

Moving Past Reality Shock: A Model for New Graduate Nurse Engagement

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THESIS

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I would like to dedicate this thesis to all of the nurse role-models in my life, especially my chair and advisor Catherine Vincent, my mother Lori Lampe, and my professional mentor Joan Plunk, who inspire me every day in my pursuit of meaningful growth. I would also like to recognize my sisters (by birth and acquired), who fortify me to be discouraged never. Finally, I would like to acknowledge my husband, Bryan Banks, for his unending love and support, without which, this work would not have come to fruition.

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LIST OF ABBREVIATIONS

NGN	New graduate nurse
LEB	Leader empowering behavior

SUMMARY

The purpose of this study was to propose a new model for new graduate nurse engagement. The new model was developed by incorporating propositions from Kramer's theory of new nurse socialization with relationships and concepts from Kanter's Theory of Structural Empowerment, Bandura's work on self-efficacy, and Newman's Attitude-Engagement Model. The aims of this study were to (a) examine the relationships among: self-efficacy (level of self-efficacy), personal goal attainment (level of perceived skill mastery), and affective engagement (level of job satisfaction, amount of affective organizational commitment, and level of job involvement) (b) the effects of personal characteristics (presence of previous work experience and type of degree completed) and organizational characteristics (amount of leader empowering behaviors, magnet status, size of hospital) on self-efficacy (level of self-efficacy), and (c) the effects of affective engagement (level of job satisfaction, amount of affective organizational commitment, and level of job involvement) and self-efficacy (level of self-efficacy) on behavioral engagement (retention). A preliminary study was also conducted to provide empirical support for Kramer's theory of new nurse socialization, specifically the existence of new graduate nurses' (NGNs') values mismatch (relationship between amount of leader empowering behaviors (LEBs) and level of organizational commitment) and phases of socialization (change in the amount of role satisfaction).

Secondary data analyses were completed, using data from a database of over 6,000 NGNs from 85 different hospitals available from Versant Holdings, LLC. The preliminary study challenges Kramer's proposition that values mismatch (the discrepancy in core values between idealized nursing practice created in the academic setting retained by NGNs and the realistic version of practice that exists in many professional settings) leads to low NGN role satisfaction and the existence of three distinct phases of socialization. Results from the second study provide early support the proposed model, suggesting a positive effect of personal characteristics and organizational characteristics on self-efficacy, and

SUMMARY (continued)

affective engagement on behavioral engagement; and moderately strong relationships between self-efficacy and goal attainment, and job satisfaction and organizational commitment.

This dissertation includes the findings of two research studies, presented here at two manuscripts. The first manuscript includes findings from pilot research conducted to provide empirical support for relationships proposed in Kramer's theory of new nurse socialization (the theoretical foundation of the follow up study). The second manuscript includes findings from the second study, in which a new model for new graduate nurse engagement is proposed. In the appendices, I have included approval letters for this research from the Institutional Review Boards at the University of Illinois at Chicago and data use agreements for access to the dataset used in the studies from Versant, LLC, and lastly my vita.

I. REALITY SHOCK: NEW NURSE ROLE SATISFACTION AND VALUES MISMATCH

Background

A crisis is looming in the impending nursing shortage. By 2020 there will be a national nursing shortage of 800,000 nurses, leaving a 29% vacancy rate (Wagner, 2006). These astounding statistics are the result of an aging nursing population, paired with the growing trend of high new graduate nurse (NGN) turnover. There is a large population of nurses who plan to leave nursing in the near future through retirement; the average age of a nurse in the United States is 47 years-old (The registered nurse population, 2010). Another group of nurses who are extremely vulnerable to turnover is NGNs with approximately 13% to 33% leaving an organization in their first year of employment, and an even higher number considering leaving (37%) (Bowles & Candela, 2005; Kovner, et al., 2007). High turnover rates can have devastating financial consequences; the average cost of replacing a nurse is between \$82,000 and \$88,000 (Jones, 2008). NGN turnover, and its financial consequences, is largely blamed on burnout (Cho, Laschinger, & Wong, 2006; Goh & Watt, 2003; Laschinger, 2008; Laschinger, Finegan, & Wilk, 2009; Rella, Winwood, & Lushington, 2009).

NGNs are highly susceptible to burnout as they make their transition from student to professional (Dyess & Sherman, 2009; Rella et al., 2009), partly due to incongruities in values between academic and professional nursing (values mismatch), according to Kramer's theory of new nurse socialization (Kramer, 1974). NGN burnout has serious implications for patient safety. Emotional exhaustion, a dimension of burnout, is strongly correlated with adverse patient events (Laschinger & Leiter, 2006; Purdy et al., 2010; Purdy, Laschinger, Finegan, Kerr, & Olivera, 2010). A total of 13.5% of hospitalized patients experience an adverse event, leading to more deaths every year than AIDS, breast cancer, or motor vehicle collisions (Institute of Medicine, 2003; United States Department of Health and Human Services, 2010). Interventions to reduce NGN turnover and burnout are necessary to reduce organizational costs and adverse patient events. Kramer (1974) provides a theoretical explanation for

causes of NGN burnout and turnover (values mismatch and low role satisfaction) that could prove useful in efforts to reduce their effects, but empirical support of her theory is needed. The purpose of this study was to provide empirical support for Kramer's theory of new nurse socialization by evaluating the existence of values mismatch and phases of new nurse socialization.

Kramer's Theory of New Nurse Socialization

In the 1970s Marlene Kramer explored the new graduate experiences of over 400 nurses across the country within the first 8 months of their employment and developed a theory of new nurse socialization. She discovered a similar cyclical experience among these nurses, which she called reality shock. The cycle has three phases: (1) honeymoon, (2) reality shock, (3) recovery/conflict resolution (Kramer, 1974).

Initially, new graduates enter the workplace in the "honeymoon" phase in which new graduates are focused on skill-building. NGNs have an overly positive outlook and are willing to ignore values mismatch (the discrepancy in core values between idealized nursing practice created in the academic setting retained by NGNs and the realistic version of practice that exists in many professional settings) (Kramer, 1974). Values mismatch often leads to poor role satisfaction (Kramer, 1974). The second phase, reality shock, sets in and NGNs feel moral outrage and rejection of the system in which they are expected to assimilate. They no longer ignore their values mismatch, and are now frustrated by the disconnection between the values they attained in nursing school, and the reality of nursing practice. The turmoil of reality shock leads to fatigue for NGNs (Kramer, 1974). Ultimately, NGNs enter the recovery phase, and a realistic perspective of their practice and organization takes hold. They may continue to cycle through the process of socialization and repeat earlier phases, or they may reach conflict resolution (Kramer, 1974).

In this study, values mismatch and the three phases of new nurse socialization (honeymoon, reality shock, and recovery/conflict resolution) were examined. We characterized values mismatch as

the strength of the relationship between LEBs and organizational commitment. That is, we postulated that NGNs experiencing values mismatch would show a weaker relationship between LEBs and organizational commitment than experienced nurses. The three phases of new nurse socialization were characterized by the change in the amount of NGNs' role satisfaction (a favorable evaluation of one's professional work and duties) over their first year of practice. We believed that during the honeymoon phase, NGNs would show high role satisfaction; in the reality shock phase, show a decrease in role satisfaction, and in the recovery/conflict resolution phase, show an increased amount of role satisfaction. Empirical support of values mismatch and the phases of new nurse socialization will provide support for use of Kramer's theory of new nurse socialization in future research.

Literature Review

New nurse residency and orientation programs focused on socialization and skill mastery, as recommended by Kramer (1974), have become a popular intervention in supporting NGNs to ease the effects of values mismatch and poor role satisfaction, such as turnover and low engagement. However, findings to support the use of these programs for this purpose are conflicting (Altier & Krsek, 2006; Halfer, Graf, & Sullivan, 2008; Herdrich & Lindsay, 2006).

Many investigators have evaluated NGN outcomes and identified Kramer's theory of new nurse socialization as a guiding framework, but they did not tie study findings back to theoretical concepts to provide empirical support for the theory (Bowles & Candela, 2005; Scott, 2005; Winter-Collins & McDaniel, 2000). Duchscher (2009) proposed an update to Kramer's theory and focused on antecedents and indicators of reality shock. She did not provide any explanation of outcomes, and did not provide empirical support for Kramer's propositions. Empirical support for Kramer's theory is needed to improve understanding and application of the theory to orientation design to improve outcomes related to NGN turnover, and to promote engagement.

Values mismatch. Support for the existence of values mismatch can be found in the literature. Maslach and Leiter (1997) described six work-life factors that reduce burnout and improve engagement: workload, control, reward, community, fairness, and value congruence (i.e., lack of values mismatch). Building off Maslach and Leiter's work, Laschinger and Finegan (2005) found that LEBs (e.g., involvement in decision-making) predicted engagement through workload, control, reward, community, and fairness. However, LEBs did not predict nurse engagement through value congruence (the sixth work-life factor). These findings suggest that if there is low value congruence (e.g., NGNs' values mismatch), then LEBs may not lead to engagement (i.e., organizational commitment). Thus, when values mismatch is present, LEBs may not be related to organizational commitment. Empirical testing of the existence and effects of NGNs' values mismatch is needed to develop and improve interventions, including orientation design, aimed at ameliorating its effects including turnover and poor engagement.

Role satisfaction. Many concepts' change through the first year of NGNs' practice and their relationships to NGNs' role satisfaction have been described in the literature, but not empirically tested. Ulrich et al. (2010) reported organizational job satisfaction and turnover intent among NGNs followed a pattern similar to that described by Kramer's socialization phases, with an initial favorable rating, then decline, and finally improvement over time. However, this pattern occurred over the first 5 years of practice, not the initial new graduate period of 12 months, as described by Kramer (1974). In addition, other dimensions such as nurse satisfaction and self-confidence showed a steady, gradual increase over time (Ulrich et al., 2010). Unfortunately, the significance of these differences over time was not reported.

