

Meaning in work in nursing as a positive personal attribute

by

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Dedication

This dissertation is dedicated to my family:

my grandmother (Dobun Lee)

my dad (Jaekwon Lee)

my mom (Chanksook Kim)

my sister (Mijung Lee)

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Abstract

The purpose of this dissertation was to introduce the concept of *meaning in work* and to provide evidence for why the concept is important in nursing. The specific aims were to: (1) develop and test an instrument to measure *meaning in work*, (2) explore direct relationships between *meaning in work* and nursing outcomes (job satisfaction, burnout), and (3) explore indirect relationships among *meaning in work*, the nursing work environment, and nursing outcomes (job satisfaction, burnout).

Data were collected from surveys mailed to a convenience sample of 500 registered nurses (RNs) randomly selected from an RN list from the North Carolina Board of Nursing. To develop an instrument to measure theoretical constructs of *meaning in work*, items from four instruments used to measure meaning in the workplace were selected. Confirmatory factor analysis (CFA) was used to test construct validity of the new instrument. Structural Equation Modeling (SEM) was performed to explore relationships among *meaning in work*, the nursing work environment, job satisfaction, and burnout.

A total of 158 RNs were included in data analysis. The newly developed instrument of *meaning in work* consisted of 25 items in four sub-scales. CFA supported construct validity (CFI=.907, RMSEA=.080) and internal consistency (Cronbach's alpha=.95) of the instrument. SEM supported (1) a positive relationship between *meaning in work* and job satisfaction ($\beta = .67$,

$SE=.05$), (2) an inverse relationship between *meaning in work* and burnout ($\beta = -.55$, $SE=.06$), and (3) indirect relationships of *meaning in work* to job satisfaction ($\beta = .35$, $SE=.11$) and burnout ($\beta = -.49$, $SE=.13$), mediated by the nursing work environment.

The results of this study supported hypothesized models, showing (1) significant direct relationships between *meaning in work*, job satisfaction, and burnout, and (2) an indirect positive relationship between *meaning in work* and job satisfaction, mediated by the nursing work environment and an indirect inverse relationship between *meaning in work* and burnout, mediated by the nursing work environment. *Meaning in work* is a positive personal attribute that provides a motivational force to work, and moreover has a possible role in positively influencing nurses' perceptions of the nursing work environment and creating healthy nursing work environments.

Chapter 1

Introduction

Florence Nightingale, Albert Einstein, Stephen Hawking, and Bill Gates. These are individuals who have inspired others. Importantly, one attribute they all have in common is that they have greatly influenced the development of health, science, and technology in the world. Another is their strong passion to work, their love of their work, and the inherent great meaning they find in what they did are doing. As suggested by these important individuals, among the many reasons to work, finding *meaning in work* is a great intrinsic motivator to work, one which makes a difference in one's work-life (Barsh, Mogelof, & Webb, 2010; Lopez & Snyder, 2003; MacMillan, 2010). Those who find meaning in the workplace have a great sense of purpose and fulfillment (Clark, 1995), a more positive experience (Fairlie, 2011; Ménard & Brunet, 2011; Steger, Littman-Ovadia, Miller, Menger, & Rothmann, 2013), and better work engagement (Fairlie, 2011; Soane et al., 2013; Steger et al., 2013).

Although the concept of *meaning in work* has not received much attention in nursing, its possible role in healthcare settings has been suggested by Leape et al. (2009), who argue that perceiving value along with finding joy and meaning in work will have positive impacts on improving patient safety by encouraging employee engagement. Despite of this well-established understanding, the nursing profession is facing a variety of serious workforce issues, such as

nursing shortages, which have been recognized as having a negative influence on patient safety and quality of care (Institute of Medicine, 2010). In the case of nurse turnover and retention, efforts to address the issue have focused on improving job satisfaction and reducing burnout (Duvall & Andrews, 2010; Flinkman, Leino-Kilpi, & Salanterä, 2010; Melo, Barbosa, & Souza, 2011; Toh, Ang, & Devi, 2012) as well as on creating a healthy nursing work environment (American Association of Critical-Care Nurses, 2005; American Organization of Nurse Executives, 2003). Although these efforts have led to some improvement, the challenges still remain, suggesting a need for new perspectives on tackling the issues. One of these is *meaning in work*. To provide empirical evidence why *meaning in work* matters in nursing, this dissertation study investigated its relationships with job satisfaction, burnout, and the nursing work environment.

Literature Review

Definition of Meaning in work

In existential psychology, meaning has been viewed as a fundamental reason for human existence. This existential meaning endows people with a unique reason to live, makes them aware of their existence in this world and underpins the significance of their lives (Frankl, 1968). Indeed, the search for meaning in one's life is a primary motivation for living. Narrowing this idea to work, *meaning in work* consists of existential meaning at work that includes all of the kinds of meaning related to work or experienced at work. According to the concept analysis by Lee (in press), *meaning in work* is defined as “the discovery of existential meaning from experiencing positive emotion, finding meaning from the work, and pursuing purpose or goals in the workplace.”

This definition of *meaning in work* includes four attributes, all of which are important for *meaning in work* to exist: (1) experienced positive emotion at work, (2) meaning from work itself, (3) meaningful purpose and goals of work, and (4) work as a part of life toward meaningful existence (Lee, in press). “Experienced positive emotion at work” is an indication of experiencing meaningfulness, a sense of worth, and self-fulfillment. For example, when employees discover *meaning in work*, they feel more valued and fulfilled through the actualization of their work values or purposes (Morrison, Burke, & Greene, 2007; Pattakos, 2004). “Meaning from work itself” is associated with an awareness of the worthy attributes of work, which are socially constructed and include work significance, work values, and work orientation. “Meaningful purpose and goals of work” is a future-oriented idea that explains why employees engage in their work or what they seek at work. “Work as a part of life toward meaningful existence” can be described as the impact of *meaning in work* on one’s personal life, a personal reason for existence, and an authentic self. In this sense, meaning explains why employees work in order to feel alive as important beings at work, while striving to achieve their authentic selves.

Meaning in work *in Nursing*

The concept of *meaning in work* in nursing has been understood simply as meaning, which is a component of workplace spirituality (Kazemipour & Amin, 2012), psychosocial work environment (Li et al., 2010), or psychological empowerment (Browning, 2013; Chang & Liu, 2009; Faulkner & Laschinger, 2008; Knol & van Linge, 2009; Li et al., 2008; Manojlovich & Laschinger, 2002; Smith et al., 2010; Stewart et al., 2010). Studies have further investigated meaning as a process that mediates between work structures and work outcomes, with less emphasis on its independent role. According to Lee (in press), however, this perspective is too

narrow because *meaning in work* is not merely situational meaning that arises from the workplace (Park, 2010). Rather, *meaning in work* encompasses global meaning that is constructed throughout one's whole life, even beginning early in life, and influences individuals' thoughts and behaviors related to their work. To deepen our perspective on *meaning in work*, this study used the core attributes of *meaning in work* described above, in order to help nurses and nursing researchers understand the concept of *meaning in work* and explore its role in nursing.

For nurses, finding *meaning in work* is important because it can create more positive emotions, thoughts and behaviors for themselves, their teams, and even their patients. For example, nurses who find *meaning in work* may have clear purposes or goals in their work that can intrinsically motivate them. When this occurs, they may be more likely to enjoy nursing with passion, sharing this positive atmosphere with others. Moreover, when facing their own difficulties, nurses who discover *meaning in work* may respond differently to these situational events by making meaning and developing greater understanding of the events. And thus they may be more committed to patient care, despite the difficulties.

Meaning in work *and nursing outcomes*

For several decades, the ongoing nursing shortage has been recognized as a critical issue that is responsible for reduced job satisfaction, burnout, and other poor nursing outcomes. (Institute of Medicine, 2010). To address the nursing shortage, researchers have often investigated improving job satisfaction and reducing burnout (Duvall & Andrews, 2010; Flinkman et al., 2010; Melo et al., 2011; Toh et al., 2012). Job satisfaction refers to a positive affective orientation of employees towards their jobs (Adams & Bond, 2000; Hackman & Oldham, 1976; Price, 2001). In contrast to this positive attitude, burnout is a job-related mental state associated with intense and excessive emotional demand (Maslach, Schaufeli, & Leiter,

2001). In numerous studies in other disciplines (e.g., management and organizational studies, occupational health, and psychology), job satisfaction and burnout have been shown to have significant associations with *meaning in work* (Borritz et al., 2005; Duffy, Allan, Autin, & Bott, 2013; Duffy, Bott, Allan, Torrey, & Dik, 2012; Gupta, Kumar, & Singh, 2014; Shanafelt et al., 2012). In particular, *meaning in work* has been shown to be an intrinsic factor in enhancing job satisfaction (Hackman & Oldham, 1976; Johns, Xie, & Fang, 1992; Maharaj & Schlechter, 2007; Stechmiller & Yarandi, 1992). A deficit of *meaning in work* can result in burnout (Malach-Pines, 2000; Pines, 2002). This study investigated possible associations of *meaning in work* with nurses' job satisfaction and burnout.

Meaning in work *and the nursing work environment*

Improving the nursing work environment has been highlighted as a way to increase job satisfaction and decrease burnout and to improve the nursing shortage (Atefi, Abdullah, Wong, & Mazlom, 2014; Friese, 2005; Manojlovich, 2005; McHugh & Ma, 2014). The nursing work environment reflects nurses' perceptions of organizational attributes such as workload, nurse staffing, resources, work schedule and so on (Alspach, 2009), as well as collaborative nurse-physician relationships and supportive nurse managers (Kramer & Schmalenberg, 2002).

Although there are various factors that facilitate professional nursing practice in hospitals, many nursing researchers have focused on improving extrinsic factors, such as organizational attributes (e.g., nurse staffing), rather than intrinsic factors (Alspach, 2009; Kramer & Schmalenberg, 2002). However, the American Association of Critical-Care Nurses (2005) suggested recognition of the value and meaningfulness of one's contribution to work as one standard for establishing and sustaining healthy work environments. This points to a possible role of *meaning in work* as

an intrinsic factor in creating healthy work environment. This study explored possible associations of *meaning in work* with perceptions on the nursing work environment.

Statement of the problem

Despite the significance of *meaning in work*, the lack of nursing research on this important construct highlights the need to explore its importance for the field. The current partial understanding of *meaning in work* in nursing limits our ability to identify the core essentials that can provide an existential reason for why nurses work and opportunities to understand the self in the context of nursing. The current perspective therefore deemphasizes the role of *meaning in work* in nursing. An emphasis on *meaning in work* allows for a focus on intrinsic factors in improving nursing workforce issues. Most nursing studies have focused on extrinsic factors (e.g. nursing work environment) rather than intrinsic factors to improve job satisfaction and reduce burnout as well as to improve the nursing work environment. A new perspective that encompasses *meaning in work* as conceptualized in this study is important because evidence shows that intrinsic factors such as *meaning in work* are more strongly associated with job satisfaction and burnout than extrinsic factors, and that they have a long-term effect on improving job satisfaction and reducing burnout. Moreover, intrinsic factors can improve nurse perceptions of the nursing work environment and thus contribute to creating healthy work environments. This study investigated how *meaning in work* can play an independent role as an intrinsic factor in interpreting the work environments and bringing better nursing outcomes.

