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Author Note

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Demographic, Work Environment and Resilience Characteristics Among Registered Nurses

Abstract

In a caring profession like nursing, the risk of sending newly-graduated nurses with low resilience into the workplace provided impetus for the study to explore the association between demographic, work environment and resilience characteristics among registered nurses employed in acute care setting. Select subscales from the PES-NWI were used to assess Nurse Manager Ability, Leadership and Support of Nurses; Staffing and Resource Adequacy; and Collegial Nurse-Physician Relations (Lake, 2002) and the Resilience Scale was used to measure resilience (Wagnild & Young, 1993). Intent to stay was measured by McCain's Behavioral Commitment Scale (McCloskey, 1990). One-hundred and thirteen (113) registered nurses completed and returned the survey, giving a response rate of 50.2%. Using SPSS 24 (IBM Corp., 2013) software, descriptive and inferential statistics were used to analyze the data. The p-value for all comparisons was set at $p \leq 0.05$. Five (5) out of the twenty-one (21) correlations were statistically significant and were greater than or equal to .33. Resilience scores and Behavioral Commitment scores, or intent-to-stay, had a correlation of only .069. Adequate Staffing was also correlated to positive Nurse-physician relationships and to strong Nurse Management. These factors are clearly related to creating a stable workforce among nurses. The results showed that no factor had strong correlation with the highest level of nursing education received, suggesting that, at this hospital, registered nurses prepared by a four-year degree had no higher or lower resilience and were no more or less likely to stay at their place of work than those who were prepared at the associate degree level. Findings from this study have the potential to mitigate practice work environment stressors and decrease turnover among registered nurses employed in acute care settings.

Introduction

When the average person is asked to think of the term ‘resilience’ they tend to define it roughly as the ability to “bounce back” after a difficult situation. The Oxford Handbook of Positive Psychology and its associated research generally refers to resilience as a pattern of positive adaption after periods or instances of adversity or negative risk (Lopez & Snyder, 2011). Front-line registered nurses are constantly challenged by demands of patient care and numerous interpersonal, emotional and physical work-related stressors. Resilience impacts nurses’ ability to achieve positive patient health outcomes as resilience capacity is associated with reduced physical and emotional exhaustion [compassion fatigue] (Hylton, et al., 2015, & Spence, 2008). Using survey methodology, this study seeks to explore the association between demographic characteristics, work environment characteristics and resilience among front-line registered nurses employed in acute care settings of a regional hospital located in Northwest Arkansas. The proposed research question: What is the association between demographic characteristics, work environment characteristics, intent to stay, and resilience among front-line registered nurses employed in a regional hospital?

Background

Considering that the professional formation of nurses in higher education is a strenuous experience that extends across multiple years and requires resilience, resilience was measured in pre-licensure students in a cross-sectional study at the University of Arkansas. Results from this study showed mean resilience scores decreased as students moved through the pre-licensure program. In a caring profession like nursing, the risk of sending newly-graduated nurses with low resilience into the workplace provided impetus for the study to explore the association

between demographic, work environment and resilience characteristics among registered nurses employed in acute care setting.

Literature Review

When examining resilience in the nursing field, it is important to understand that resilience is used in a variety of fields and disciplines, but resilience in nursing encompasses some unique components (Earvolino-Ramirez, 2007). One concept analysis and another study on building resilience in the workplace agreed that the main antecedent to resilience is adversity and that building resilience involves a process of reflecting upon both successes and failures (Hodges, Keely, & Troyan, 2008 & Earvolino-Ramirez, 2007). No one study has determined the best method to build resilience among nurses, and in a set of informal interviews researchers found that some nurses felt inherently endowed with resilience while others thought they had developed it over time (Kelly, Lankshear, & Jones, 2016). For the purposes of this study, resilience in nursing is defined by factors described by Wagnild and Young in the development of their Resilience Scale. Those included equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness (Wagnild & Young, 1993).