Williams et al. (2007) found that NGNs' perceived control over practice, satisfaction with professional opportunities, and satisfaction with level of control and responsibility were high at the beginning of employment, decreased after 6 months, then increased at 12 months of employment, supporting the pattern of socialization phases proposed by Kramer (1974). However, two dimensions of

satisfaction did not follow the same pattern. Professional satisfaction was high at the beginning of employment, then decreased after 6 months, and continued to decrease at 12 months of employment (Williams, Goode, Krsek, Bednash, & Lynn, 2007). Finally, NGNs' self-perceived growth in clinical leadership abilities was rated highest after 12 months of employment than the two previous measurements at the beginning and 6 months after beginning employment (Williams et al., 2007). However, none of the patterns' significance was reported by the authors. Understanding the pattern of poor role satisfaction and developing strategies to cope with those sources is vital in determining effective tools to alleviate the consequences, such as turnover and poor engagement.

Purpose

The purpose of this study was to provide empirical support for Kramer's theory of new nurse socialization, specifically the existence of NGNs' values mismatch (relationship between amount of LEBs and level of organizational commitment) and phases of socialization (change in the amount of role satisfaction over time). The research questions for this study were: (a) is there a difference in the relationship between amount of LEBs and level of organizational commitment for NGNs (6 months of experience) compared to experienced nurses (2 years of experience)? And (b) are there differences in amounts of nurses' role satisfaction through transition from 3 months (honeymoon), to 6 months (reality shock), and at 12 months (recovery/conflict resolution) after beginning of employment? Based on Kramer's theory, it was expected that the amount of LEBs would have a stronger positive relationship with the level of organizational commitment among experienced nurses when compared to NGNs. In addition, it was expected that the amount of nurse role satisfaction would be significantly higher at 3 months than at 6 months, and significantly lower at 6 months than 12 months after beginning of employment.

Method

In this study, we used an exploratory, descriptive design with a secondary data analysis approach. The data used in this study were collected and stored in a database beginning over 10 years ago; data collection is ongoing.

Sample Characteristics

In the primary data collection, participants included NGNs who worked as employees at inpatient hospitals that contracted with Versant Corporation, LLC to provide NGN residency programming. Data from participants who completed the residency program from January 1, 2006 and December 31, 2010 were included in this secondary data analysis, due to changes implemented in the residency program in 2011, including length of program. All participants from acute care hospitals, children's hospitals, and skilled nursing facilities were included in analyses. Participants with missing items were excluded from analyses. Patterns of missingness were evaluated with none found.

Instruments

Several different instruments were used to measure the variables in this study. All instruments used have support for validity and reliability at the time of development and for use in this study (Table 1). Amount of LEBs was measured with a modified version of the Leader Empowering Behaviors Scale (Hui, 1994). Level of organizational commitment was measured with the Organizational Commitment Questionnaire (Mowday et al., 1979). NGNs' role satisfaction was measured with the Nursing Job Satisfaction Scale (Atwood & Hinshaw, 1987). The Nursing Job Satisfaction Scale is frequently used in the literature, with strong support for validity and reliability (Doran et al., 2007; Leveck & Jones, 1996; Wade et al., 2008).

Data Analysis

Multiple Linear Regression analysis was performed to assess for moderation of NGN status on the relationship between amount of LEBs and level of organizational commitment through creation of

an interaction term. Because both data points were available for the whole sample, we used the SPSS “split-file” feature to split cases into two separate groups randomly. This was necessary because the data available for all participants was longitudinal in nature, and within-subjects effects needed to be controlled.

Amount of nurse role satisfaction was compared 3, 6, and 12 months after the start of employment, using repeated measures Analysis of Variance (ANOVA). The level of statistical significance was set at $p < 0.05$ for all tests and SPSS 20.0 software was used for all analyses.

Results

The results of this secondary data analysis will be presented in two parts with descriptions of the different samples used to address each research question presented first. After describing sample characteristics, we will address values mismatch, followed by the socialization phases.

Sample Characteristics

For evaluation of the first research question of this study (examining values mismatch), a sample of 1,608 nurses was included. The majority of nurses were female (54.9%), Caucasian (47.3%), with Baccalaureate degrees (56.1%), and 23 to 30 years of age (53.4%) at the time of enrollment in the study. The majority of nurses also had some experience in a health related field prior to their nursing career (60.8%). This sample included nurses working in a variety of patient care areas with Medical-Surgical (27.3%) being the most common. After group assignment, the NGN group included a sample of 792 and the experienced nurse group included 816 participants. The two groups were not significantly different in any characteristics after random assignment.

For evaluating the second research question of this study (examining NGN socialization phases), 1,111 NGNs were included. The majority of nurses were female (87.1%) and Caucasian (52.2%), with Baccalaureate degrees (60.6%), and 23 to 30 years of age (56.4%) at the time of enrollment in the study.

The majority did have some type of previous experience in a health-related field (58.1%), and were working in a variety of patient care areas, with Medical-Surgical (29.2%) being the most common.

Values Mismatch

For both new graduate and experienced nurses, there was a statistically significant positive correlation between the amount of LEBs and the level of organizational commitment (Table 2). The regression model with amount of LEBs and the interaction term (NGN status) were found to statistically significantly predict the level of organizational commitment (F -statistics= 100.14; $p < 0.001$). The model explained 16% of the variance in organizational commitment ($R^2 = 0.16$; $p < 0.001$). Amount of LEB alone was found to significantly predict organizational commitment, but NGN status was not (Table 3). There was no significant interaction of NGN status on the relationship between amount of LEBs and level of organizational commitment ($p = 0.61$).

Role Satisfaction

The results of Repeated Measures ANOVA showed nurses' total satisfaction scores significantly decreased over time with each pair-wise comparison ($p < 0.001$), during the first 12 months of practice (3 months compared to 6 months, and 6 months compared to 12 months after beginning of employment). In analysis of the three subscales individually, the same pattern was seen in the Enjoyment subscale, with a significant decrease overall and between each time interval ($p < 0.001$) (Table 4). In the Quality of Care subscale, there was no statistically significant difference in satisfaction between 3- and 6-month time intervals ($p = 0.92$), or 6- and 12-month intervals ($p = 0.21$). However, there was a significant decrease in satisfaction related to quality of care between the 3- and 12-month interval ($p = 0.003$). For the Time to Do One's Job subscale, there was no statistically significant difference between the time intervals overall ($p = 0.06$), but there is a statistically significant decrease in satisfaction between the 3- and 6-month time intervals ($p = 0.02$) (Figure 1).

Discussion

The purpose of this study was to provide empirical support for Kramer's theory of new nurse socialization, specifically the existence of NGNs' values mismatch (relationship between amount of LEBs and level of organizational commitment) and phases of socialization (change in the amount of role satisfaction over time). We discovered two important findings. First, there was no significant difference in the relationship between LEBs and organizational commitment for NGNs compared to experienced nurses. Second, role satisfaction continued to decrease over the first 12 months of practice.

Values Mismatch

Because there was no difference in the relationship between LEBs and organizational commitment among NGNs compared to experienced nurses, the findings in this study do not support the existence of values' mismatch in this sample of nurses. This was not an expected finding, as the presence of an academic-practice gap (related to values mismatch) is well-documented in the literature (Bowles & Candela, 2005; Casey, Fink, Krugman, & Propst, 2004; Duchscher, 2009; Dyess & Sherman, 2009; Goh & Watt, 2003). However, the NGNs in this sample were participating in a residency program, targeted at easing the transition from student to professional nurse. Positive outcomes of residency programs have been reported (Ulrich et al., 2010), leading the Institute of Medicine to include a recommendation for implementation of the programs to advance the profession of nursing (Institute of Medicine, 2010). This finding supports the use of evidence-based residency programs in supporting NGNs through their first 12 months of practice. This finding does not provide support for the existence of values mismatch, as proposed by Kramer.

Role Satisfaction

Despite the lack of evidence of values mismatch in the sample, role satisfaction was found to decrease throughout the first 12 months of practice. This finding was not expected, as it is not consistent with the socialization cycle phases proposed by Kramer (1974). These findings differ from

other findings suggesting patterns in NGNs' satisfaction (Ulrich et al., 2010; Williams et al., 2007). However, different timeframes and concepts related to satisfaction were used in each of the previous studies, without reports of statistical analysis of change over time. It is important to note that nurses in this study did report higher levels of role satisfaction than has been reported in other studies with samples of more experienced nurses (Leveck & Jones, 1996; Wade et al, 2008). However, it is expected that a residency program would improve recovery from reality shock, not hinder it so this finding of continued decrease in satisfaction would potentially be exacerbated in a sample that had not participated in a residency program. In addition, there may be organizational factors that impact the pattern of change in role satisfaction over time.

In order to complete an in-depth analysis of changes in role satisfaction over time, evaluation of the instrument's subscales in addition to the total scores was completed. This analysis provided a more complete evaluation of the changes in role satisfaction experienced by NGNs. In contrast to Kramer's proposition, there is a marked decrease in level of job enjoyment, quality of care, and overall satisfaction throughout the first year in the nurses' careers. A positive recovery/conflict resolution, as suggested by Kramer (1974), was not evident in this sample of nurses, as many of the subscales showed a continued decrease in role satisfaction.

Strengths and Limitations

One strength of this study was that the large sample size provided strong statistical power and the ability to perform necessary statistical analyses to address the research questions. In addition, the multi-site nature of the data collection allowed for strong external validity. The findings of this study can be generalizable to health care organizations that provide residency or robust orientation programming for their NGNs, as many do. Finally, the correlation between the results at varying time intervals supports the reliability of the findings.

Major limitations include the nature of secondary data analysis related to the inability to directly measure some variables and the alteration of survey instruments by the primary data collectors weakens the internal validity of the study. There is also limited generalizability to NGNs who do not participate in any type of residency program upon hire. However, recruitment of an adequate sample size for a primary study would be the best alternative but is also logistically difficult.