Conceptual framework

Based on a full understanding of *meaning in work* from an existential perspective, a relationship of *meaning in work* to both the nursing work environment and nursing outcomes

(job satisfaction, burnout) was proposed. The conceptual framework introduces two important roles of *meaning in work*, the first as an intrinsic factor that can improve job satisfaction and decrease burnout, and the second as an intrinsic factor that can influence perceptions of the nursing work environment and its impact on job satisfaction and burnout (see figure 1). This research addressed the following hypotheses:

H1. There will be a direct positive relationship between *meaning in work* and the nursing work environment.

H2. There will be a positive indirect relationship (mediated by the nursing work environment) between *meaning in work* and job satisfaction.

H3. There will be an inverse indirect relationship (mediated by the nursing work environment) between *meaning in work* and burnout.

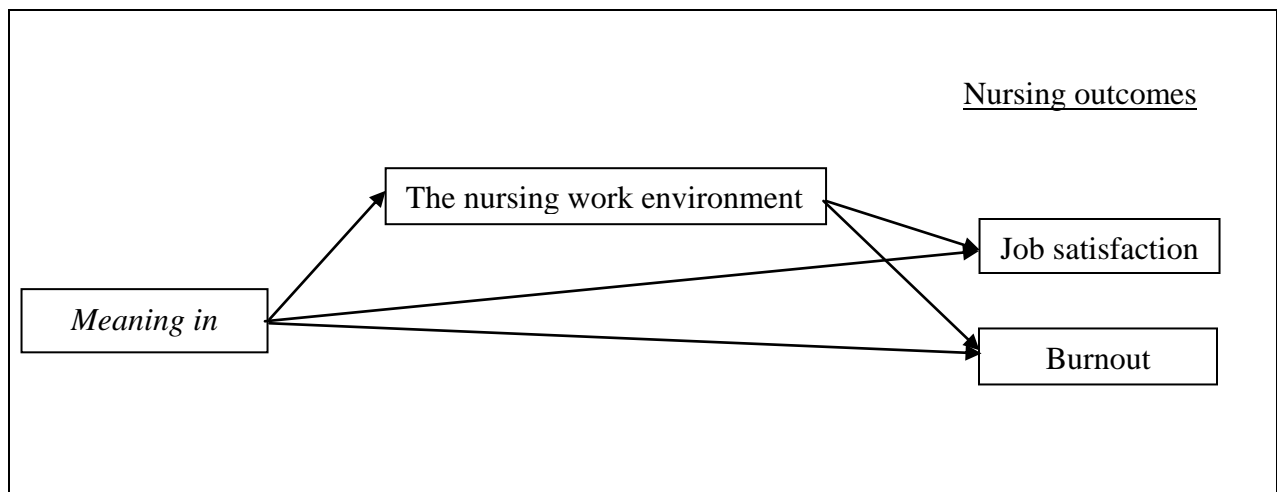


Figure 1. The hypothetical relationships between *meaning in work* and nursing outcomes (job satisfaction, burn-out) through the nursing work environment

Significance of the Study

Despite efforts of nursing researchers to improve the nursing work environment, the nursing workforce continues to struggle with issues of job dissatisfaction and burnout, which in

turn can affect patient care. This study introduced a novel, understudied concept, *meaning in work*, and investigated its role in the work of nursing. Previous evidence shows that employees who find *meaning in work* experience more satisfaction in their jobs and experience less burnout. Moreover, *meaning in work* can allow employees to perceive their work environment in a more positive light. Findings from this study will have the potential to contribute to efforts directed at solving issues faced by the nursing workforce, which in turn can lead to improved quality of care and patient safety.

Structure of the dissertation

The dissertation consists of five chapters: Introduction (Chapter 1), Developing and testing an instrument of *meaning in work* for nursing (Chapter 2), *Meaning in work*: an intrinsic motivator to improve nursing outcomes (Chapter 3), *Meaning in work* to improve the nursing work environment and nursing outcomes (Chapter 4), and Conclusion (Chapter 5).

This introduction introduces the concept of *meaning in work* as derived through a concept analysis (done prior to the dissertation), describes a conceptual framework for the dissertation and hypotheses, and presents the significance of the study. Since at the onset of this research no existing instruments were available to measure the identified constructs of *meaning in work* as a result of the concept analysis, this project developed an instrument to measure *meaning in work*. Chapter 2 first describes the process used to develop the instrument and then tests the psychometric properties of the new instrument. In Chapters 3 and 4, the proposed hypotheses are tested. Chapter 3 investigates the role of *meaning in work* in influencing nursing outcomes (i.e., job satisfaction and burnout). Chapter 4 examines the relationships between *meaning in work* and nursing outcomes (i.e., job satisfaction, burnout), mediated by the nursing work environment.

Finally, Chapter 5 provides a summary of this research, limitations, and recommendations for future work.

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Chapter 2

Developing and testing an instrument of *meaning in work* for nursing

Introduction

Finding meaning in one's work is a primary motivator for working. Individuals who find *meaning in work* can attain a clear goal or purpose for working and behave proactively to reach their work goals (Richards, 1997). Finding *meaning in work* further provides individuals a chance to understand their existential core, which in part consists of being fulfilled with a meaningful existence (Bolman & Deal, 1995). *Meaning in work* has been differentially conceptualized from diverse theoretical perspectives. For example, some studies define *meaning in work* as a work value (Duffy et al., 2012), while other studies perceive it as an experience of meaningfulness while working (Hackman & Oldham, 1975). However, none of these definitions capture an existential view on *meaning in work*, which understands meaning as a fundamental motivational force for working, and none are specific to nursing. In an effort to comprehensively explain the concept, the author previously analyzed the concept of *meaning in work* based on the existential view and defined it as 'the discovery of existential meaning from work experience, work itself, and work purpose/goals.'

Four constructs contribute to the definition of *meaning in work*: (1) experienced positive emotion at work, (2) meaning from work itself, (3) meaningful purpose and goals of work, and

(4) work as a part of life toward meaningful existence (Lee, in press). There are several instruments that measure *meaning in work* (Ashmos & Duchon, 2000; Pejtersen et al., 2010; Spreitzer, 1995; Steger, Dik, & Duffy, 2012), however, they do not address all four constructs. If only some constructs are included in an instrument, construct validity suffers, and the instrument loses its power to accurately capture the overall concept. Given the contribution of *meaning in work* in other areas, *meaning in work* may have a potential role in nursing workforce issues that result from nursing outcomes such as job satisfaction and burnout. Therefore, the purpose of this study was to develop an instrument that measures the four constructs of *meaning in work* for nursing and test the instrument's psychometric properties.

Background

Meaning in work has been explored in a number of professions such as psychology and organizational studies. Surprisingly, it has received little attention in the nursing literature. Nursing studies have connected nursing shortages, unhealthy nursing work environments, and adverse patient outcomes to workforce problems such as job dissatisfaction, burnout, and high turnover (Aiken et al., 2002; American Association of Critical-Care Nurses [AACN], 2005; American Nurses Association [ANA], 2000; American Organization of Nurse Executives [AONE], 2003; Irvine & Evans, 1995; Toh, Ang, & Devi, 2012). Nursing workforce problems can be addressed in a number ways (individual, inter-personal, and organizational), but the most common approach in published studies is organizational, for example changing the work structure of hospitals by increasing numbers of nursing staff (Aiken et al., 2002) or building healthier work environments (AACN, 2005; AONE, 2003). Even though these approaches have introduced positive outcomes for some nurses, it has been difficult to realistically apply these

changes at hospitals in general because organizational strategies are costly and alone are insufficient to solve nursing workforce issues (May, Bazzoli, & Gerland, 2006).

Current approaches also give less attention to personal factors that can influence the perception of the work environment. Individuals actively perceive their environments, and they can even be influenced by their perceptions rather than by the work structure itself (Bandura, 1989). In fact, recent studies in other fields have shown *meaning in work* to be a positive contributor to one's work (Dutton, Glynn, & Spreitzer, 2006), and to have a promising role in improving job satisfaction (Gupta, Kumar, & Singh, 2013; Pawar, 2009; Yaseen, 2013) and reducing burnout (Li, Chen, & Kuo, 2008). Despite of the lack of studies in nursing, *meaning in work* may be useful as a personal strategy to help improve nursing workforce issues.

Conceptual Framework

In existential psychology, meaning has been approached as a reason for human existence. This existential meaning has been explored with a concept of meaning in life within Frankl's (1968) logotherapy. Logotherapy posits that finding meaning in life endows people with a unique reason to live, makes them aware of their existence in this world, and drives the significance of their lives. So, the search for such meaning in one's life becomes a primary motivational force for living. Logotherapy assumes three premises: (1) life has meaning under all circumstances (meaning in life), (2) people have a motivational force to find meaning (will to meaning), and (3) people have free will to activate the will to meaning and to find meaning (freedom of will) (Frankl, 1968). These premises allow individuals to actively react to or even create their environments. The existential view, along with these premises, was used to guide a concept analysis of *meaning in work* in a previous study (Lee, in press).

