. These findings suggest that efforts to reduce turnover and retain experienced nurses may improve patient safety.

Patients Safety

Most of the patient safety variables were positively and moderately associated with one another, the interesting exception was the associations with medication errors where there were negative associations to the other patient safety variables. There are no current universal processes for reporting medication errors and it is difficult to distinguish between errors of delivery, those mostly associated with nursing, from those of prescription, transcription and dispensing (Rutledge, Retrosi, & Ostrowski, 2018). There are numerous programs targeted to reduce patient falls, readmission, pressure injuries, and medication errors (Agency for Healthcare Research and Quality, 2013). However, our study findings are similar to those by other researchers, lower Patient Falls and 30-day readmissions were associated with better practice environments (Geiger-Brown & Lipscomb, 2010; Hanrahan, Kumar, & Aiken, 2010; Lake et al., 2010; Ma et al., 2015). Prior studies have linked patient falls to better staffing levels, a variable not measured in this study (Papastavrou, Andreou, & Efstathiou, 2014). Additionally, patient

falls and 30-day readmissions were moderately associated with all other patient safety variables in this study.

Patient Satisfaction

Patients may know when their nurse is not treated well. There was an inverse association between the practice environment and WPB. The findings in this study showed weak associations between the practice environment and patient satisfaction while other investigators found positive practice environments were strongly associated with patient satisfaction (Kutney-Lee et al., 2009). In our study the variable Recommend the Hospital was negatively correlated with patient safety variables with the exception of medication errors. This indicates the patient's willingness to recommend the hospital is related to patient safety. The majority of these associations were moderate to strong suggesting better patient outcomes may be related to better patient satisfaction. Noteworthy results as patient satisfaction is tied to hospital reimbursement (Centers for Medicare and Medicaid (CMS), 2011).

Limitations

As a cross sectional design, this study explored associations and does not definitively establish causality. The small sample size with only 15 units (with 2-23 responses per unit) and a total of 138 nurses across units limits generalizability. Nurse patient safety and satisfaction data was based on unit level means and is not collected based on the individual nurse. The nature of nursing as a collaborative processes makes patient safety and satisfaction data collection and individual nursing responses difficult to connect. Future studies exploring the relationship between nurse perceptions and patient outcomes should include multisite longitudinal studies with a large number of units. Another limitation of this study was the variables we were unable to control that may contribute to patient safety and satisfaction (i.e.: managing family and patient

expectations, interventions by the healthcare team, physician time with patients, new interventions like palliative or transitional care programs) (Agency for Healthcare Research and Quality, 2014).

Future studies should focus on a more robust sample size and perhaps comparisons unit-to-unit and hospital-to-hospital so that patient safety data can be better matched to nursing care quality. Also, the measurement of potential confounders such as data on staffing, nursing autonomy, patient safety programs, nurse satisfaction, and the accuracy of nurse perceptions of patient safety and care quality may help strengthen the associations that can be drawn. Standardization of basic nursing care measures like medication errors measures and reporting will allow better analysis and interpretation of results.

Clinical Implications

Better quality practice environments are associated with better working conditions for nurses and better patient outcomes. The association of WPB with the practice environment suggests WPB may be associated with poorer quality practice environments which may affect nurse satisfaction, nurse turnover (Lee et al., 2017), and patient safety (Roche et al., 2010). Nurse managers and administrators need to consider the potential effects the quality of the practice environment may have on the quality of care and hospital reimbursements. The associations between the practice environment and patient outcomes suggests nurse may need more autonomy and control over nursing practice structural and processes issues. Workload and staffing are elements in both the NAQR-US and the PES-NWI that nurse have very little control over in the practice environment. Nurse manager and administration efforts to improve civil discourse and respect for nurses may reduce WPB and improve the practice environment. There are studies that support positive practice environments are characterized by nurse autonomy and empowerment,

basic nursing values (Cicolini, Comparcini, & Simonetti, 2014; Fuentelsaz-Gallego et al., 2013; Spence Laschinger, Leiter, Day, Gilin-Oore, & Mackinnon, 2012). A positive practice environment is associated with positive patient and nurse outcomes (Ausserhofer et al., 2013). It may be time to allow nurses greater practice autonomy and authority as well as administrative control in hospitals that reflects nursing values.

Conclusion

This is one of the only studies to examine the impact of WPB on the practice environment and patient safety and patient satisfaction. We found significant and noteworthy correlations between the practice environment and WPB, the practice environment and RN experience with patient safety, and WPB and patient satisfaction. A large number of studies have identified an association between better quality practice environments and patient safety (Flynn et al., 2012; Kirwan et al., 2013; Swiger et al., 2018) Clearly, WPB has a negative association with the practice environment therefore improvements directed at reducing the prevalence of WPB may be associated with improvements in the practice environment and hopefully patient outcomes.

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CHAPTER 5 WORKPLACE FLOURISHING

This chapter explores the variable Workplace Flourishing. A work environment that lacks overt bullying behaviors may not be the same as an environment which nurtures human growth and well-being as expressed in the concept of workplace flourishing. Conceptually this variable fits within the original quality framework as a process variable. Whereas WPB reflects negative oppressive behaviors present in a nurses' work environment, workplace flourishing is not only the absence of bullying, but an attempt to describe an environment that respects and nourishes the individual to excel and grow in the work environment.

The concept of workplace flourishing is based on the theoretical work of Peggy Chinn's (2013) group processes for building community (Chinn). The concept of bullying has been discussed extensively in nursing and has been demonstrated to have a harmful effect on nurses. The absence of bullying may not be enough to assure an environment that nurtures human growth and well-being. The PEACE and Powers model emphasized group process that is based upon the emancipatory principles similar to those developed by Paulo Freire's (1970) approaches to education. The model was developed as a way to use group process based on emancipatory philosophies and critical feminist ideals for social action (Chinn & Falk-Rafael, 2015). The concepts expressed as PEACE stand for Praxis, Empowerment, Awareness, Cooperation, and Evolvement (Chinn, 2013) defined as:

- *Praxis*. Synchronous reflection and action.
- *Empowerment*. Growth and ability to enact one's will in the context of love and respect for others.
- *Awareness*. Growing knowledge of self and others.

- *Cooperation.* Commitment to group solidarity and integrity.
- *Evolution.* Commitment to deliberate growth and change.

The model has been applied to the work place to create healthy group interactions and promote health by reducing stress created by hostile workplace conflict. The model is based on six assumptions (Chinn & Falk-Rafael, 2015):

1. All human relationships involve the exercise of power.
2. One group or individual has privilege or greater power over others.
3. People seek space where they are free from power imbalances and competition, and where cooperation and peace prevail.
4. In typical Western societies, workplaces (public places) tend to be associated with “male power”, the ability to exercise one’s will in the world with that which is strong, powerful, and savvy.
5. Conflict is inevitable in all human relationships.
6. People recognize the value of cooperative ways of working together.

