

**Retention of Nurses in a Rural Environment: The Impact of Job Satisfaction, Resilience,  
Grit, Engagement, and Rural Fit**

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## Abstract

**Purpose:** The purpose of this study is to examine the unique contributions that job satisfaction, resilience, grit, engagement, and rural fit have on nurses' intention to stay in their unit for the next 6 months and intention to leave the institution in the next 3 years.

**Sample:** The data come from a network wide survey of RNs and LPNs employed by a rural hospital network in the northeast of the United States. Just over half (n=436, 55%) of the 797 nurses that were employed by the network responded to the survey. The majority (73%) were registered nurses (RNs), worked inpatient (56%) and were female (86%).

**Method:** Surveys were sent out in paper form and electronically. Nurses responded to questions about their intention to leave their unit in the next 6 months or the organization in the next 3 years, job satisfaction/dissatisfaction, resilience, grit, engagement, and rural fit.

**Findings:** We found that when considering all factors together, better rural fit predicted less intention of leaving the current unit in the next 6 months and less intent to leave the organization in the next 3 years. The only other predictor of intent to leave the unit in the next 6 months was resilience where nurses who reported themselves as being more resilient were less likely to report intention to leave. The only other predictor of intent to leave the organization in the next 3 years was nurse engagement (i.e., professional growth) where more engaged nurses were less likely to report intention to leave.

**Conclusion:** Rather than considering variables independently, our multivariate model found that rural fit is paramount in retention of rural nurses. Further, clear and accessible opportunities for professional growth may retain nurse over the long-term despite poor fit with the rural environment.

*Keywords:* Job satisfaction, Resilience, Grit, Engagement, Rural fit, Nurse retention. Rural nursing

## **Retention of Nurses in a Rural Environment: The Impact of Job Satisfaction, Resilience, Grit, Engagement, and Rural Fit**

Rural nursing practice, in comparison to urban practice, has unique challenges that impact recruitment and retention. These challenges include 1) lower compensation, 2) chronic understaffing, 3) issues with the professional work environment, and 4) lifestyle issues such as lack of adequate housing, employment opportunities for spouses, and childcare options (Baernholdt & Mark, 2009; Jackman, Myrick, & Yonge, 2012; Newhouse, Morlock, Provonost, & Sproat, 2011; Roberge, 2009; Rohatinsky & Jahner, 2016).

High rates of turnover and lack of retention for professional nurses in health care services is of great concern in nursing practice, especially in rural areas (Adams, 2016; Barrett, Terry, Le, & Hoang, 2016; Lea & Cruickshank, 2014; Mbemba, Gagnon, Paré, & Côté, 2013; Mbemba, Gagnon, & Hamelin-Brabant, 2016). Retention is alternately defined as turnover, intention to stay, or intention to leave (Adams, 2016). In the United States efforts to address retention focus both on retaining nurses within an organization and within the profession of nursing (Kovner et al., 2016 a, 2016 b). Poor retention both within organizations and the nursing profession has consequences on the health and welfare of organizations, patients, and society, while retaining nursing staff improves access to quality care (Squires, Jylha, Jun, Ensio, & Kinnunen, 2017).

Given the importance of nursing retention to quality care, it is not surprising that research focused on nursing retention has identified many contributing factors including salary, availability

of enhanced professional development opportunities, value congruence between the nurse and organization, and flexibility in scheduling and shift patterns (Chang et al., 2015; Cosgrave, Maple, & Hussain, 2018; Dotson et al., 2011; Fitzgerald & Townsend, 2012; Gutekunst, DeLuca, & Kessler, 2012; Halfer, 2011; Hayes, Bonner, & Pryor, 2010; Mbemba, Gagnon, & Hamelin-Brabant, 2016; Tourangeau, Cummings, Cranley, Ferron, & Harvey, 2010). Theoretical models often categorize factors related to nursing retention into either job characteristics or nurse characteristics (Ellenbecker, 2004). However, in the rural setting, community characteristics, especially how well nurses fit and are engaged in their rural environment, is an important factor for consideration (Dotson et al., 2011; Kulig et al., 2018). In the following sections we review what is known about the contributions of job satisfaction, resilience, grit, and engagement on nursing retention and then consider the unique contribution of rural fit on nursing retention.

## **Background**

### **Job Satisfaction**

Conceptually, job satisfaction is defined as the fulfillment of one's wishes, expectations or needs with relation to his or her job or the pleasure derived from one's job (Fairbrother, Jones, & Rivas, 2010). Factors which influence job satisfaction for professional nurses are well studied, and include relationships with coworkers and managers, pay and promotion, a perceived ability to ensure patient safety, the availability of support services, autonomy in nursing practice, and workload (Baernholdt & Mark, 2009; De Gieter, De Cooman, Pepermans, & Jegers, 2010; Hairr, Salisbury, Johannson, & Redfern-Vance, 2014; Lu, Barriball, Zhang, & While, 2012; Twibell, St. Pierre, Johnson, Barton, Davis, Kidd, & Rook, 2012; Wang, Tao, Ellenbecker, & Liu, 2012). Kuo, Lin, and Li (2014) examined factors that influence nurses' intention to leave their current positions. Their results indicate that higher job satisfaction significantly decreases work stress and intention

to leave among nurses. Similarly, Larrabee et al. (2003) reported that job dissatisfaction is a major predictor of intent to leave. This literature corroborates that nurses who derive satisfaction with their current position are less likely to consider leaving their job.