The concept analysis of *meaning in work* determined that there are four critical attributes or constructs: (1) experienced positive emotion at work, (2) meaning from work itself, (3) meaningful purpose and goals of work, and (4) work as a part of life toward meaningful existence (Lee, in press). ‘Experienced positive emotion at work’ reflects subjective positive experience including meaningfulness, a sense of worth, and self-fulfillment, when employees have meaning in work. ‘Meaning from work itself’ indicates work attributes that provide meaning, such as work significance, work values, and work orientation. ‘Meaningful purpose and goals of work’ indicates that meaning in work can be derived from knowing what employees want to be and do in the workplace—meaningful purpose and goals of work. ‘Work as a part of life toward meaningful existence’ reflects the impact of meaning in work on one’s personal life, a personal reason for existence, and an authentic self. As can be seen in Figure 2, each construct

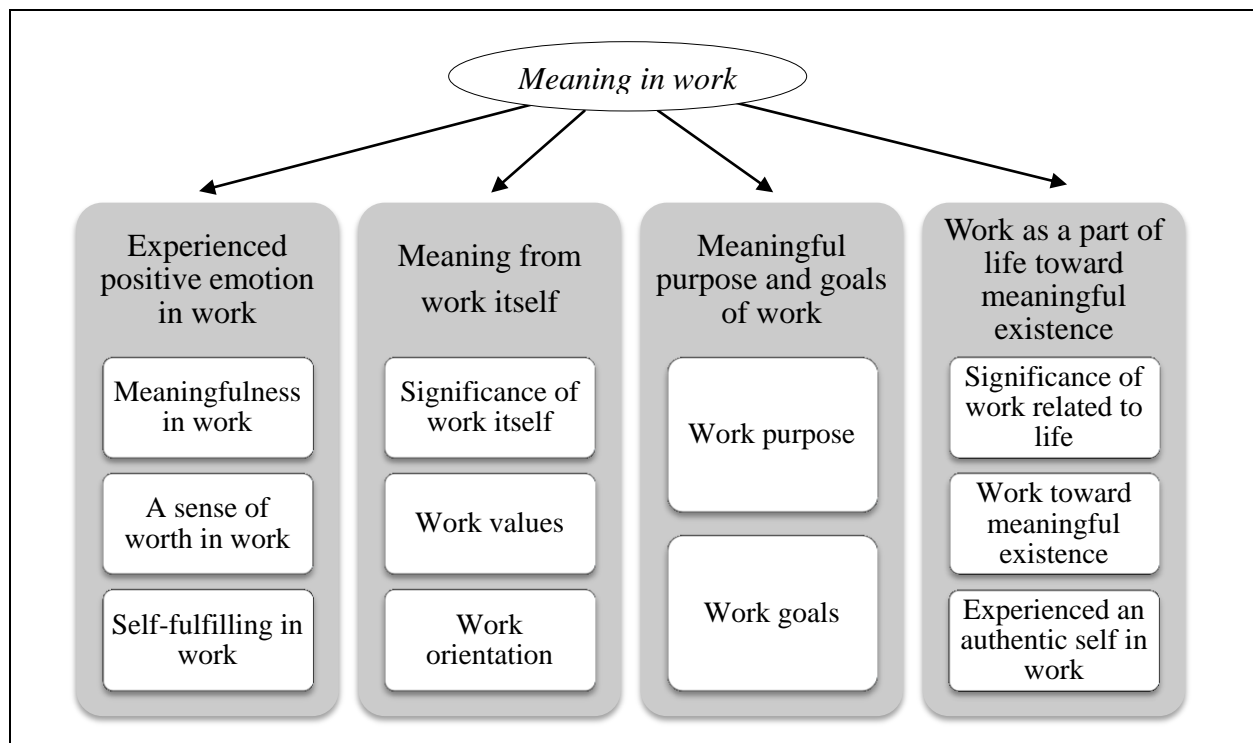


Figure 2. Constructs and sub-constructs of *meaning in work*

consists of two or three sub-constructs. For example, the construct ‘experience positive emotion at work’ includes three sub-constructs of experienced meaningfulness, a sense of worth, and self-fulfillment that reflect subjective positive experience.

Procedures for Instrument Development

This study consisted of two phases. Phase I involved a literature review to determine frequently used instruments to measure meaning in the workplace. From the measures chosen from the literature review, phase II identified items to measure the four theoretical constructs that contribute to *meaning in work*, and that were derived from a concept analysis (Lee, in press).

The literature review in Phase I was conducted using six electronic databases: Medline (Ovid), CINAHL, PsycINFO, Business Source Complete, Web of Science, and ABI/INFORM Global. These six databases were chosen to obtain articles related to meaning in workplace studies from distinct areas including nursing, psychology, and organizational studies. The search was done during August, 2013 without placing limits on year of publication. In order to capture terms analogous or synonymous to *meaning in work*, the key terms ‘meaningful work’ and the combined keywords of ‘meaning’ and ‘work’ were searched in addition to ‘meaning in work.’ Inclusion criteria included empirical studies that used instruments that measured meaning in the workplace, studies in which subjects are employees, and studies written in English. This review excluded studies that had a focus on helping individuals *find* work or focused on populations that do not work (e.g. students). This decision was made in order to focus exclusively on those who are employed.

A total of 67 studies assessed meaning in the workplace by employing various instruments that have different constructs or contexts of meaning: 48 studies implemented whole or parts of multi-dimensional instruments to measure *meaning in work*; 24 studies developed

items to measure *meaning in work* (e.g. ‘I find meaning in my work.’) or borrowed developed items from another study; the remaining 5 studies focused on *meaning in work*, but did not describe their measures. For instrument development, frequently and recently used instruments were selected— the Work and Meaning Inventory (WAMI), the Psychological Empowerment Scale (PES), the Copenhagen Psychosocial Questionnaire (COPSOQ), and the spirituality questionnaire.

The WAMI was included in developing an instrument of *meaning in work* as it is the most recent instrument that measures the experience of meaningful work (Steger, et al., 2012), and thus more likely to capture facets of the current work environment. Meaningful work is defined as work consisting of positive meaning, meaning-making through work, and greater good motivations. This instrument has ten items with a five-point Likert scale and has good reliability (Cronbach’s alpha =.93) and validity. The PES was selected because it is the most widely used. The PES consists of four subscales, and one subscale of the PES, meaning, refers to a cognition that reflects an individual’s orientation to the work (Spreitzer, 1995). The meaning subscale consists of three items measured using a seven-point Likert scale. The internal reliability of the subscale has been shown to be .89 (Cronbach’s alpha). Interestingly, many nursing studies have used the PES, showing wide usage of the overall concept of psychological empowerment, but have not focused on the meaning sub-scale. The COPSOQ was chosen for instrument development because it is the second most often used. It assesses meaning as a dimension of a psychosocial work environment (Pejtersen et al., 2010). Unlike the WAMI and the PES, it does not clearly define meaning. The COPSOQ consists of seven subscales; meaning is included in one subscale of work organization and job content as one of five sub-constructs. The subscale for meaning consists of three items measured using a five-point Likert scale. It also

has acceptable reliability with a Cronbach's alpha of .74. Finally the spirituality questionnaire was selected because it is also widely used. It consists of seven subscales and includes meaning as one aspect of spirituality (Ashmos & Duchon, 2000). This questionnaire also did not define meaning. The subscale for meaning consists of seven items measured using a seven-point Likert scale. It has good reliability with a Cronbach's alpha of .86.

Phase II identified items to measure *meaning in work* for nursing from the WAMI, PES, COPSOQ, and the spirituality questionnaire. The author matched a total of 23 items from these four measures to 11 sub-constructs under the four constructs, and these matched items were reviewed by a senior nursing researcher. As can be seen in Table 1, WAMI addresses all identified constructs, but not all sub-constructs of *meaning in work*. Moreover, WAMI refers to meaningful work, whose theoretical foundation is significantly different with *meaning in work*. For example, WAMI includes greater good motivation which emphasizes a positive impact on others (Steger et al., 2012), but is not included in the four constructs of *meaning in work*. PES includes two defining constructs—experienced positive emotion in work and meaning from work itself—and two sub-constructs. The COPSOQ includes two defining constructs—experienced positive emotion in work and meaning from work itself—and three sub-constructs. The spirituality questionnaire includes two defining constructs—experienced positive emotion in work and work as a part of life toward meaningful existence—and three sub-constructs.

From a total of 23 items, 20 items were relevant to sub-constructs of *meaning in work*; three items on the subscale for the meaning of the spirituality questionnaire were excluded. However, even with 23 items not all of the sub-constructs identified could be captured. For example, there was no item to measure a sense of worth in work, which is the sub-construct of experienced positive emotion at work. And some sub-constructs (e.g. work orientation) consisted

Table 1. Items of the instrument of *meaning in work* derived from the various existing instruments

Existing Constructs of <i>meaning in work</i>	Existing Instruments	The Work and Meaning Inventory	The Psychological Empowerment Scale	The spirituality questionnaire	The Copenhagen Psychosocial Questionnaire	The revised Purpose in Life test	Career Orientation Index
Experienced positive emotion in work	Meaningfulness in work	I have a good sense of what makes my job meaningful.	The work I do is meaningful to me. My job activities are personally meaningful to me.	I understand what gives my work personal meaning.	Is your work meaningful?		
	A sense of worth in work					If I should die today, I would feel that my work* has been very worthwhile.	
	Self-fulfilling in work			My spirit is energized by my work.	Do you feel motivated and involved in your work?		
Meaning from work itself	Significance of work itself		The work I do is very important to me.		Do you feel that the work you do is important?		
	Work values	My work really makes no difference to the world. I know my work makes a positive difference in the world.					
	Work orientation	I have found a meaningful career.					Overall, I have a very independent, self-directed career.
Meaningful purpose and goals of work	Work purpose	I have discovered work that has a satisfying purpose. 10. The work I do serves a greater purpose.				I regard my ability to find a meaning purpose, or mission at work* as very great.	
	Work goals					In work*, I have no goals or aims at all. In achieving work* goals, I have made no progress whatsoever.	
Work as a part of life toward meaningful existence	Significance of work related to life	I understand how my work contributes to my life's meaning.		The work I do is connected to what I think is important in life. I see a connection between my work and the larger social good of my community.			
	Work toward meaningful existence	My work helps me make sense of the world around me.				My personal existence is utterly meaningless and without purpose. In thinking of my work*, I often wonder why I exist.	
	Experienced an authentic self in work	I view my work as contributing to my personal growth. My work helps me better understand myself.					