The authors of the Peace and Power process proposed group interactions are learned from experience. The cooperative and intentional use of peace powers shape the groups dialectic toward shared knowing and doing that shapes their actions. The mature group, following the ideals of the PEACE acronym will open the possibility of profound emancipatory change toward justice, empowerment, and well-being for all members. The outcome of PEACE including empowerment, growth, and action is not merely the absence of bullying or the influence of positive structural elements in the work environment as some may have assumed. The behaviors of a strong group process are evident in the tangible actions between group members.

There are few references to flourishing workplaces in the literature and these do not describe the PEACE and Power process. Flourishing was conceptually discussed as part of a limited number of studies with older adults. A doctoral study in Australia by Yalden and McCormack (2010) explored the concept of aging and dignity with long term care residents and staff (Yalden & McCormack, 2010). She described human flourishing as the ultimate aim of practice, based on the Aristotelian principle of Eudemonia. While discussed in Yalden's participative action research for her doctoral studies, it is integral to their descriptions of human dignity needed in healthcare. The use of the flourishing concept in this study was grounded in critical feminist values and constructs. Yalden's findings were supported by exploration of the concept of human flourishing in older adults by Sorrell (2017) where flourishing is a state of mental health that is beyond feeling good to a state of trying to live well (Sorrell, 2017).

The concept of workplace flourishing in nursing was identified in a clinical nurse advancement system at Rochester General Hospital in New York and described as part of the American Association of Critical Care Nurses (AACN) standards for an empowering nurse advancement system (Vollers, Hill, Roberts, Dambaugh, & Brenner, 2009). The authors perceive healthy practice environments include advancement systems that represent workplace flourishing.

The PEACE and Power as a theory of group process has evolved into a conceptual framework based on emancipatory principles. PEACE and Power as a conceptual model has since been used as a theoretical application to understand the role of the School Nurses role in the prevention of commercial sexual exploitation of children (Fraley & Aronowitz, 2017). This study used the model to explore power issues, awareness, and attitudes to guide nurses in identifying youth and families at risk for commercial sexual exploitation.

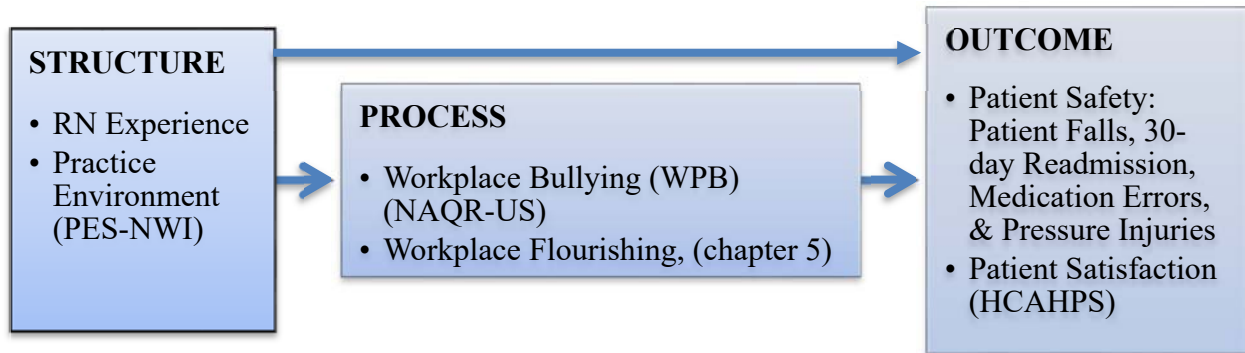
In this study, workplace flourishing was identified as a second process variable in the studies Quality framework described in chapters 3 and 4 and represented here in **Figure 5.1** with the inclusion of Workplace Flourishing. We were unable to find an instrument that measured this concept and the researcher created a new survey tool. In introducing a new instrument, construct validity, consideration of psychometric properties, and reliability were examined (Polit & Beck, 2008). The content validity of this new instrument was reviewed and approved by Peggy Chinn, nursing expert, theorist, and the author of the PEACE and Powers Model (Chinn, 2013). The questions strive to capture elements of a work environment that are perceived to foster shared power and growth among the work team. Consideration was given to assess the psychometric properties of the new instrument. The scale and target population are intentionally the same as those found in the NAQR-US. With this instrument, the researcher developed a parsimonious set of items that collectively measure a global variable over the prior six months. Each item is weighted based on frequencies associated with the number of work days in the preceding six months (never, 0; now and then, 2; monthly, 6; weekly, 25; and daily, 125). The items can then be summed to create an interval-level scale the same as the scale used in the NAQR-US, the range for this item was 0.5-125.

Conceptual Model for Study Variables

The variable, workplace flourishing, fits in the conceptual model presented in chapter 4 of this paper, the Quality Framework developed by Donabedian (1980). The framework identifies patient safety and quality variables as structure, processes, or outcomes of care. Workplace flourishing is a process variable that involves the interaction of providers in how they deliver care (Figure 5.1). The aim of including flourishing in this part of the study is to explore its

association with the other study variables of RN experience, practice environment, WPB, patient safety, and patient satisfaction.

Figure 5. 1. Conceptual Model for Present Study



Note: Study variables presented in Donabedian's Quality Framework

Methods

The study methods are described in greater detail in chapter 4. As part of an exploratory cross sectional design, this data was part of a larger study discussed in chapter 4. The study received approval from the institutional review board of Duquesne University. Access to the nurses and patient safety and satisfaction data was obtained through the hospital's quality and safety department that provided an honest broker to collect patient safety and satisfaction data.

Data Analysis

The data set was checked for errors and missing data prior to analysis. The data from the NAQR-US and Flourishing survey was recoded and weighted based on workday frequencies in the preceding six months with five possible responses; never (0), Now and Then (2), Monthly (6), Weekly (25), Daily (125) (Simons et al., 2011). The patient safety and satisfaction rates were supplied as unit level rates. The rates were applied to each nurse's response based on work unit association. Unit level patient safety rates were summarized to create an event rate per unit.

Descriptive statistics were generated to characterize the study participants, the practice environment, WPB, flourishing and patient safety and satisfaction. Bivariate associations were then examined with scatter plots and Pearson's r . Following verification of the assumptions, the WPB composite variable was severely and positively skewed and responsive to logarithmic transformation (Tabachnick & Fidell, 2013).