## **Resilience**

Nurse resilience is inferred to be an important factor in nurse retention (Hodges, Keeley, & Troyan, 2008; Kornhaber & Wilson, 2011; Rushton, Batcheller, Schroeder, & Donohue, 2015). Resilience is defined as the ability to bounce back from a stressful situation (Smith et al., 2008). Although resilience is not prominent in the discussion of factors related to retention of experienced nurses, the direct role resilience plays in professional nurse retention is important in healthcare settings as nurses experience stressful work environments (Happell, et al., 2013). In addition to the external stressors of professional practice (including variables related to continual changes as institutions work to become more competitive and cost-effective) (Brown, Wey, & Foland, 2018) internal effects of job stressors for nurses include psychological emptiness, diminishing inner balance, and a sense of dissonance (Hart, Brannon, & De Chesnay, 2014).

Given the current evidence that resilience during nursing education engenders strength, focus and endurance (McAllister & McKinnon, 2009), it is posited that resilience will positively influence retention in the face of difficult workplace experiences. Brown, Wey and Foland (2018) found a positive association with job satisfaction and resilience ( $p < .001$ ) in a descriptive correlational study of 521 hospital staff nurses. Using a grounded theory investigation among female critical care nurses, Jackson, Vandall-Walker, Vanderspank-Wright, Wishart, & Moore (2018) suggested that resilience and burnout are connected. Nurses who are more resilient are better able to bounce back from negative experiences and should be less likely to leave.

## **Grit**

Grit is thought to be an intrinsic quality that correlates with resilience. Robertson-Kraft & Duckworth (2014) define grit as perseverance and passion towards a goal over long periods of time. However, grit is conceptually different from resilience as grit considers only intrinsic characteristics with no integration of environmental factors. In addition, grit requires sustained effort and interest in goal attainment despite adversity (Robertson-Kraft & Duckworth, 2014).

Though a considerable amount of research suggests that the presence of grit is a valuable predictor of success in educational and employment opportunities (Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014; Robertson-Kraft & Duckworth, 2014), findings are contradictory. Findings from one study on the effects of grit on physicians' job satisfaction and retention in rural and nonrural settings found that grit is unrelated to job satisfaction or retention (Reed, Schmitz, Baker, Nukui, & Epperly, 2012). However, as nurses assume relatively lower positions in the healthcare hierarchy and may be less empowered to address negative work circumstances, grit may exercise more influence on a nurse's intent to stay despite adversity encountered on the job. Additional research is needed to determine the impact of grit on nurse retention in a rural environment.

### **Nurse Engagement**

Individuals who are more engaged in their work view their work as positive and fulfilling and approach their work with vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). The value of nurse engagement was brought to the fore when Hodges and Clifton (2004) published the results of a survey demonstrating a positive relationship between nurses' work engagement and patient satisfaction. Since then nurse engagement has also been positively correlated with positive patient outcomes, patient safety and patient satisfaction with the

hospital experience (Day, 2014; Dempsey & Reilly, 2016; Nishioka, Coe, Hanita, & Moscato, 2014; Press Ganey, 2013).

Multiple studies have examined nurse work engagement in relation to burn out, job satisfaction, and retention. On review of the literature, (Simpson, 2009) concluded that nurse engagement at work is largely impacted by organizational factors rather than the intrinsic qualities of the professional. Organizational factors related to engagement include having greater job resources (versus job demands), better work experiences (particularly more control), empowerment, reward (including money), recognition, and value fit (Le Blanc, Hox, Schaufeli, Taris, & Peeters, 2007). Hakanen and Roodt (2010) suggest that job resources are the most important contributor to work engagement and, thus, should be the main focus of organizational efforts to increase employee engagement.

Increasing nurse engagement is a strategy proposed by Tillott, Walsh, and Moxham (2013) to improve nurse retention. Lower levels of nurse engagement are associated with higher job turnover and greater intention to leave one's current position (Brunetto et al., 2013; Collini, Guidroz, & Perez, 2015; Sawatzky & Enns, 2012; Tullar et al., 2016). Of the different organizational factors closely tied to engagement, a work environment with supportive leadership that promotes professional practice and high quality patient care is associated with less turnover (Nei, Snyder, & Litwiller, 2015; Spence Laschinger, Zhu, & Read, 2016). Better nurse-physician collaboration, readily available resources, empowerment, recognition, control/responsibility, and autonomy are all associated with less intention to leave (Hewko, Brown, Fraser, Wong, & Cummings., 2015; Blake, Leach, Robbins, Pike, & Needleman, 2013; Sawatzky, Enns, & Legare, 2015). In a comprehensive systematic literature review, 77 factors were found to influence nurse work engagement (Keyko, Cummings, Yonge, & Wong, 2016). These factors were categorized

into six themes: organizational climate, job resources, professional resources, personal resources, job demands, and demographic variables. Among the many correlates of engagement, Keyko, et. al. reported that nurses who were more engaged are less likely to leave or to consider leaving their job. Thus, we hypothesized that nurses who view their workplace as promoting engagement, through professional growth opportunities and professional autonomy, may be more engaged in their organization and less likely to intend to leave their position.