Available Tools for Assessing Resilience

In existing literature, resilience has been measured quantitatively using numerous instruments. Two comprehensive reviews evaluated instruments used to measure resilience. Both reviews concluded that the Resilience Scale (Wagnild & Young, 1993) had the best psychometric factors to span multiple age groups (Ahern et al., 2006 & Windle, Bennet, & Noyes, 2011). The second review of instruments found that the Resilience Scale was appropriate for a wide array of populations and reported that the Resilience Scale had the highest score for

validity and interpretability of all the instruments examined (Windle, Bennet, and Noyes). These reviews and psychometric studies of instruments to measure resilience are invaluable to the selection of survey instruments when studying resilience. In order to compare resilience findings across time and populations and ensure highest probable validity, the Wagnild and Young Resilience Scale was used.

Previous Research

Current research in resilience is not extensive. In order to maintain relevance and possible generalizability to the aims of the proposed study, research performed in non-western countries or non-English speaking countries were excluded from this literature review. Studies examining the predictive factors for resilience or those that explored characteristics associated with resilience were only considered if they were done on healthcare professionals. Within these parameters, very little research has been done on predictive and related factors of resilience. Use of semi-structured interviews in a study of resilience in registered nurses found that new nurses adapt to their surroundings successfully by learning the milieu, discerning good fit in the organization, and moving through adversity (Hodges, Keeley, & Troyan, 2008). A study conducted to test the effectiveness of resiliency training in the workplace found that patient satisfaction is improved when nurses feel they are more supported (Pipe, et al., 2012). These qualitative styles of research focus on the developing themes relating to resilience, while other studies examined quantifiable associations between resilience and factors such as job satisfaction, age, years of experience, and intent to stay. One such study found that there was little connection between years of experience, age, and resilience (Gillespie, Chaboyer, & Wallis, 2009). The 2009 study had a clear weakness in that it did not adequately differentiate between

age and years of experience and thus found no correlation in either factor. This study will reexamine the association between each of these demographic characteristics and resilience.

Another focus of this study was to explore the association between workplace characteristics and resilience. One study found that although no one style of interpretation (within the sub-categories related to resilience) was a predictor of personal stress, overall resilience in nurses played a role in job satisfaction (Larrabee, et al., 2010). Another study exploring the association between burnout and resilience among nurses found that resilience did not differ significantly with years of experience but was a protective factor in emotional exhaustion and burnout (Hylton, et al., 2015). A similar study reported resilience played a role in job satisfaction and theorized based on the data that there may be correlation between resilience and intent-to-stay, although the relatively small sample size limited statistical significance (Hudgins, 2001). Overall, there is congruence in the literature regarding the concept of resilience and measuring it in registered nurses. However, additional research is needed to advance knowledge regarding the association of demographic and work environment characteristics on resilience and the impact this knowledge could have in the professional formation of future of nurses and the delivery of nursing care across settings.

Research Design and Methods

Using a cross-sectional research design, the descriptive survey was given to two hundred and twenty-five (225) Registered Nurses employed at a regional hospital. One-hundred and thirteen (113) registered nurses completed and returned the survey, giving a response rate of 50.2%. Surveys were distributed over a two-month period. In collaboration with hospital/unit leadership, registered nurses were approached at designated times to complete the surveys. A

member of the research team was present to describe the study, answer questions, distribute the survey, and to collect completed surveys. Aside from demographic information, no other personal identifying information was collected

The paper-pencil survey measured resilience, practice environment characteristics, behavioral commitment, and select demographic characteristics. All employed registered nurses of the regional facility were invited to participate until 225 surveys were distributed. Completion of the survey implied consent, and participants were informed of this at the time of survey distribution as well as in a cover letter attached to the survey. Identifying information was not recorded on survey document and following completion of data entry into a secure electronic database, surveys were destroyed. Hospital leadership was not made aware of participants.