The third and fourth analysis explored the degree WPB or workplace flourishing explained the variation in patient safety and patient satisfaction. Regression analyses were performed to explore the relationship between environment and WPB on the outcome variables patient safety and patient satisfaction described in chapter 4. The impact of workplace flourishing on the study variables was then examined.

To avoid a false positive result, a Type I error, a post hoc Bonferroni correction was applied to significance levels as $p (\alpha_{\text{altered}} = .05/4 \text{ predictor variables}) \leq 0.0125$ in the regression analysis. A power analysis was performed to assess the likelihood of a Type II error, or false negative (Polit, 2010). The sample size of 138 is adequate for a power based on values of r between 0.17 and 0.26, with a power level between 0.40 to 0.80, medium to high, before the correction (Polit, 2010). This was verified in a post hoc power analysis after correcting the $\alpha \leq 0.017$ for our sample size ($n=138$) based on two predictors and an effect size. Regression ($R^2 = f^2 = 0.01-0.06$) yielded a power between 0.17-0.75, low to moderately high (Faul, Erdfelder, Buchner, & Lang, 2009).

Measures

Structure: Demographic and practice environment.

The structure data included a researcher designed demographic survey that assessed participant's eligibility as well as nurse characteristics like gender, sexual orientation, education,

and experience as a registered nurse (RN). The quality of the practice environment was assessed using the Practice Environment Survey of the Nursing Work Index (PES-NWI), a 31 item survey instrument that describes a set of organizational characteristics of better nurse practice environments (Lake, 2002; University of Pennsylvania, Center for Health Outcomes and Policy Research, 2017). The scale is a 4-point Likers from ‘strongly disagree’ to “strongly agree” for each item. The items are measure on subscales and a composite score is calculated by averaging the five subscales to produce a single score ranging from 1.50-3.75.

Process: Workplace bullying and flourishing.

The process elements included WPB and Workplace Flourishing. Workplace bullying was measured using the Negative Acts Questionnaire Revised for the United States. The 4-item instrument provides a measure of total bullying experience over the preceding six months. This instrument identifies four items that measure bullying to include harassment, incivility, and violence, without using those pejorative terms to influence the participant (Einarsen, Hoel, Zapf, & Cooper, 2011; S. R. Simons et al., 2011). The respondents indicate the degree of frequency to which they experienced the four behaviors in the past six months. The items are then summed to create an interval scale from 0-252.

No instrument was found that measured Workplace Flourishing and the researcher created a new survey tool. In introducing a new instrument, construct validity, consideration of psychometric properties, and reliability were examined (Polit & Beck, 2008). The content validity of this new instrument was reviewed and approved by Peggy Chinn, nursing expert, theorist, and the author of the PEACE and Powers Model (Chinn, 2013). Consideration was given to assess the psychometric properties of the new instrument. The scale and target population are intentionally the same as those found in the NAQR-US. With this instrument, the

researcher developed a parsimonious set of items that collectively measure a global variable over the prior six months. Each item is weighted based on frequencies associated with the number of work days in the preceding six months (never, 0; now and then, 2; monthly, 6; weekly, 25; and daily, 125). The items can then be summed to create an interval-level scale the same as the scale used in the NAQR-US, the range for this item was 0.5-125.

The inclusion of these four items allows the researchers to assess correlations between environments that are perceived to have high levels of bullying and those that perceive the work environment as supporting empowerment and flourishing among the nurses. These exploratory items are based on the same scale used in the NAQR-US. Analysis of the new instrument includes an assessment of internal consistency and reliability analysis.

Measures of internal consistency and reliability analysis. The instrument has only four items. More items would lend to a factor analysis related to depth and breadth of concepts explores and maybe worth considering for future instrument development. The standardized Cronbach's Alpha on the flourishing scale was 0.71 ($n=138$) is considered an adequate indicator of reliability (Lance et al., 2006). **Table 5.1** displays the flourishing scale reliability Each item if deleted from the scale displayed a close range of lower Cronbach's Alpha than the overall scale indicating each item contributes to the overall scale and have about equal value to the overall scale. The scale has less reliability if any one item is deleted. The highest item, if removed, is "Given support by colleagues in improving your work performance" ($r=0.586$) and the lowest is "Being asked for your opinion or consultation" ($r=0.453$). All items are closely correlated within the scale indicating each item as strong predictability for the other items as confirmed by the R^2 correlation scores.

Table 5. 1. Flourishing Scale Reliability

Item-Total Statistic (<i>n</i> =138)	Scale Mean if Item Deleted	Corrected Item-Total Correlation*	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Given support by colleagues in improving your work performance.	125.18	.586	.375	.611
Recognized for your contribution to the work.	146.32	.574	.354	.645
Being asked for your opinion or consultation.	121.59	.453	.221	.695
Being offered help or support with challenging workloads.	105.30	.476	.238	.688

Notes: Overall instrument Cronbach's α based on sample before unit reduction $\alpha=0.77$, (*n*=193), after unit reduction $\alpha=0.71$ (*n*=138),

Table 5.2 shows the inter-item correlation matrix. The range of Pearson's *r* in the inter-item correlation matrix (**Table 5.2**) found scores between 0.311 and 0.537, values near the range of those found with good reliability scales, usually between 0.3-0.5 (Lance et al., 2006).

Table 5. 2 Flourishing Scale: Inter-Item Correlation Matrix

Items	1	2	3	4
1. Given support by colleagues in improving your work performance.	1	.537	.377	.449
2. Recognized for your contribution to the work.	.537	1	.418	.371
3. Being asked for your opinion or consultation.	.377	.418	1	.311
4. Being offered help or support with challenging workloads.	.449	.371	.311	1

Notes: Pearson's *r* values for 2-tailed.

Outcomes: Patient safety and satisfaction.

Patient safety data was collected at the unit level within the agency and reported over the prior six-month period matching the recollection period of the nurse survey. The events are nurse sensitive items required by CMS (Centers for Medicare and Medicaid (CMS), 2011) for hospitals to report. Items include; patient falls, 30-day readmission rates, medication errors, and pressure

injuries. The patient safety data was collected as an overall incident rate by patient care unit per 1000 patient days.

Patient satisfaction data was applied using the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, a 32-item, nationally standardized survey of patients' perspectives of hospital care. Press Ganey® as an agent for the hospital, collects and reports patient interviews within 48 hours of discharge. The patient's perception of their hospital experience is measured on eight domains and two global ratings of overall hospital care. The two global ratings of hospital care were used in this study, Overall Hospital rating and willingness to Recommend the Hospital.