### **Rural Fit**

This study examined the perceptions of a population of nurses who work in a rural healthcare network. The majority of the nurses employed by the network live in rural communities.

As outlined by Bealer, Willits, and Kuvlesky (1965), rurality is a multidimensional construct including ecological (set out by census data), occupational, and sociocultural frameworks. Accordingly, Rural Fit is felt to be an important concept to explore. The retention of professionals in rural areas is impacted by the local economy and the resultant socio-political culture (including attitudes, normative beliefs, sense of volitional control, motivations, and behaviors) and not just impacted by the geography (Killam & Carter, 2010). Hence, while the phenomenon of rural may be narrowly defined according to the specific demographic and geophysical features of place, more aptly rurality is the interactive effect of the human-environmental field that manifests in differences in perceptions, attitudes and normative beliefs, along a rural-to-urban continuum (Willits, Bealer, & Timbers, 1990). Understanding the fit between the individual and the context may be critical in understanding nurse retention.

Features of rural places such as people, organizations, and infrastructures can have both positive and negative effects on the perceptions of rural healthcare providers. In particular, close community ties and intricate webs of relations between lay and professional community members



may result in greater professional visibility, a lack of anonymity, and a blurring of boundaries among health care providers (Mills, Birks, & Hegney, 2009). Rural healthcare providers may also experience opportunities to work in more diverse roles and have more independence and autonomy (Penz & Stewart, 2012). This can be more professionally stimulating. The downside to rural practice is that there is also a risk for greater role diffusion, professional isolation and a scarcity of resources (Conger & Plager, 2012). Nurses unfamiliar with rural living may have the additional burden of dealing with issues related to distance, isolation, insider versus outsider status, lack of familiarity with the sociocultural milieu and care networks, as well as a lack of anonymity (Williams, 2012). These burdens may be compounded by being both a newcomer to the rural culture and the profession (Lea & Cruickshank, 2014).

In a comprehensive review, Dotson et al. (2011) identified that individuals who had connections to rural environments through 1) growing up in a rural environment, 2) family connections, and 3) a positive perception of the rural lifestyle were more likely to choose rural nursing practice. Nurses who report that the rural lifestyle is not very important to them are more likely to move than those who rate rural lifestyle as being important (Molanari, Jaiswal, & Hollinger-Forrest, 2011). In addition to connection to a rural area, nurses were more likely to choose a job in a rural area if they trained at rural facilities and perceived rural workplaces to be supportive environments (Bushy & Leipert, 2005; Lea and Cruickshank, 2014). The importance of community is so influential that Roberge (2009) reported that nurses were only satisfied with their jobs if they were also satisfied with their community. Taken together, the fit between the nurse and the community may play a key role in understanding rural nurse retention.

### **Theoretical Models of Nursing Retention**

Prominent models of nursing turnover, such as the Causal Turnover Model, (Price & Mueller, 1981) emphasize individual characteristics along with job characteristics to predict retention. Despite the model's popularity, a meta-analysis completed by Irvine and Evans (1995) reported that the model only accounted for 12% of the variance in actual turnover. In other words, 88% of why nurses leave their jobs is predicted by something other than their individual characteristics or job characteristics. Hence, in rural nursing, fit within the rural environment could be a characteristic that deserves more attention.

As an alternative to the Causal Turnover Model, the Job Embeddedness Model views job retention as a function of how much the individual has become embedded, not just in the organization, but also into the community context (Mitchell, Holtom, Lee, Sablinski, & Erez, 2001; Reitz, 2014). The job embeddedness model has three components: links to people in the community, fit with the community, and a sense that the person has a lot to sacrifice if they leave their current job. Theoretically, individuals who are more embedded in their communities are less likely to leave their jobs because their community connections make them want to stay. Empirical applications have found that job embeddedness is a better predictor of retention than factors like job satisfaction and organizational commitment (Halfer, 2011; Reitz, Anderson, & Hill, 2010; Vardaman, Rogers, & Marler, 2018). While Stroth (2010) has suggested that the Job Embeddedness Model could be used to develop retention strategies for rural hospitals, no empirical support for the Job Embeddedness Model in rural nursing retention currently exists. In this paper we will consider the role of rural community fit along with individual and job characteristics to identify which factors most strongly predict nursing retention.

