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Incorporating Just Culture Principles into Clinical Learning Experiences

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Incorporating Just Culture Principles into Clinical Learning Experiences

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Abstract

Background: Although nursing student's confidence regarding patient safety is influenced by both clinical faculty and environments in which they learn, faculty seemed to have the most influence in shaping student's attitudes surrounding a culture of safety.

Objectives: To explore and support faculty culture of safety practices that promote meaningful learning experiences for students surrounding patient safety in clinical learning environments.

Methods: An embedded mixed method design was utilized for this pilot study. Quantitative data was collected both pre- and post-semester utilizing an adapted Health Professional Education in Patient Safety Survey, and post-semester qualitative data further expanded on faculty perceptions and experiences. Interventions included an educational webinar on just culture principles and use of patient safety reporting as part of clinical learning.

Results: There was significant increase in faculty (n = 17) perception of confidence to teach sociocultural aspects of patient safety t [16] = - 4.69, $p < .001$, d = 1.12, 95% CI [- 0.59, - 0.22]. Among safety events reported (n = 34), 50% were incidents and most (41.2 %) related to infection control. Influences that affected incorporating just culture principles into clinical learning environments were clinical environmental realities and level of connectedness between those environments and faculty.

Conclusions: Clearer avenues for faculty and students to address patient safety without fear or risk may enhance the reciprocal relationship between faculty, clinical staff and students in a way that accelerates and sustains a culture of safety. Improving connections between academia and clinical environments, and faculty development were supported.

Incorporating Just Culture Principles into Clinical Learning Experiences

Background

The healthcare industry has learned a great deal about the complex nature of patient safety since the ground-breaking Institute of Medicine's report, *To Error is Human: Building a Safer Health System* (Kohn, Corrigan, & Donaldson, 2000). Still, patient safety remains a global health concern. National organizations continue to call for inclusive system level approaches to patient safety with more value placed on creating and sustaining positive cultures of safety (NPSF, 2015). Central to a positive culture of safety are *just culture* principles. *Just culture* principles consider system failures relating to patient safety hazards and encourage reporting of hazards to better predict and manage organizational safety (NPSF, 2015). Increased communication and transparency of patient safety hazards in this type of environment improves system functions that better sustains improvements in patient safety (PSNET, 2016).

Nursing education has also responded to the challenges of patient safety complexities and has incorporated more rigorous quality and safety education into curricula (QSEN, 2014; WHO, 2011). In addition, more attention has been given to student outcomes relating to patient safety. While research showed students were gaining knowledge of more current patient safety science, students still often lacked confidence in the sociocultural aspects surrounding patient safety (Lukewich et al., 2015; Ginsburg, Tregunno, & Norton, 2013). Upon evaluation of factors that impacted student's confidence it was often proposed that clinical environments impacted student's development of culture of safety principles (Duhn et al., 2012; Ginsburg, Castel, Tregunno, & Norton, 2012; Lukewich et al., 2015) while key individuals such as mentors and clinical faculty had more direct influence (Fagan, Parker, & Jackson, 2016; Law & Chan, 2015;

Bickhoff, Sinclair, & Levett-Jones, 2017; Doyle et al., 2017). Therefore, it was important to identify faculty practices which would best support student learning of these principles.

Problem

Faculty and clinical environments both influence the development of health professional student's cultural aspects of patient safety. However, there was limited evidence about the culture of safety practices among faculty and less evidence on how faculty model these principles in clinical environments that best supported student learning.

Purpose

The purpose of this study was to explore and support faculty culture of safety practices that promoted and provided students meaningful learning experiences surrounding patient safety in clinical learning environments in a way that better sustains a culture of safety and improves patient outcomes.

Specific Aims

Specific aims were to a) explore clinical faculty perceptions of confidence teaching patient safety principles after exposure to just culture principles and utilization of patient safety event reporting tools in the clinical environment, b) gain transparency of patient safety events that faculty and students were exposed to in clinical environments, c) increase communication about patient safety and d) gain an understanding of the influences faculty faced when incorporating just culture principles in clinical environments.

Research Questions

What was the difference in faculty perceptions of confidence teaching patient safety principles after the implementation of a learning module on just culture principles and utilization of patient safety event reporting as part of clinical teaching?

How did the use of the Patient Safety Event Reporting Tool influence faculty perceptions and practices of patient safety culture in the clinical environments?

Significance

Promoting communication and acting in a manner consistent with a positive culture of safety addresses a significant barrier to accelerating and sustaining change regarding patient safety. Faculty are in a unique position to better prepare future nurses who possess confidence regarding patient safety, while also influencing the culture of safety in current practice settings in a way that better sustains a culture of safety and improves patient outcomes.

Literature Review

Culture of Safety

In healthcare, a culture of safety is "the summary of knowledge, attitudes, behaviors, and beliefs that staff share about the primary importance of the well-being and care of the patients they serve, supported by systems and structures that reinforce the focus on patient safety" (The Joint Commission Center for Transforming Healthcare, 2014, p.1). This type of culture in complex healthcare environment has proven to be difficult and requires persistent mindfulness of patient safety within an organization (PSNET, 2016). This persistent mindfulness is often associated with high reliability science, which is considered imperative to achieving substantial progress in reducing patient harm (PSNET, 2016; Joint Commission Center for Transforming Healthcare, 2014). The culture of safety that supports high reliability includes ongoing leadership support focused on zero harm, an environment of trust so that individuals openly communicate and report errors, and widespread effective process improvement tools (Chassin & Loeb, 2013).

Just Culture Principles

Just culture principles, as part of a fully functional culture, are demonstrating to have great influence on patient safety (NPSF, 2015; WHO, 2011; Chassin & Loeb, 2013). As part of just culture, focus is on proactive identification of patient safety issues and open communication in a non-punitive environment. This entails reporting safety events regardless of the perceived severity because this transparency sheds light on patient safety issues that may otherwise go undetected (Chassin & Loeb, 2013). A non-punitive environment does not necessarily relinquish accountability, it is rather a balance between not blaming individuals and egregious behavior (Barnsteiner & Disch, 2012). By recognizing that individuals still have a degree of control over their own behavior, accountability is based on individual actions and choices while also considering system factors that are out of the control of the individual (Barnsteiner & Disch, 2012). Blaming an individual based on a system flaw, without changing the system only perpetuates problems, which then leads to more errors. In a sense, accountability is raised as it requires quality to be everyone's role (Barnsteiner & Disch, 2012) and reporting is a means to learning within the organization.

Just Culture and Schools of Nursing

Numerous healthcare organizations and patient safety regulatory bodies have moved to this culture, and health professional education leaders have been taking note as well. The World Health Organization, as the lead globally (WHO, 2011) and in the US, the American Nurses Association and several state boards of nursing have endorsed just culture principles (ANA, 2010; Burhans, Chastain, & George, 2012). Experiences of schools that have incorporated reporting or just culture principles as part of their curriculum have also highlighted benefits to student learning (Geller, Bakken, Currie, Schnall, & Larson, 2010; Cooper, 2013). Transparency

of patient safety issues within schools of nursing increased which allowed for the identification of human and system factors that impacted faculty and students (Penn, 2014). More opportunities became available to apply teaching and learning strategies to reduce those hazards, and transparency increased dialogue of patient safety between faculty and students (Penn, 2014). There was also an ongoing effort described in research to implement a national occurrence reporting system for pre-licensure students given the benefits of learning and opportunities for improved outcomes (Disch & Barnsteiner, 2014; Disch, Barnsteiner, Connor, & Brogan, 2017). When just culture principles were utilized as a debriefing model for simulation, the principles created an environment that was safe for students to discuss both positive and negative findings (West, Zidek, Holmes, & Edwards, 2013). Furthermore, it was highly recommended to revise school of nursing policies to include a fair and just culture to minimize the negativity associated with patient safety events among faculty and students (Penn, 2014; Disch et al., 2017).

Faculty Experiences Integrating Patient Safety

Although more emphasis on culture of safety seems to be gaining greater attention in the undergraduate setting (Robson, Clark, Pinnock, White, & Baxendale, 2013) there was limited evidence on faculty teaching sociocultural aspects of patient safety in clinical environments. However, when exploring the degree to which patient safety was incorporated into nursing curriculums in England, most faculty felt confident to teach patient safety (Robson et al., 2013). On the other hand, Mansour's (2012) review exploring how students and faculty perceived the integration of patient safety in undergraduate programs, technical skills versus system level patient safety competencies were still predominately taught and measured as student outcomes. It was also reported that faculty may not be up to date on the latest patient safety science and may not be incorporating critical safety components into clinical learning as they received their

education prior to the increased emphasis on quality and safety (Thornlow, & McGuinn, 2010). To bridge this gap, Roney, Sumpio, Beauvais, & O'Shea (2017) provided high reliability safety culture training to nursing clinical faculty then explored faculty experiences regarding culture of safety principles and reported on their experiences utilizing safety event reporting. Although faculty described already possessing a heightened awareness regarding patient safety, they felt the training increased accountability and empowered them to act on safety issues in clinical environments (Roney et al., 2017). Faculty also agreed to incorporate consistent patient safety event tracking into permanent academic policies, recognizing benefits for student learning (Roney et al., 2017). Tregunno, Ginsburg, Clarke and Norton (2014) explored faculty perspectives of patient safety integration, challenges to safe practice in clinical environments and how learning was supported in these environments. The key challenges described by nursing faculty included the fast pace of care, competing priorities of an overcrowded curriculum and the informal influences in clinical practice settings such as the culture of safety differences among the various clinical environments (Tregunno et al., 2014). These results also reinforced previous work that clinical environments were often characterized as harmful power imbalances with disrespectful treatment and faculty-learner incivility (Tregunno et al., 2014). They also mentioned vulnerabilities associated with securing clinical placements for students, which lowered faculty expectations of the clinical settings (Tregunno et al., 2014).