Results

The population characteristics are reported in table 4.1. There were 138 responses out of a possible 1,296 nurses at the hospital that met eligibility criteria. Eligibility criteria are more fully discussed in chapter four *supra*. Table 5.1 indicates the unit response to Flourishing means by unit. The units with the highest flourishing score were Orthopedics ($m=82.25$) and Maternity ($m=58.61$). The units with the lowest scores were Oncology ($m=25.36$) and Cardiology ($m=27.47$).

Table 5. 3. Responses on Nurse Survey and Patient Data by Patient Care Units

Nursing Unit	Nurse survey						Unit level measures	
	Nurses		Structure		Process		Patient Outcome Composites	
	<i>f</i>	%	RN Exp. (<i>m</i>)	PE (PES-NWI) (<i>m</i>)	WPB (NAQR-US) (<i>m</i>)	Flourish (<i>m</i>)	Patient Safety (Σ)	Patient Satisfaction (<i>m</i>)
Cardiology	16	11.6	4.0	2.79	24.94	27.47	4.79	0.50
Cardiothoracic	9	6.5	17.0	2.89	34.33	51.54	3.92	0.83
Labor & Delivery	6	4.3	18.8	3.17	3.67	53.58	1.49	0.66
Maternity	7	5.1	5.8	2.62	13.43	58.61	1.15	0.78
Medical ICU	13	9.4	7.1	2.71	27.92	43.94	5.34	0.80
Medicine	7	5.1	18.9	2.58	34.29	40.50	8.87	0.66
Neonatal ICU	11	8.0	14.1	3.05	4.55	37.86	4.23	0.68
Neurosciences	9	6.5	17.9	2.77	6.33	30.31	4.85	0.80
Oncology	7	5.1	17.7	2.73	15.00	25.36	6.13	0.75
Orthopedics	2	1.4	16.5	2.80	4.00	82.25	4.62	0.78
Pediatrics	10	7.2	7.5	2.84	43.40	56.43	4.58	0.74
Psychiatry	9	6.5	8.8	2.64	34.33	30.67	9.54	0.77
Surgery	9	6.5	22.3	2.50	25.11	55.50	4.23	0.74
Surgical ICU	23	16.7	24.0	2.74	9.43	37.82	4.58	0.70
<i>m</i>	9.38	6.8	14.3	2.77	20.05	41.53	4.89	0.74
<i>min</i>	2	1.4	4.0	1.50	0.00	0.50	1.15	0.66
<i>max</i>	23	16.7	24.0	3.79	252.00	125.00	9.54	0.83
<i>SD</i> ±			12.9	0.40	38.49	37.12	2.03	0.11

Note: *n*=138, *f*=frequency of nurse responses per unit, *m*=mean, RN Experience= nursing experience as an RN in years, Practice Environment is the PES-NWI composite score, WPB=Workplace bullying composite score from the NAQR-US, Flourish=Flourishing composite score, Σ =Composite safety score is the sum of patient falls, 30-day readmission rates, medication errors, and pressure injuries rates per 1000 patient days; *SD*= Standard deviation. Composite patient satisfaction is average of the two universal patient satisfaction scores; overall rating and recommend the hospital.

The flourishing items in **Table 5.4** show the frequency of event occurrences. No one indicated they never experienced any of the support items. One respondent indicated they had experienced all items on a daily basis. In this population, the flourishing events occur weekly or more 50% of the time. The most commonly occurring daily event was “Being offered help or support with challenging workloads”. The lowest occurring event was “Recognized for your contribution to the work”, where 53.6 percent reported they experienced this attribution never to now and then.

Table 5. 4. Flourishing Subscale Mean, Standard Deviation, and Frequency

Scale <i>f</i> (%)	<i>m</i>	<i>SD</i>	Never 0	Now and then 2	Monthly 6	Weekly 25	Daily 125	Total
Given support by colleagues in improving your work performance.	40.95	51.87	7 (5.1)	46 (33.3)	14 (10.1)	34 (24.6)	37 (26.8)	138
Recognized for your contribution to the work.	19.81	37.80	10 (7.2)	64 (46.4)	26 (18.8)	23 (16.7)	15 (10.9)	138
Being asked for your opinion or consultation.	44.54	52.38	2 (1.4)	38 (27.5)	20 (14.5)	38 (27.5)	40 (29.0)	138
Being offered help or support with challenging workloads.	60.83	57.10	3 (2.2)	36 (26.1)	8 (5.8)	31 (22.5)	60 (43.5)	138
Sum of Scale	166.13	148.49	22 (4.0)	184 (33.3)	68 (12.3)	126 (22.8)	152 (27.5)	552
Incidence (rate)			0	368	408	3150	19,000	22,926

Notes: *n*=138, Scale Cronbach's α = 0.721, 4 items, * α =Cronbach's α if item deleted. Scale shows frequency and (percentages). 125 work days in six months; 183.41 incidents per day.

Associations between Practice Environment, Workplace Bullying and Flourishing, and Patient Outcomes

The correlation matrix shown in **Table 5.5** includes means, standard deviations, and Pearson's *r* correlations between RN Experience, the Practice Environment, Workplace Bullying, Workplace Flourishing, patient safety and patient satisfaction. When workplace flourishing is added to the matrix, there is little change in the results. It is noteworthy that flourishing associations patient safety or patient satisfaction were very small ($r = -0.02$ to $r = -0.013$). Flourishing and RN Experience ($r = -0.11$) and WPB ($r = -0.08$) were very weak. However, the correlation with the Practice Environment was fairly strong ($r = 0.44$) and highly significant even after post hoc testing.

Table 5. 5. Correlation of Study Variables

Variables	<i>m</i>	<i>SD</i>	EX 1	PE 2	WPB 3	FL 4	PF 5	30 6	ME 7	PI 8	HS 9	RH 10
STRUCTURE												
1. RN Experience (EX)	14.74	12.18	1									
2. Practice Environment (PE)	2.78	0.40	-0.02	1								
PROCESS												
3. WPB	0.93	0.55	-0.01	-0.26 **	1							
4 Flourishing (FL)	41.53	37.12	-0.11	0.44 ***	-0.08	1						
OUTCOME: Patient Safety												
5. Patient Falls (PF)	2.44	1.99	-0.08	-0.21 *	0.14	-0.12	1					
6. 30-Day Readmissions (30)	0.09	0.04	-0.26 *	-0.21 *	0.19	-0.13	0.47 ***	1				
7. Medication Errors (ME)	1.92	0.98	0.21 *	0.13	0.02	0.02	-0.32 ***	-0.16	1			
8. Pressure Injuries (PI)	0.35	0.40	-0.16	-0.15	0.14	-0.02	0.34 ***	0.69 ***	-0.45 ***	1		
OUTCOME: Patient Satisfaction												
9. Hospital Satisfaction (HS)	0.73	0.09	-0.12	-0.09	0.02	-0.07	0.25 **	0.25 **	0.28 **	-0.24 *	1	
10. Recommend Hospital (RH)	0.78	0.03	0.05	0.17	-0.24 *	0.03	-0.22 *	-0.48 ***	0.07	-0.63 ***	0.42 ***	1

Note: Pearson correlation (2-tailed), *m*=mean, *SD*=Standard Deviation, *P* values after Bonferroni correction ($p/4_{predictor}$) * $p < 0.0125$, ** $p < 0.0025$, *** $p < 0.00025$.