## **Summary**

This study examined contributions of job satisfaction, resilience, grit, engagement, and rural fit on nurses' intention to stay in their unit for the next six months and intention to leave the organization in the next three years. Given the paucity of research on factors influencing rural nurses' intent to stay in a practice, applying the Job Embeddedness Model, rural fit is considered as an indicator of community embeddedness. In accordance with the Job Embeddedness Model, it is expected that better rural fit will be associated with less intention to leave. Understanding the predictors of intention to leave will inform strategies to improve nurse retention in rural settings.

## **Methods**

### **Participants**

Data for this study came from a network wide survey of registered nurses (RNs) and license practical nurses (LPNs) employed by a rural hospital network in the Northeast of the United States. The network serves a predominantly rural population, located in primarily rural counties defined by the 2010 US Census Bureau (Ratcliffe, Burd, Holder, & Fields, 2016; United States Census Bureau, n.d.) as “mostly rural” with >50% of the population considered rural). Geographically, each of the counties served by this network are > 90% rural with population densities of <75 persons/square mile (US Census Bureau, 2010). While population density is central to this definition of rural, the authors recognize that rural is really a multidimensional concept and, when it comes to nurse retention in rural practice settings, issues such as geographic, social and professional isolation, insider versus outsider status, limited access to resources, and so forth, are also important factors to consider.

The integrated hospital network consists of six corporately affiliated hospitals, as well as skilled nursing facilities, community and school-based health centers, and health partners in related

fields. Nurses throughout the network provide care and services to people living in a 5,600 square mile region. Nurses are employed in both inpatient and outpatient settings. Of the 797 nurses employed by the network at the time of the survey, 436 of the eligible nurses responded (55%) to the survey. Of the nurses that responded, the majority (73%) were RNs, worked in acute care settings (56%) , and were female (86%). In addition, 87% were full time, 6% part time, and 7% were per-diem. All RNs and LPNs employed by the network were included. Contract nurses were excluded from the sample.

### **Procedures**

Following approval of the study by the network's institutional review board (IRB Study 2050), a distribution list of all eligible RNs and LPNs was obtained from the network human resources department. Individuals on the distribution list were sent an electronic version of the instrument through email using a personalized Survey Monkey link as well as a hard copy with a return envelope through inter-office mail. The electronic and paper survey instruments were linked to the same participant ID number in the unlikely event that someone responded twice, then the duplicate response could be eliminated. No duplicate responses were obtained. Both the electronic and hard copy surveys included a cover letter explaining the study, the risks and benefits, and a description of measures employed to ensure that participant responses would remain confidential. On average, the survey took 15-20 minutes to complete.

### **Measures**

Creating a survey that could be completed in approximately 15 minutes was felt to be critical to encouraging an adequate response rate. Given the number of constructs to be included in the survey, it was necessary to shorten some of the validated measures by choosing proxy items to

represent entire scales. While this method did not allow verification of the validity, it was found that the scales retained their reliability.

**Retention.** Based on conceptual definitions of retention, retention was measured by two items developed by the study team. One item asked the participants to report the likelihood they would “leave your current unit within the next 6 months,” while the other asked the likelihood they would “leave the organization in the next 3 years.” Self-report responses were rated on a five-point Likert scale ranging from 1 “very unlikely” to 5 “very likely.” On average participants reported being unlikely to leave their current unit in the next six months ( $M = 2.06$ ,  $SD = 1.31$ ) or the organization in the next three years ( $M = 2.52$ ,  $SD = 1.33$ ).

**Patient type.** The healthcare network where the study took place includes both acute care and ambulatory care settings. The ambulatory care nurses work an eight-hour work day, Monday through Friday while the acute care nurses work a more variable 12-hour shift, three days per week schedule. Due to the differences in the types of work environments that acute care and ambulatory care nurses experience, we suspected possible differences in intention to leave between ambulatory and acute care nurses. Respondents were not asked to specify clinic versus hospital as some ambulatory services are delivered in the hospital setting. Patient type was measured using one question in the survey that asked participants “What population do you work with?” Self-report response choices included the option between “Outpatient” ( $n = 236$ ) and “Inpatient” ( $n = 158$ ). Outpatient was coded as 0 and inpatient was coded as 1.

**Job satisfaction.** Job satisfaction was measured using one item that asked participants to indicate the percentage of time they were satisfied, dissatisfied, or felt neutral about their practice. Participants were instructed to respond so that the total percentage between the three boxes equal 100 percent (Waddimba, Scribani, Krupa, May, & Jenkins, 2016). The higher the percentage of

time a participant felt either satisfaction or dissatisfaction with their practice, the higher their level of job satisfaction or job dissatisfaction. In general, nurses reported moderately high levels of job satisfaction ( $M = 68.66$ ,  $SD = 21.37$ ) and low levels of job dissatisfaction ( $M = 19.21$ ,  $SD = 15.73$ ).