To ensure confidentiality of participants, results of the study will be reported only in aggregate. Using SPSS 24 (IBM Corp., 2013) software, descriptive and inferential statistics were used to analyze the data. The *p*-value for all comparisons was set at $p \leq 0.05$. This study has been approved by the Institutional Review Board (IRB) at the University of Arkansas and the participating regional hospital.

Instrumentation

Demographic data for the proposed study was collected using a standardized worksheet developed for the purpose of this study. Select subscales from the PES-NWI were used to assess Nurse Manager Ability, Leadership and Support of Nurses; Staffing and Resource Adequacy; and Collegial Nurse-Physician Relations (Lake, 2002) and the Resilience Scale was used to measure resilience (Wagnild & Young, 1993). Intent to stay was measured by McCain's Behavioral Commitment Scale (McCloskey, 1990).

The Resilience Scale uses 26 questions on a seven (7) point Likert scale to assess resilience. Each responder's answers can be averaged to determine a resilience score between one (1) and seven (7), with seven (7) showing the highest possible resilience score. Similarly, the PES-NWI uses a four (4) point Likert scale, with four (4) representing a high level of positive work environment characteristics. The Behavioral Commitment Scale uses a five (5) point Likert Scale, with five (5) representing the highest level of commitment, or the greatest intent-to-stay. None of the chosen survey tools had questions needing to be reverse-coded.

Data Analysis

Several variables were examined in the collected survey. Each assessment tool variable is briefly defined in table 1.1 below.

Variable	*Definition*
Highest nursing education	Respondents were asked the highest complete degree in nursing education they had received, and given answer choices including associates, bachelors, masters, and doctorates degree.
WRMC years	The number of years the respondent has been employed at the regional hospital in the study.
Resilience	High scores on this variable indicate that respondents have inner strengths required to adapt positively
Commitment	High scores on this variable indicate nurse's intent to stay in their present jobs
Nurse Manager Support Subscale	High scores on this sub scale indicate that respondents feel that their nursing managers, or direct supervisors, adequately supports the decision-making ability and the autonomy of staff.
Staffing and Resource Adequacy Subscale	Higher scores on this subscale indicate that respondents feel there is adequate staff present to complete their job safely and efficiently.
Collegial Nurse-Physician Subscale	Higher score on this subscale indicate that respondents feel that nurses and physicians in their facility have a positive and collaborative relationship while working.

After survey collection, data was entered in to a secured account with Microsoft 365 Excel™ for organization and then transferred to SPSS software for analysis. Initial results showed an average resilience score of 5.65 out of 7 possible for the one hundred and thirteen (113) responders. The average PES-NWI score was 2.89 and the average Behavioral Commitment score was 2.98. The average age of respondent was 35 with respondents reporting an average of 7.29 nursing practice years. The average number of years working specifically at the regional hospital where the study was conducted was 3.8 with the average number of years worked on the nurses' designated unit being 3.2. Forty-three percent (43.3%) of respondents had a bachelor's degree or higher, and thirty-six (36.3%) of respondents had an associate degree in nursing. Approximately twenty percent (19.5%) did not respond. According to the survey, eighty-seven percent (87%) of respondents had worked at the regional facility for less than ten years, and twenty-three percent (23.2%) had more than ten years of experience at the regional hospital.

Correlation coefficients were computed among the seven variables. The results of the correlational analyses presented in Table 2. show that 5 out of the 21 correlations were statistically significant and were greater than or equal to .33.

Table 2 Correlations among the Seven Variables

	Nurse Manager	WRMC years	Resilience	Commitment	Nurse Physician relations	Staffing and Resources
WRMC years	-.035					
Resilience	.333*	.048				
Commitment	.193	.224	.069			
NP Relations	.229	.042	.299	.384*		
Staffing	.450*	.085	.230	.446*	.395*	
Nursing Education	-.136	-.170	.015	.125	-.007	.202

*p <.002

Using the Bonferroni approach to control for Type 1 error across the 21 correlations, a *p* value of less than .002 (.05/21=.002) was required for significance. Correlations of other variables are lower and not significant.