Directions for Future Research

The findings of this study provide numerous opportunities for future research. These findings suggest that residency programs may alleviate values mismatch and lead to high levels of role satisfaction. Targeted interventions through a residency program may be needed to promote NGNs' organizational commitment in order to improve patient safety and improve retention. A better understanding of specific features of residency programs will assist in development of cost-effective interventions to improve NGNs' outcomes. Organizational characteristics may also play a role in patterns of NGNs' role satisfaction. Examination of additional relationships may provide support for multi-level interventions to improve NGNs' outcomes.

These findings do not support Kramer's propositions of the existence values mismatch between NGNs' academic ideals and those of the professional setting in which they become employed (Kramer, 1974). Additionally, the cycles of NGN socialization, including three distinct phases (Kramer, 1974) was not supported by these findings. This finding is significant, because it indicates that this theory may need modification or update from its original publication. There is the opportunity for updating and expanding this theory based on the latest evidence in nursing and organizational behavior research. A new theoretical model may be needed to describe potential outcomes of NGNs' experiences.

Conclusion

The period of time in which NGNs develop as a professional is wrought with stress and anxiety. Difficulty in transitioning from student to professional is a common experience that must be better

understood in order to improve patient outcomes as well and organizational financial outcomes. By providing empirical support for portions Kramer's theory of new nurse socialization and calling others into question, this study advances nursing science by creating the opportunity for refinement of theory surrounding NGNs' experiences. Likewise, the implications for targeted interventions may improve NGNs' experiences and improve negative outcomes associated with NGN burnout and turnover. This phenomenon is one that needs further study as increasing demand and decreasing supply of nurses becomes realized.

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Table 1

Study Instruments

Concept	Measure	Subscales	Number of Items	Scoring	Reliability
Leader	Leader	• Creating	27	7-point Likert-	Reliability at
Empowering	Empowering	Meaningfulness		type; Low	development:
Behaviors	Behaviors	of Work		score means	inter-item
	Scale (Hui, 1994)	• Encouraging		high amount	correlations ($r =$
		Participation in		of LEBs	0.20 to 0.69)
		Decision-			Reliability this
		Making			sample (modified
		• Expressing			version): Internal
		Confidence in			consistency
		High			reliability ($\alpha =$
		Performance			0.99), inter-
					subscale
					correlations ($r =$
					0.67 to 0.93)
<i>(continued)</i>					

Table 1 (continued)

Concept	Measure	Subscales	Number of Items	Scoring	Reliability
Organizational Commitment	Organizational Commitment Scale (Mowday et al., 1979)	None	15	7-point Likert-type; Low score means high level of organizational commitment	Reliability at development: internal consistency ($\alpha = 0.82$ to 0.93) Reliability in this sample (modified version): internal consistency ($\alpha = 0.91$)
Role Satisfaction	Nurses Job Satisfaction Scale (Atwood & Hinshaw, 1987)	<ul style="list-style-type: none"> • Quality of Care • Enjoyment • Time to do One's Job 	18	5-point Likert-type; High score means high level of role satisfaction	Reliability at development: not available Reliability in this sample (modified version): internal consistency ($\alpha = 0.91$), inter-item correlation ($r = 0.17$ to 0.64)

Table 2

Amount of Leader Empowering Behaviors and Level of Organizational Commitment

Variable	Mean (S.D.)	Correlation (p-value)
New Graduate Nurses		0.37 (<0.001)
Leader Empowering Behaviors	77.85 (24.41)	
Organizational Commitment	59.93 (13.87)	
Experienced Nurses		0.42 (<0.001)
Leader Empowering Behaviors	77.90 (22.90)	
Organizational Commitment	58.56 (12.15)	

Table 3

Effect of Amount of Leader Empowering Behaviors on Level of Organizational Commitment

Variable	B-value	Significance (p)
Constant	42.36	< 0.001
Leader Empowering Behaviors	0.22	< 0.001
Time Interval	-2.39	0.25
Leader Empowering Behaviors	0.01	0.61
Time Interval		
R ² = 0.16; F-statistic = 100.41 (p < 0.001)		

Table 4

Significance of Change in Amount of Role Satisfaction over Time

Dimension of Satisfaction	Mean (S.D.)			Within-Subjects Effects: F-statistic (p-value)
	3 months	6 months	12 months	
Total Satisfaction	71.32 (9.42)	70.14 (9.48)	68.62 (10.38)	55.76 (<0.001)
Enjoyment	38.74 (4.86)	37.95 (4.86)	36.46 (5.59)	135.74 (<0.001)
Quality of Care	18.83 (3.47)	18.65 (3.33)	18.47 (3.49)	6.96 (0.001)
Time to Do One's Job	13.75 (3.04)	13.53 (3.19)	13.69 (3.22)	2.91 (0.06)

Figure 1. Change in Amount of Role Satisfaction over Time

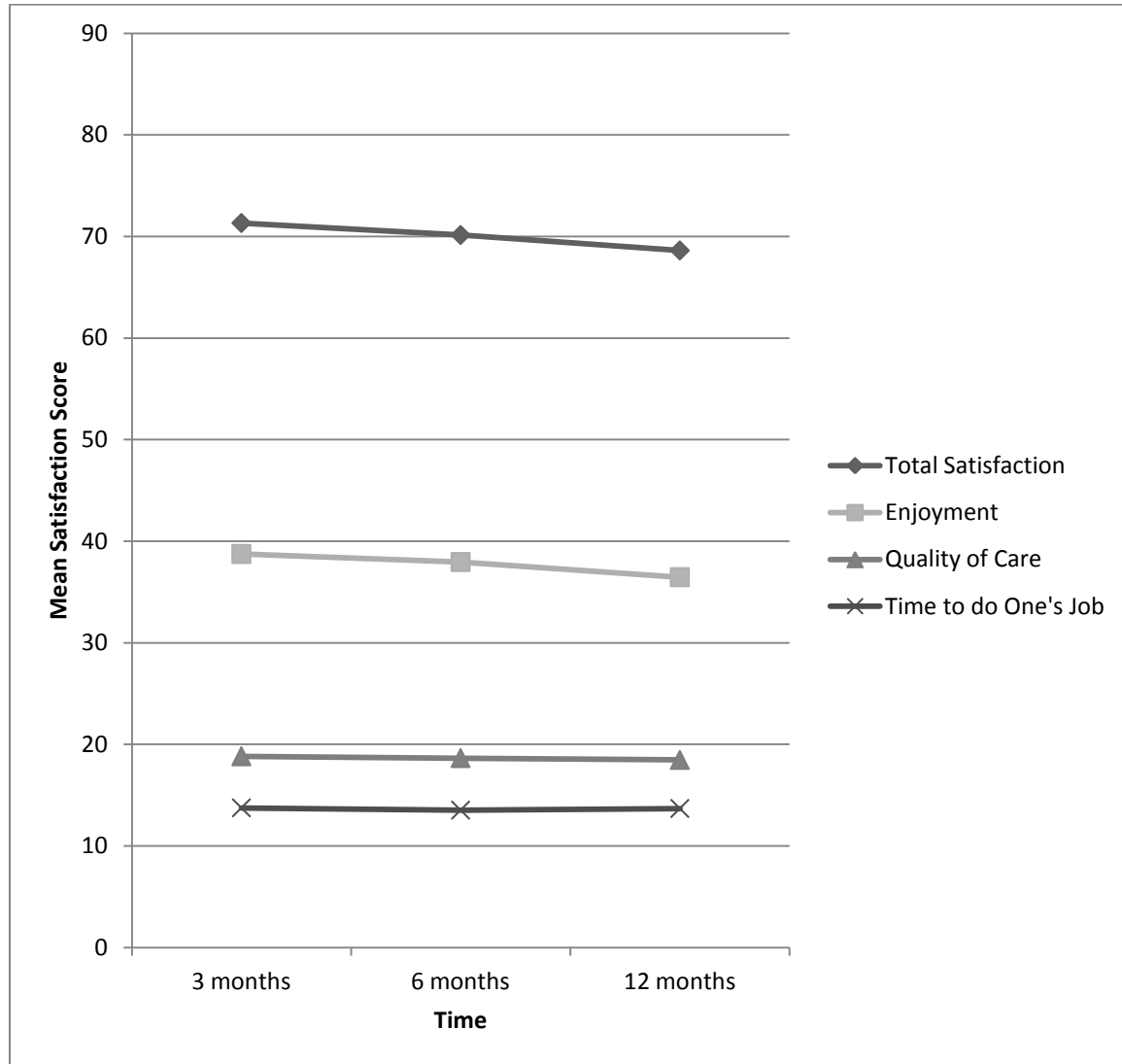


Figure 1. Mean response scores for the Nursing Job Satisfaction Scale (Atwood & Hinshaw, 1980), including total score and subscales. Highest possible scores for subscales include: 90 (Total Satisfaction), 45 (Enjoyment), 25 (Quality of Care), and 20 (Time to do One's Job).

II. A MODEL FOR NEW GRADUATE NURSE ENGAGEMENT

Background

New graduate nurses (NGNs) face many challenges entering the workforce. Investigators have described the NGN experience as a time of high stress, low self-efficacy, low professional self-concept, fear, and fatigue (Bowles & Candela, 2005; Casey, Fink, Krugman, & Propst, 2004; Cowin & Hengstberger-Sims, 2006; Dyess & Sherman, 2009; Goh & Watt, 2003; Rella, Winwood, & Lushington, 2009; Winter-Collins & McDaniel, 2000). Furthermore, investigators tested interventions to ease the transition from a student to professional nurse (Scott & Smith, 2008; Ulrich et al., 2010; Williams, Goode, Krsek, Bednash, & Lynn, 2007).