**Grit.** Grit was measured using the Short Grit Scale (Grit-S), an 8-item self-report measure designed to assess trait-level perseverance and passion for long term goals (Duckworth & Quinn, 2009). In comparison to the original scale, the Grit-O, the Grit-S retains the two factors of consistency of interests and perseverance of efforts, but with four fewer items (Duckworth, Peterson, Matthews, & Kelly, 2007). A subset of four items represents the factor of consistency of interest, which include items such as “New ideas and projects sometimes distract me from previous one.” The remaining four items represents the subset that represents the factor of perseverance of efforts, which include items such as “I am diligent.” Participants rated each item on a five-point Likert scale ranging from 0 “not like me at all” to 4 “very much like me.” Negatively worded items were reverse coded. The Grit-S is scored by computing the mean of the 8 items. The higher the Grit score, the higher the participant’s trait-level perseverance and passion for long term goals, and vice versa. Grit-S has established an internal consistency range of  $\alpha = .73-.83$  over the course of testing (Duckworth, et al., 2009). In the current study, the Cronbach’s alpha is 0.82, which indicates a high level of internal consistency. On average nurses reported a moderately high level of grit ( $M = 2.81$ ,  $SD = .51$ ).

**Resilience.** Resilience was measured using the Brief Resilience Scale (BRS), a 6-item self-report measure designed to measure four components of resilience which include recovery, resistance, adaptation, and thriving (Smith et al., 2008; Windle, Bennett, & Noyes, 2011). The scale is meant to assess the ability to bounce back or recover from stress. Participant rated each item, such as “I tend to take a long time to get over setbacks in my life” and “I usually come

through difficult times with little trouble,” on a five-point Likert scale ranging from 0 “strongly disagree” to 4 “strongly agree.” Negatively worded items were reverse coded. The BRS is scored by computing the mean of the six items. The higher the resilience score, the higher the participant’s resiliency, or their ability to bounce back or recover from stress. BRS has established an internal consistency range of  $\alpha = .80-.91$  (Smith et al., 2008). The Cronbach’s alpha for the BRS in the current study is 0.83, which indicates a high degree of internal consistency. On average nurses reported moderately high levels of resilience ( $M = 2.58$ ,  $SD = .68$ ).

**Nurse engagement.** Engagement was assessed using a composite self-report measure that included items from scales in the Health Care Advisory Board (HCAB) online Nurse Engagement Survey Tool (Ankner, Coughlin, & Holman, 2010). The scales included were Passion for Nursing, Autonomy and Input, Nurse Staff Teamwork, Recognition, and Professional Growth.

The *Passion for Nursing* scale assessed how participants feel about nursing. Three items focus on the pride in being a nurse, belief in the hospital’s mission, and understanding of how one’s daily activities contribute to the hospital’s mission. Participants rated each item, such as “I am proud to be a nurse” on a five-point Likert scale ranging from 0 “strongly disagree” to 4 “strongly agree.” A passion for nursing score was created by computing the mean of the three items. On average nurses reported moderately high levels of passion for nursing ( $M = 3.37$ ,  $SD = .61$ ). Cronbach’s alpha for Passion for Nursing in the current study is 0.82, which indicates a high degree of internal consistency.

*Autonomy and Input* assessed how much input participants have at work. The six items focus on the perception of decisional control. Participants rated each item, such as “My manager is open and responsive to staff nurse input” on a five-point Likert scale ranging from 0 “strongly disagree” to 4 “strongly agree.” The scale was computed by taking the mean of the six items. On average

nurses reported moderately high levels of autonomy and input ( $M = 2.27$ ,  $SD = .63$ ). Cronbach's alpha for Autonomy and Input in the current study is 0.81, which indicates a high degree of internal consistency.

The *Nurse Staff Teamwork* scale assessed participant's feelings about the team they work with. The seven items focus on the ability to function effectively within nursing and inter-professional teams fostering open communication, mutual respect, and shared decision making to achieve quality patient care. The seven items focus on the ability to function effectively within nursing and inter professional teams fostering open communication, mutual respect, and shared decision making to achieve quality patient care. Participants rated each item, such as "I have good relationships with nurses on my unit" and "Nurses on my unit work toward common goals" on a five-point Likert scale ranging from 0 "strongly disagree" to 4 "strongly agree." A score was computed by taking the mean of the seven items. On average nurses reported moderately high levels of teamwork ( $M = 2.89$ ,  $SD = .68$ ). Cronbach's alpha for teamwork in the current study is 0.81, which indicates a high degree of internal consistency.

*Recognition* assessed how participants feel about the feedback they receive. The three items focus on the acknowledgement of one's contribution. The questions were "I receive regular feedback on my performance", "I received recognition when I provide care above the care standard", and "I receive positive recognition for providing evidence based care". Participants rated each item, such as on a five-point Likert scale ranging from 0 "strongly disagree" to 4 "strongly agree". A recognition score was created by computing the mean of the two items. On average nurses reported moderately high levels of recognition ( $M = 2.30$ ,  $SD = .99$ ). Cronbach's alpha for recognition in this study is 0.81, which indicates a high degree of internal consistency.