Discussion of Results

The initial hypothesis of this research study was that resilience would be greatly impacted by demographic factors such as years of experience and by work environment characteristic factors, and that there would be a strong correlation between greater resilience and intent to stay. However, significant correlation with resilience was only found with Nursing Manager Support. The relationship between these variables shows that nurses with a higher resilience score are more likely to feel that their nurse manager was supportive of staff nurses and likely to defend the responsibility and autonomy of nurses. Resilience scores and Behavioral Commitment scores, or intent-to-stay, had a correlation of only 0.069, showing little to no correlation. Based upon this evidence, a higher resilience score does not necessarily indicate more likely intent-to-stay, as hypothesized. Resilience scores were moderately associated (correlational coefficient 0.333, $p < .001$) with scores on the Nurse Manager Ability, Leadership, and Support of Nurses subscale of the PES-NWI. If resilience is the criterion variable and nurse manager ability, leadership, and support of nurses is the predictor, we can conclude that 11% of the variance (0.333^2) is accounted for by its linear relationship with this subscale of the nurse environment

The factors that are more greatly correlated with intent to stay were Nurse-Physician relations and Adequate Staffing, two subscales of the PES-NWI. Correlation can only show a connection between two variables, not causation in one direction or another, but this information suggests that further research would be beneficial to determine the causative factors driving

intent to stay based on work environment characteristics. Adequate Staffing was also correlated to positive Nurse-physician relationships and to strong Nurse Management. These factors are clearly related to creating a stable workforce among nurses. The results showed that no factor had strong correlation with the highest level of nursing education received, suggesting that, at this hospital, registered nurses prepared by a four-year degree had no higher or lower resilience and were no more or less likely to stay at their place of work than those who were prepared at the associate degree level.

Limitations

The population studied for this project was limited by the geographical area and allotted time for the study to occur. Due to these limitations, 98 out of 113 respondents in to the race/ethnicity question on the survey responded as "white." Similarly, 72.6 percent of respondents were considered full-time status employees, and 47.8 worked the standard day shift of 7am to 7pm. Therefore, these results may not be valid for other populations.

The study also encountered an unforeseen problem using a paper-pencil survey. Two hundred and twenty-five copies were printed using a professional business printing company. Of these, an unknown number were printed with a page missing, leaving respondents unable to answer these questions. The researcher was not aware of the problem initially, and data collection was completed before the issue was resolved. As a result, only 67 out of 113 surveys had complete data, with no questions omitted and no answers falsified. Although the research team was still able to draw conclusions from the data, it bears noting that the strength of the finding is lessened in this case.

Future Research

Although this Study was unable to draw many meaningful conclusions about resilience in the nursing workforce, resilience may play a deeper role than initially discovered. Conducting this study on a larger scale, with a multi-hospital sample, would help to supply results that could be more widely generalized to the Registered Nurse population. As previously discussed, this study's results also highlight the importance of continuing research relating work environment characteristics and intent to stay. Although data was collected quantitatively, a qualitative study on the characteristics found in a competent nurse manager has the potential to improve the hiring and promotion of nurse managers, as well as the training received by nursing students in leadership. The connectivity between work environment, nurse leadership, and resilience should be more widely studied, specifically to determine if a connection exists between leadership characteristics and resilience.

Conclusion

Understanding the work environment and resilience characteristics of registered nurses will provide opportunities for improvement in undergraduate nursing education and organizational improvement. This study has shown that nursing leadership and adequate staffing are quintessential to developing a workforce of nurses committed to their job and to giving the highest level of patient care. Perhaps equally important is the development of positive nurse-physician relationships. Findings from this study have the potential to mitigate practice work environment stressors and decrease turnover among registered nurses employed in acute care settings.

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