Student Perspectives of Patient Safety

Students often experienced or witnessed safety events in clinical and were especially hesitant regarding reporting or speaking up about these events (Lukewich et al., 2015; Duhn et al., 2012; Ginsburg et al., 2013). Students' reasons for not reporting included fear, punishment, time constraints, shame and guilt (Cooper, 2013; Lukewich et al., 2015; Fagan et al., 2016).

Students often had difficulty questioning authority (Usher et al., 2017), lack clarity to the concept of speaking up and to whom they should speak up to (Milligan et al., 2017). Students also felt reporting could harm other professionals (Espin & Meikle, 2014). After examining how students overcame these barriers Bickhoff, Levett-Jones, & Sinclair, (2016) identified that key individuals had significant impact. Key individuals were mentors who discouraged or encouraged actions, and whether they were or were not supportive, or demonstrated positive patient advocacy (Bickhoff et al., 2016). Fagan et al. (2016) identified organizational safety culture and supervision and support as major contextual influences, and whether students had opportunities to observe consistent positive role models (DeBourgh, 2012; Duhn et al., 2012). When safety was not consistently handled in different clinical environments it was postulated that this led to student confusion and diminished confidence (DeBourgh, 2012; Lukewich et al., 2015; Duhn et al., 2012). When witnessing care that placed patients at risk, students often described feelings of stress, anxiety and conflict (Bickhoff et al., 2017). The qualitative study by Vaismoradi, Salsali and Marck (2011) reported on student's perceptions of patient safety education in the classroom and clinical, and identified student dissatisfaction with the level of emphasis of patient safety in the classroom versus what they thought was needed to manage patient safety in clinical. The authors highlight the need for educators to better model the values, beliefs and behaviors associated with a patient safety culture, and place more emphasis on the shared responsibility of reducing errors among educators, clinical organizations and students (Vaismoradi et al., 2011).

Theoretical Framework

Anthony Giddens' structuration theory, as a theoretical framework, offers a way to look at culture of safety as a dual system involving both individual actions and organizational social structures (Groves, Meisenbach, & Scott-Cawiezell, 2011). Structuration involves the unique

relationship between individuals and the social forces that cause or reinforce its existence. Unlike other sociological theories, structuration is based on the premise that it is people that are the driver of social change, rather than the traditional institutions (Groves et al., 2011). The duality of agency and structures related to just culture principles are depicted in Appendix A. When nurses implement and act in a way that supports a culture of safety they are in a sense, reinforcing the rules and recreating a system of safety culture (Groves et al., 2011). Considering structuration theory, increased faculty and student communication regarding patient safety in clinical environments would influence other healthcare attitudes and patterns of behavior. In short, further advancing or sustaining the culture of safety in clinical environments.

Methods

Design

A non-experimental embedded mixed method design was utilized for this pilot study. Quantitative data was collected pre-intervention and, both quantitative and qualitative data were collected post-intervention. Interpretation is based on both data types as depicted in Appendix B. The quantitative component primarily explains the effects of the interventions with qualitative data providing more in-depth examination of faculty perceptions and experiences incorporating just culture principles in clinical environments. The intent of this design was to gain a more complete understanding of faculty perceptions of culture of safety by drawing on the strengths of both the quantitative and qualitative methods and by reducing the limitations of both approaches.

Setting, Sample and Recruitment

Clinical faculty (N = 66) were recruited from an accelerated baccalaureate nursing program in eastern US who were assigned to conduct clinical with nursing students during the Fall 2017 semester. During this semester there were 362 students enrolled across 4 cohorts and

clinical courses included maternal-child health, psychiatric health, community health, medical-surgical, pediatrics and transitions to practice where students were assigned to a preceptor in a variety of settings. Given the limited research on faculty perceptions of culture of safety, a moderate effect size was anticipated with a significance level $a = 0.05$ and a power of 80%. Recruitment of subjects occurred via email notification and during two pre-semester clinical faculty development training sessions. Information about the study was presented live during the training sessions and faculty present were provided a small lunch cooler bag with a personalized statement about nurses accelerating a culture of safety. Recruitment for the focus group portion of the study occurred during the last two weeks of the semester via email and via a face-to-face approach.

Defined Variables

Independent Variables

Faculty learning module.

Theoretical and operational definitions of all variables are shown in Appendix C. To support faculty culture of safety practices, an AACN webinar titled *QSEN Update: Creating a fair and just culture within schools of nursing* (2016a) was utilized. The presenters of the webinar, Barnsteiner and Disch are considered leading experts of the QSEN curriculum and have extensive experience promoting and integrating just culture principles in schools of nursing (AACN, 2016a). The content of the educational activity is not adapted or manipulated to ensure consistency, and participants served as their own comparison group.

Event reporting tool.

A Patient Safety Event Reporting Tool (PSERT) was developed to increase communication surrounding patient safety events between faculty and students, increase

transparency and to provide students learning opportunities about reporting. As shown in Appendix D, the tool was designed for use by students or faculty and was modeled after the GRaSSP Occurrence Reporting Tool (Disch & Barnsteiner, 2014).

Dependent Variables

Perceptions of patient safety.

To uncover faculty perceptions of confidence to teach sociocultural aspects of patient safety in the clinical environment, a modified Health Professional Education in Patient Safety Survey (H-PEPSS) was utilized. The instrument was originally developed to reflect Canadian health professional patient safety competencies and focuses on the more complex sociocultural aspects of patient safety (Ginsburg et al., 2012; Lukewich et al., 2015). Permission was granted by the developer to utilize and adapt the tool to assess faculty perceptions of confidence or knowledge. The H-PEPSS has demonstrated good reliability and validity when utilized to measure both health professionals and health professional students self-reported patient safety competence (Ginsburg et al., 2013), and has been utilized among a variety of different health professional groups in several countries. Validity was based on extensive confirmatory factor analysis of the six-factor measurement model of health professionals' perceptions of patient safety competency (Ginsburg et al., 2012). Reliability and internal consistency of survey items has been established with a Cronbach's α of 0.91 and the subscale dimensions ranged between 0.81 and 0.85 (Ginsburg et al., 2012). The H-PEPSS has demonstrated usefulness in identifying integration of patient safety curriculum objectives (Ginsburg et al., 2012), gaps in learners' confidence upon completion of health profession programs, or when modified, during pre-licensure training (Ginsburg et al., 2013). The H-PEPSS has also been utilized among hospital nurses. Hwang (2015) examined the relationship of the Safety Attitudes Questionnaire climate to

nurse's self-reported patient safety competency. Results indicated, nurses who had higher self-reported competency on the H-PEPSS also perceived safety climate more positively (Hwang, 2015).

Variables of the modified H-PEPSS consisted of three main sections: specific patient safety dimension subscales, questions on how broader patient safety issues were addressed and questions about speaking up about patient safety (Lukewich et al., 2015). All items were measured on a 5-point Likert scale from strongly disagree to strongly agree. The first section reflected overall patient safety confidence measured by the six subscale dimensions which were culture of safety, communicating, managing safety risks, human and environmental factors, recognizing and responding to adverse events, and working in teams. These items consisted of 16 questions. Although there were items reflecting clinical safety, these were asked only to help focus respondents on the latter sociocultural aspects of patient safety (Ginsburg et al., 2012) and were not calculated as part of overall confidence. Higher scores among the safety dimensions indicated greater confidence teaching patient safety principles. The stem of the questions in the first section were modified to capture faculty views of their abilities, changing *I feel confident in what I learned about* to *I feel confident in what I teach about*. The second section (7 items) of the H-PEPSS sought faculty opinion of how patient safety was integrated in the clinical and school of nursing environments. Question items in this section did not have a common stem and two questions were modified to reflect faculty versus student opinion. The third section (3 items) related to comfort in speaking up about patient safety and questions were not modified. Both the pre- and post-H-PEPSS survey variables were identical except for demographic variables on the pre-survey and three items on the post-survey asking about the impact and usefulness of the PSERT.

Qualitative variables.

Both exploratory and probing questions were utilized during the interviews to gain an understanding of faculty perceptions of the reporting tool and the influences faculty faced when incorporating just culture principles in clinical environments. The qualitative questions were intended to be broad and open ended. These questions were developed based on commonalities and themes identified in the Roney et al. (2017) study describing faculty experiences concerning patient safety events in the clinical setting.

Demographic variables.

Seven demographic variables were collected to describe the characteristics of faculty participants. Variables included faculty age, employment status, years of teaching clinical at current school, total years teaching clinical at any school, level of student, type of clinical setting and highest academic degree.

Ethical Considerations

Based on the considerations and procedures of the George Washington University Institutional Review Board this study met the criteria defined as research (GWU, 2015) and all activities associated with this research project were conducted in accordance with all Federal and Institutional laws and regulations (HHS, 2009). Participants were informed of the elements of consent and obtained consents were securely maintained. Written consent was only required for the focus group participants, as a waiver of consent was granted for all survey items. The research presented no more than minimal risk to subjects and involved no procedures for which written consent would normally be required outside of the research context (HHS, 2009). While privacy of the focus group participants could not be guaranteed, it was requested that all present respect the group by not disclosing who attended or what was discussed outside of the groups.

Although no personal information, such as name, was collected as part of any survey, there was a small chance of discovery based on other demographic data. The researchers did not declare any conflict of interest.