Associations of Nurse Experience, Practice Environment, Workplace Bullying, Workplace Satisfaction, with Patient Safety and Patient Satisfaction

Only a very small amount of variance in patient safety and satisfaction variables were attributed to the variables in this study and little contribution was evidence by Workplace flourishing when added to the group of variables.as evidence in **Table 5.6**. A standard multiple regression analysis was performed to examine the relationship among study variables with the inclusion of Workplace Flourishing in the six patient outcomes of patient safety and satisfaction. When compared with the models in Chapter 4, there is very little change. The variance and range remains small, from the lowest found variance found in Overall Satisfaction ($R^2 = 0.027$), to the highest found with 30-Day Readmission ($R^2 = -0.135$). The Flourishing variable did not significantly contribute to any outcome variables.

Table 5. 6. Multiple Regression Models with Flourishing

Models	<i>b</i>	<i>SE</i>	β	<i>t</i>	Sig.
Patient Safety Models					
7. Patient Falls: $R^2=.061$, Adjusted $R^2=.032$, $F(4,137)=2.148$, $p=.078$					
RN Experience	-.015	.014	-.090	-1.070	.287
Practice Environment	-.842	.485	-.168	-1.737	.085
WPB	.310	.311	.086	.997	.313
Flourishing	-.003	.005	-.048	-.513	.609
8. 30-Day Readmission: $R^2=.135$, Adjusted $R^2=.109$, $F(4,137)=5.206$, $p=.001^{**}$					
RN Experience	-.001	.000	-.267	-3.294	.001 **
Practice Environment	-.015	.010	-.133	-1.430	.155
WPB	.011	.007	.144	1.727	.086
Flourishing	.000	.000	-.093	-1.023	.308
9. Medication Errors: $R^2=.068$, Adjusted $R^2=.040$, $F(4,137) = 2.426$, $p=.051$					
RN Experience	.017	.007	.214	2.540	.012 *
Practice Environment	.403	.239	.163	1.689	.094
WPB	.103	.154	.058	.670	.504
Flourishing	-.001	.002	-.021	-.228	.820
10. Pressure Injuries: $R^2=.059$, Adjusted $R^2=.031$, $F(4,137) = 2.103$, $p=.084$					
RN Experience	-.005	.003	-.157	-1.957	.066
Practice Environment	-.141	.097	-.141	-1.456	.148
WPB	.074	.062	.103	1.177	.241
Flourishing	.00	.001	.037	.388	.698
Patient Satisfaction Models					
11. Overall Satisfaction: $R^2=.027$, Adjusted $R^2=-.002$, $F(4,137)=0.919$, $p=.455$					
RN Experience	-.001	.001	-.131	-1.525	.130
Practice Environment	-.022	.020	-.098	-1.115	.267
WPB	-.002	.014	-.008	-.094	.926
Flourishing	.000	.000	-.052	-.540	.590
12. Recommend Hospital: $R^2=.073$, Adjusted $R^2=.045$, $F(4,137)=2.630$, $p=.037$					
RN Experience	.000	.000	.048	.570	.569
Practice Environment	.011	.008	.137	1.422	.157
WPB	-.012	.005	-.206	-2.382	.019
Flourishing	-4.072	.000	-.048	-.508	.612

Notes: *b*=unstandardized beta coefficients, *SE*=standard error, β =Standardized beta coefficients, Sig.=significance, * $p<0.0125$, ** $p<0.0025$, *** $p<0.00025$

Discussion

This is the first study to explore workplace flourishing in the acute care nursing setting in the context of the practice environment, workplace bullying, and patient outcomes. The aim was to extend this exploration beyond the important negative consequences of WPB and to measure the characteristics of an enriched workplace characterized by growth and receptive to change.

There were no substantial or significant associations between workplace flourishing and patient safety or patient satisfaction. There appears to be no direct connection between this higher ideal of professional thriving, growth, professional and intellectual prosperity with the product of the nurses work as patient safety and patient satisfaction as may be attributed to Aristotelian philosophy of flourishing as striving for excellence and virtue (Kraut, 2017). These findings may mean we have not captured the benefits to patients as the result of better nursing work environments in acute care settings

A positive practice environment is negatively associated with WPB and positively associated with workplace flourishing. The significant and positive association between flourishing and the practice environment suggests that healthy practice environments as measured by the PES-NWI have similarities with work place flourishing characteristics. The flourishing elements focus on interpersonal interaction which is capture in very different ways in the PES-NWI scale. Further exploration of what these instruments measure and better identification and understanding of the conceptual overlaps may help us better understand the structure and process variables of the nurses practice environment.

The idea that WPB and workplace flourishing are on a continuum is not supported by these findings. There were very poor associations between these two variables. Our results suggest the absence of WPB is not a positive health and flourishing work environment. These two concepts

are not at opposite ends of a continuous scale but more likely separate and distinct concepts. It may be possible to have both elements present in the same environment as these results suggest.

Strengths, Limitations, Recommendations

This study adds a modern application on the Aristotelian idea of flourishing, personal and professional growth through change in the nurse practice environment. The PEACE and Power model grounded in emancipatory feminist theory may offer a framework for future studies. This is an early exploratory investigation of the concepts and related behaviors associated with fulfilling professional work life with ideals associate with critical social theory and emancipatory feminist philosophies.

There are limitations to the study as are mentioned in Chapter 4. The sample was a convenience sample at only one agency. Patient safety data was only collected from inpatient units and there were a number of outpatient units in the facility excluded from the patient outcome data. The nurse data was self-reported over the prior six-months and therefor possible subject to selective memory, telescoping, and attribution or exaggeration.

The lack of data on patient outcomes that are associated with the work of the nurse presents a challenge to nurse researchers who seek to connect the process of nursing with outcomes in patient care. The ability to control for additional confounding variables such as staffing levels, standardized definitions of medication errors, patient acuity, Magnet status, work intensity, nursing autonomy, nurse satisfaction, nurses' perceptions of care quality and nurse staffing mix would strengthen the findings. Access to the hospital and patient safety data is dependent on the hospital to share that information which may not be readily available We found hospitals reluctant to have nursing research on the subject of the quality of the practice environment and

workplace bullying. The agencies were very reluctant to share patient safety data. Other hospitals within the region refused to be study sites.