Engagement and burnout are potential opposing outcomes of the NGN experience, as described by Kramer's theory of new nurse socialization (Kramer, 1974). Engagement can be defined as an employee's favorable evaluation of their role, attachment to their company, and a psychological identification with work, resulting in high job performance (Newman, Joseph, & Hulin, 2010). One precursor of engagement is structural empowerment, while a potential outcome is reduced emotional exhaustion (Cho, Laschinger, & Wong, 2006). Burnout has been defined as a psychological condition, in which one experiences emotional exhaustion, depersonalization, and decreased personal accomplishment (Maslach, Jackson, & Leiter, 1997). In contrast to engagement, outcomes of burnout are much more widely reported and include high rates of new graduate turnover; an average 33% of nurses leave their workplace in their first year of employment (Bowles & Candela, 2005), costing health care organizations \$82,000 to \$88,000 per nurse (Jones, 2008). In addition, nurses' emotional exhaustion, a dimension of burnout, is strongly correlated with patient adverse events (Laschinger & Leiter, 2006; Purdy, Laschinger, Finegan, Kerr, & Olivera, 2010). Researchers indicated that patient adverse events in hospitals have been linked to 440,000 deaths per year, which would rank patient adverse events as the third leading cause of death in the United States (James, 2013; Murphy, Xu, &

Kochenak, 2013). NGNs are exceptionally vulnerable to burnout as they make their transition from a student to a professional (Dyess & Sherman, 2009; Rella et al., 2009). An improved understanding of NGN engagement could reduce burnout for nurses, reduce harm to patients, and improve financial and quality outcomes for healthcare organizations.

The purpose of this study was to propose a new model for NGN engagement incorporating concepts from Kramer's theory of new nurse socialization (Kramer, 1974), Kanter's theory of structural empowerment (Kanter, 1993), Bandura's work on self-efficacy (Bandura, 1982), and Newman's Attitude-Engagement Model (Newman et al., 2010).

Theoretical Framework

In 1974, Marlene Kramer proposed a theory of new nurse socialization to describe the process of NGNs' internal conflict and resolution through engagement or burnout as they progress through three stages of socialization: (1) honeymoon, (2) reality shock, (3) recovery/conflict resolution (Kramer, 1974). During the "honeymoon" phase, NGNs have an overly positive outlook and are willing to ignore their coworkers' imperfections. The second phase, reality shock, sets in and NGNs feel moral outrage and rejection of the system in which they are expected to assimilate. Ultimately, NGNs enter the recovery phase, and a realistic perspective of their practice and workplace takes hold. They may continue to cycle through the process of socialization and repeat earlier phases, or they may reach a final recovery/ conflict resolution (Kramer, 1974).

There are several challenges to applying Kramer's theory to current research. The outcomes described by Kramer are not presented in a way that is harmonious with current organizational behavior literature. Using relationships and concepts from organizational behavior theories will help translate work in other fields to nursing practice. In addition, interventions based on recommendations from Kramer, which focus on socialization and organizational skill mastery have yielded conflicting results. Some researchers showed increased job satisfaction and reduced turnover (Halfer, Graf, & Sullivan,

2008), while others reported no improvement in job satisfaction or turnover (Altier & Krsek, 2006; Herdrich & Lindsay, 2006). Clear outcome definitions and additional outcome predictors may help to eliminate discrepancies in findings. Based on recent literature, additional outcome predictors that may be appropriate to incorporate in a model of NGN engagement include self-efficacy, personal goal attainment (Bandura, 1982; Cheeks & Dunn, 2010; Greguras & Diefendorff, 2010; Judge, Bono, Erez, & Locke, 2005; Roberson, 1990; Salanova, Llorens, & Schaufeli, 2011) personal characteristics (Cowin & Hengstberger-Sims, 2006; Kelly & Courts, 2007), and organizational characteristics (Altier & Krsek, 2006; Bowles & Candela, 2005; Cho et al., 2006; Goh & Watt, 2003; Scott, 2005), as these outcomes have been shown to directly and indirectly affect engagement.

Researchers evaluating nurse residency and orientation outcomes identified Kramer's theory of new nurse socialization as the guiding framework, but did not connect findings back to the concepts or propositions of the theory (Bowles & Candela, 2005; Scott, 2005; Winter-Collins & McDaniel, 2000). In addition, Kramer's theory has undergone little testing or update since its original publication in 1974, leading to application challenges. Duchscher (2009) presented a proposed update to Kramer's theory, but focused on the antecedents and indicators of NGN internal conflict and did not provide any explanation of outcomes. Kramer's theory is valuable because it describes experiences of NGNs early in their careers and proposes stages that lend themselves to different interventions to create positive NGN outcomes, including retention and engagement. Therefore, in this study we examined potential factors that influence NGNs' likelihood of becoming engaged in their work, in order to build more robust interventions to promote affective engagement and behavioral engagement. These factors include personal characteristics, organizational characteristics, self-efficacy, and personal goal attainment.

A new model that incorporates relationships and concepts from theories in organizational behavior and psychology can be developed to better explain the phenomenon of NGN engagement and guide interventions to achieve this outcome. Added predictors in this proposed model include concepts

from Kanter's theory of structural empowerment, which supports the premise that organizational characteristics have a direct effect on self-efficacy (Kanter, 1993). According to Kanter, relationships that foster communication, an empowering work environment, and certain job characteristics lead to an employee's success through access to information, support, resources, and opportunities. Success is manifested by informal and formal power, work satisfaction, and productivity (Kanter, 1993). Kanter's theory provides support for organizational factors' effect on employee empowerment (i.e., self-efficacy) (Figure 2).

Predictors in the proposed model are also products of Bandura's work on self-efficacy (Bandura, 1982), which provides theoretical explanation for the relationship between personal characteristics and self-efficacy. Self-efficacy can be defined as one's own judgment of how confident one is in performing a task (Bandura, 1982). Bandura proposes that prior personal success leads to self-efficacy. Self-efficacy also has a bi-directional relationship with personal goal attainment (Bandura, 1982). Personal goal accomplishment also has bi-directional relationships with motivation, interest, and satisfaction (i.e., affective engagement) (Bandura, 1982). Bandura's findings provide support for a cyclical relationship among self-efficacy, personal goal attainment, and affective engagement, as well as a positive relationship between personal characteristics and self-efficacy (Figure 2).

Parsimonious descriptions of affective and behavioral engagement comes from Newman's Attitude-Engagement Model (Newman et al., 2010), which provides conceptual definitions and dimensions of affective engagement, which include job satisfaction, affective organizational commitment, and job involvement. Newman et al. described job satisfaction as favorable evaluation of one's work, affective organizational commitment includes feelings of attachment to one's organization, and job involvement is defined as one's psychological identification with one's work. Affective engagement is strongly related to behavioral engagement (job performance, citizenship behavior, and

absence of withdrawal). Newman et al. state that these dimensions of affective engagement are valuable to measure because of their ability to predict behavioral engagement (Figure 2).

Literature Review

Literature relevant to this study will be discussed by providing evidence of support for each conceptual relationship within the proposed model. Literature discussed in this section is from organizational behavior and nursing fields of study.

Effects of Personal Characteristics and Organizational Characteristics on Self-Efficacy. Personal characteristics included in this study are presence of previous healthcare work experience and type of nursing degree completed. Presence of healthcare work experience has been shown to have an impact on NGNs' level of job satisfaction and professional self-concept (Altier & Krsek, 2006; Cowin & Hengstberger-Sims, 2006; Kelly & Courts, 2007), two concepts that are related to self-efficacy. In addition, higher levels of nursing education were positively correlated with critical reflective practice (Lawrence, 2011), which may indicate a relationship between type of nursing degree completed and self-efficacy.

Specific organizational characteristics examined in this study include LEBs, Magnet® status, and hospital size. LEBs include those actions taken by leaders that create an environment in which employees are able to be successful in their work and feel as though they are involved in making decisions that affect their work (Cho et al., 2006). LEBs are also indicative of organizational empowerment structure (Cho et al., 2006) and affect self-efficacy (Kanter, 1993). Magnet® status is awarded to hospitals that have a formal employee empowerment structure and have demonstrated employee engagement through employee satisfaction and positive patient outcomes (American Nurses Credentialing Center, 2013), indicating common organizational characteristics, which promote self-efficacy, among hospitals with Magnet® status (K. J. Armstrong & Laschinger, 2006). There is empirical support that those hospitals with Magnet® status, report higher levels of nurse self-efficacy and

engagement (K. Armstrong, Laschinger, & Wong, 2009; K. J. Armstrong & Laschinger, 2006). Hospital size may also have an impact on NGN self-efficacy, as research demonstrates that NGNs on larger nursing units have more negative perceptions of the new graduate experience (Bowles & Candela, 2005). It is possible that factors common to large nursing units that affect NGNs' experience may also be present among large hospitals as well.

Relationships among Self-Efficacy, Personal Goal Attainment, and Affective Engagement.

There is strong support for the relationships among these three concepts throughout organizational behavior research. Self-efficacy is associated with improved job satisfaction and organizational commitment (dimensions of affective engagement) (Cheeks & Dunn, 2010; Judge et al., 2005; Roberson, 1990; Salanova et al., 2011), and personal goal attainment is predictive of job satisfaction (Greguras & Diefendorff, 2010; Roberson, 1990). Thus, this study proposed a cyclical relationship among self-efficacy, personal goal attainment, and affective engagement.

Effects of Affective Engagement and Self-Efficacy on Behavioral Engagement. In this study, affective engagement was measured by level of job satisfaction, amount of affective organizational commitment, and level of job involvement; behavioral engagement was measured by NGN retention. There is strong support that affective engagement predicts behavioral engagement. NGNs with high levels of satisfaction demonstrate improved retention (Cheeks & Dunn, 2010). Low affective engagement among nurses is associated with patient adverse events (i.e., poor job performance) (Laschinger & Leiter, 2006). Furthermore, nurses' high job satisfaction improves quality of care delivery (i.e., strong job performance). High job satisfaction has also been associated with dimensions of behavioral engagement including job performance and organizational citizenship behaviors (Greguras & Diefendorff, 2010). There is also support for the relationship between self-efficacy and behavioral engagement; Salanova et al. (2011) reported a positive relationship between self-efficacy and engagement (both affective and behavioral).