*Professional Growth* assessed how the healthcare organization supports their professional development. The three items focus on perceived opportunity and support for advancement. Participants rated each item, such as “The organization values my professional growth and clinical skill development” on a five-point Likert scale ranging from 0 “strongly disagree” to 4 “strongly agree.” The mean of the three items was computed to determine a score. On average nurses reported moderately high levels of professional growth ( $M = 2.51$ ,  $SD = .87$ ). Cronbach’s alpha for professional growth in the current study is 0.81, which indicates a high degree of internal consistency.

The engagement score was computed by taking the mean of the 21 items from the five subscales listed under engagement. On average nurses reported moderately high levels of engagement ( $M = 2.81$ ,  $SD = .51$ ). Cronbach’s alpha for Engagement in the current study is 0.80, which indicates a high degree of internal consistency.

**Rural fit.** Community embeddedness is conceptualized as fit between the individual and the surrounding rural community. Rural fit was measured using three items from the Sense of Community Index II, a self-report measure designed to assess a sense of community for a given sample (Chavis & Wandersman, 1990). The items were modified to address the local rural communities associated with this study. Participants rated each item, such as “Fitting into rural [region name inserted] is important to me” on a four-point Likert scale ranging from 0 “not at all” to 4 “completely.” A Rural Fit score is created by computing the mean of the three items. On average nurses reported moderate levels of Rural Fit ( $M = 1.69$ ,  $SD = .67$ ). Cronbach’s alpha for Rural Fit in the current study is 0.82, which indicates a high degree of internal consistency.

## **Data Analytic Plan**

Before testing study hypotheses, preliminary analyses were computed in which all study constructs were checked for violations of the normality assumption. Next, correlations across study constructs were evaluated to check assumptions of directionality of expected relationships between variables. Two linear regressions were used to examine the impact of job satisfaction and dissatisfaction, grit, resilience, nurse engagement, and rural fit on intention to leave unit within the next 6 months and intention to leave the hospital in the next three years, respectively. If nurse engagement was a significant predictor of intent to leave, a second linear regression was performed using the subscales of engagement.

## Results

Study constructs were evaluated to ensure that all constructs met normality assumptions. All of the variables met the requirements of normality.

**Correlation analyses.** Bivariate correlations were computed among study variables. Variable descriptive statistics and correlations among variables can be found in Table 1 below.

Patient type demonstrated a weak positive correlation with nurse engagement ( $r = .14$ ,  $p < .05$ ), intent to leave the unit in the next 6 months ( $r = .21$ ,  $p < .001$ ), and intent to leave the organization in the next 3 years ( $r = .25$ ,  $p < .001$ ), indicating that individuals who worked in acute care settings reported more engagement with their job, were more likely to leave their unit within the next 6 months, and more likely to leave the organization in the next three years.

Job satisfaction demonstrated a moderately positive correlation with grit ( $r = .30$ ,  $p < .001$ ) and nurse engagement ( $r = .36$ ,  $p < .001$ ), a weak but positive correlation with resilience ( $r = .21$ ,  $p < .001$ ) and rural fit ( $r = .16$ ,  $p < .01$ ), and a weak, negative correlation with intent to leave the unit in the next 6 months ( $r = -.25$ ,  $p < .001$ ) and intent to leave the organization in the next 3 years ( $r = -.26$ ,  $p < .001$ ). In short, those nurses in this study who reported greater job satisfaction

reported greater grit, engagement, resilience, and/or rural fit and reported less intention to leave the unit and/or organization.

Table 1: *Descriptive Statistics and Correlations Among Study Variables*

	<i>M (SD)</i>	1	2	3	4	5	6	7	8
1 Patient Type	-	-							
2 Job Satisfaction	68.66 (21.37)	-.10	-						
3 Job Dissatisfaction	19.21 (15.73)	.01	-.78†	-					
4 Grit	2.81 (0.51)	-.12	.30†	-.23†	-				
5 Resilience	2.58 (0.68)	-.02	.21†	-.21†	.42†	-			
6 Rural Fit	1.69 (.67)	-.02	.16**	-.14**	.13*	.05	-		
7 Nurse Engagement	2.81 (.51)	.14*	.36†	-.38†	.18†	.19†	.20†	-	
8 Leave current unit within 6 months	2.06 (1.31)	.21†	-.25†	.23†	-.16**	-.16†	-	-.22†	-
9 Leave organization in next 3 years	2.52 (1.33)	.25†	-.26†	.25†	-.18†	-.03	-	-.25†	.49†

Note. + =  $p < .10$ , \* =  $p < .05$ , \*\* =  $p < .01$ , † =  $p < .001$ .

Grit had a moderately positive correlation with resilience ( $r = .42, p < .001$ ) and a weak but positive correlation with rural fit ( $r = .13, p < .05$ ) and nurse engagement ( $r = .18, p < .001$ ), with a weak negative correlation with intent to leave the unit in the next 6 months ( $r = -.16, p < .01$ ) and

intent to leave the organization in the next 3 years ( $r = -.18, p < .001$ ). This suggests that those nurses who reported greater grit expressed greater rural fit and engagement and less intention to leave the unit and/or organization.