Timeline and Data Collection

The educational component was made available to all clinical faculty on August 25th and remained available during the semester. Unique links to the educational activity, H-PEPSS survey instrument and the PSERT survey were provided to faculty via email, and all surveys were set up in a way that was completely anonymous. For the pre-and post-semester H-PEPSS surveys faculty utilized a same unique identifier for both. The H-PEPSS was administered at the beginning of the semester from August 25th to October 3rd and post responses were collected from December 5th to December 12th. Study tasks and associated timelines are shown on The Gantt chart task list and timeline in Appendices E and F respectively. All surveys were housed via Surveygizmo (Surveygizmo, 2017) then downloaded, stored and managed for retrieval utilizing SPSS 24 (IBM Corporation, 2016).

The PSERT survey asked about patient safety events that students or faculty witnessed, or were involved with in the clinical setting. Surveys were available for use throughout the semester and were reviewed weekly to monitor for consistency per the AHRQ common formats (AHRQ, 2013) and unintended disclosure of health protected information. Four follow-up emails were disseminated during the semester to encourage use of the PSERT as part of clinical learning. Collected safety trends were reported mid-semester and at the end of the semester to all clinical faculty regardless of participation in the study for transparency purposes.

Focus groups were conducted on the 11th and 12th of December utilizing the same semi-structured interview guide to illicit responses and discussion from participants about 1) how the

patient safety event reporting tool influenced faculty perceptions and practices of patient safety culture and 2) experiences in clinical incorporating just culture principles. Questions presented to participants are shown in Appendix G. Two separate live focus group sessions were conducted with one faculty joining via the university's on-line platform. Participants (n = 6) taught in the medical surgical, pediatric or psychiatric settings. The same researcher conducted both interviews at the university and sessions ranged from 40 to 50 minutes.

Data Analysis

To identify differences in faculty perceptions of confidence teaching patient safety principles after incorporating just culture principles into clinical learning, paired *t* tests were performed on H-PEPSS repeated measures for the same participant (n =17). Also, H-PEPSS survey items were dichotomized to reflect the percentage of faculty who agreed and strongly agreed with individual items. Descriptive statistics were generated for demographic variables and PSERT surveys. The mean, standard deviation, minimum and maximum were calculated for continuous variables with frequency and percentages reported for categorical variables. Submitted PSERT's were reviewed in an independent fashion by all three researchers and through consensus, 14 events were recategorized (hazard, near miss or incident). Ten events were upgraded from a hazard or near miss to an incident, and 4 were changed from a near miss or incident to a hazard. All other data was verified by the researcher and double-checked by the principle investigator to ensure accuracy.

Focus group sessions were audiotaped by the focus group moderator and transcribed by an outside transcription service. Transcriptions were then double checked for accuracy against the audio recording by the moderator. Through thematic analysis, the qualitative data was analyzed drawing on the work of Creswell (2014) and Levitt et al. (2018). Major and minor

themes were identified by both inductive and deductive approaches. First, data was organized and condensed around research aims and memos were created to describe the types of data. This was followed by categorizing and assigning themes that included identified themes from previous studies. Major and minor themes were then compared and combined based on similarities or differences. To enhance reliability, cross checking of themes was conducted by one other researcher and through consensus, interrelating and overlapping themes were re-organized, producing the combination of emerging and predetermined themes. Regarding validity and bias, the moderator was known by some of the participants as a previous employee of the university and had in-depth experience as a clinical instructor. Through reflexivity, the moderator developed awareness of relationships and prejudgments in effort to ensure objectivity. Member checking was not utilized after analysis of data.

Results

The majority of faculty (n = 17) were adjunct (76.5%), master's prepared (62.5%) with a mean of 2.64 (SD = 2.60) years clinical teaching experience. Ages ranged from 27 to 58 with 60% being 40 years of age or younger. Participants taught in the medical surgical environment (43.8%), maternal child health (12.5%), psychiatric health (18.8%), community health (12.5%) and the pediatric setting (12.5%).

Faculty Perceptions of Confidence Teaching Patient Safety

Overall, the mean pre-test and post-test scores for the patient safety dimensions were 4.16 (SD = 0.41) and 4.57 (SD = 0.35) respectively, showing a significant increase in faculty perception of confidence, t [16] = - 4.69, $p < .001$, d = 1.12, 95% CI [- 0.59, - 0.22]. Mean differences for safety dimension items are displayed in Appendix H and Appendix I show subscale dimension differences. Among the broader aspects and comfort speaking up items, most

were not significantly different. However, several items were scored low. As shown in Appendix J, the post-response mean for the question *regarding consistency in how patient safety issues were dealt with by different preceptors in clinical* was 3.06 (SD = 0.75) and the percent of faculty who agreed there was consistency remained unchanged at 29.4%.

Transparency and Communication

Among the safety events reported (n=34) faculty reported 23.5%, students 61.8% and 14.7 % were completed together by faculty and student as a pair. Most safety events were reported by first semester students (78.1%), then third (17.6%) and second semester (5.9%). Appendix K further highlights safety report details. Most faculty agreed or strongly agreed that the PSERT contributed to student learning (70.5%), improved communication surrounding patient safety between faculty and students (76.4%) and felt incorporating anonymous safety event reporting should be included as part of clinical practices and policies within the school of nursing (82.4%).

Influences Faculty Faced Incorporating Just Culture Principles

Themes and supporting statements are displayed in Appendix L and in narrative format that follows. The major themes identified from the focus group findings that impacted communication and transparency of patient safety in clinical environments were level of connectedness and environmental realities. Level of connectedness refers to the relationships or perceptions of risk to those relationships that faculty perceived within clinical environments. Reporting and communication behaviors were described in relation to the level of connectedness between faculty and clinical staff, between faculty and clinical leadership, or the relationship to the clinical organization. Faculty described having good relationships with clinical agency educators, whereas other faculty were more comfortable discussing issues with unit leadership.

Directly approaching clinical staff or leadership varied among participants depending on personality of the clinical staff, past experiences of receptiveness or disregard, and perceived risk of disrupting relationships. There was also a perceived risk that transparency could be taken out of context, which could risk future clinical placement for students. Faculty described not crossing the school-unit relationship and not interjecting oneself. Competing priorities included time and having to balance student learning objectives with how one addressed clinical staff regarding patient safety, while still maintaining patient safety.

Environmental realities that positively impacted faculty communication and transparency of patient safety included whether faculty perceived the clinical sites as non-punitive, learning and working hard toward just culture. However, it was also identified even in an environment perceived as having a positive culture of safety that faculty communication patterns were mostly determined by the contextual relationship. Faculty described limited reporting or need to utilize clinical reporting systems, and questioned receptiveness of clinical sites having transparency of faculty or student's reported safety trends. Faculty expressed hopefulness that clinical environments would be receptive in the effort to change their culture, however, faculty also identified that the clinical sites may respond negatively. The level of leadership engagement on units also impacted faculty behaviors. When management responded in non-punitive ways, faculty were more inclined to communicate safety issues. Constraining and enabling actions occurred, stemming from the complexities surrounding communication between students, clinical staff and faculty. When students were "shut down" faculty highlighted that this impacted student learning. Again, faculty described needing to be mindful to ensure patients and students were safe, while considering how to address and follow up on students concerns. Faculty described that students were often correct in recognizing deviations in care, and felt regardless of

how the safety issues were communicated; the most important factor was ensuring that patients were safe. Regarding student follow-up, faculty described the importance of mentoring and continued encouragement to speak up. However, students were also re-directed to bring safety issues to faculty versus speaking up to staff when conflict or risk of conflict was perceived.

Discussion

Patient Safety Confidence, Broader Aspects of Safety and Comfort Speaking Up

After exposure to just culture principles and utilization of patient safety event reporting tools in the clinical environment faculty perceived higher confidence to teach sociocultural aspects of patient safety. The most significant scored item of the H-PEPSS was related to faculty confidence teaching about the importance of having a supportive environment that encourages patients and providers to speak when having a safety concern. The percent of faculty agreeing that reporting a safety event would result in a negative repercussion also decreased, reflecting a more positive attitude about reporting. In addition, faculty recognized clinical environments as being non-punitive, learning organizations and working hard toward just culture; highlighting that the culture of safety may be changing in clinical environments. In a culture that was described as non-punitive, faculty were empowered to bring safety issues forward. However, faculty were fully aware of differences in safety culture among different clinical settings and within their own setting. In fact, the percent of faculty who agreed there was consistency in how patient safety issues were dealt with by different preceptors in clinical remained unchanged (29.4%). Inconsistencies in clinical environments were commonly described by nursing faculty (Tregunno et al., 2014; Roney et al., 2017) and recognized by students (Fagan et al., 2016; Bickhoff et al., 2017; Ginsburg et al., 2013) and supports what is widely known about the environmental realities such as different cultures, supervisory relationships, psychosocial

interactions (staff attitudes), hierarchical differences, and workloads (Duhn et al., 2012; Lukewich et al., 2015; Doyle et al., 2017; Tregunno et al., 2014). Despite the view that clinical environment cultures were changing, the comfort speaking up items were scored low and only 56.3 % of faculty agreed that discussion about adverse events mainly focused on system related factors versus the individual most responsible. This reflects that a culture of blame may still be pervasive in clinical environments, which contributes to low transparency and undermines advancing a culture of safety (Barnsteiner & Disch, 2012: Gorini, Miglioretti, & Pravettoni, 2012). Drawn from the focus group themes, faculty drew on their interpersonal relationships in clinical environments or spent time assessing situations to determine actions regarding communicating about patient safety. Direct communication about safety was often dependent on whether clinical staff and faculty had an established relationship. Bagnasco et al. (2017) also reported faculty were mindful of how patient safety issues were approached based on the degree or perception of relationships. This approach was noted to lead to more reactive methods in addressing safety among faculty, which then led to fragmented interventions (Pronovost, Ravitz, Stoll, & Kennedy, 2015) which further exposed students to inconsistent practices. These inconsistencies were described as contributing factors to the identified decrease in student's confidence as students progressed through their program (Lukewich et al., 2015). Although individual accountability was practiced to prevent harm, more focus on system fixes would lead to better outcomes (Barnsteiner & Disch, 2012).