Purpose

The purpose of this study was to propose a new predictive model for NGN engagement including concepts of personal characteristics, organizational characteristics, self-efficacy, personal goal attainment, affective engagement, and behavioral engagement. The specific aim of this study was to examine (a) the effects of personal characteristics (presence of previous healthcare work experience and type of degree completed) and organizational characteristics (amount of leader empowering behaviors (LEBs), magnet status, and size of hospital) on self-efficacy (level of self-efficacy), (b) the relationships among self-efficacy (level of self-efficacy), personal goal attainment (level of perceived skill mastery), and affective engagement (level of job satisfaction, amount of affective organizational commitment, and level of job involvement), and (c) the effects of affective engagement (level of job satisfaction, amount of affective organizational commitment, and level of job involvement) and self-efficacy (level of self-efficacy) on behavioral engagement (retention) (Figure 2).

Method

In this study, an exploratory descriptive design was employed following a secondary data analysis approach. The data used in this study were collected and stored in a database beginning over 10 years ago. Due to changes made the residency program in 2011, including length of the program, data from participants who completed the residency program from January 1, 2006 and December 31, 2010 were included in this study.

Sample Characteristics

Those who participated in the primary data collection included NGNs who worked at inpatient hospitals that contracted with Versant Corporation, LLC to consult on NGN residency programming. All participants from acute care hospitals, children's hospitals, and skilled nursing facilities were included in this study except participants with missing responses to items, who were excluded. Patterns of missingness were evaluated with none found. Sample characteristic data available included gender,

race, level of education, age, presence of previous healthcare work experience, patient care area of work, employment at a Magnet® status hospital, and continued employment after 2 years after start of employment.

Exclusion and inclusion criteria used in this study resulted in a sample of 2,051 nurses for addressing the study aims. Sample characteristics are included in Table 5, demonstrating the majority of the nurses had previous work experience in a health related field (64.8%), completed a Bachelor's Degree in Nursing (57.2%), worked at an organization that did not have Magnet® status (58.0%), and continued employment at their organization 2 years after beginning employment (72.2%). The majority of nurses were female (85.4%), Caucasian (38.9%), and 23 to 30 years of age (55.8%) at the time of enrollment in the study.

Instruments

Table 6 includes details of each instrument used to measure variables in this study. All personal characteristics and organizational characteristics were measured by the primary data collectors upon beginning of employment, behavioral engagement (retention) was measured 2 years after beginning of employment, and all other variables were measured 6 months after the beginning of employment.

Personal characteristics included NGNs' presence of previous healthcare work experience and type of nursing degree completed. The type of nursing degree completed included options of Diploma, Associate's, Bachelor's, Accelerated Bachelor's, and Master's.

Organizational characteristics were measured by Magnet® status, hospital size, and with the Leader Empowering Behaviors Scale (Hui, 1994). Amount of LEBs was measured with a modified version of the Leader Empowering Behaviors (LEB) Scale ($\alpha = 0.97$) (Hui, 1994).

Level of self-efficacy was measured with the Skills Competency Self-Confidence Scale. This instrument was created by the primary data collectors (Coyazo, October 21, 2012).

Personal goal attainment was measured by NGNs' level of perceived skill mastery, which was measured with the Slater Nursing Competencies Rating Scale (Wandelt & Stewart, 1975). This rating scale was originally developed for observation of behavior, not self-evaluation. However, previous investigators have used this measure for self-evaluation with supported reliability ($\alpha = 0.98$) (Beecroft, Kunzman, & Krozek, 2001). Level of perceived skill mastery is an appropriate proxy variable for personal goal attainment because NGNs, as novices in their profession, are extremely task-focused (Benner, 1982). Skill-mastery and learning the role of a nurse is a primary concern for NGNs (Kramer, 1974). It is likely that NGNs set skill-based goals for themselves, and competency in that skill would indicate personal goal attainment. This concept is separate from self-efficacy because a NGN may feel competent, but lack self-efficacy in his or her ability to perform tasks as desired due to system barriers that are beyond their control (Kramer, 1974). Bivariate correlation was calculated to ensure separation of concepts between personal goal attainment and level of self-efficacy in this study ($r = 0.40$).

Affective engagement was measured by evaluating level of job satisfaction, amount of affective organizational commitment, and level of job involvement. Level of job satisfaction was measured with the Nursing Job Satisfaction Scale (Atwood & Hinshaw, 1987). Amount of affective organizational commitment was measured by a modified version Organizational Commitment Scale (Mowday et al., 1979). Level of job involvement was measured by a modified version the Nursing Role Conception Scale (Corwin, 1961). Role conception, as defined by Corwin (Corwin, 1961), includes rights and responsibilities one perceives as part of one's work, and shapes personality, goals, and motives (i.e., identity), closely mirroring Newman et al.'s (Newman et al., 2010) definition of job involvement.

For the purpose of this study, behavioral engagement is characterized by retention, which is defined as absence of complete withdrawal (turnover) from an organization. Retention was measured as continued employment, as reported by the participant's employer.

Data Analysis

Data screening and statistical analysis were performed using SPSS Version 20.0 (IBM Corp., 2011), and the level of statistical significance was set at $p < 0.05$ for all tests. Data screening was conducted to assess if the data were intact and reliable, and to evaluate distribution of data, patterns of missingness, and representativeness of sample characteristics compared to the general population of NGNs. Power analysis was completed to support validity of findings. Clustering of respondents from the same hospital or same region was a concern for the possibility of Type I error. Because the sample is not completely random, the sample characteristics were compared to those of the Nursing National Survey (United States Department of Health and Human Services, 2010). Differences between respondents based on hospital were assessed by including these variables in the regression models to control for this effect. Differences in outcomes based on gender, age, and race were included in the regression models to control for their effects.

Bivariate correlation and regression analyses were performed to address the specific aims, with assumptions met. Factor analysis was used to evaluate the best option for combining measures for affective engagement or keeping them as separate outcome variables. The decision was made to keep level of job satisfaction, amount of affective organizational commitment, and level of job involvement separate in analyses based on results of factor analyses completed and evaluation of the scree plot.

Results

The results of this secondary data analysis will be presented in three parts to address each aim of the study. After describing sample characteristics, we address the effects of personal characteristics and organizational characteristics on self-efficacy; followed by the relationships among self-efficacy, personal goal attainment, and affective engagement; then finally the effects of affective engagement and self-efficacy on behavioral engagement. The mean scores of the instrument totals and subscales were also calculated for comparison to other similar samples reported in the literature (Table 7).

Effects of Personal Characteristics and Organizational Characteristics on Self-Efficacy

The regression model to predict self-efficacy was found to be statistically significant (F-statistic= 5.41; $p < 0.001$). The model explained 7% of the variation of dependent variables ($R^2 = 0.07$). Completion of a Master's Degree in Nursing and the amount of LEBs significantly predicted self-efficacy, but presence of healthcare work experience, Magnet® status, and hospital size did not (Table 8). Facility ($\beta = 0.001$; $p = 0.001$) and Asian ethnicity ($\beta = 0.10$; $p = 0.001$) were also found to significantly predict self-efficacy, and were included in the model to control for their effects.

Relationships among Self-Efficacy, Personal Goal Attainment, and Affective Engagement

All bivariate correlations among self-efficacy, personal goal attainment, and affective engagement (job satisfaction, organizational commitment, and job involvement) were statistically significant ($p < 0.001$). However, only relationships between self-efficacy and personal goal attainment ($r = 0.40$), and between job satisfaction and organizational commitment ($r = 0.47$) were moderately strong (Table 9).

Effects of Affective Engagement and Self-Efficacy on Behavioral Engagement

The logistic regression model to predict behavioral engagement (retention) was found to be statistically significant ($X^2 = 36.67$; $p = 0.001$). The model explained 4% of the variance of dependent variable ($R^2 = 0.04$). Affective engagement (the amount of organizational commitment and level of job involvement) significantly predicted retention; level of job satisfaction, and level of self-efficacy did not (Table 10). Asian ethnicity ($\beta = -0.38$; $p = 0.04$) and Hispanic ethnicity ($\beta = -0.55$; $p = 0.003$) significantly predicted retention, and were included in the model to control for their effects.

Discussion

The purpose of this study was to propose a new model for NGN engagement by examining the effects of personal characteristics and organizational characteristics on self-efficacy, the relationships among self-efficacy, personal goal attainment, and affective engagement; and the effects of self-efficacy

and affective engagement on behavioral engagement. We will discuss the findings of this study in sections related to the sample characteristics, then for each individual aim. Overall, key relationships of the proposed model for NGN engagement are supported by these findings.

Sample Characteristics

Nurses in this study were slightly different than the national sample of registered nurses, which has a lower proportion of Bachelor's Degree prepared nurses (34.2%) and included fewer non-white nurses (16.8%). The sample of nurses in this study is similar to the national sample of nurses in regards to employment setting, with 62.2% of nurses practicing in a hospital setting (United States Department of Health and Human Services, 2010). In addition, the nurses in this study reported much higher amounts of LEBs compared to another sample available in the literature consisting of mostly diploma, older (mean age was 40 years-old), and more experienced nurses (mean amount of experience was 17 years) (Laschinger, Wong, McMahon, & Kaufmann, 1999). Nurses in this study also reported higher levels of job satisfaction compared to those reported in other studies with experienced nurses (Leveck & Jones, 1996; Wade et al., 2008). This may be the result of higher levels of affective engagement related to the residency program in which they participated.