Resilience demonstrated a weak positive correlation with nurse engagement ( $r = .19, p < .001$ ), but a weak negative correlation with intent to leave the unit in the next 6 months ( $r = -.18, p < .001$ ). Those who reported a greater sense of resilience tended to report more engagement and less intention to leave their unit within 6 months.

Rural fit had a weak but positive correlation with nurse engagement ( $r = .20, p < .001$ ), a weak negative correlation with intent to leave the unit in the next 6 months ( $r = -.24, p < .001$ ) and a moderate negative correlation with intent to leave the organization in the next 3 years ( $r = -.32, p < .001$ ), such that nurses with greater feelings of fitting into the local rural community also reported more engagement with their job, and indicated less intention to leave their unit and/or organization within the the next 6 months or 3 years, respectively.

Nurse engagement was negatively correlated with intent to leave the unit in the next 6 months ( $r = -.22, p < .001$ ) and intent to leave the organization in the next 3 years ( $r = -.25, p < .001$ ), such that nurses reporting a higher degree of engagement with their job at the organization also reported less likelihood to leave their unit within the next 6 months or the organization in the next 3 years.

Finally, intent to leave the unit in the next 6 months ( $r = -.22, p < .001$ ) was positively correlated with intent to leave the organization in the next 3 years ( $r = .49, p < .001$ ), such that nurses who are more likely to leave their unit within the next 6 months are also more likely to leave the organization in the next 3 years.

**Intent to leave unit in six months.** Linear regression was used to evaluate the relationship between job satisfaction, resilience, grit, engagement, and rural fit on nurses' reported intention to leave their unit within the next six months. The results predicting intent to leave the unit can be found in Table 2. The model was significant, predicting 18 percent of the variance in intent to leave the unit in six months ( $R^2 = .18$ ,  $F = 10.02$ ,  $p < .001$ ). The results revealed that when all the variables were considered in a single model, only patient type ( $t = 4.46$ ,  $p < .001$ ), resilience ( $t = -2.69$ ,  $p < .01$ ) and rural fit ( $t = -3.14$ ,  $p < .01$ ) remained significant predictors.

Table 2: *Linear Regression Predicting Intent to Leave Unit Within Next Six Months*

	<i>B</i>	<i>SE</i>	<i>t value</i>
Intercept	3.20	.70	4.54†
Patient Type	.63	.14	4.46†
Job Satisfaction	.00	.01	-.95
Job Dissatisfaction	.01	.01	1.17
Resilience	-.30	.11	-2.69**
Grit	.03	.15	.22
Nurse Engagement	-.23	.15	-1.52
Rural Fit	-.32	.10	-3.14**

$R^2 = .18$ ,  $F = 10.02$ ,  $p < .001$

Note. \*\* =  $p < .01$ , † =  $p < .001$ .

**Intent to leave hospital in three years.** Linear regression was used to evaluate the relationship between job satisfaction, resilience, grit, engagement, and rural fit on nurses' intent to leave the hospital in the next three years. The model was significant, predicting twenty percent of the variance in intent to leave the organization in the next three years ( $R^2 = .20$ ,  $F = 11.390$ ,  $p <$

.001; Table 3). The results revealed that when all variables were considered in a single model, significant predictors included patient type ( $t = 4.78, p < .001$ ), nurse engagement ( $t = -2.34, p < .05$ ), and rural fit ( $t = -4.72, p < .001$ ).

Table 3: *Linear Regression Predicting Intent to Leave Organization Within Next Three Years*

	<i>b</i>	<i>SE</i>	<i>t value</i>
Intercept	3.60	.70	5.13†
Patient Type	.67	.14	4.78†
Job Satisfaction	.00	.01	-.26
Job Dissatisfaction	.01	.01	1.54
Resilience	.11	.11	1.01
Grit	-.23	.15	-1.56
Nurse Engagement	-.35	.15	-2.34*
Rural Fit	-.49	.10	-4.72†

$R^2 = .18, F = 10.02, p < .001$

Note. + =  $p < .10$ . \*, † =  $p < .001$ .

In order to further explore which components of engagement were most predictive of intent to leave the hospital in three years, an additional set of analyses were performed. The results predicting intent to leave the unit in the next three years can be found in Table 4. The model was significant, predicting twenty-three percent of the variance in intent to leave the hospital in the next three years ( $R^2 = .23, F = 8.45, p < .001$ ). The results revealed that opportunities for professional growth ( $t = -3.25, p < .01$ ) was the only sub-scale of engagement that was significant. Rural fit ( $t = -4.05, p < .001$ ) and Patient Type ( $t = -4.89, p < .001$ ) remained significant predictors.

Table 4: *Linear Regression Predicting Intent to Leave the Organization in the Next Three Years*

	<i>B</i>	<i>SE</i>	<i>t value</i>
Intercept	3.54	.71	5.01†
Patient Type	.70	.14	4.89†
Job Satisfaction	<-.01	.01	-.05
Job Dissatisfaction	.01	.01	1.71
Resilience	.11	.11	.98
Grit	-.23	.15	-1.58
Passion for Nursing	-.10	.12	-.77
Autonomy & Input	.06	.15	.41
Teamwork	-.01	.13	-.04
Professional Growth	-.32	.10	-3.28*
Recognition	-.05	.09	-.54
Rural Fit	-.45	.10	-4.33†

$R^2 = .23, F = 8.45, p < .001$

Note. \* =  $p < .05$ , † =  $p < .001$ .