Note. PIL-R: the revised Purpose in Life test, * life is changed to work

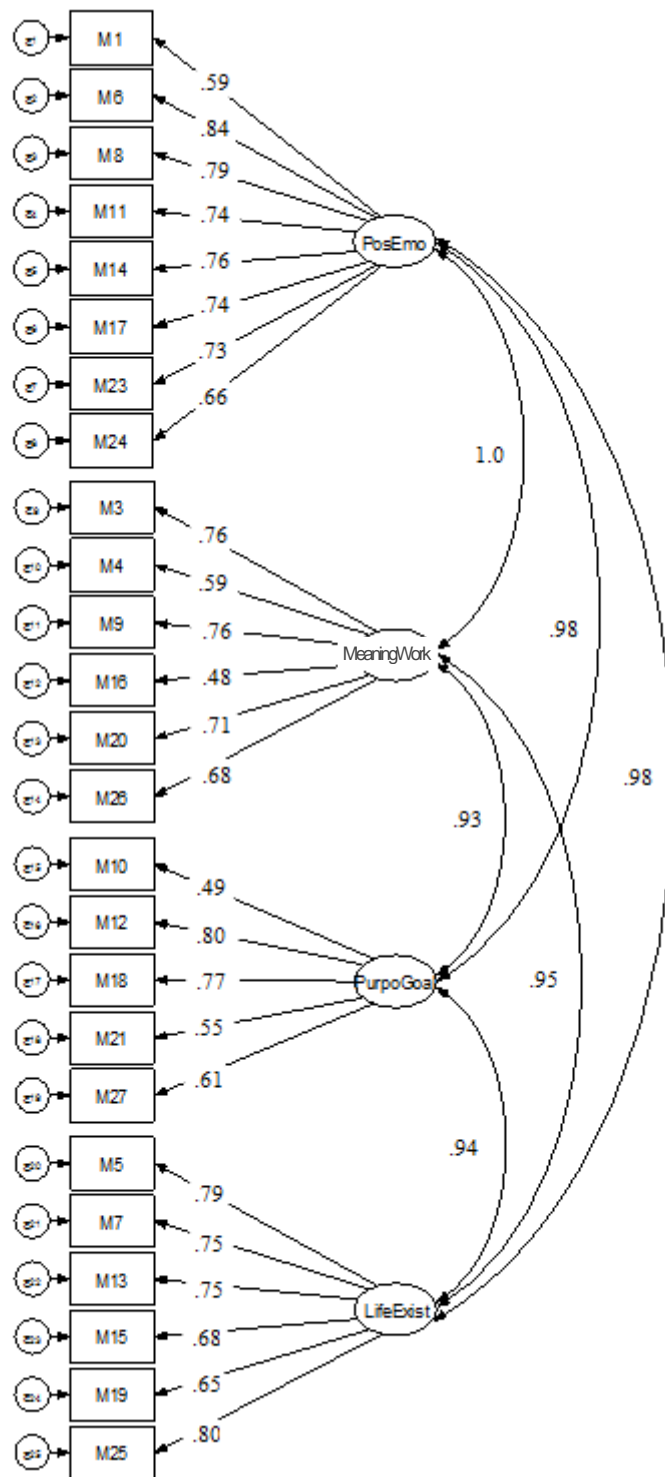
of only one item. To create a comprehensive instrument, other instruments were searched that assess similar concepts of *meaning in work*, such as meaning in life, which is a parent concept of *meaning in work*, and career orientation, which broadly includes *meaning in work* as a calling. This hand search yielded two additional instruments—the revised purpose in life test and the career orientation index. Finally, a new instrument of *meaning in work* was developed with a total of 27 items from six selected instruments. Table 1 shows the six instruments from which the items were drawn. Each construct has a different number of items, but this does not indicate that some constructs are more important than others.

Description, Administration, and Scoring of the Instrument

The newly developed instrument consists of 27 five-point Likert scale items (ranging from 1: strongly disagree to 5: strongly agree). These items measure the four constructs of *meaning in work*: (1) 8 items focused on experienced positive emotion at work, (2) 6 items on meaning from work itself, (3) 5 items on work purpose and goals, and (4) 8 items on work as a part of life toward a meaningful existence. Each of the four constructs is identified by its component items. For example, experienced positive emotion at work is explained by items 1, 6, 8, 11, 14, 17, 23, and 24 (See Figure 3). Items 2, 10, 16, 22, and 27 are computed after reverse scoring. Each of the four constructs computes the mean of component items, ranging from 1 to 5. A higher mean score reflects a higher level of *meaning in work*.

Methods

The target population of this study was a convenience sample of registered nurses (RNs) identified from a list of RNs (n= 122,396) obtained from the North Carolina Board of Nursing. This list was chosen because of completeness. Inclusion criteria for the study were: (1) currently working in acute-care hospital settings, and (2) working full-time (over 36hrs/week). RNs were



Note. PosEmo= Experienced positive; MeaningWork= Meaning from work itself; PurpoGoal= Meaningful purpose and goals of work; LifeExist= Work as a part of life toward meaningful existence

Figure 3. Final CFA model of *meaning in work*

selected by a random process, using a random number table without replacement. Random sampling was chosen to eliminate potential bias resulting from characteristics of hospitals (including bed capacity, type of hospital, and hospital size) and demographic characteristics of nurses (including sex, age, marital status, religion, level of education, and years in practice).

This study was a part of a larger project to examine the role of *meaning in work* in a hospital nursing work environment and nursing outcomes (job satisfaction and burn out). In the parent study, a power analysis was done to determine that a sample size of 260 was needed for structural equation modeling (MacCallum, Browne, & Sugawara, 1996). This number was also found to be reasonable based on a participant-to-factor ratio of 20:1 (Tabachnick & Fidell, 2007). Accounting for a response rate of 60% (Badger & Werrett, 2004), 433 RNs were needed, but 500 names, which is 0.4% of the total list, were randomly selected. Oversampling was necessary to compensate for those who had to be deleted because of failure to meet inclusion criteria.

Following the approval of the Institutional Review Board Health Sciences & Behavioral Sciences (IRB-HSBS) of the University of Michigan, 500 selected RNs received an invitation to participate in a survey. Following the Dillman method (2009) the mailing included a cover letter explaining the purpose and importance of this study, intended use of results, and a guarantee of anonymity; demographic questions; and four instruments that measure *meaning in work*, the nursing work environment, job satisfaction, and burnout. Two-dollar bills were also included in the mail as an advance incentive for participating in the study. After one week reminders were sent and after one month, follow up surveys were sent.

Demographic characteristics and the mean of *meaning in work* were completed using Statistical Package for the Social Sciences (SPSS) version 22.0 software. To test this newly developed instrument, confirmatory factor analysis (CFA) was performed using Stata 13. CFA

was chosen because we had a hypothesized factor structure of *meaning in work* that consists of four constructs and 11 sub-constructs. If a hypothesized factor structure that explicitly specified with factors and their correspondence with the indicators is given, CFA is an appropriate technique to use, rather than exploratory factor analysis (EFA) that is a technique to use when the number and structure of the factors are unknown (Acock, 2013; Kääriäinen et al., 2011; Kline, 2011). In this study, the maximum likelihood method was applied, with imputed missing values. Internal consistency reliability was also tested to estimate how consistent responses were across the items within a measure (Kline, 2011).

Results

Study Characteristics

Data collection was conducted between October 2014 and March 2015. A total of 185 questionnaires were returned representing a 37% response rate. Twenty seven questionnaires were excluded because they either did not meet the inclusion criteria (e.g., work in a hospital setting) or did not answer questions on main variables. Finally, a total of 158 questionnaires were included in data analysis. This sample size met a required sample size to have 80 % power for instrument development purposes (MacCallum et al., 1996). Table 2 presents demographic characteristics of respondents. Compared to the target population, RNs from the North Carolina Board of Nursing, there were significant differences in education degrees in the sample ($\chi^2 = 6.06, p = .014$).

Raw scores of meaning in work

Scores of the four constructs of *meaning in work* ranged from 1 to 5 with a mean score of 4.1 ($SD = .57$). Table 3 presents mean scores of each construct. Pearson correlations of total items ranged from .05 to .76, with four items of 2, 10, 16, and 22 having extremely low and non-

Table 2. Demographic characteristics (n = 158)

	Variables	n (%)	Mean (SD)
Age			43.2 (12.03)
	Missing	4 (2.5%)	
Sex	Male	19 (12.0%)	
	Female	137 (86.7%)	
	Missing	2 (1.3%)	
Marital status	Single	28 (17.7%)	
	Married	115 (72.8%)	
	Divorced/widowed/separated	13 (8.2%)	
	Missing	2 (1.3%)	
Belongs to religious organization	Yes, and I attend services regularly.	59 (37.3%)	
	Yes, but I do not attend services regularly.	43 (27.2%)	
	No. I don't belong to any formal religious organization, but I am very religious.	17 (10.8%)	
	No. I don't belong to a formal religious organization.	37 (23.4%)	
	Missing	2 (1.3%)	
Education	Diploma in Nursing	7 (4.4%)	
	Associate Degree in Nursing	65 (41.1%)	
	Bachelor's Degree in Nursing	67 (42.4%)	
	Master's Degree in Nursing	6 (3.8%)	
	Doctorate Degree in Nursing	0 (0%)	
	Other educational degrees not in Nursing	10 (6.3%)	
	Missing	3 (1.9%)	
Certification by a national nursing specialty organization	Yes	37 (23.4%)	
	No	118 (74.7%)	
	Missing	3 (1.9%)	
RN year			14.1 (10.62)
	Missing	5 (3.2%)	
Magnet status	Yes	91 (57.6%)	
	No	60 (38.0%)	
	N/A	3 (1.9%)	
	Missing	4 (2.5%)	
Hospital size	<100 beds	24 (15.2%)	
	100-299 beds	35 (22.2%)	
	300-400 beds	25 (15.8%)	
	>400 beds	70 (44.3%)	
	Missing	4 (2.5%)	

Table 3. Mean of *meaning in work*

Variables		Mean (SD)	Potential range
<i>Meaning in work</i>	Experienced positive emotion in work	4.1 (0.62)	1 - 5
	Meaning from work itself	4.3 (0.54)	1 - 5
	Meaningful purpose and goals of work	4.1 (0.63)	1 - 5
	Work as a part of life toward meaningful existence	4.0 (0.64)	1 - 5
	Grand scale	16.5 (2.26)	4 - 20

significant correlations with other items ($r < .16$). But, no correlations were over .90, which would indicate extreme multivariate collinearity (Kline, 2011).

Construct Validity Testing

CFA was used for construct validity testing. A total of 27 cases had missing values, and the percent of missing values in each variable ranged from 0% to 3.2%. Because values were missing at random, all cases with missing values were included in CFA estimation and imputed using maximum likelihood estimation. Table 4 summarizes the estimated path coefficients between factors and items and model fit of three models: (1) the original propose CFA model of *meaning in work*, (2) a modified CFA model after removing item 2 and 22 that had extreme low factor loadings, and (3) the final model after modification indices.

Figure 3 presents the final CFA model of *meaning in work*. The final model had sufficient factor loadings ranging from .48 to .84, with high correlations among four factors ranging from .93 to 1.00. The model fit of the final model yielded a comparative fit index (CFI) of .907, which meets the criteria for the fitted model ($>.90$) and a root mean square error of approximation (RMSEA) for a residual fit index of .080, which indicates a reasonably close fitting model (Kääriäinen et al., 2011).