Among the broader aspects of patient safety, one item was of statistical significance. This item reflected clarity of the scope for what was safe for students to do in the clinical setting. This item may be an outlier or due to a large influx of new faculty that occurred just prior to the semester of this research. However, lack of communication among and between faculty

regarding clinical expectations in how patient safety should be handled leads to inconsistent practices among faculty. Although most faculty agreed that patient safety science and system aspects of patient safety were well incorporated into the nursing program, post-survey mean scores for both were relatively low, 3.94 and 3.76 respectively. Faculty also questioned when and in what ways students were educated about patient safety within the curriculum pathway. This is consistent with other research where faculty were often unaware of patient safety courses within their programs or where students obtain this content in their program (Tregunno et al., 2014; Robson et al., 2013). In Robson et al. (2013) study exploring patient safety and human factors theory in UK nursing schools, faculty were often unaware of safety curricula and lacked awareness of faculty resources.

Transparency, Communication and Clinical Influences

Transparency of patient safety events that faculty and students were exposed to in clinical environments was gained. Regarding communication, most faculty (76.4%) reported improved communication surrounding patient safety between faculty and students on the post-survey, and in focus group discussions faculty described discussing and reviewing PSERTs with students. The degree that the patient safety reporting tool increased communication in clinical between faculty, students and clinical staff was difficult to measure. It was not consistently clear based on student comments on the event reports if students discussed the event with clinical staff or just with faculty. In the study by Roney et al. (2017), 24 patient safety concerns were reported among 18 clinical faculty, with medication errors being the most common type of event reported. Most event types reported in this study were related to infection control and reported by beginning level students. These differences would be expected based on curriculum progression of students in this study, where beginning students had not yet gained experience passing medications. Also,

of the events re-categorized (n=14), 11 were submitted by students, suggesting students need more knowledge of the criteria utilized to determine what constitutes an incident, near miss and hazard. Nursing student's lack of knowledge regarding what constitutes an incident was also found among fourth-year nursing students (Espin & Meikle, 2014), suggesting regardless of the level of student, students need more practice reporting.

When compared to other schools who have implemented event reporting as part of their curriculum (Geller et al., 2010), the number of events reported in this study was low. There was also limited representation among the various clinical setting and among the different level of students. The voluntary status of reporting as part of this study and the emphasis that faculty placed on its importance likely impacted these reporting patterns, however, other probable contributors may have stemmed from competing priorities. Although faculty were vigilant in advocating for patient safety, focus was on maximizing students' experiences relating to curricula objectives and direct care. This was often founded in other research that examined faculty perceptions of integration of patient safety where the more complex human factors seemed to be missing (Mansour, 2012). Tregunno et al. also reported that faculty described more technical aspects such as nursing assessments, care planning and infection control when discussing the informal clinical education in clinical settings (2014).

Of all the events reported as part of this study, only one report reflected that a safety report was filed at the clinical setting. Again, this low rate of reporting may be related to competing priorities or more likely, stemming from unclear expectations regarding reporting in clinical environments or the environmental realities of low reporting. Tregunno et al. (2014) also reported faculty were often immersed in clinical environments without clear organizational expectations surrounding communication and transparency which led to inconsistent faculty

roles and responsibility (Tregunno et al., 2014). Low reporting was also commonly described to exist within most clinical organizations. According to the Office of Inspector General as cited by Roney et al. (2017), up to 86% of adverse events in hospitals were not reported. It was reported by Bagnasco et al. (2017) that faculty described common perceptions of risk associated with reporting such as risk of placement loss and the need to maintain a balance to fit in with the culture of the organization.

Flow of information between clinical leadership and faculty, and the degree of leadership involvement in sustaining a culture of safety within their prospective organizations, influenced faculty communication and transparency. Faculty were more engaged with leaders when trust was established between them. Conversely, faculty not knowing how leaders engaged or not knowing how leaders would react, limited communication. Culture is often directed down from leadership to clinical staff (Fagan et al., 2016), therefore, culture within units was often dependent on leader's efforts to eliminate intimidation and encourage reporting of unsafe conditions (Chassin & Loeb, 2013). Mistrust was also described as a factor affecting communication between faculty and staff. Staff were "a bit pricklier" when unfamiliar with faculty. This mistrust among clinical staff toward faculty was noted to undermine contributions to patient safety (Roney at al., 2017).

Although faculty valued the usefulness of event reporting for student learning, they also perceived limited benefits to clinical environments having transparency of the faculty and student trends. Faculty described clinical sites as being proactive in quality improvement processes and felt what limited trends were reported, would likely not contribute to clinical safety. This was similarly described by schools who do not trend patient safety events. Faculty were often unaware of events that did occur or faculty did not see the number of events as a

problem (Disch et al., 2017). Increased transparency of these safety issues could benefit both clinical and academic environments by enriching quality improvement processes for both settings (Barnsteiner & Disch, 2012).

When asked about the culture of safety at the school of nursing regarding just culture principles, faculty overall found it difficult to conceptualize relevance. After follow-up statements about communication and transparency of patient safety, faculty felt this concept was not applicable given their limited interactions with another clinical faculty since they only conducted clinical. The safety culture was assumed to be high, based on identifying faculty as role models. Several faculty described their actions in clinical environments in relation to preparing students such as providing clear expectations, encouraging critical thinking with open communication techniques and supporting students. Supporting students was described as constructive feedback and providing students with a safe place to communicate about patient safety, especially after students were disregarded or when a student possessed an intrinsic personality trait fearing speaking up. These actions were often described by students as important feedback to prevent similar situations in the future, or as motivators to overcome fears and anxiety (Chan, Tong, & Henderson, 2017). Faculty also recognized the importance of mentoring just culture principles and described demonstrating to students how to accept and receive corrections regarding safety. This was described as an effective teaching strategy, which influenced students' abilities to speak up, as students were often found replicating their mentor's behaviors (Bickhoff et al., 2016). Although faculty perceived an element of shame associated with sharing their own safety issues with other faculty, sharing their past mistakes with students was common as a method to prepare them. Appendix M further expands on participant statements regarding culture of safety within the school of nursing.

Limitations

Limitations include small convenience sampling from an accelerated baccalaureate nursing program at a single university in one region of the US, all of which may limit generalizability to other types of programs and settings. The H-PEPSS survey has been utilized among a wide range of health professionals, however, this was the first known study to utilize the tool among nursing faculty. Socially desirable response bias may also have contributed to higher or lower scores by the responders on the pre- and post-survey. Even though the patient safety event reports were made available to all courses, the degree of emphasis within each course differed, which may have resulted in under-reporting in various clinical settings. Participants of the focus groups represented a small group of faculty who may possess more diverse clinical or teaching experience with interest in patient safety that may differ from other faculty at the university. Lastly, the study was limited by a researcher new to interviewing skills. A researcher more familiar with qualitative research would likely obtain more in-depth narratives.

Implications for Practice

Nursing faculty possessed high confidence to teach sociocultural aspects of patient safety. However, faculty capacity and actions in clinical settings were often diminished by the known environmental realities of the clinical setting surrounding patient safety and limited by their own underlying assumptions of risk associated with communication and transparency of safety. As a result, this likely led to the identified inconsistent ways faculty practiced patient safety principles in clinical environments. Also, the level of connectedness between clinical environments and faculty undermined system safety. Recommendations to address these factors include, 1) enhancing the connectedness between clinical environments and academia, 2) faculty awareness,

3) revising academic policies to reflect current patient safety science, and 4) ensuring students obtain experience, consistent modeling and competency evaluation.

Since a safety culture reflects individual and group behaviors, attitudes and collective commitment (Sherwood, 2015), a sustainable safety culture within clinical organizations would better be supported with improved connections between academia and clinical environments. It should be recognized this has long been supported, yet efforts were not in widespread use (Tregunno et al., 2014; Steven, Magnusson, Smith, & Pearson, 2014) and missed opportunities have been recognized among both academia and healthcare organizations (AACN, 2016b). Partnerships do not necessarily need to be large scale collaboratives to improve the culture. However, collective accountability where all levels are viewed as part of a system (Aveling, Parker, & Dixon-Woods, 2016) with clear expectations and clear avenues to communicate about patient safety should exist (Chassin & Loeb, 2013). Regardless of scale, developing collaborative opportunities will be dependent on engagement between leaders in both the academic and clinical settings to cultivate conditions and expectations (AACN, 2016b). In addition, active engagement needs to occur across settings among frontline faculty and clinical staff (Law & Chan, 2015; Tregunno et al., 2014), and between frontline faculty and clinical unit leadership. Like findings of this study, both faculty and students often encountered unsafe practices in clinical settings that may otherwise go undetected or unreported (Department of Health, 2015; Roney et al., 2017) and nursing faculty were contributors to individual and system processes that enhanced patient safety (DeBourgh, 2012). In terms of high reliability, this collective accountability is critical in efforts to achieve improved patient safety (Chassin & Loeb, 2013) and nursing faculty and students should be considered.