Suggestions for future work would include developing a better connection between nursing results and patient outcomes. This suggests using hospital-to-hospital comparisons or unit-to-unit comparison which present their own limitations. Identification of work environments that engage with the PEACE and Power model might help explore the nature of concept in the workplace. There is opportunity to explore those variables that may be sensitive to an empowered and enriched work environment. Future studies on instrument development and conceptual analysis will help improve the research and refine the concepts. Further discussion, reflection, and application of the concept of flourishing may help to empower nurses, and clarify the significance of the nurse's role in healthcare.

Conclusion

Workplace flourishing is a new concept that represents an empowered professional nursing workforce achieving change and promoting high-levels of wellness and human potential. The introduction of this concept into a discussion about workplace bullying provides an aspirational context that moves nurses away from victimization characterizations to empowered, aware, professionals focused on human potential of our patients and our professional relationships. These principles align with nursing professional values of caring, human dignity, autonomy and social justice. The process of PEACE and Power are actions that improve nurse interactions, growth, and provides a path toward professional flourishing.

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APPENDIX A: COMBINED SURVEY INSTRUMENT

Combined Survey Instrument

(PES-NWI, NAQR-US, & Workplace Flourishing)

Anonymity and disclosure statement

You are invited to participate in a study being conducted by researchers at Duquesne University School of Nursing. As a participant, you are asked to complete an online survey about your experience and perceptions of the work environment.

There are studies that have examined the effect of the work environment on nurses but little is known about the effect of nurse's perceptions of the work environment on patient care. We would like to develop a deeper understanding of the ways the work environment impacts patient safety.

If you have worked as a nurse on your current unit for the last six months, we invite you to follow the link below to answer 55 questions about your perceptions of the work environment, your work experience, and values. The study should take 15-30 minutes. We believe that the nurse's work environment is a significant factor in providing safe patient care. Your contribution to this study will help us understand this important relationship.

Participation in this study is anonymous. Your responses will not be shared with your employer and your employer will not have access to original data. Individual responses will not be linked to your personal information. You indicate your consent to participate in this study by clicking on the "I agree" button below and the survey will begin. While we hope you will complete the entire survey, you may exit the survey at any time.

If you have additional questions about the survey, please do not hesitate to contact principle investigator, Noreen M. Houck, PhD candidate, RN by at XXX-XXX-XXXX, or email houcknm@plattsburgh.edu.

Before exiting the survey, you will be invited to follow a link to a third party to be entered into a drawing for a gift card.

Please indicate your agreement with the following statement:

I freely give my consent to participate in this survey.

I agree (move on to the survey)

I do not agree (exit from the survey)

The practice environment scale of the nursing work index (PES-NWI)

Directions: For each item, please indicate the extent to which you agree that the item is PRESENT IN YOUR CURRENT JOB. Indicate your degree of agreement by circling the appropriate number. 1 Strongly Agree, 2 Agree, 3 Disagree, 4 Strongly Disagree.

1. Adequate support services allow me to spend time with my patients.
2. Physicians and nurses have good working relationships.
3. A supervisory staff that is supportive of the nurses
4. Active staff development or continuing education programs for nurses.
5. Career development/clinical ladder opportunity.
6. Opportunity for staff nurses to participation in policy decisions.
7. Supervisors use mistakes as learning opportunity, not criticism.
8. Enough time and opportunity to discuss patient care problems with other nurses.
9. Enough registered nurses to provide quality patient care.
10. A nurse manager who is a good manager and leader.
11. A chief nursing officer who is highly visible and accessible to staff.
12. Enough staff to get the work done.
13. Praise and recognition for a job well done.
14. High standards of nursing care are expected by the administration.
15. A chief nurse officer equal in power and authority to other top-level hospital executives.
16. A lot of team work between nurses and physicians.
17. Opportunities for advancement.
18. A clear philosophy of nursing that pervades the patient care environment.
19. Working with nurses who are clinically competent.
20. A nurse manager who backs up the nursing staff in decision-making, even if the conflict is with a physician.
21. Administration that listens and responds to employee concerns.
22. An active quality assurance program.
23. Staff nurses are involved in the internal governance of the hospital (e.g., practice and policy committees).
24. Collaboration (joint practice) between nurses and physicians.
25. A preceptor program for newly hired RNs.
26. Nursing care is based on a nursing, rather than a medical, model.
27. Staff nurses have the opportunity to serve on hospital and nursing committees.
28. Nursing administrators consult with staff on daily problems and procedures.
29. Written, up-to-date nursing care plans for all patients.
30. Patient care assignments that foster continuity of care, i.e., the same nurses care for the patient from one day to the next.
31. Use of nursing diagnoses.

Negative acts questionnaire revised – US (NAQR-US)

Directions: The following behaviors are often seen as examples of negative behaviors in the workplace. Over the last six months, how often have you been subjected to the following negative acts at work? Please indicate the number that best corresponds with your experience over the last six months: 1 never, 2 now and then, 3 monthly, 4 weekly, 5 daily.

- 32. Someone withholding information which affects your performance.
- 33. Being humiliated or ridiculed in connection with your work.
- 34. Being ignored or excluded.
- 35. Being exposed to an unmanageable workload.

Workplace flourishing questionnaire

Directions: The following behaviors are often seen as examples of encouraging behaviors in the workplace. Over the last six months, how often have you been subjected to the following encouraging acts at work? Please indicate the number that best corresponds with your experience over the last six months: 1 never, 2 now and then, 3 monthly, 4 weekly, 5 daily.

- 36. Given support by colleagues in improving your work performance.
- 37. Recognized for your contribution to the work.
- 38. Being asked for your opinion or consultation.
- 39. Offered help or support with challenging workloads.