Table 4. CFA results of *meaning in work* (standardized path coefficients)

Factor	Indicator	Model 1 ; original proposed	Model 2 ; delete M2 M22	Model 3 ; final model after modification indices
Experienced positive emotion in work	M1	.63	.63	.59
	M6	.83	.83	.84
	M8	.81	.81	.79
	M11	.75	.76	.74
	M14	.76	.76	.76
	M17	.72	.72	.74
	M23	.71	.71	.73
	M24	.68	.68	.66
Meaning from work itself	M3	.79	.79	.76
	M4	.58	.58	.59
	M9	.74	.74	.76
	M16	.47	.47	.48
	M20	.71	.71	.71
	M26	.63	.63	.68
Meaningful purpose and goals of work	M10	.47	.47	.49
	M12	.81	.81	.80
	M18	.71	.71	.77
	M21	.56	.56	.55
	M27	.57	.56	.61
Work as a part of life toward meaningful existence	M2	.31		
	M5	.79	.79	.79
	M7	.73	.74	.75
	M13	.76	.77	.75
	M15	.68	.69	.68
	M19	.63	.64	.65
	M22	.34		
	M25	.79	.80	.80
Covariance	PosEmo*MeaningWork	1.04	1.04	1.00
	PosEmo*PurpoGoal	1.02	1.02	.98
	PosEmo*LifeExist	1.00	.99	.98
	MeaningWork*PurpoGoal	1.01	1.01	.93
	MeaningWork*LifeExist	.96	.95	.95
	PurpoGoal*LifeExist	.97	.95	.94
	e.M16*e.M27			.40
	e.M3*e.M12			.48
	e.M1*e.M3			.39
	e.M11*e.M20			.41
	e.M17*e.M10			.36
	e.M23*e.M18			.29
	e.M14*e.M15			.31
	e.M11*e.M18			-.25
	e.M21*e.M13			.29
	e.M24*e.M13			.32
	e.M24*e.M25			.28
	e.M8*e.M3			.37
	e.M8*e.M12			.35
	e.M1*e.M27			.23
e.M23*e.M26			-.26	

Fit	Chi-square (df)	906.231 (318)	770.901 (269)	510.597 (254)
	p>chi2	.000	.000	.000
	CFI	0.795	0.818	0.907
	RMSEA	0.108	0.109	0.080

Note. * $p < .05$ ** $p < .01$ *** $p < .001$, PosEmo= Experienced positive emotion in work; MeaningWork= Meaning from work itself; PurpoGoal= Meaningful purpose and goals of work; LifeExist= Work as a part of life toward meaningful existence

Reliability Testing

Internal consistency estimates were evaluated for each of the four constructs and for the total scale. As can be seen in Table 5, Cronbach's alpha ranged from .91 to .95, indicating that the total composite score and each of the four sub-scales are internally consistent (Acock, 2013).

Table 5. Reliability Coefficients for the four constructs of meaning in work

	Variables	# of items	Cronbach's Alpha
<i>Meaning in work</i>	Experienced positive emotion in work	8	.91
	Meaning from work itself	6	.93
	Meaningful purpose and goals of work	5	.94
	Work as a part of life toward meaningful existence	6	.94
	Grand scale	25	.95

Discussion

This study had two purposes to develop an instrument to measure the four constructs of *meaning in work* and to test the psychometric properties of the instrument. The developed instrument of *meaning in work* consists of 25 items using a five-point Likert scale after removing two items with extreme low factor loadings. The final CFA resulted in an acceptable model fit (CFI = .907, RMSEA = .080) and good internal reliability (Cronbach's alpha = .91 to .95). Thus, the newly developed instrument was found to correspond to each of the four hypothesized constructs that represent *meaning in work*.

The major strength of this new instrument is that it captures a comprehensive and core understanding of the concept of *meaning in work*. Despite numerous studies, *meaning in work*

has been an umbrella concept that has not been viewed consistently (Rosso, Dekas, & Wrzesniewski, 2010). A new definition of *meaning in work*, which this instrument was based upon, integrates different approaches to understanding the concept (e.g., experienced meaningfulness, work meaning), and adds a core attribute of existential meaning (Lee, in press). Using this instrument can help nursing researchers comprehensively understand the concept and improve synthesis of the accumulating body of knowledge on *meaning in work*.

This study reported the high mean of *meaning in work* of nurses. Some studies support this result, with showing a tendency of a higher level of *meaning in work* for nurses (Albuquerque et al., 2014; Allan et al., 2014; Chadi et al, 2013). In particular, Albuquerque and colleague (2014) compared three groups of nurse, doctor and administration staff in hospitals and found that the nurse group has the highest level of *meaning in work*. These results indicate that many nurses may already find their meaning in nursing. The next paper examined relationships among the level of *meaning in work* and demographic factors (e.g. education) to guide how to design the next study to further develop the instrument.

Some limitations need to be addressed. This study had a small sample size (n= 158) and included only acute-care hospital settings. Given the significant difference of education degree between the target population of RNs from the North Carolina Board of Nursing and the sample of this study, this sample may not represent the population of registered nurses. However, the sample size had enough power for instrument development purposes. This study detected high correlations among items and a higher internal reliability of the four constructs of *meaning in work*. For a better theoretical justification, this study added 15 covariances among error terms of items into the final CFA model. Specifying and reducing redundancy of items can also help improve the structure of the instrument, but it is not appropriate to reduce items with one single

study. These limitations suggest the need for further research on testing this new instrument of *meaning in work* with a larger sample size and different hospital settings for further development of the instrument.

Many studies show that *meaning in work* leads to a successful life for both individuals and organizations (Duffy et al., 2012; Steger et al., 2013; Scroggins, 2008). All individuals have the potential to find meaning in any type of work, but not everyone finds *meaning in work*. Although this is the first stage of the development of the instrument of *meaning in work*, this newly developed instrument can help nursing researchers understand, assess, and use the concept of *meaning in work* in nursing workforce studies. Understanding *meaning in work* can activate a nurse's will to find *meaning in work* in his or her own career and improve personal attributes of interest. Moreover, nursing researchers who are interested in intrinsic motivation can apply the concept of *meaning in work* to understand nursing outcomes such as job satisfaction and burnout. It can further contribute to building a healthy nursing work environment and positive work experience.

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Chapter 3

Meaning in work: an intrinsic motivator to improve nursing outcomes

Introduction

The nursing workforce is aging, which suggests a substantial long-term nurse shortage (Aluttis, Bishaw, & Frank, 2014; Buerhaus, 2008; Matt, Fleming, & Maheady, 2015). As optimal nurse staffing is associated with improved patient safety, retention of the existing nurse workforce is a national priority (Institute of Medicine, 2010). With this trend, studies to decrease turnover and increase retention have received much attention (Aiken et al., 2012; Duvall & Andrews, 2010). Studies have shown that the most promising factors influencing turnover or intention to leave a nursing job are job satisfaction and burnout (Duvall & Andrews, 2010; Flinkman, Leino-Kilpi, & Salanterä, 2010; Melo, Barbosa, & Souza, 2011; Toh, Ang, & Devi, 2012). Indeed, in the early 2000s, over 40% of nurses in the US were dissatisfied with their job, four times greater than the average for all US workers, and 43% of nurses experienced high emotional exhaustion (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). Although the recent rate of job dissatisfaction and burnout has decreased to 25 % and 34%, respectively in the US, 11 to 56% of nurses internationally were dissatisfied with their jobs, and 10 to 78% of them felt exhausted (Aiken et al., 2012). Thus, job satisfaction and burnout remain important nursing outcomes.

Factors affecting job satisfaction and burnout can be classified as intrinsic (e.g. growth, meaning) and extrinsic factors (e.g. rewards, pay, recognition, supervision, organizational support) (Hackman & Oldham, 1976; Knoop, 1994; Stechmiller & Yarandi, 1992; Weiss, Dawis, & England, 1967). Most nursing researchers have correlated job satisfaction and burnout with inter-personal and organizational factors, which can be considered as extrinsic factors, and have emphasized the need to change the work environment of hospitals to improve job satisfaction and to reduce burnout (Leiter & Spence Laschinger, 2006; Manojlovich, 2005; May, Bazzoli, & Gerland, 2006; Smith, Hood, Waldman, & Smith, 2005). Although improving work environments can yield some improvement, finding ways to address intrinsic factors is important because intrinsic factors may be more salient contributors to job satisfaction (Stechmiller & Yarandi, 1992) and burnout (Knoop, 1994) than extrinsic factors (e.g. benefits, working conditions, job security).

One intrinsic factor that is worthy of additional exploration is *meaning in work*. *Meaning in work* is defined as ‘the discovery of existential meaning from work experience, work itself, and work purpose/goals’ (Lee, in press). As an intrinsic motivator, *meaning in work* can endow employees with a reason to work or to be in the workplace and produce motivation and energy. Although the goal of *meaning in work* is not to be equated with success (MacMillan, 2010), it can have a number of positive impacts on both individuals and organizations, such as improving job satisfaction of employees in insurance companies (Gupta, Kumar, & Singh, 2014; Pawar, 2009) and reducing burnout of workers in human services (Borritz et al., 2005). Extending the research done on *meaning in work* in management and organizational studies, this paper introduces *meaning in work* as a possible intrinsic motivator that can be used to improve nursing

outcomes. The purpose of this study was to investigate the role of *meaning in work* in nursing and its relationship to job satisfaction and burnout.

Background

Meaning in work has received much attention in management and organizational studies. This concept was introduced with initiatives to improve the quality of working life (McLean, 1974; U.S. Department of Health, 1973) and was revived with the emerging movement of Positive Organizational Scholarship (POS) whose focus is to energize and transform organizations for better organizational effectiveness and work life (Dutton, Glynn, & Spreitzer, 2006). In the healthcare arena, *meaning in work* has been suggested as one approach to increase employee commitment and engagement for healthcare safety improvement (Leape et al., 2009; Morrison, Burke, & Greene, 2007).

Meaning in work is a newly introduced concept in nursing that has already received some research attention. For instance, Pavlish and Hunt (2012) explored meaningful work, a similar concept to *meaning in work*, and found that perceptions of meaningful work resulted in engagement in work, enjoyment at work, pride in nursing, and productivity. However, instead of investigating *meaning in work* as an independent intrinsic motivator, the majority of studies of the nursing workplace have investigated meaning as it relates to other phenomena, such as a psychosocial work environment (Li et al., 2010) and psychological empowerment (Spreitzer, 1995). For example, Spreitzer (1995) regarded meaning as one of four cognitions that comprise psychological empowerment. This usage of the concept of meaning as a sub-component of other concepts is important and has extended our knowledge of the context in which meaning is situated, but it deemphasizes the importance of *meaning in work* and also fails to view the concept in its entirety. Moreover, most nursing studies have not been focused on meaning as a

stand-alone concept. Given the narrow focus of previous research, it is quite difficult to determine the precise impact of meaning on nursing or even patient outcomes.

The concept of *meaning in work* that informs the present study is fundamentally different from existing conception of ‘meaning’ used in nursing previously. As noted above, *meaning in work* does not literally refer to meaning of one’s work. Instead, it is consistent with a core attribute of the concept of meaning in life that endows people with an existential reason to live, which is a fundamental motivator for living (Frankl, 1968). People find *meaning in work* by questioning themselves throughout their lives. This meaning includes both a general awareness that one’s work is valuable and the ability to identify why one’s work is valuable.