Also supported in literature and by this study, faculty need support to change underlying assumptions about processes and relationship that impact patient safety and learning (Tregunno et al., 2014). Given the inconsistent practices, more awareness and formalized faculty development is supported. Faculty development has shown to increase knowledge and empowerment regarding communication surrounding patient safety among faculty (Roney et al., 2017) and is recommended as what is needed the most (Tregunno et al., 2014). More awareness and education relating to the sociocultural aspects of patient safety may change faculty perceptions. Often faculty still practice with the mindset that the degree of individual vigilance is what impacts safety the most (Disch et al., 2017). To create awareness of just culture principles, the AACN webinar utilized in this study is recommended. To further expand on culture of safety principles, the QSEN Safety Competency Theory Burst module through the AACN site specifically addresses the complexities of care delivery, human factors and high reliability organizations (2018). The QSEN specific site also houses faculty learning modules that were developed to assist both new and experienced faculty integrate the Quality and Safety competencies into curriculums (QSEN, 2018). Utilizing these sites as faculty development also exposes faculty to teaching and learning resources that they may otherwise not know about. It is common for many part-time or adjunct faculty to have limited exposure to QSEN resources or awareness of the required student competencies (Thornlow & McGuinn, 2010; Cabaniss, 2014). Many other free resources exist to create awareness such as the WHO curriculum guide (WHO, 2011) and the Institute for Healthcare Improvement open enrollment courses on patient safety (IHI, 2018).

Adapting an organizational philosophy at the school of nursing incorporating just culture principles would be establishing a commitment to improve safety (Disch et al., 2017). Policies

should address how student and faculty errors are handled and define quality improvement purposes (Disch et al., 2017). A fair and just culture is less punitive and provides students and faculty with clear guidelines in how errors are handled. These policies may reduce faculty inconsistencies in how they address student's safety concerns (Steven et al., 2014). To establish and sustain a culture of safety, it is also recommended that centralized and coordinated oversight of patient safety exits (NPSF, 2015; Roney et al., 2017). This could be accomplished through identification of a quality safety officer (QSO) within the school of nursing. Such a position better ensures sustained patient safety focus and demonstrates a commitment to safety for faculty, students and patients (Usher et al., 2017; Cooper, 2014). The QSO could also serve as the point of contact between academia and clinical environments for system wide improvements.

Students need practice, competency validation and consistent modeling. Ideally educational strategies should be in clinical and focused on effective interpersonal communication (DeBourgh, 2012) and clinical evaluation tools should be enhanced to reflect competencies of sociocultural aspects, such as students' contribution to a culture of safety (Mansour, 2012). When patient safety is already incorporated into the curriculum as an individual course, safety should also be considered across the curriculum (Tregunno et al., 2014) as students are often exposed to patient safety issues prior to their specific patient safety course. For beginning students this could be accomplished by providing scripting on how to communicate about patient safety in simulation or lab experiences (West, et al., 2013) or short additions to current scenarios in which students are exposed to situations requiring speaking up (Fagan et al., 2016). Reported patient safety trends could also be utilized throughout the curriculum as follow-up assignments and as an avenue to demonstrate patient safety competency.

To address the impact on policy or curriculum changes regarding patient safety, prospective or correlational studies among faculty and students may be useful. Also, more robust patient safety educational outcome measures would aide in identifying trends and issues for regulatory oversight of health professional student licensing authorities. Lack of robust outcome measures within education was often cited as an issue for regulatory authorities updating frameworks for entry-level nursing practice which reflect current needs of patients and care settings where activities are performed (NCSBN, 2016). Lastly, research is needed which further explores associations between clinical environment and faculty or student's attitudes about patient safety, and the impact on patient outcomes.

Conclusions

Faculty perceptions of confidence teaching patient safety increased after greater awareness of just culture and use of patient safety reporting. However, increased confidence did not consistently transfer into practice. Barriers included unclear expectations, environmental realities, complex relationships and competing priorities. When overcoming these barriers, faculty possessed greater capacity to empower other individuals regarding patient safety principles. Also, when immersed in environments with fully functioning cultures of safety, attitudes and behaviors were reinforced. With greater faculty support and connectedness between academia and clinical environments, communication and transparency surrounding patient safety would likely be greater and nursing students would gain more consistent experiences in clinical environments. Overall, learning would be enhanced and allow the implementation of meaningful system changes to prevent patient harm.

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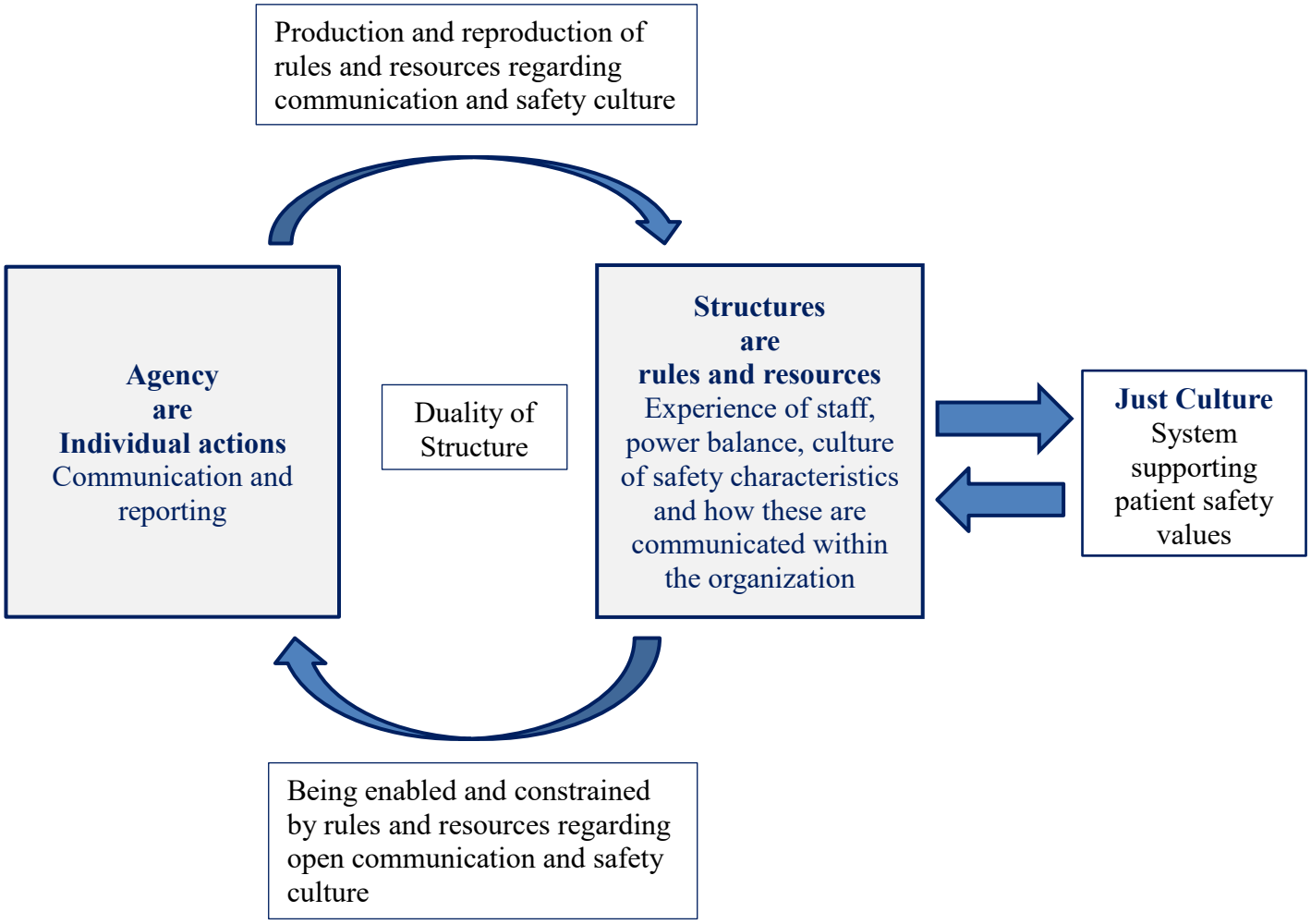
Appendix A

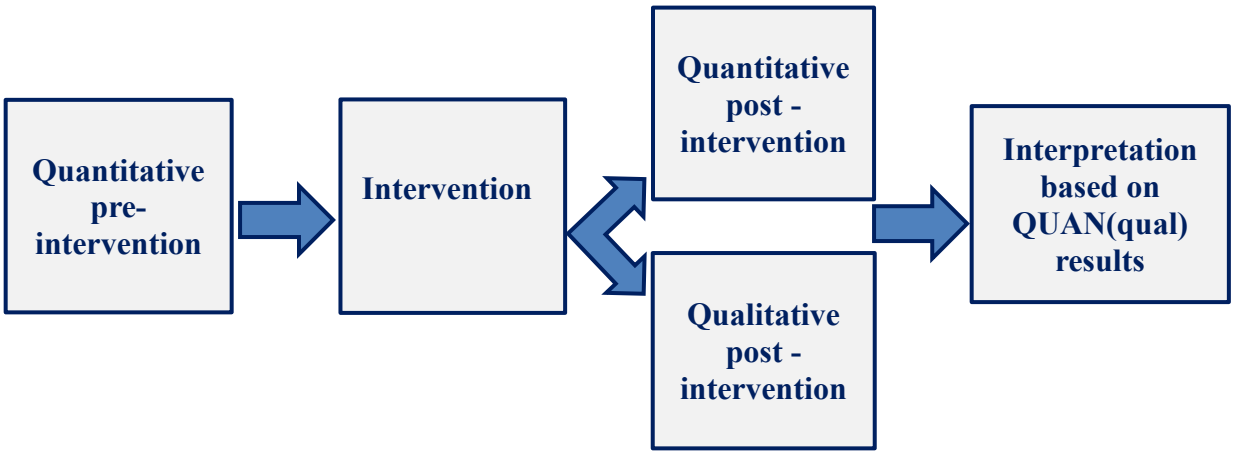
Structuration Model of the Intersection of Nursing Practice and Just Culture Principles



Note. Adapted from "Keeping Patients Safe in Healthcare Organizations: A Structuration Theory of Safety Culture," by Groves, Meisenbach, & Scott-Cawiezell, 2011, *Journal Of Advanced Nursing*, *67*(8), p. 1850.