Demographics

- 40. Select the response to each item you best identify yourself:
- 41. Gender: female, male, transgender, other
- 42. Age in years: your age at your last birthday:
- 43. Which type of nursing degree or nursing credential qualified you for your first U.S. RN license? (select one)
 - a. Diploma program
 - b. Associate degree
 - c. Bachelor's degree
 - d. Master's degree
 - e. Doctorate
 - f. Other degrees
- 44. In what month and year did you graduate from this nursing program?
Month: Year:
- 45. Please indicate all post-high-school degrees you received before starting your initial RN education program (mark all that apply)

- a. None
 - b. Associate degree
 - c. Bachelor's degree
 - d. Master's degree
 - e. Doctorate
 - f. Other
46. What was your field of study for your highest degree?
- a. Health related field
 - b. Biological or physical science
 - c. Business or management
 - d. Education
 - e. Liberal arts, social science, or humanities
 - f. Law
 - g. Computer science
 - h. Social work
 - i. Other non-health related field
47. Have you ever been licensed as a licensed practical nurse (LPN) or licensed vocational nurses (LVN) in the U.S.? yes, no
48. Years as an UAP or nurses aid
49. Years as an LPN
50. Months or Years in present position
51. Position title:
52. Facility size:
53. Which one of the following best describes your employment setting of the principal nursing position you hold: Unit/department type and designation: (labor and delivery, ICU, ED, PACU, orthopedics, renal, general medical, general surgical, outpatient cardiac,
54. Do you plan to leave your principal nursing position?
- a. Yes, will leave within the next 12 months
 - b. Yes, in 1 – 3 years
 - c. No plans to leave within the next 3 years
 - d. Undecided
55. If you plan to leave your current position, do you plan to work in nursing after you leave this position (mark one)
- a. I have no intention to leave this position
 - b. Yes, I plan to work in nursing
 - c. Yes, I plan to work at this agency in another nursing position
 - d. Yes, I plan to go to school in nursing field
 - e. No, I plan to retire
 - f. No, I plan to seek non nursing employment

The end of the survey.

APPENDIX B: PERMISSION TO USE INSTRUMENTS

From: Simons, Shellie R
Sent: Monday, January 16, 2012 3:29 PM
To: Noreen Houck
Subject: RE: Dissertation work

Dear Noreen-

This email confirms that you have permission to use the NAQR-US, the four item instrument to measure workplace bullying in an online survey.

I do ask that you share any findings from your study with me. Otherwise, please let me know if I can assist you in any way. The best way to reach me is at home at XXX-XXX-XXXX.

Good luck, take care and stay in touch- Shellie

From: AB
Sent: Monday, July 09, 2012 10:35 AM
To: Noreen Houck
Subject: RE: PES-NWI

Dear Noreen:

Thank you for your inquiry. I am replying on behalf of Dr. Lake. Enclosed, please find the instrument, scoring instructions, an article containing PES-NWI scores for ANCC Magnet hospitals from 1998 in Table 1, and a Warshawsky & Haven article you may find useful.

Dr. Lake's permission is not needed as the instrument is in the public domain due to its endorsement by the National Quality Forum in 2004 and re-endorsement in 2009:http://www.qualityforum.org/Projects/n-r/Nursing-Sensitive_Care_Measure_Maintenance/Nursing_Sensitive_Care_-/ However, if you prefer to have Dr. Lake's permission, this email serves as her permission.

Please direct any reply to Dr. Lake at elake@nursing.upenn.edu. If you need anything else, feel free to write to us again.

Sincerely,

A B
Administrative Coordinator
Center for Health Outcomes and Policy Research
University of Pennsylvania School of Nursing
378 Fagin Hall

APPENDIX C: HCAHPS Survey, Sample Cover letters, and Scoring Directions

Survey Instructions

- ◆ You should only fill out this survey if you were the patient during the hospital stay named in the cover letter. Do not fill out this survey if you were not the patient.
- ◆ Answer all the questions by checking the box to the left of your answer.
- ◆ You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow with a note that tells you what question to answer next, like this:

Yes

No → *If No, Go to Question 1*

You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.

Please note: Questions 1-25 in this survey are part of a national initiative to measure the quality of care in hospitals. OMB #0938-0981

Please answer the questions in this survey about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

YOUR CARE FROM NURSES

1. During this hospital stay, how often did nurses treat you with courtesy and respect?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

2. During this hospital stay, how often did nurses listen carefully to you?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

3. During this hospital stay, how often did nurses explain things in a way you could understand?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

4. During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always
- 9 I never pressed the call button

YOUR CARE FROM DOCTORS

5. During this hospital stay, how often did doctors treat you with courtesy and respect?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

6. During this hospital stay, how often did doctors listen carefully to you?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

7. During this hospital stay, how often did doctors explain things in a way you could understand?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

THE HOSPITAL ENVIRONMENT

8. During this hospital stay, how often were your room and bathroom kept clean?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

9. During this hospital stay, how often was the area around your room quiet at night?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

YOUR EXPERIENCES IN THIS HOSPITAL

10. During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or in using a bedpan?

- 1 Yes
- 2 No → If No, Go to Question 12

11. How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

12. During this hospital stay, did you need medicine for pain?

- 1 Yes
- 2 No → If No, Go to Question 15

13. During this hospital stay, how often was your pain well controlled?

- 1 Never
- 2 Sometimes
- 3 Usually
- 4 Always

14. During this hospital stay, how often did the hospital staff do everything they could to help you with your pain?

- 1 Never
- 2 Sometimes
- 3 Usually

4 Always

15. During this hospital stay, were you given any medicine that you had not taken before?

1 Yes

2 No → If No, Go to Question 18

16. Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?

1 Never

2 Sometimes

3 Usually

4 Always

17. Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?

1 Never

2 Sometimes

3 Usually

4 Always

WHEN YOU LEFT THE HOSPITAL

18. After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

1 Own home

2 Someone else's home

3 Another health

facility → If Another, Go to Question 21

19. During this hospital stay, did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?

1 Yes

2 No

20. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

1 Yes

2 No

OVERALL RATING OF HOSPITAL

Please answer the following questions about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

21. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?

0 0 Worst hospital possible

1 1

2 2

3 3

4 4

5 5

6 6

7 7

8 8

9 9

10 10 Best hospital possible

22. Would you recommend this hospital to your friends and family?

- 1 Definitely no
- 2 Probably no
- 3 Probably yes
- 4 Definitely yes

UNDERSTANDING YOUR CARE WHEN YOU LEFT THE HOSPITAL

23. During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.

- 1 Strongly disagree
- 2 Disagree
- 3 Agree
- 4 Strongly agree

24. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.

- 1 Strongly disagree
- 2 Disagree
- 3 Agree
- 4 Strongly agree

25. When I left the hospital, I clearly understood the purpose for taking each of my medications.

- 1 Strongly disagree
- 2 Disagree
- 3 Agree
- 4 Strongly agree
- 5 I was not given any medication when I left the hospital

ABOUT YOU

There are only a few remaining items left.