### Discussion

This study aimed to examine the unique contributions that job satisfaction, resilience, grit, engagement, and rural fit have on nurses' intention to stay in their unit for the next six months and intention to leave this rural organization in the next three years. Findings suggested that intent to leave the unit in the next six months or the organization in the next three years held a negative relationship to rural fit such that nurses whom felt that they fit in reported less intention to leave. These findings support the Job Embeddedness model. Specifically, the fit between the individual

and the community context is very influential on nurses' intention to leave their unit and the organization. Findings provide additional support for including understanding of how the nurse is embedded in the community context in considerations of models of rural nursing retention and of the development of recruitment and retention plans. The findings underscore the importance of the interactional and cultural dimensions of rurality.

The only other predictor of intent to leave the unit in the next six months was resilience. Nurses who identified as being more resilient were less likely to report intention to leave. The only other predictor of intent to leave the organization in the next three years was nurse engagement. More engaged nurses were less likely to report intention to leave the organization in the next three years. These findings add to our knowledge of nursing retention by highlighting the importance of fit within the rural community context in models of nursing retention.

At the bivariate level, job satisfaction, grit, resilience, nurse engagement, and rural fit were all negatively associated with intention to leave their unit in the next six months, and with the exception of resilience, all variables were also negatively associated with intention to leave the organization in the next three years. However, in the multivariate analyses, rural fit was the strongest predictor. These results mirror those of Roberge (2009) who reported that rural nurses were not satisfied with their jobs unless they were also satisfied with the rural environment. The lifestyle supported by one's job is likely a part of one's satisfaction with their job. Unfortunately, individuals who prefer the recreational activities and lifestyles more typical of urban areas are likely to find the travel to urban centers both time and cost prohibitive, thus decreasing satisfaction with their job, and increasing their intention to leave.

Resilience was a unique predictor of intention to leave the unit in six months, but not the organization in three years. It is possible that when individuals have a difficult time recovering



from stressors, that they may see changing units as a solution that may address the problem. If this is true, supporting nurse resiliency may be one strategy to address within organization turnover. It is also possible that poor individual-unit fit may erode nurse resilience. More research is needed to better understand the nature of nurse resilience and within organization turnover over-time.

Lack of nurse engagement was a unique predictor of intention to leave in the next three years. When deconstructing this finding, the professional growth subscale was driving this relationship. Even when considering rural fit, perception of opportunities for professional growth is associated with less likelihood of leaving over the next three years. It is possible that the opportunity to grow professionally through training opportunities and increasing responsibility incentivizes nurses to remain in rural organizations. Opportunities for professional growth need to be clearly laid out and accessible to nurses. Alternatively, it is also possible that nurses who intend to remain at an organization become more engaged and seek out more opportunities to advance their practice within the organization.

### **Limitations**

Several limitations should be considered. First, as a cross-sectional study, the ability to draw causal conclusions is limited. Next, all of the data was collected through self-report which may inflate the relationships found between variables. Objective measures of factors like resilience would strengthen the research design. In addition, only partial scales were used to measure nurse engagement. While internal reliability was maintained, the use of partial scales creates some uncertainty regarding the validity of the scales. Future research can further explore subscale validity compared with established scales. Rather than using an established scale to evaluate retention, we asked respondents to indicate how likely they were to leave. Future studies should

consider measuring retention in other ways such as using validated scales or administrative records of turnover. Finally, one measure of embeddedness was used (i.e., community fit); future research studies should include measures of community links and the perceived sacrifice one would make if they left their current job in order to investigate the job embeddedness model more comprehensively.

### **Conclusions**

In conclusion, poor rural fit was found to be associated with increased intention to leave one's unit and the organization. These findings should be interpreted with caution as this is a cross-sectional study and no causal conclusions can be drawn from these findings. However, these findings suggest strategies that rural organizations may employ to both recruit and retain nurses. For example, organizations may work to support interested local rural residents to pursue a nursing career. Unfortunately, while rural students are as successful as urban students in nursing programs, they are less likely to be accepted into nursing school (Bigbee & Mixon, 2013). Programs that offer support for prospective rural nursing students, cultivating their interests and assisting in the application process, may be successful in increasing the number of nurses attracted to rural practice. Helping nurses to develop a sense of community and supporting activities that are of interest to newly recruited nurses may help new nurses find a better fit with their rural community.

Despite the limitations, this study provided additional information about retention of rural nurses. Rather than considering variables independently, our multivariate model found that rural fit is paramount in retention of rural nurses. Additionally, clear and accessible opportunities for professional growth may help retain nurses over the long-term despite poor fit with the rural environment. It is also possible that nurses who stay in their positions longer to achieve professional growth may establish rural connections that improve fit with the rural community.

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