Appendix B

Embedded QUAN(qual) Design



Note. Adapted from "*Choosing a Mixed Method Design,"* by J. W. Creswell, 2006.

Appendix C

Variables Table with Theoretical and Operational Definitions

Variable	Variable Form	Theoretical Definition	Operational Definition
Independent Variables			
Intervention: Just culture Educational Activity	Categorical nominal	The proportion of ABSN faculty completing patient safety training	Post-survey question: I have completed the educational activity on just culture principles: 1 = yes, 2 = no
Intervention: Patient Safety Event Reporting Tool (PSERT)	Nominal	The number of near misses, hazards and incidents reports generated during the semester of study. **Incidents**: Patient safety events that reached the patient, whether or not there was harm involved. **Near misses (or close calls)**: Patient safety events that did not reach the patient. **Unsafe conditions**: Circumstances that increase the probability of a patient safety event occurring.	The number of near misses, hazards and adverse event reports generated and submitted during the semester of study. Categorized by researcher: 1 = near misses, 2 = hazard, 3 = incident Events were also categorized by type and location of event.
Dependent Variables			
Modified H-PEPSS		Participants rated sections 1 through 3 on a 5-point Likert scale: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral/Unsure, 4 = Agree and 5 = Strongly agree	
H-PEPSS Section 1 Clinical Safety	Ordinal	Faculty perception of confidence to teach about clinical safety.	Faculty were asked to rate 4 clinical items which included safe clinical practice in general, hand hygiene, infection control and medication practices.
Culture of safety	Ordinal	Faculty perceptions of confidence teaching about a culture of safety in the clinical environment.	Perceptions of a culture of safety measured by 3 items
Working in teams	Ordinal	Faculty perceptions of confidence teaching about working in teams.	Working in teams measured by 3 items
Communicating safety events	Ordinal	Faculty perceptions of confidence teaching about effective communication about safety events.	Perceptions of communicating safety events measured by 3 items
Managing Safety Risks	Ordinal	Faculty perceptions of confidence teaching about how patient safety issues were addressed in clinical with students.	Perceptions measured by 3 items
Human and environmental factors	Ordinal	Faculty perceptions of confidence teaching about human and environmental factors.	Perceptions of Human and environmental factors measured by 2 items
Recognizing and Responding to adverse events	Ordinal	Faculty perceptions of confidence teaching about disclosure of patient safety events.	Perceptions about recognizing, responding and disclosing patient safety events measured by 2 items
Section 2: Integration of patient safety within clinical and school of nursing environments	Ordinal	Faculty perceptions of how broader patient safety issues were addressed in the school of nursing program and clinical environments.	Participants rated 7 modified H-PEPSS statements regarding integration of broad safety issues

Variable	Variable Form	Theoretical Definition	Operational Definition
Section 3: Comfort in speaking up about patient safety	Ordinal	Faculty level of comfort in speaking up about safety in the clinical setting.	Level of comfort in speaking up measured by 3 items
Section 4 Pre-Survey: Demographics			
Age Range	Continuous	Chronological age in years.	Self-reported age in years
Employment Status	Nominal	Faculty status of employment at the School of Nursing.	How would faculty best describe their employment status with the school of nursing: 1 = Full time >36 hours, 2 = Part time <36 hours, 3 = Contract/Adjunct
Clinical teaching experience	Continuous	Total number of years teaching clinical at the School of Nursing.	Self-reported number of years
Clinical teaching experience	Continuous	The total number of years that faculty have taught clinical at any college or university.	Self-reported number of years
Level of student	Nominal	The level of student faculty primarily conducts clinical with.	Select the semester level that you primarily perform most of your clinical teaching. Select one answer: 1 = 1st Semester, 2 = 2nd Semester, 3 = 3rd Semester, 4 = 4th Semester
Clinical setting	Nominal	The type of clinical setting that faculty primarily teach.	Faculty self-select the type of clinical setting that they primarily teach. Select one answer: 1 = Maternal-Child Health, 2 = Psychiatric Health, 3 = Community Health, 4 = Medical-Surgical, 5 = Pediatrics, 6 = Transition to Practice
Highest academic degree	Nominal	Highest academic degree completed by faculty.	Faculty select highest academic degree: 1 = BSN, 2 = MSN, 3 = DNP, 4 = NP, 5 = PhD, 6 = Other
Section 4 Post-Survey: Benefits of Reporting Tool			
Faculty perceptions of the Patient Safety Reporting Tool (PSERT)	Ordinal	Faculty perceptions of benefits utilizing PSERT's in clinical environments in relation to student learning, communication and the degree in which faculty felt PSERT's should be included as routine educational practice.	Participants rated 3 items: The patient safety event reporting tool contributed to student learning, incorporating patient safety event reporting has improved communication surrounding patient safety between faculty and students in the clinical setting, and incorporating anonymous safety event reporting should be included as part of clinical practices and policies within the school of nursing. Each item was rated on a 5-point Likert scale: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral/Unsure, 4 = Agree and 5 = Strongly agree.
Qualitative Questions			
Influences within the clinical environments that affected incorporating just culture principles		Open ended focus group questions	What were the clinical environment influences faculty faced when working with students surrounding patient safety?

Variable	Variable Form	Theoretical Definition	Operational Definition
Impact of just culture educational activity		Open ended focus group questions	How did the educational activity impact faculty safety culture behaviors in the clinical environment?
Impact of utilizing a reporting tool		Open ended focus group questions	How faculty felt the reporting tool impacted student learning of patient safety in the clinical environment?
Clinical site culture of safety		Open ended focus group questions	How faculty perceived the culture of safety within clinical sites influenced safety theory into practice?
School of nursing culture of safety		Open ended focus group questions	Faculty were asked to describe the culture of safety within the school of nursing?

Appendix D

Weekly Clinical Patient Safety Event Reporting Tool (PSERT)

Survey Instructions:
1. This survey seeks to uncover patient safety events that occur or are witnessed in the clinical environment.
1. The survey asks about patient safety events that you noticed, witnessed, or were involved with in the clinical setting.
2. This survey is completely anonymous, no one will know who completed this survey. Clinical site, student and/or faculty information is not known. If accidental disclosure of such information is discovered, researchers will exclude any identifying information prior to reporting.
3. At the end of the semester all survey responses will trended and categorized as hazards, near misses or incidents.
4. Completion of the survey is entirely voluntary, though we do hope you will take this opportunity to teach and learn about patient safety reporting. Transparency is an important first step in improving quality safe care. With your participation, the school of nursing and clinical environments may gain rich information about patient safety to then implement processes to improve care.

Item	Detail
Was there an identified patient safety event during the clinical week?	Dropbox options: Yes Please complete the PSERT No Thank you, your survey is complete
Please do NOT include Protected Health Information (PHI) as part of this survey	
Who is completing report	Dropbox options Faculty Student Student and Faculty dyad
Time event was discovered	Example: 1430 (2:30pm) or 0800 (8:00am)
Clinical week	Example: 1,2 or 3
Semester	Dropbox options 1, 2, 3, 4
Location of event	Dropbox options Medical/surgical unit Psychiatric setting Pediatric unit Emergency Department OB/GYN setting Intensive Care unit Community setting Describe other area
Type of incident identified	Dropbox options Sharps Deviation in protocol Communication Environment of safety Medication Equipment/medical device Falls Scope of Practice Injury other than fall Breech of Health Protected Information Other-please describe
Category of event	Dropbox options Hazard (unsafe condition) Near misses (close call) Incident (reached the patient regardless of harm)
Brief description of incident	Comment box provided
Immediate and Follow up action taken	Comment box provided
How was the issue reported (if warranted) to the appropriate personnel at the clinical site and/or School of Nursing?	Dropbox options Incident Report Created Verbally Clinical Site School of Nursing Written
Thank you for accelerating our patient safety culture	

Note. Adapted from "*Generic & Event-Specific Formats,"* by AHRQ, 2013, and from "*Developing a reporting and tracking tool for nursing student errors and near misses*," by Disch, and Barnsteiner, 2014, Journal Of Nursing Regulation, *5*(1)