The association of meaning in work with job satisfaction

Studies in other disciplines (e.g., management and organizational studies, psychology) have shown that *meaning in work* is positively associated with job satisfaction (Duffy, Allan, Autin, & Bott, 2013; Duffy, Bott, Allan, Torrey, & Dik, 2012; Gupta et al., 2014; Kazanas, 1978; Pawar, 2009). In fact, among various factors explaining job satisfaction, *meaning in work* accounts for a more significant proportion of the variance in job satisfaction than other work characteristics, including extrinsic rewards, supervisory relationships, and organizational support (Fairlie, 2011). *Meaning in work* is also more important than various forms of compensation factors including promotion opportunity, pay, and recognition (Yaseen, 2013). In particular, *meaning in work* is significantly related to ‘intrinsic’ job satisfaction (Hackman & Oldham, 1976; Johns, Xie, & Fang, 1992; Maharaj & Schlechter, 2007; Stechmiller & Yarandi, 1992). For example, Hackman and Oldham (1976) divided job satisfaction into six types: general, growth, social, pay, job security, and supervision satisfaction. Among these six types of satisfaction,

growth satisfaction, which could be identified as intrinsic job satisfaction, was highly correlated with the meaningfulness of the work (Hackman & Oldham, 1976; Johns et al., 1992).

The association of meaning in work with burnout

In studies conducted in other disciplines (e.g., management and organizational studies, occupational health, psychology), *meaning in work* has been inversely associated with burnout, including exhaustion and stress (Borritz et al., 2005; Fairlie, 2011; Knoop, 1994; Shanafelt et al., 2012). Lack of *meaning in work* has been shown to be a significant predictor of burnout (Borritz et al., 2005; Knoop, 1994). For example, Knoop (1994) found that meaningfulness of work was the most significant predictor among other variables (e.g., esteem, benefits, security) to explain emotional stress. Moreover, a longitudinal study reported that *meaning in work* predicted burnout 3 years after baseline data were collected (Borritz et al., 2005).

The existential perspective of *meaning in work* theorizes that it can prevent burnout, while the absence of *meaning in work* can cause burnout (Etzion & Pines, 1986; Malach-Pines, 2000; Malach-Pines & Yafe-Yanai, 2001; Pines, 2002). One of a handful of nursing studies indicates how *meaning in work* may be associated with burnout. In the study of Malach-Pines (2000), a nurse who saw nursing as a calling and found significance in being a nurse reported that she did not perceive nursing as hard work. It is possible that, given the same stressful situations, nurses who discover such *meaning in work* can perceive their situations differently and find positive aspects. Indeed, Etzion and Pines (1986) investigated how burnout and ways of coping with stress were associated. They characterized finding positive aspects as one way of coping and found that nurses who look for positive aspects in their situation were less likely to experience burnout.

In summary, *meaning in work* gives a reason for one's existence at work. Considerable studies in other disciplines support positive impacts of *meaning in work* on job satisfaction and burnout. Despite the significant role of *meaning in work*, there is a lack of research that explores why finding meaning in nursing is important. This study investigates *meaning in work* as an independent concept and explores its role in nursing outcomes.

Conceptual model

The conceptual model for this study is built on understanding how four sub-constructs of *meaning in work* (Lee, in press) affect job satisfaction and burnout: (1) experienced positive emotion in work, (2) meaning from work itself, (3) meaningful purpose and goals of work, and (4) work as a part of life toward meaningful existence. A better understanding of the differential influence of each construct on nursing outcomes could explain how each may affect outcomes differently and be used to build interventions targeted towards the construct that may be deficient. The conceptual model integrates the proposed hypotheses (See figure 4).

H1. There will be a positive relationship between *meaning in work* and job satisfaction.

H1-a. Experienced positive emotion in work will be positively related to job satisfaction.

H1-b. Meaning from work itself will be positively related to job satisfaction.

H1-c. Meaningful purpose and goals of work will be positively related to job satisfaction.

H1-d. Work as a part of life toward meaningful existence will be positively related to job satisfaction.

H2. There will be an inverse relationship between *meaning in work* and burnout.

H2-a. Experienced positive emotion in work will be inversely related to burnout.

H2-b. Meaning from work itself will be inversely related to burnout.

H2-c. Meaningful purpose and goals of work will be inversely related to burnout.

H2-d. Work as a part of life toward meaningful existence will be inversely related to burnout.

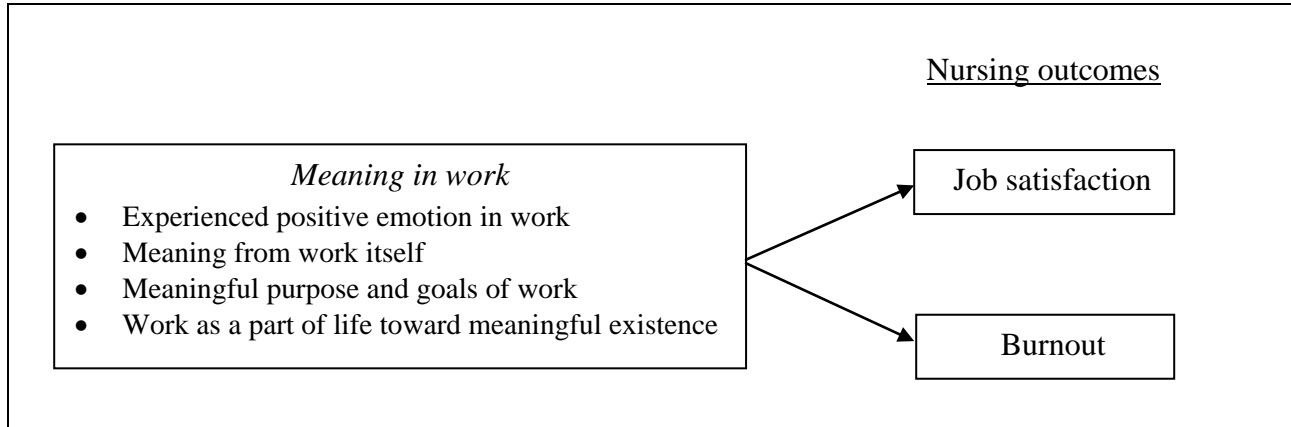


Figure 4. The hypothetical relationships between *meaning in work* and nursing outcomes (job satisfaction, burn-out)

The study

Aim

The aim of the study was to investigate the role of *meaning in work* and its sub-constructs in nursing and its relationship to two nursing outcomes: job satisfaction and burnout.

Design

This study used a cross-sectional descriptive design and was a part of a larger project to examine the role of *meaning in work* in the relationship between the nursing work environment and nursing outcomes (job satisfaction and burnout). A survey method was employed following the Dillman method (Dillman, Smyth, & Christian, 2009). Questionnaires measured variables of *meaning in work*, the nursing work environment, job satisfaction, and burnout. In this paper, the author is reporting only on the relationships between each of the four sub-constructs within *meaning in work* and nursing outcomes of job satisfaction and burnout.

Sample/Participants

The target population of this study was a convenience sample of registered nurses (RNs) who were currently working full-time (over 36hrs/week) in acute-care hospital settings. RNs were randomly selected from a list of RNs obtained from the North Carolina Board of Nursing. A sample size of 260 was calculated for the parent study using a power analysis for structural equation modeling (MacCallum, Browne, & Sugawara, 1996). To achieve a response rate of 60% (Dillman et al., 2009), 433 RNs were needed. To compensate for those who had to be omitted because of failure to meet inclusion criteria, oversampling was implemented, and a total of 500 RNs were finally selected.

Data measurement

Measurement of meaning in work *Meaning in work* was measured using a newly developed instrument of *meaning in work* (Lee, in review). The new instrument consists of 25 items that measure the four sub-constructs of *meaning in work*: (1) experienced positive emotion in work (8 items), (2) meaning from work itself (6 items), (3) meaningful purpose and goals of work (5 items), and (4) work as a part of life toward meaningful existence (6 items). The instrument uses a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument has good internal consistency (Cronbach's alpha = .95), and construct validity has also been supported with an acceptable CFA model fit (CFI = .907, RMSEA = .080).

Measurement of job satisfaction Job satisfaction was measured using a short version of the index of job satisfaction (Judge, Locke, Durham, & Kluger, 1998). Although there are many instruments available to measure job satisfaction, this instrument was chosen because it focuses on intrinsic factors of job satisfaction. In addition, this instrument is short, creating less burden for the participant. The instrument uses five items to measure the degree to which participants

feel satisfied with their jobs. Each item uses a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scale has good internal consistency, with Cronbach's alpha ranging from .88 (Duffy et al., 2012; Judge et al., 1998) to .91 (Duffy et al., 2013). The instrument has good construct validity (Judge et al., 1998).

Measurement of burnout Burnout was measured using the Burnout Measure, Short version (BMS) (Malach-Pines, 2005). This instrument was chosen because it was developed with a one-dimensional structure that has a high association with emotion exhaustion, a central component of burnout. Moreover, this instrument is easy for participants to use having fewer items than other instruments. This instrument consists of 10 items and assesses the degree of an individual's physical, emotional, and mental exhaustion, using a seven-point Likert scale ranging from 1 (never) to 7 (always). The reliability of the scale is internally consistent, with Cronbach's alpha, ranging from .85-.92 (Malach-Pines, 2005). The scale has high stability with a 3-month test-retest coefficient of .74. The face validity and construct validity have also been supported (Malach-Pines, 2005).

Demographic characteristics

The demographic characteristics describe both nurse participants and the hospitals in which they work. Questions for the nurses included sex, age, marital status, religion, level of education, certification, and years in practice. Questions about their hospitals included type of hospitals, hospital size, and magnet status.

Data collection

Data collection was conducted between October 2014 and March 2015. Following the Dillman method (2009), a packet was sent that included a cover letter describing the study,

explaining the purpose and importance of this study, and intended use of results; a guarantee of anonymity and confidentiality; demographic questions; and four instruments to measure *meaning in work*, nursing work environment, job satisfaction, and burnout. Two-dollar bills were included in the packet as an advance incentive for participating in the study. After one week reminders were sent and after one month, follow up questionnaires were sent to 500 selected RNs.

Ethical considerations

This study was approved by the Institutional Review Board (IRB) Health Sciences & Behavioral Sciences (IRB-HSBS) of the University of Michigan.

Data analysis

Descriptive statistics of demographic characteristics and research variables were completed using Statistical Package for the Social Sciences (SPSS) version 22.0 software. Structural equation modeling (SEM) was performed using Stata 13. SEM was chosen to test the degree of fit of the conceptual model with the data (Kline, 2011). We used maximum likelihood estimation and followed two steps: (1) Before specifying a structural model, a measurement model for each latent variable was tested using an individual Confirmatory Factor Analysis (CFA). Individual CFAs examine whether observed variables load significantly onto the latent variable. (2) Based upon results of the individual CFAs, we specified a structural model and tested it using a path model. Path analysis examines whether the hypothesized relationships among the latent variables are significant or not. We used fit indices of the SEM model to report how well the conceptual model fits the sample data: (1) A significance level of chi-square (χ^2) statistics at reading of 0.05 indicates a good model fit; (2) A root mean square error of approximation (RMSEA) in the range of 0.05 to 0.10 is considered as indicative of fair fit; (3) A

comparative fit index (CFI) of 0.90 or greater is considered an indication of acceptable fit (Hooper, Coughlan, & Mullen, 2008; MacCallum et al., 1996; Newman, Vance, & Moneyham, 2010). For tests of significance, the typical level of alpha .05 was used.