Effects of Personal Characteristics and Organizational Characteristics on Self-Efficacy

The results support that some personal characteristics predict self-efficacy among NGNs. Although the total predictive value of the included variables is low, it was anticipated as there are several variables that predict self-efficacy that were not included. Respondents with a Master's Degree in Nursing reported higher levels of self-efficacy than those with a Diploma, Associate's, Bachelor's, or Accelerated Bachelor's degrees. This finding is not surprising, as it is likely that the individuals who seek out a Master's Degree for entry to nursing practice are likely to have high self-efficacy in many endeavors and the accomplishment of this type of degree would increase one's self-efficacy in achieving similar successes, according to Bandura's work on self-efficacy (Bandura, 1982). This is consistent with

other findings suggesting that increased levels of education are related to critically reflective practice, which may lead to self-efficacy (Lawrence, 2011). Previous work experience in a health related field was not found to predict NGNs' self-efficacy. This finding was unexpected because Bandura (1982) theorizes that past success with a set of tasks improves self-efficacy in performing similar tasks in the future. Also, other investigators have identified work experience in a health related field leads to increased professional self-concept and job satisfaction among NGNs (concepts related to self-efficacy) (Altier & Krsek, 2006; Cowin & Hengstberger-Sims, 2006; Kelly & Courts, 2007). The conflicting result found in this study may be related to the validity of the instrument used to measure level of self-efficacy.

In addition to personal characteristics, certain organizational characteristics predict NGNs' self-efficacy including LEBs. This finding is expected since these behaviors point to a formal empowerment structure within an organization (Cho et al., 2006) , which impacts self-efficacy (Kanter, 1993). However, Magnet® status was not found to predict NGNs' self-efficacy. This finding may seem contradictory to the relationship between LEBs and self-efficacy, but the lack of relationship may indicate that the absence of Magnet® status does not mean that an organization lacks formal empowerment structure. A lack of relationship between Magnet® status and self-efficacy is contrary to other findings demonstrating a relationship between the two concepts (K. Armstrong et al., 2009; K. J. Armstrong & Laschinger, 2006). It is possible that Magnet® status is not significant in predicting self-efficacy for NGNs specifically. Hospital size was also not found to predict NGNs' self-efficacy. Other evidence supports the size of the nursing unit impacts self-efficacy (Bowles & Candela, 2005); this relationship may not hold true at the organizational level. A large healthcare organization does not necessarily have large individual nursing units.

Some of our findings related to personal characteristics' and organizational characteristics' effects on self-efficacy are inconsistent with other findings in the literature. This discrepancy may be related to the instrument used to measure self-efficacy. The Skills Competency Self-Confidence Scale

was created by the primary data collectors and has limited support for validity and reliability. Also, it may not be an ideal instrument for measurement of the self-efficacy concept, as it is possible that it better captures NGNs' competency, not self-efficacy.

These findings provide preliminary support for a portion of the proposed model. Some personal characteristics and organizational characteristics did predict NGNs' self-efficacy. Other personal characteristics and organizational characteristics may predict NGNs' self-efficacy. For example, Bratt and Felzer (2012) proposed a model including personal and organizational characteristics predicting organizational commitment and found that type of nursing degree (comparing Associate's to Bachelor's degree) and prior healthcare work experience did not predict NGNs' organizational commitment. However, hospital setting (urban compared to rural) did have an effect; NGNs working in urban hospitals had higher levels of organizational commitment (Bratt & Felzer, 2012). These characteristics may also be important in predicting NGNs' self-efficacy in addition to organizational commitment.

Relationships among Self-Efficacy, Personal Goal Attainment, and Affective Engagement

The relationship between self-efficacy and personal goal attainment, and the relationship between affective engagement (job satisfaction and organizational commitment) were statistically significantly positively correlated with moderate strength. All other relationships studied were statistically significant, but weakly related. The moderately strong relationship between self-efficacy and personal goal attainment is not surprising. This relationship is at the corner stone of Bandura's (1982) work on self-efficacy. Also not surprising is the finding of the relationship between job satisfaction and organizational commitment. This relationship has been well-documented in the literature (Bratt & Felzer, 2012; Newman et al., 2010; Meyer & Allen, 1991).

It was surprising that other relationships among variables were weakly related, as this is inconsistent with other findings in the literature (Greguras & Diefendorff, 2010; Judge et al., 2005; Roberson, 1990; Salanova et al., 2011). These conflicting findings may be the result of the instruments

used to measure the variables including the Skills Competency Self-Confidence Scale, which was used to measure self-efficacy (as previously discussed) and the Slater Nursing Competencies Rating Scale (Wandelt & Stewart, 1975), used to measure personal goal attainment. While the second instrument is well-validated and reliable in this sample of nurses for measuring competency, skill competency itself may not always be in line with NGNs' personal goals despite their focus on nursing tasks as novices (Benner, 1982). Bratt and Felzer (2012) found that NGN competence did not have a significant relationship with organizational commitment; however, successfully meeting orientation objectives (a more direct measure of goal attainment) was found to have a significant relationship with organizational commitment (a dimension of engagement). Another instrument used with limited support for validity in this sample of nurses is the Corwin Role Conception Scale (Corwin, 1961; Merritt, 1997), which was used to measure job involvement. Use of this instrument to measure this concept was not ideal due to content validity concerns and may not have captured the concept well, which may explain the weaker relationships with other variables in the study.

These findings provide limited support for a portion of the model, which suggests a cyclical relationship between self-efficacy, personal goal attainment, and affective engagement. Due to less than ideal instrument availability to measure the concepts in this study, these findings do not necessarily support rejection of this portion of the proposed model for NGN engagement. Further study of these relationships is needed to evaluate the existence of the proposed cycle over time.

Effects of Affective Engagement and Self-Efficacy on Behavioral Engagement

Affective engagement (organizational commitment and job involvement) was found to significantly predict behavioral engagement (retention). Although the overall predictive value of the included variables is low, it is acceptable, as there are several other predictors of retention that were not included in the model. The relationship between organizational commitment and retention is well-supported in the literature (Beecroft et al., 2001; Cheeks & Dunn, 2010; Newman et al., 2010; Wagner,

2007), so this finding is not surprising. The effect of job involvement on retention is less well-documented, but other researchers have found positive relationships between job involvement and concepts related to retention including organization identification (Katrinli, Atabay, Gunay, & Guneri, 2009) and absenteeism (a dimension of behavioral engagement) (Wegge, Schmidt, Parkes, & Van Dick, 2007). In this study, job satisfaction was not found to significantly predict retention. The concept of job satisfaction is long thought to be an affective measure that is relatively unstable over time (Mowday et al., 1979; Newman et al., 2010), compared to job involvement and organizational commitment. Instability over time may explain why job satisfaction did not predict retention in this sample of nurses when it is evaluated separately from the other two dimensions of affective engagement (job involvement and organizational commitment). This finding highlights the importance of healthcare organizations measuring employee engagement instead of job satisfaction.

These findings provide preliminary support for this portion of the proposed model of NGN engagement which postulates that affective engagement predicts behavioral engagement (retention). Due to the unavailability of instruments to measure certain variables more closely (including job involvement), and other indicators of affective engagement (i.e. work performance and organizational citizenship behaviors) and behavioral engagement (i.e., tardiness and absenteeism) (Newman et al., 2010), these findings do not provide support for removing job satisfaction as a dimension of affective engagement in the model.

Strengths and Limitations

Major strengths of this study included the large sample size, which provided statistical power to perform analyses with a high number of variables to aid in model-building. Also, the multi-site nature of the data collection allowed for stronger external validity than using a sample from a single site. Finally, the longitudinal collection of data by the primary data collectors helps support causality and theory building.

Limitations exist as well and possible alternative approaches were considered. The inability to more directly measure some concepts, such as self-efficacy, personal goal attainment, and job involvement, created the necessity of use of proxies, which weakened the internal validity of the study. Also, some instruments used have limited validity and/or reliability, particularly the Self Competency Self-Confidence Scale and the Nursing Role Conception Scale. Also, there is some item redundancy in some instruments including the Self Competency Self-Confidence Scale and the Slater Nursing Competency Scales.

Another limitation of this study is the inability to measure certain variables that would be appropriate to include in the model. Other personal characteristics such as race/ethnicity have been shown to potentially impact NGN self-efficacy (Altier & Krsek, 2006), but this variable was not included in the model at the request of the primary data collectors. Also previous success in nursing, such as achievement of passing score on NCLEX (National Council Licensure Examination) on the first attempt could potentially predict self-efficacy, but was not available from the primary data collectors. Other organizational characteristics such as type of hospital (i.e., teaching facility or non-teaching facility) (Casey et al., 2004), profit designation (Bowles & Candela, 2005), size of nursing units (Bowles & Candela, 2005), nursing unit culture (Goh & Watt, 2003; Laschinger, Finegan, & Wilk, 2009), and staffing levels (Scott & Smith, 2008) have been shown to impact the development of affective engagement but this information was not available in the primary data set. Lastly, other dimensions of behavioral engagement were not available from the primary data collectors including work performance, organizational citizenship behaviors, and other forms of withdrawal (i.e., tardiness and absenteeism) so were not able to be included in the model.

There are also a few considerations in generalizability of the sample. This study includes a sample of nurses with a higher portion of non-white participants, who are more highly educated than the national sample of nurses. Also, these findings may not be representative of NGNs who do not

participate in any type of residency program. Despite these limitations, this study provides the foundation for development of a new model for nurse engagement incorporating new predictors and outcomes that will allow for translation to additional fields of study such as organizational behavior.

Directions for Future Research

The findings in this study provide preliminary support for the proposed model for NGN engagement. Further research is needed to test some of the relationships within this model, as measurement limitations may have masked significance of those relationships. Primary data collection will need to be completed to use instruments that more closely measure some variables in this study, and additional instruments will be needed to measure variables that were unable to be included. Developing empirical support in this field of research is important because a model predicting NGN engagement and retention can direct intervention development to promote NGN engagement, reduce NGN burnout and turnover, reduce costs for healthcare organizations, and improve patient outcomes.