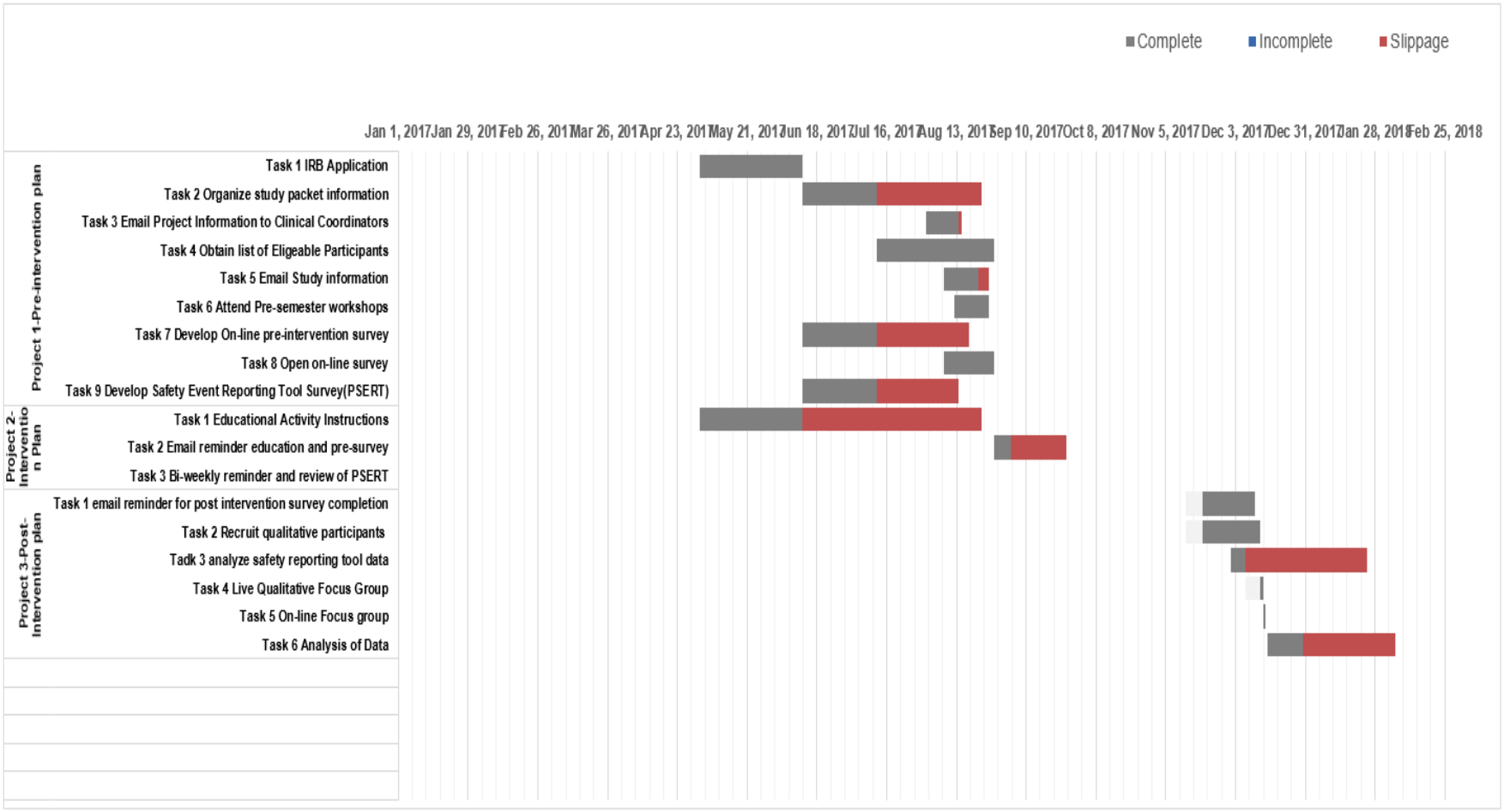
Appendix E

Gantt Chart Project Task List

PROJECT	TASK	PRIORITY	START	PLAN END	ACTUAL END	% COMPLETE	Project Start	Days to Start	Complete	Incomplete	Slippage	Plan Days
Project 1-Pre-intervention plan	Task 1 IRB Application	HIGH	5/2/2017	6/12/2017	6/9/2017	100%	5/2/2017	0	41	0	-3	41
	Task 2 Organize study packet information	MEDIUM	6/12/2017	7/12/2017	8/23/2017	100%	6/12/2017	0	30	0	42	30
	Task 3 Email Project Information to Clinical Coordinators	HIGH	8/1/2017	8/14/2017	8/15/2017	100%	8/1/2017	0	13	0	1	13
	Task 4 Obtain list of Eligeable Participants	HIGH	7/12/2017	8/28/2017	8/17/2017	100%	7/12/2017	0	47	0	-11	47
	Task 5 Email Study information	MEDIUM	8/8/2017	8/22/2017	8/26/2017	100%	8/8/2017	0	14	0	4	14
	Task 6 Attend Pre-semester workshops	MEDIUM	8/12/2017	8/26/2017	8/26/2017	100%	8/12/2017	0	14	0	0	14
	Task 7 Develop On-line pre-intervention survey	HIGH	6/12/2017	7/12/2017	8/18/2017	100%	6/12/2017	0	30	0	37	30
	Task 8 Open on-line survey	MEDIUM	8/8/2017	8/28/2017	8/26/2017	100%	8/8/2017	0	20	0	-2	20
	Task 9 Develop Safety Event Reporting Tool Survey(PSERT)	HIGH	6/12/2017	7/12/2017	8/14/2017	100%	6/12/2017	0	30	0	33	30
Project 2-Intervention Plan	Task 1 Educational Activity Instructions	HIGH	5/2/2017	6/12/2017	8/23/2017	100%	5/2/2017	0	41	0	72	41
	Task 2 Email reminder education and pre-survey	LOW	8/28/2017	9/4/2017	9/26/2017	100%	8/28/2017	0	7	0	22	7
	Task 3 Bi-weekly reminder and review of PSERT	LOW	9/8/2017	12/13/2017	11/18/2017						-25	96
Project 3-Post-Intervention plan	Task 1 email reminder for post intervention survey completion	LOW	11/20/2017	12/11/2017	12/3/2017	100%	11/13/2017	7	21	0	-8	21
	Task 2 Recruit qualitative participants	LOW	11/20/2017	12/13/2017	12/12/2017	100%	11/13/2017	7	23	0	-1	23
	Tadk 3 analyze safety reporting tool data	LOW	12/1/2017	12/7/2017	1/25/2018	100%	12/1/2017	0	6	0	49	6
	Task 4 Live Qualitative Focus Group	LOW	12/13/2017	12/14/2017	12/12/2017	100%	12/7/2017	6	1	0	-2	1
	Task 5 On-line Focus group	LOW	12/14/2017	12/15/2017	12/12/2017	100%	12/14/2017	0	1	0	-3	1
	Task 6 Analysis of Data	LOW	12/16/2017	12/30/2017	2/5/2018	100%	12/16/2017	0	14	0	37	14

Appendix F

Gantt Chart Project Timeline



Appendix G

Focus Group Qualitative Interview Questions

How did the patient safety event reporting tool influence faculty perceptions and practices of patient safety culture?
Have you filled out an incident or patient safety report at clinical with a student before? Do you feel the patient safety event reporting tool impacted student learning of patient safety in the clinical setting? Do you think it would benefit the clinical sight or school of nursing to have data trends reported by students or faculty?
What were the influences faculty faced when incorporating just culture principles in clinical environments?
How would you describe your clinical settings culture of safety in relation to just culture principles? When student do bring up issues that may be safety events, what are some ways these are usually addressed in clinical? Have you ever experienced a negative response in the clinical setting when bringing up or discussing an issue that impacts safety? In what ways or other ways would you say students or faculty influence the culture of safety in the clinical setting?
What were clinical faculty perceptions of the culture of safety in relation to just culture principles within the school of nursing?
In relation to just culture principles, how would you describe the culture of safety that currently exists in the school of nursing?

Appendix H

Paired *t* test of Individual Patient Safety Items

Question Stem: In the clinical setting	Pre		Post				95% CI		
I feel confident teaching about…	*M(SD)*	% Agree	*M(SD)*	% Agree	*t(16)*	*p*	LL	UL	Cohen's *d*
…the importance of having a questioning attitude and speaking up	4.41(0.51)	100	4.88(0.33)	100	-3.77	.002	-0.74,	-0.20	0.93
…the importance of a supportive environment that encourages patients and providers to speak	4.45(0.60)	94.1	4.88(0.33)	100	-4.24	.001	-0.79,	-0.27	0.89
…the nature of systems and system failures and their role in adverse events	3.82(0.81)	70.5	4.35(0.86)	88.2	-2.17	.046	-1.05,	-0.01	0.66
…managing inter-professional conflict	3.88(0.72)	64.7	4.13(0.50)	94.1	-1.07	.300	-		-
…sharing authority, leadership, and decision-making	4.00(0.79)	70.6	4.41(0.51)	100	-2.75	.014	-0.73,	-0.09	0.52
…encouraging team members to speak up, question, challenge, advocate and be accountable as appropriate	4.12(0.78)	88.2	4.65(0.61)	94.1	-3.50	.003	-0.85,	-0.02	0.68
…enhancing patient safety through clear and consistent communication with patients	4.69(0.48)	100	4.88(0.34)	100	-1.86	.083	-		-
…enhancing patient safety through effective communication with other health care providers	4.67(0.49)	100	4.87(0.35)	100	-1.38	.189	-		-
…effective verbal and nonverbal communication abilities to prevent adverse events	4.35(0.49)	100	4.82(0.39)	100	-3.77	.002	-0.74,	-.021	0.95
…recognizing routine situations and settings in which safety problems may arise	4.06(0.57)	88.2	4.44(0.51)	100	-3.00	.009	-0.11,	-3.00	0.66
…identifying and implementing safety solutions	4.18(0.53)	94.1	4.41(0.51)	100	-2.22	.041	-0.46,	-0.01	0.43
…anticipating and managing high risk situations	4.24(0.66)	88.2	4.35(0.61)	94.1	-0.70	.496	-		-
…the role of human factors such as fatigue, competence that effect patient safety	3.94(0.97)	64.7	4.41(0.87)	88.2	-1.58	.134	-		-
…the role of environmental factors such as work flow, ergonomics, resources, that effect patient safety	3.88(0.60)	76.5	4.35(0.61)	94.1	-3.11	.007	-0.15,	-3.10	0.78
…recognizing an adverse event or close call	3.94(0.85)	75	4.69(0.48)	100	-3.22	.006	-0.25,	-3.22	0.88
…reducing harm by addressing immediate risks for patients and others involved	4.29(0.59)	94.1	4.71(0.47)	100	-2.75	.014	-0.09,	-2.75	0.71