To test the hypotheses, we created two different models. Model 1 was designed to test the two main hypotheses. Model 1 was specified using *meaning in work* as a latent variable and factor scores of four sub-constructs of *meaning in work* as observed variables. We generated factor scores instead of creating means to optimally weight each item relevant to a concept (Acock, 2013). Model 2 was designed to test eight sub-hypotheses. Model 2 was specified using mean scores of four sub-constructs of *meaning in work* as observed variables without a latent variable of meaning in work. For both models, we controlled for demographic variables that were significantly correlated with job satisfaction and burnout, i.e., marital status, education degree, certification, hospital size, and magnet status.

Results

A total of 185 questionnaires were returned, representing a 37% response rate. After excluding 27 questionnaires that either did not meet the inclusion criteria or were incomplete, a total of 158 questionnaires were finally included in data analysis. Each question had 0 to 3.2% of missing values, and these values were missing at random. To investigate whether cases with missing data differed from cases without missing data, two survey groups were created and compared: one with missing values and the other without missing values. There were statistically significant differences between the two groups on items 11 and 23 in *meaning in work*, marital status, and hospital magnet status. Despite statistical differences, differences were not conceptually meaningful. Missing values were imputed in an SEM analysis, and all cases that met inclusion criteria were included in the analysis.

Table 6 presents descriptive statistics for the participants' demographic characteristics and main research variables. Notably, means of four sub-constructs of *meaning in work* were high, with scores from 4.0 to 4.3, on a scale of 1 to 5. Table 7 shows correlations among all variables. Among the demographic characteristics, education and certification were significantly correlated with job satisfaction, while marital status, education, hospital size, and magnet status were significantly correlated with burnout. All correlations among all research variables were significant.

Table 6. Descriptive statistics: demographic characteristics and main research variables (n=158)

Variables		Statistics
1) Demographic characteristics		n (%) Mean (SD)
Age		43.2 (12.03)
	Missing	4 (2.5%)
Sex	Male	19 (12.0%)
	Female	137 (86.7%)
	Missing	2 (1.3%)
Marital status	Single	28 (17.7%)
	Married	115 (72.8%)
	Divorced/widowed/separated	13 (8.2%)
	Missing	2 (1.3%)
Belongs to religious organization	Yes, and I attend services regularly.	59 (37.3%)
	Yes, but I do not attend services regularly.	43 (27.2%)
	No. I don't belong to any formal religious organization, but I am very religious.	17 (10.8%)
	No. I don't belong to a formal religious organization.	37 (23.4%)
	Missing	2 (1.3%)
Education	Diploma in Nursing	7 (4.4%)
	Associate Degree in Nursing	65 (41.1%)
	Bachelor's Degree in Nursing	67 (42.4%)
	Master's Degree in Nursing	6 (3.8%)
	Doctorate Degree in Nursing	0 (0.0%)
	Other educational degrees not in Nursing	10 (6.3%)
	Missing	3 (1.9%)
Certification by a national nursing specialty organization	Yes	37 (23.4%)
	No	118 (74.7%)
	Missing	3 (1.9%)
RN year		14.1 (10.62)

	Missing	5 (3.2%)
Magnet status	Yes	91 (57.6%)
	No	60 (38.0%)
	N/A	3 (1.9%)
	Missing	4 (2.5%)
Hospital size	<100 beds	24 (15.2%)
	100-299 beds	35 (22.2%)
	300-400 beds	25 (15.8%)
	>400 beds	70 (44.3%)
	Missing	4 (2.5%)
2) Research variables		Mean (SD) Potential range
<i>Meaning in work</i>	Experienced positive emotion in work	4.1 (0.62) 1 - 5
	Meaning from work itself	4.3 (0.54) 1 - 5
	Meaningful purpose and goals of work	4.1 (0.63) 1 - 5
	Work as a part of life toward meaningful existence	4.0 (0.64) 1 - 5
	Grand scale	4.1 (0.57) 1 - 5
Job satisfaction	Sum	18.1 (4.42) 5 - 25
Burn-out	Mean	3.0 (1.20) 1 - 7

Table 7. Correlations among demographic variables (Kendall's tau) & research variables (Pearson's r)

	<i>Meaning in work</i>					Job satisfaction	Burnout
	PosEmo	ValueWork	PurpoGoal	LifeExist	Overall		
Age	.13	.01	.01	.11	.07	.00	.07
Sex	.07	.03	.07	.06	.06	-.02	.06
Marital status	.03	.05	-.03	.00	.02	-.08	.21**
Religion	-.05	-.04	.01	-.08	-.04	-.04	.04
Education	.06	.08	.12	.15*	.11	.15*	-.14*
Certification	.13*	.12*	.20**	.12	.15*	.22**	-.10
RN year	.02	-.09	-.07	.03	-.03	-.04	.06
Magnet status	.17*	.17*	.22**	.14*	.17*	.13	-.20**
Hospital size	.02	.06	.08	.00	.04	.07	-.13*
<i>Meaning in work</i>	PosEmo	1					
	MeaningWork	.87**	1				
	PurpoGoal	.83**	.80**	1			
	LifeExist	.87**	.78**	.76**	1		
	Overall	.96**	.92**	.91**	.92**	1	
Job satisfaction	.07	.61**	.60**	.58**	.66**	1	-.72**
Burnout	-.13*	-.53**	-.54**	-.42**	-.54**	-.72**	1

Note. * indicates that correlation is significant at the 0.05 level (2-tailed). ** indicates that correlation is significant at the 0.01 level (2-tailed). PosEmo= Experienced positive emotion in work; MeaningWork= Meaning from work itself; PurpoGoal= Meaningful purpose and goals of work; LifeExist= Work as a part of life toward meaningful existence

Model testing

The proposed model presented measurement and structural components that address hypothesized relationships among *meaning in work*, job satisfaction, and burnout. Prior to testing the path model, the measurement model for all six latent variables was tested using individual CFAs: (1) experienced positive emotion at work, (2) meaning from work itself, (3) meaningful purpose and goals of work, (4) work as a part of life toward meaningful existence, (5) job satisfaction, and (6) burnout. The results of individual CFAs showed that the observed variables loaded significantly onto each of the six latent variables, with standard coefficients ranging from .48 to .86. After modification indices were applied, all individual CFAs had acceptable goodness of fit (CFI = .983 – 1.000, RMSEA = .000- .069). The six variables had good internal consistency, with Cronbach's alpha ranging from .77 to .93.

As can be seen in figure 5, the result of model 1 supported the two main hypotheses: a positive relationship between *meaning in work* and job satisfaction ($\beta = .67, SE = .05$) and an inverse relationship between *meaning in work* and burnout ($\beta = -.55, SE = .06$). The model fit of model 1 yielded a CFI of .975, which meets the criteria for the fitted model (>.90) and RMSEA of .052, which indicates a reasonably close fitting model (Kline, 2011).

The result of model 2 revealed that only three among eight sub-hypotheses were supported (See figure 6). Regarding relationships between four sub-constructs of *meaning in work* and job satisfaction, only one sub-hypothesis was confirmed: experienced positive emotion in work was positively related to job satisfaction ($\beta = .63, SE = .17$). In regard to relationships between four sub-constructs of *meaning in work* and burnout, two sub-hypotheses were confirmed: (1) experienced positive emotion in work was inversely related to burnout ($\beta = -.47, SE = .18$) and (2) meaningful purpose and goals of work was inversely related to burnout ($\beta = -$

.29, $SE = .12$). However, the fourth sub-hypothesis was not supported and it was even opposite to the assumption: work as a part of life toward meaningful existence was positively related to burnout ($\beta = .32, SE = .14$). The model fit of model 2 yielded a CFI of .951, which meets the criteria for the fitted model ($>.90$) and RMSEA of .056, which indicates a reasonably close fitting model (Kline, 2011).

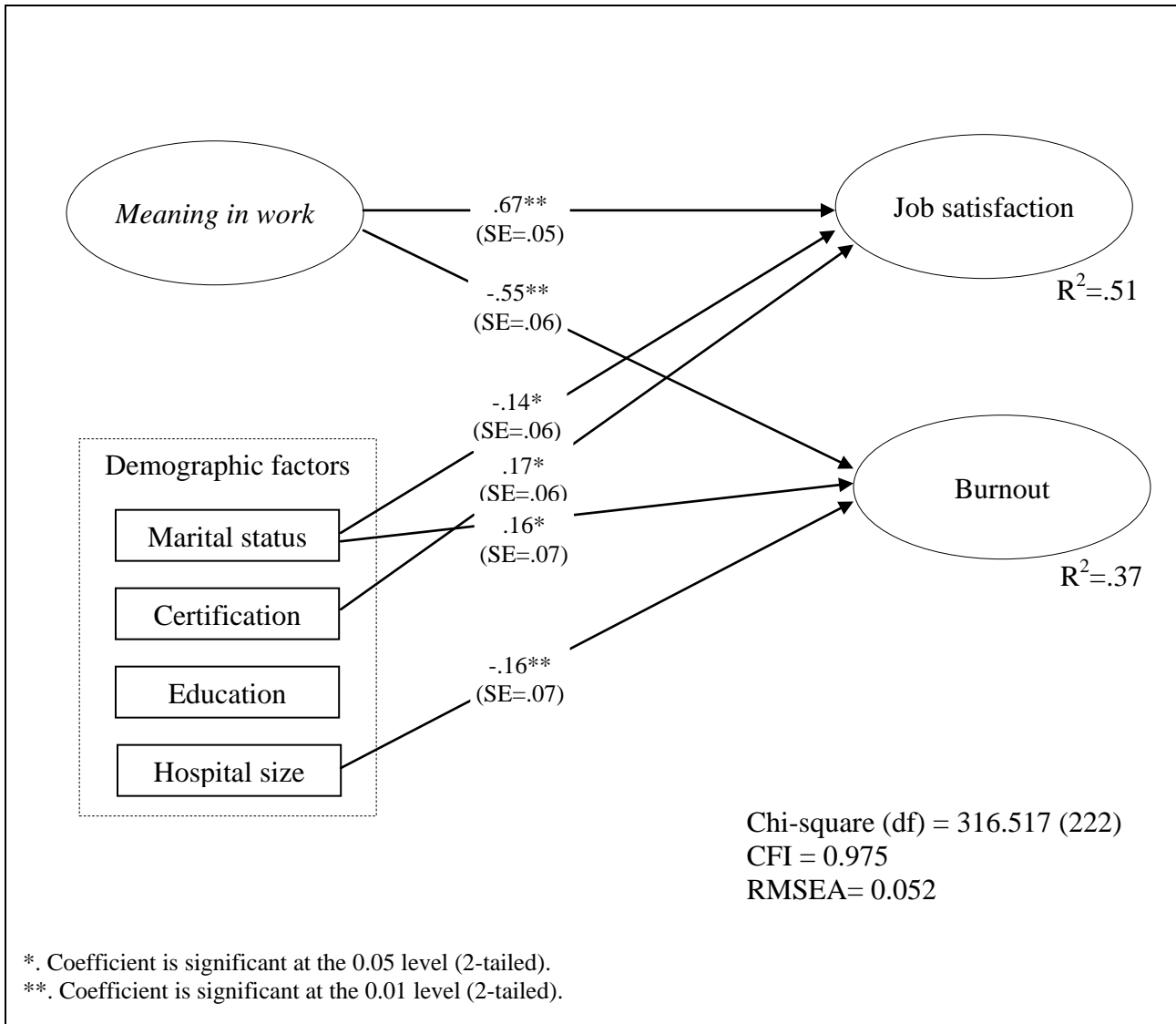


Figure 5. Model 1 with significant standardized coefficients and standard errors (SE)