Conclusion

The transition from nursing student to professional nurse is a difficult one for many NGNs. This phenomenon often leads to low NGN engagement, poor retention, patient adverse events, and high cost for healthcare organizations. Our findings provide support for further development of a new model to predict NGN engagement, but further research is needed to better understand relationships among key concepts. A new model for NGN engagement is needed to effectively develop interventions to lessen the negative effects of NGNs' experiences in order to improve patient outcomes and reduce costs. Evidence-based interventions would also help build a nursing workforce who are satisfied by their work, are committed to their organizations, identify with their role as a nurse, and become positive agents for change to bring the nursing profession into a new era of empowerment.

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Table 5

Sample Characteristics

Characteristic	N (% of Sample)
Gender	
Female	1752 (85.4)
Male	299 (14.6)
Age	
< 23 years-old	347 (16.9)
23 – 30 years-old	1145 (55.8)
31 – 40 years-old	394 (19.2)
> 40 years-old	165 (8.0)
Race	
White	810 (39.5)
Black	84 (4.1)
Hispanic	290 (14.1)
Asian	253 (12.3)
Other	52 (2.5)
Missing	562 (27.4)
Patient Care Area of Work	
Critical Care	546 (26.6)
Extended Care	519 (25.3)
Medical-Surgical	431 (21.0)

(continued)

Table 5 (continued)

Characteristic	N (% of Sample)
Patient Care Area of Work	
Pediatrics	115 (5.6)
Obstetrics	101 (4.9)
Psychiatrics	63 (3.1)
Other	276 (13.5)
Previous Healthcare Work Experience	
Yes	1329 (64.8)
No	722 (35.2)
Type of Nursing Degree	
Diploma	8 (0.4)
Associate Degree	792 (38.6)
Bachelor's Degree	1173 (57.2)
Accelerated Bachelor's Degree	72 (3.5)
Master's Degree	6 (0.3)
Magnet Designation	
Yes	863 (42.0)
No	1189 (58.0)
Hospital Size (N licensed beds)	
< 250	513 (25.0)
250 - 400	1023 (49.9)
> 400	515 (25.1)
Retention (at 2 years)	1481 (72.2)

Table 6

Details of Instruments of Measure for Related Concepts

Concept	Measure	Subscales	Number of Items	Scoring	Reliability
Personal Characteristics	Self-report of previous work experience in health related field (yes/no)				
	Self-report of type of nursing degree completed				
Organizational Characteristics	Leader Empowering Behaviors Scale (Hui, 1994)	<ul style="list-style-type: none"> • Creating Meaningfulness of Work • Encouraging Participation in Decision-Making • Expressing Confidence in High Performance 	27	7-point Likert-type; Low score indicates high amount of LEBs	Reliability at development: inter-item correlations ($r = 0.20$ to 0.69) Reliability in this sample (modified version): internal consistency ($\alpha = 0.99$)

(continued)

Table 6 (continued)

Concept	Measure	Subscales	Number of Items	Scoring	Reliability
Organizational	Organization				
Characteristics	leadership				
	self-report of				
	achievement				
	of Magnet®				
	status				
	Organization				
	leadership				
	self-report				
	number of				
	licensed				
	patient beds				

(continued)

Table 6 (continued)

Concept	Measure	Subscales	Number of Items	Scoring	Reliability
Self-Efficacy	Skills	<ul style="list-style-type: none"> • Admit a Patient 	Up to	4-point	Reliability at
	Competency	<ul style="list-style-type: none"> • Assess the Patient 	134 (vary by setting)	Likert-type; Mean score	development: unavailable
Self-Confidence	Scale	<ul style="list-style-type: none"> • Manage Patient Care Procedures • Administer Medications and Fluids • Perform Procedures • Coordinate Patient Care • Ensure Patient Safety • Education • Support • Provide Leadership • Maintain Professional Responsibilities 		created	Reliability in this sample: internal consistency ($\alpha = 0.99$), inter-item correlations ($r = 0.09$ to 0.71)

(continued)

Table 6 (continued)

Concept	Measure	Subscales	Number of Items	Scoring	Reliability
Personal goal attainment	Slater Nursing Competencies Rating Scale (Wandelt & Stewart, 1975)	<ul style="list-style-type: none"> • Psychosocial Individual • Psychosocial Group • Physical • General • Communication • Professional Implications 	84	5-point Likert-type	Reliability at development: internal consistency ($\alpha = 0.74$) Reliability in this sample: internal consistency ($\alpha = 0.99$), inter-item correlations ($r = 0.48$ to 0.91)
Affective Engagement	Nurses Job Satisfaction Scale (Atwood & Hinshaw, 1987)	<ul style="list-style-type: none"> • Quality of Care • Enjoyment • Time to do One's Job 	18	5-point Likert-type	Reliability at development: not available Reliability in this sample (modified version): internal consistency ($\alpha = 0.91$), inter-item correlation ($r = 0.17$ to 0.64)

(continued)

Table 6 (continued)

Concept	Measure	Subscales	Number of Items	Scoring	Reliability
Affective	Organizational	None	15	7-point	Reliability at
Engagement	Commitment			Likert-type	development:
	Scale				internal
	(Mowday et				consistency ($\alpha =$
	al., 1979)				0.82 to 0.93)
					Reliability in this
					sample (modified
					version): internal
					consistency ($\alpha =$
					0.91)
	Nursing Role	• Bureaucratic	14	5-point	Reliability in other
	Conception	Role Conception		Likert-type,	sample: internal
	Scale (Corwin,	• Professional Role		dissonance	consistency within
	1961)	Conception		(ideal	subscales ($\alpha =$
		• Service Role		versus real)	0.24 to 0.52)
		Conception		score	(Merritt, 1997)
				created	Reliability in this
					sample (modified
					version): internal
					consistency ($\alpha =$
					0.67)

(continued)

Table 6 (continued)

Concept	Measure	Subscales	Number of Items	Scoring	Reliability
Behavioral	Organizational				
Engagement	leadership				
	report of				
	continued				
	employment 2				
	years after				
	beginning of				
	employment				
	(yes/no)				

Table 7

Descriptive Statistics of Scales and Subscales

Characteristic	Mean	Standard Deviation (SD)
Leader Empowering Behaviors Total	77.00	24.21
Creating Meaningfulness	29.14	9.45
Fostering Decision Making	23.60	7.69
Expressing Confidence	24.26	7.68
Skills Competency Self-Confidence	2.30	0.41
Slater Nursing Competency Total	51.39	9.02
Psychosocial Individual	91.40	14.71
Physical	51.39	9.02
General	62.00	11.29
Communication	26.49	5.14
Professional Implications	65.77	11.97
Nursing Job Satisfaction Total	68.97	9.98
Quality of Care	18.36	3.34
Enjoyment	37.12	5.27
Time to Do One's Job	13.49	3.17
Organizational Commitment Total	60.69	12.58
Nursing Role Conception Scale Total	74.49	10.29
Ideal Subscale	34.69	5.97
Real Subscale	39.80	5.89

Table 8

Effect of Personal Characteristics and Organizational Characteristics on Self-Efficacy

Variable	B-value	Significance (p)
Constant	2.07	<0.001
Previous Healthcare Work Experience	0.03	0.20
Diploma	0.20	0.22
Associate's Degree	0.05	0.06
Accelerated Bachelor's Degree	-0.02	0.79
Master's Degree	0.67	0.02
Leader Empowering Behaviors	0.01	0.001
Magnet Status	0.02	0.34
Hospital Size	<0.001	0.35
R ² = 0.07; F-statistic = 5.41 (p < 0.001)		

Table 9

Correlations among Self-Efficacy, Personal Goal Attainment, and Affective Engagement

Measure	1	2	Affective Engagement		
			3	4	5
1. Self-Efficacy	—	0.40*	0.25*	0.20*	-0.12*
2. Personal Goal Attainment	0.40*	—	0.26*	0.19*	-0.15*
3. Job Satisfaction	0.25*	0.26*	—	0.47*	-0.19*
4. Organizational Commitment	0.20*	0.19*	0.47*	—	-0.22*
5. Job Involvement	-0.12*	-0.15*	-0.19*	-0.22*	—

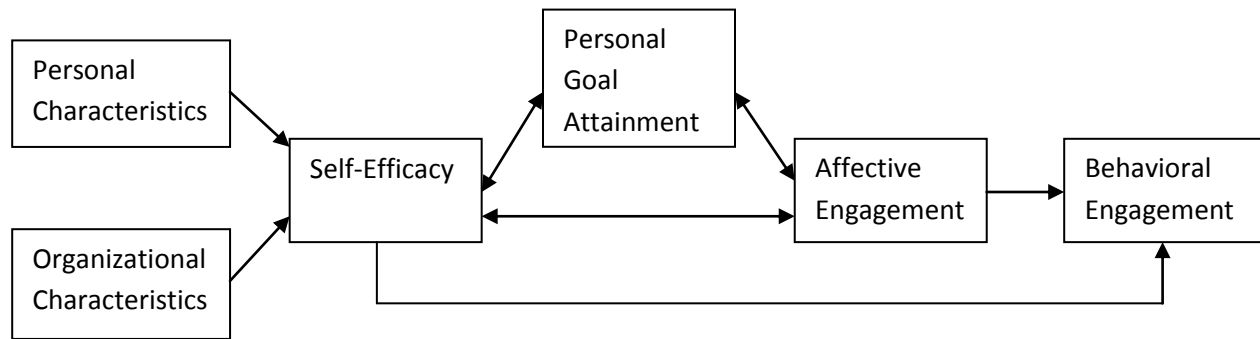
*p<0.05

Table 10

Effects of Affective Engagement and Self-Efficacy on Behavioral Engagement

Variable	B-value	Significance (p)
Constant	-0.90	0.41
Job Satisfaction	0.01	0.10
Organizational Commitment	0.01	0.02
Job Involvement	0.01	0.03
Self-Efficacy	0.12	0.48
$R^2 = 0.04$; $X^2 = 36.67$ ($p = 0.001$)		

Figure 2. Model for New Graduate Nurse Engagement



APPENDICES

APPENDIX A

UNIVERSITY OF ILLINOIS AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Determination Notice Research Activity Does Not Involve “Human Subjects”

September 18, 2012

Kayla Lampe, MSN
Health Systems Science
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Champaign, IL 61822
Phone: (573) 462-5508

**RE: Research Protocol # 2012-0762
“Improving outcomes of new nurse reality shock: A model for promoting engagement”**

Dear Ms. Lampe:

The above proposal was reviewed on September 18, 2012 by OPRS staff/members of IRB #2. From the information you have provided, the proposal does not appear to involve “human subjects” as defined in 45 CFR 46.102(f).