26. During this hospital stay, were you admitted to this hospital through the Emergency Room?

- 1 Yes
- 2 No

27. In general, how would you rate your overall health?

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor

28. In general, how would you rate your overall mental or emotional health?

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor

29. What is the highest grade or level of school that you have completed?

- 1 8th grade or less
- 2 Some high school, but did not graduate
- 3 High school graduate or GED
- 4 Some college or 2-year degree
- 5 4-year college graduate
- 6 More than 4-year college degree

30. Are you of Spanish, Hispanic or Latino origin or descent?

- 1 No, not Spanish/Hispanic/Latino
- 2 Yes, Puerto Rican
- 3 Yes, Mexican, Mexican American, Chicano
- 4 Yes, Cuban
- 5 Yes, other Spanish/Hispanic/Latino

31. What is your race? Please choose one or more.

- 1 White
- 2 Black or African American
- 3 Asian
- 4 Native Hawaiian or other Pacific Islander
- 5 American Indian or Alaska Native

32. What language do you mainly speak at home?

- 1 English
- 2 Spanish
- 3 Chinese
- 4 Russian
- 5 Vietnamese
- 6 Some other language (please print): _____

THANK YOU

Please return the completed survey in the postage-paid envelope.

[NAME OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

[RETURN ADDRESS OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

Questions 1-22 and 26-32 are part of the HCAHPS survey and are works of the U.S. Government. These HCAHPS questions are in the public domain and therefore are NOT subject to U.S. copyright laws. The three Care Transitions Measure® questions (Questions 23-25) are copyright of The Care Transitions Program® (www.caretransitions.org).

Sample Initial Cover Letter for the HCAHPS Survey

[HOSPITAL LETTERHEAD]

[SAMPLED PATIENT NAME]

[ADDRESS]

[CITY, STATE ZIP]

Dear [SAMPLED PATIENT NAME]:

Our records show that you were recently a patient at [NAME OF HOSPITAL] and discharged on [DATE OF DISCHARGE]. Because you had a recent hospital stay, we are asking for your help. This survey is part of an ongoing national effort to understand how patients view their hospital experience. Hospital results will be publicly reported and made available on the Internet at www.medicare.gov/hospitalcompare. These results will help consumers make important choices about their hospital care, and will help hospitals improve the care they provide.

Questions 1-25 in the enclosed survey are part of a national initiative sponsored by the United States Department of Health and Human Services to measure the quality of care in hospitals.

Your participation is voluntary and will not affect your health benefits.

We hope that you will take the time to complete the survey. Your participation is greatly appreciated. After you have completed the survey, please return it in the pre-paid envelope. Your answers may be shared with the hospital for purposes of quality improvement. [OPTIONAL: You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.]

If you have any questions about the enclosed survey, please call the toll-free number 1-800-xxx-xxxx. Thank you for helping to improve health care for all consumers.

Sincerely,

[HOSPITAL ADMINISTRATOR]

[HOSPITAL NAME]

Note: The OMB Paperwork Reduction Act language must be included in the mailing. This language can be either on the front or back of the cover letter or questionnaire, but cannot be a separate mailing. The exact OMB Paperwork Reduction Act language is included in this appendix. Please refer to the Mail Only, and Mixed Mode sections, for specific letter guidelines.

Sample Follow-up Cover Letter for the HCAHPS Survey

[HOSPITAL LETTERHEAD]
[SAMPLED PATIENT NAME]
[ADDRESS]
[CITY, STATE ZIP]

Dear [SAMPLED PATIENT NAME]:

Our records show that you were recently a patient at [NAME OF HOSPITAL] and discharged on [DATE OF DISCHARGE]. Approximately three weeks ago we sent you a survey regarding your hospitalization. If you have already returned the survey to us, please accept our thanks and disregard this letter. However, if you have not yet completed the survey, please take a few minutes and complete it now.

Because you had a recent hospital stay, we are asking for your help. This survey is part of an ongoing national effort to understand how patients view their hospital experience. Hospital results will be publicly reported and made available on the Internet at www.medicare.gov/hospitalcompare. These results will help consumers make important choices about their hospital care, and will help hospitals improve the care they provide.

Questions 1-25 in the enclosed survey are part of a national initiative sponsored by the United States Department of Health and Human Services to measure the quality of care in hospitals. Your participation is voluntary and will not affect your health benefits. Please take a few minutes and complete the enclosed survey. After you have completed the survey, please return it in the pre-paid envelope. Your answers may be shared with the hospital for purposes of quality improvement. [OPTIONAL: You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.] If you have any questions about the enclosed survey, please call the toll-free number 1-800-xxx-xxxx. Thank you again for helping to improve health care for all consumers.

Sincerely,

[HOSPITAL ADMINISTRATOR]
[HOSPITAL NAME]

Note: The OMB Paperwork Reduction Act language must be included in the mailing. This language can be either on the front or back of the cover letter or questionnaire, but cannot be a separate mailing. The exact OMB Paperwork Reduction Act language is included in this appendix. Please refer to the Mail Only, and Mixed Mode sections, for specific letter guidelines.

OMB Paperwork Reduction Act Language

The OMB Paperwork Reduction Act language must be included in the survey mailing. This language can be either on the front or back of the cover letter or questionnaire, but cannot be a separate mailing. The following is the language that must be used:

English Version

“According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0938-0981. The time required to complete this information collected is estimated to average 8 minutes for questions 1-25 on the survey,

including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate(s) or suggestions for improving this form, please write to: Centers for Medicare & Medicaid Services, 7500 Security Boulevard, C1-25-05, Baltimore, MD 21244-1850.”

APPENDIX D: IRB APPROVALS

I. Protocol Exemption Certification: Agency

TO: Noreen Houck

FROM: Gale Weld, Research Review Administrator

DATE OF CERTIFICATION: 18-Aug-2014

SUBJECT: CHRMS: 15-073 The Associations among Nurses' Perception of the Practice Environment and Interpersonal Relationships with Patient Safety.

According to federal regulations, certain types of research activities are "exempt" from formal Committee review and approval, however, University policy requires that all projects which involve human subjects be submitted to the Committee office for exemption determination.

Following such a review of your project, it has been determined that it qualifies for exemption, as indicated below, under Section 45 CFR 46.101(b) of the Federal Policy for the Protection of Human Subjects.

Exemption Category: 2

"Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior, unless: (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation."

It is University policy to require all research to be conducted in accordance with the Belmont Report, which sets forth ethical principles for research involving humans as subjects. A copy of this report is available on our website under Rules, Regulations, and Guidance.

Modifications may affect the original determination of exemption, therefore, you must submit any proposed project modifications which affect human subjects for review prior to implementation (i.e. surveys, questionnaires, changes to on-line interventions, etc.).

This exemption is effective for the duration of the project UNLESS modifications are made that affect the original determination of exemption.

II. Protocol Exemption: University

Duquesne University IRB Protocol #2014-07-5; Approved: 7-31-2014