Note. CI = Confidence interval; LL = Lower limit; UL = Upper limit

Appendix I

Paired *t* test of Patient Safety Dimension Factor Scores

Safety Dimensions	M(SD)					95% CI	
	Pre	Post	*t*(16)	*p*	Cohen's *d*	LL	UL
Culture of Safety	4.20(.53)	4.71(.41)	-3.79	.002	0.97	-0.79,	-0.22
Communicating	4.55(.39)	4.82(.36)	-3.00	.008	0.70	-0.47,	-0.81
Managing Safety Risks	4.18(.49)	4.41(.48)	-2.40	.029	0.48	-0.44,	-0.03
Human/Environmental	3.91(.71)	4.38(.60)	-2.49	.024	0.66	-0.87,	-0.07
Adverse Events	4.12(.63)	4.71(.44)	-3.64	.002	0.94	-0.93,	-0.25
Working in Teams	4.02(.56)	4.39(.34)	-3.00	.008	0.67	-0.64,	-0.11
Overall Confidence	4.16(.41)	4.57(.35)	-4.69	.001	1.12	-0.59,	-0.22

Note. CI = Confidence interval; LL = Lower limit; UL = Upper limit.

Appendix J

Paired *t* test of Broader Aspect and Comfort Speaking Up Items

Broader Aspects of Patient Safety	Pre		Post		Paired Samples Test	
	M(SD)	%Agree	*M(SD)*	%Agree	*t*(16)	*p*
The scope of what is safe for students to do in the clinical setting is very clear to me	3.53(1.07)	58.8	4.18(0.73)	82.4	-2.68	.017*
There is consistency in how patient safety issues are dealt with by different preceptors in the clinical setting	3.00(0.79)	29.4	**3.06(0.75)**	29.4	-0.32	.750
Students are provided sufficient opportunity to interact with members of interdisciplinary teams in the clinical setting	3.35(0.86)	47.1	3.65(0.61)	94.1	-1.16	.264
I have a solid understanding that reporting adverse events and close calls can lead to change and can reduce re-occurrence of events	4.59(0.51)	100	4.71(0.47)	100	-1.00	.332
Patient safety science is well integrated into the overall nursing program	3.88(0.78)	64.7	3.94(0.66)	76.4	-0.57	.579
Clinical aspects of patient safety (e.g. hand hygiene, transferring patients, medication safety are well covered in our nursing program	4.18(0.88)	70.6	4.53(0.80)	82.4	-1.69	.111
System aspects of patient safety are well covered in our program	3.41(0.79)	35.3	3.76(0.75)	70.6	-1.85	.083
Comfort Speaking Up						
In clinical settings, discussion around adverse events focuses mainly on system-related issues, rather than focusing on the individual(s) most responsible for the event)	3.63(0.89)	58.9	**3.44(0.89)**	56.3	0.82	.423
In clinical settings, reporting a patient safety problem will result in negative repercussions for the person reporting it	3.71(0.92)	70.6	**3.47(0.87)**	58.8	-1.00	.332
If I see someone engaging in unsafe care practice in the clinical setting, I feel safe to approach them	3.81(0.91)	75.1	4.19(0.66)	88.2	-2.09	.054

Note. Post survey item mean scores lower than 3.5 in boldface. % Agree = participants who either agreed or strongly agreed with the item statement. * $p < .05$ at 95% confidence interval, lower limit = -1.16 and upper limit = -0.14.

Appendix K

Patient Safety Event Report Details

Category of Event	***n***	**%**	Events Descriptions by Type, Location **or** Category
Incident	17	50.0	Medication that should not be crushed was given crushed
Near miss	8	23.5	Patient found with bed raised and bed rails down
Hazard	9	26.5	Nurse wore same gloves for AM care and med administration
Type of Event			
Infection control	14	41.2	Provider entered room without cleansing hands, sanitizer empty
Protocol deviation	3	8.8	Patient received blood transfusion without consent
Environment/safety	4	11.8	Needle left on patient bedside table
Falls	2	5.9	High falls risk patient in chair without alarm
Communication	3	8.8	Pt NPO through the night without knowing rational
Equipment/device	4	11.8	Out of range vital signs due to machine error
Medication	4	11.8	Medication left at patient's bedside
Location of Event			
Medical/surgical unit	25	78.1	Staff did not wash with soap and water after exiting C-diff room
Pediatric setting	3	9.4	Nurse did not clean hub of an IV site prior to infusing medication
Psychiatric setting	4	12.5	Provider rounding without hand hygiene between three patients

Note. Event descriptions were examples from the reported patient safety events.

Appendix L

Faculty Perceptions and Experiences Incorporating Just Culture Principles

How patient safety event reporting tool influence faculty perceptions and practices of patient safety culture	
Major Themes: Connectedness	**Minor Themes:** Acting as individuals not part of a system; Perceived risk of relationships: Competing priorities
Questions	**Faculty Quotes**
Safety reporting with students	"We do a situational awareness, and we kind of tie that in at the same time with when we're looking around on your unit." (P2) "I tried to tie it in during post conference…and also just did a short introduction…I was also able to explain how we actually do this as nurses using our own hospital system." (P2) "…what would they anticipate in that given clinical setting and then, keep an eye out for it…you also want to see them process that." (P3) "I've never had the situation where the need arise…if it does I definitely will…have to make time for it". (P6)
Impact on student learning	"I felt that wasn't necessarily a good use of their time to walk them through it. I told them, here's what's going on, here's where it is, fill it out." (P1) "…preparing them for the kind of scenarios in med-surg 1 could be helpful." (P2)
Benefits of trends for school of nursing or clinical setting	"Most of my students I think in general told me whatever the thing was they were reporting… triaged them myself whether I needed to bring it to the director or if they were something that was a good learning thing but we didn't necessarily need to make a report." (P2) "…makes it dangerous…I think that the hospital would tell me not to come back." (P5) "I would imagine there are no surprises for the unit…" (P1)

Influences faculty face when incorporating just culture principles in clinical environments	
Major Themes: Environmental realities; Connectedness	**Minor Themes:** Learning environments; Non-punitive environments; Contextual relationships; Constraining and enabling actions
Questions	**Faculty Quotes**
Describe clinical culture of safety	"…attitude of, everybody's learning, is out there." (P1) "my place has worked pretty hard on just culture, but the problem is when the student does find that one person who shuts them down. It can really impact them." (P2)
Communication with clinical leadership	"…when I see…not best practice, I immediately bring that to the attention of the nurse." (P5) "…before I even get to the unit I meet the managers…develop a relationship…" (P6) "…longer term relationship…they are receptive to me…if it's a brand-new person, it's a different situation where…I go to the educator." (P1) "I don't know the nurse manager that well…even as an instructor you're a little nervous to that school unit relationship". (P4) "I usually report things to the nursing director…does a very good job of bringing things up in a nonpunitive way." (P2)
Responses to student	"…we're going to try to do the right thing follow just culture…so important… to question." (P2) "…depends on the student, if they feel too timid to say something…their personality and situation." (P4)
Students or faculty influences in the clinical setting	"…heard from the students…on med-surg units they get shut down and quickly." (P1) "…where I don't know the people as well and they're a little pricklier." (P3) "Doing the right thing doesn't take experience." (P5) "…sometimes they feel like you're watching and they know you're there, so they just try to do the right thing." "…people feel empowered when they feel like they're teaching or imparting knowledge." (P6)

Note. P = participant; P1, P2, P3, P4, P5, and P6 represents individual focus group participants. Participants were not labeled by clinical setting as requested by participants.

Appendix M

Faculty Perceptions of Culture of Safety at School of Nursing

Faculty perceptions of the culture of safety in relation to just culture principles within the school of nursing	
Major Themes: Relevance and Connectedness	**Minor Themes:** Implicit and explicit rules; Limited resources
Questions	**Faculty Quotes**
Communication among Faculty	"I don't find it very applicable…I don't even think we get to meet a lot of the clinical faculty." (P5) "I guess I feel that it's really high, mainly because we are the role models…" (P5)
Transparency	"Feel like it's a little hard for me to speak about the school nursing overall since I just teach the clinical and I'm not at the school very often…" (P2) "I would just agree that I hear from the students that there's a huge range in the clinical instructors." (P2) "…helping the students get less anxious, which puts them in a setting where they feel safer. And they feel like they can report that." (P3) "…it's really important that the students know where their limits are but they also know exactly what they're supposed to be doing." (P1) "Holding faculty accountable too." (P1) "Faculty…I think that they think that they have to know everything and that's just not the case. If they don't know, that's why they have you, but they have to know what they don't know." (P3)

Note. P = participant; P1, P2, P3, P4, P5, and P6 represents individual focus group participants. Participants were not labeled by clinical setting as requested by participants.