The specific definition of human subject under 45 CFR 46.102(f) is:

Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains

- (1) data through intervention or interaction with the individual, or
- (2) identifiable private information.

Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject’s environment that are performed for research purposes. *Interaction* includes communication or interpersonal contact between investigator and subject. *Private information* includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

Appendix A (continued)

All the documents associated with this proposal will be kept on file in the OPRS and a copy of this letter is being provided to your Department Head for the department's research files.

If you have any questions or need further help, please contact the OPRS office at (312) 996-1711 or me at (312) 355-2908. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, B.S., C.I.P.
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

cc: Arlene Miller, Health Systems Science, M/C802
Catherine Vincent, Health Systems Science, M/C802

APPENDIX B

UNIVERSITY OF ILLINOIS AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Determination Notice Research Activity Does Not Involve “Human Subjects”

May 24, 2013

Kayla Lampe, MSN
Health Systems Science
2913 Sierra Dr
Champaign, IL 61822
Phone: (573) 462-5508

RE: Research Protocol # 2013-0473
“New Graduate Nurse Self-Efficacy: A model for engagement”
Sponsor: None

Dear Ms. Lampe:

The above proposal was reviewed on May 23, 2013 by OPRS staff/members of IRB #2. From the information you have provided, the proposal does not appear to involve “human subjects” as defined in 45 CFR 46. 102(f).

The specific definition of human subject under 45 CFR 46.102(f) is:

Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains

- (1) data through intervention or interaction with the individual, or
- (2) identifiable private information.

Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject’s environment that are performed for research purposes. *Interaction* includes communication or interpersonal contact between investigator and subject. *Private information* includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

APPENDIX B (continued)

All the documents associated with this proposal will be kept on file in the OPRS and a copy of this letter is being provided to your Department Head for the department's research files.

If you have any questions or need further help, please contact the OPRS office at (312) 996-1711 or me at (312) 355-2908. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne
Assistant Director
Office for the Protection of Research Subjects

cc: Arlene Miller, Nursing, M/C 802
Catherine Vincent, Women, Children, and Family Health Science, M/C 802

APPENDIX C



Versant Data Use Agreement

Use of Versant Data

This Versant Data Use Agreement (the "Agreement") is entered into as of this 7th day of September, 2012, by and between VERSANT HOLDINGS, LLC, a Delaware limited liability corporation ("Versant") and Kayla Lampe ("INDIVIDUAL").

Versant® offers and licenses nurse residency programs for new graduate nurses practicing in general acute care and pediatric hospitals and nurses transitioning into new specialty areas. The Versant RN Residency™ is a comprehensive education and training system designed to (1) facilitate the transition of new graduate nurses to professional registered nurses and facilitate transition of experienced nurses into new specialty areas, (2) prepare staff nurses to confidently provide competent and safe patient care, and (3) retain committed new graduate and experienced nurses within participant organizations.

Versant grants the individual use of limited data set gathered between 1/1/2006 and 12/31/2010, specifically, Nursing Job Satisfaction Scale, Organizational Commitment Questionnaire, and Leader Empowering Behaviors instruments for the purpose of evaluating new graduate nurses socialization, including (a) the relationship of socialization cycle phases, by comparing nurse role satisfaction through transition from honeymoon at 12 weeks, reality shock at 12 months, and recovery at 24 months after beginning of employment and (b) the assumption of new graduate nurses' values mismatch, by examining the difference in the relationship between leader empowering behaviors and organizational commitment among new graduate nurses compared to nurses at 24 months after beginning of employment.

The individual understands that individual system, hospital, and Versant RN Residency participant names such as resident information are not included in the data provided for protection of confidentiality.

Expectations from Individual

The individual conducting research using Versant data is expected to:

1. Not use or disclose the limited data set for any purpose other than the research project stated above.
2. Provide Versant the results of the study.
3. Publish and/or present the results of the study in collaboration with Versant.

Versant Holdings, LLC • P.O. Box 4900 • Ithaca, NY 14852-4900

A handwritten signature in blue ink that reads 'Kayla Lampe'.

APPENDIX C (continued)

Signature Lanissa Africa
Versant
Representative Lanissa Africa
Date 9/13/2012

Signature Kayla Lampe
Individual Kayla Lampe
Date 9/17/12
Address 2913 Sierra Dr
Phone
Number Champaign, IL 61822
Email Kayla.Lampe@carle.com

APPENDIX D



Versant Data Use Agreement Addendum

Use of Versant Data

This Versant Data Use Agreement (the "**Agreement**") is entered into as of this **9th** day of **April**, 2013 by and between VERSANT HOLDINGS, LLC, a Delaware limited liability corporation ("**Versant**") and **Kayla Lampe** ("**INDIVIDUAL**").

Versant® offers and licenses nurse residency programs for new graduate nurses practicing in general acute care and pediatric hospitals and nurses transitioning into new specialty areas. The Versant RN Residency™ is a comprehensive education and training system designed to (1) facilitate the transition of new graduate nurses to professional registered nurses and facilitate transition of experienced nurses into new specialty areas, (2) prepare staff nurses to confidently provide competent and safe patient care, and (3) retain committed new graduate and experienced nurses within participant organizations.

According to the agreement of September 7th, 2012 Versant grants the individual use of limited data set gathered between **1/1/2006** and **12/31/2010**:

- **Nursing Job Satisfaction Scale**
- **Organizational Commitment Questionnaire**
- **Leader Empowering Behaviors**

In addition Versant grants the individual use of limited data set gathered between **1/1/2006** and **12/31/2010**:

- **Participant Demographics (age, gender, race)**
- **Previous Work Experience**
- **Type of nursing degree**
- **Continued employment at yr 2 (to be aggregated from 2 data points)**
- **Magnet designation of hospital**
- **Number of patient beds in hospital**
- **Skills Competency Self-Confidence Scale**
- **Slater Nursing Competencies Rating Scale**
- **Nursing Role Conception Scale**

The individual understands that individual system, hospital, and Versant RN Residency participant names such as resident information are not included in the data provided for protection of confidentiality.

A handwritten signature in blue ink, appearing to be 'KL' or similar initials.

APPENDIX D (continued)

Kayla Lampe

Page | 2

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Expectations from Individual

The individual conducting research using Versant data is expected to:

1. Not use or disclose the limited data set for any purpose other than the research project stated above.
2. Provide Versant the results of the study.
3. Publish and/or present the results of the study in collaboration with Versant.

Signature

Dean Shimono

Versant

Representative

Director for Research

Date

4-10-13

Signature

Kayla Lampe

Individual

Kayla Lampe

Date

2913 Sierra Dr.

Address

Champaign, IL 61822

Phone

Number

573-462-5508

Email

Kayla.lampe@gmail.com

VITA

NAME Kayla Marie Lampe

EDUCATION

2005 B.S.N., University of Iowa, Iowa City, Iowa
2009 M.S.N., University of Illinois at Chicago, Chicago, Illinois
2014 Ph.D., Nursing Science, University of Illinois at Chicago, Chicago, Illinois

PROFESSIONAL EXPERIENCE

Carle Foundation Hospital, Urbana, IL

2013 – present Manager of Operational Quality, Nursing Administration
2011 – 2013 Quality Outcomes Coordinator, Heart and Vascular Institute
2010 – 2011 Data Coordinator, Stroke Program

Northwestern Memorial Hospital, Chicago, IL

2009-2010 Education Coordinator, Neurosciences
2006-2010 Staff Nurse, Neuro-Spine Intensive Care Unit

PROFESSIONAL TRAINING AND CERTIFICATIONS

2009 -present Certified Critical-Care Nurse, American Association of Critical-care Nurses

HONORS/AWARDS

2013 Greater Chicago Nurse.com Nursing Excellence regional finalist, Education and Mentorship
2012 University of Chicago Medicine Nursing Award for Nurses in a Specialty Role (nomination)
2010 University of Chicago Medical Center Arthur Quern Fellowship
1997 Sigma Theta Tau

SCHOLARSHIPS

2012 Nurse Economic\$ Foundation National Scholarship
2010 Dean's Academic Excellence Scholarship, University of Illinois at Chicago
2007 Illinois Board of Trustees Scholarship, University of Illinois at Chicago
2001-2005 University of Iowa National Scholars Award Scholarship

PUBLICATIONS

Lampe, K., Stratton, K., Welsh, J. (2011). Evaluating orientation preferences of the Generation Y new graduate nurse. *Journal for Nurses in Staff Development*, 27 (4) E6-E9.

PRESENTATIONS

Lampe, K. (2012). Creative Readmission Reduction Strategies. Presentation, Premier Partnership for Patients Regional Meeting, Dallas, TX, September 2012.

Lampe, K., Stratton, K., Welsh, J. (2009). Evaluating orientation preferences of the Generation Y new graduate nurse. Refereed abstract for poster presentation, 12th Annual Edward Evidence Based Practice Conference, Naperville IL, June 2009.

PROFESSIONAL MEMBERSHIP

American Association of Critical Care Nurses
American Organization of Nurse Executives
Midwest Nursing Research Society
Sigma Theta Tau