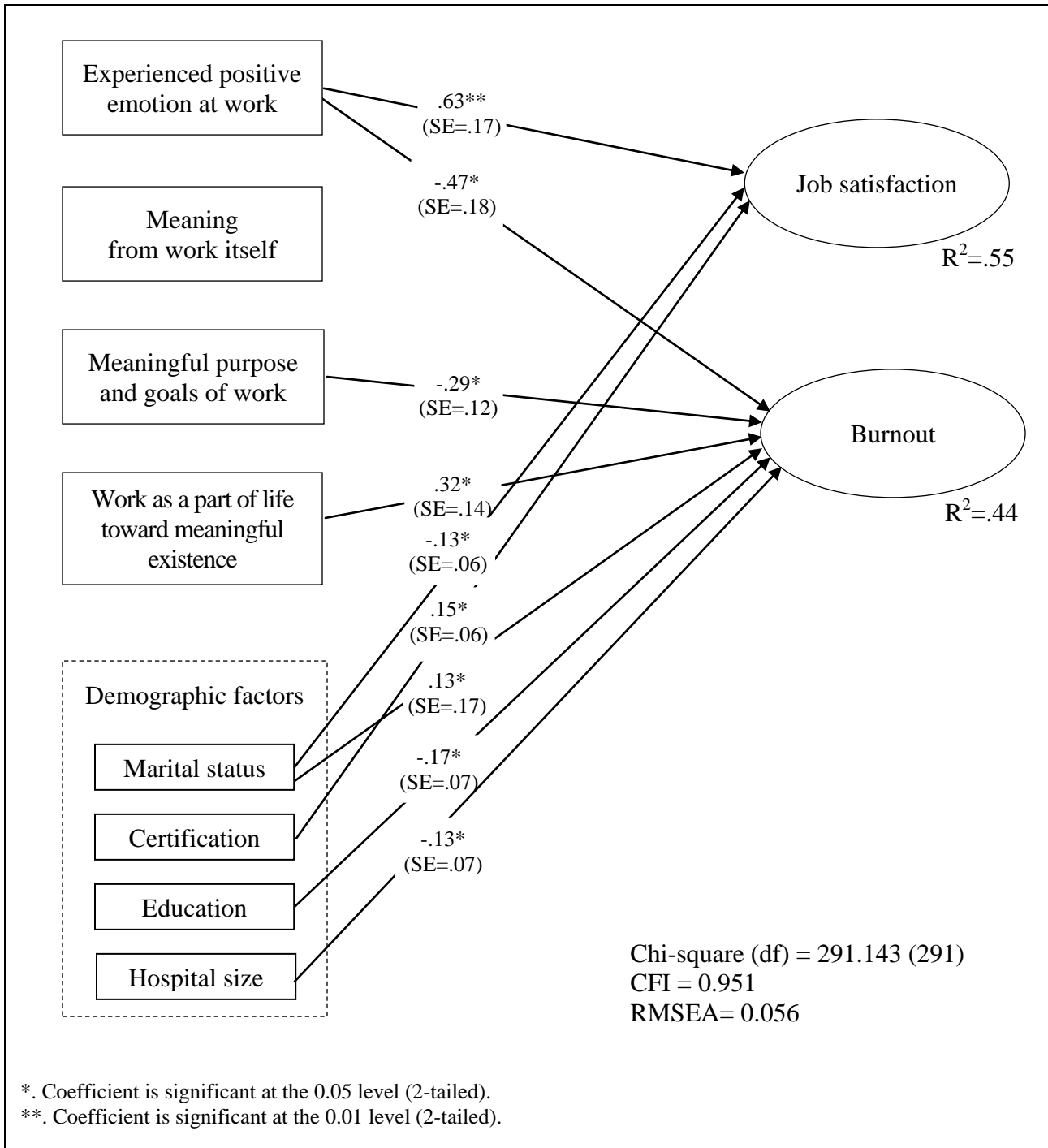


Figure 6. Model 2 with significant standardized coefficients and standard errors (SE)

Discussion

The purpose of this study was to investigate the role of *meaning in work* in the nursing workforce by examining the relationships of this concept with job satisfaction and burnout. The

proposed conceptual model was based on two main hypotheses and eight sub-hypotheses. Using SEM to test the conceptual model, we found that two models were a good fit for the data, supporting two main hypotheses and three sub-hypotheses: (1) a positive relationship exists between *meaning in work* and job satisfaction, (2) an inverse relationship exists between *meaning in work* and burnout, (3) a positive relationship exists between experienced positive emotion in work and job satisfaction, (4) an inverse relationship exists between experienced positive emotion in work and burnout, and (5) an inverse relationship exists between meaningful purpose and goals of work and burnout.

This study introduced a comprehensive view of the concept of *meaning in work* in nursing, adding *an existential reason to work* as a core attribute of *meaning in work*. We found a high level (Mean= 4.1 out of 5) of *meaning in work* among nurses, with a distribution that was skewed to the right. Other studies have also shown a similar distribution, indicating a high level of *meaning in work* (Albuquerque, Cunha, Martins, & Sá, 2014; Harpaz, 2002; Kelly Global Workforce Index, 2009). In particular, the Kelly Global Workforce Index (2009) reported that over half of employees were willing to accept more meaningful work even if this resulted in lower wages. These findings indicate that many employees perceive *meaning in work* as the most important aspect of their job, regardless of where they are from and what their job entails.

The main results of this study provide empirical support for the unique contribution of *meaning in work* to two specific nursing outcomes. One main result supports the conclusion that *meaning in work* is positively associated with job satisfaction. This finding is consistent with previous studies that show personal significance and purpose are related to employee job satisfaction (Duffy et al., 2012; Fairlie, 2011; Gupta et al., 2014; Manojlovich & Laschinger, 2002; Pawar, 2009; Yaseen, 2013). In nursing research, meaning, as a sub-component of

psychological empowerment, is positively associated with nurses' job satisfaction (Ahmad & Oranye, 2010; Casey, Saunders, & O'Hara, 2010; Laschinger, Finegan, Shamian, & Wilk, 2004; Li, Kuo, Huang, Lo, & Wang, 2013). More importantly, the finding that only 'experience positive emotion in work' among four sub-constructs of *meaning in work* was significantly associated with job satisfaction suggests that *meaning in work* can result in job satisfaction by producing positive emotion. One previous study shows a possible link of experiencing positive emotion in work to job satisfaction. Steger, Dik, and Duffy (2012) reported that positive meaning, a psychological aspect of meaningful work, was more highly related to job satisfaction than other aspects of meaningful work including meaning-making and good motivation. These findings provide additional evidence suggesting the important role of *meaning in work* in cultivating positive emotion in work, such as feeling valued and fulfilled, and thus making employees intrinsically satisfied with their jobs.

Another main result shows that *meaning in work* is inversely associated with burnout. This finding is in accordance with Borritz and colleagues' (2005) finding that low scores on meaning of work were significantly associated with high levels of personal, work-related, and client-related burnout. Some nursing studies have also found that the psychosocial work environment and psychological empowerment (both of which include meaning as a sub-component) are linked to burnout (Hochwalder, 2007; Laschinger, Finegan, Shamian, & Wilk, 2001; Laschinger, Finegan, Shamian, & Wilk, 2003). Specifically, among four sub-constructs of *meaning in work*, experienced positive emotion in work and meaningful purpose and goals of work were inversely associated with burnout. These findings may be aligned with the result of Fairlie (2011)'s study that emphasized facets of feelings of personal accomplishment, self-actualizing work, and achieving one's career goals when measuring meaningful work. Moreover,

some studies even provide a possible explanation of how *meaning in work* affects burnout. These investigators suggest engaging in meaningful work can increase hardiness or resilience at work (Britt, Adler, & Bartone, 2001; Mehrabi, Babri, Frohar, Khabazuan, & S., 2013). In this regard, finding *meaning in work* was suggested the most important and frequent strategy for wellness promotion (Shanafelt et al., 2012) or a coping method for stressful events (Etzion & Pines, 1986). However, Malach-Pines (2000) reported that many nurses experienced burnout when their hopes and expectations related to existential significance were unmet. These studies provide evidence for suggesting a significant role of *meaning in work* in contributing to and protecting against burnout.

Our results include some unexpected findings. For example, meaning from work itself was not significant at all in explaining job satisfaction and burnout. This finding may be due to changes in perceptions about nursing over time. Although caring is a major value for individuals to choose nursing as a career (Watson, Deary, & Lea, 1999; While & Blackman, 1998), this ‘idealized’ perception about nursing is declining in light of increased interests in high salary and job security (McNeese-Smith & Crook, 2003; Rognstad & Aasland, 2007; Watson et al., 1999). This changing value was also supported in our findings that young nurses in their 20s had the lowest level of *meaning in work* relative to other age groups. Considering the fact that the current nursing workforce in the United States is aging and there is a need for younger nurses, lower value that has been placed on *meaning in work* in younger nurses can be problematic. It is possible that younger nurses may have had more negative experiences and therefore engage less in their work, which will negatively influence the quality of care. Thus, more research on *meaning in work* for younger nurses is needed to address this potential problem and to provide better patient outcomes.

Interestingly, the final sub-hypothesis on burnout was the opposite: work as a part of life toward meaningful existence was positively related to burnout. This apparent contradiction can be explained by considering the fact that *meaning in work* and *meaning in life* are closely associated. It is possible that nurses who consider work as a part of life may experience more burnout in their personal lives or they may have more work-life conflicts due to a competing priority in their lives. Indeed, Borritz et al. (2005) found that a relationship between meaning of work and personal burnout was changed from positive to negative when they controlled personal burnout at baseline, whereas a relationship between meaning of work and work-related and client-related burnout became only non-significant. Therefore, people who experience more burnout in their personal lives can experience more burnout in their work-lives.

Another reason for these inconsistent results may be due to the specific methodological issues associated with instrument development. This study detected high correlations among the four sub-constructs of *meaning in work*. In addition, these scores had low variability. Since model 2 used the four sub-constructs as observed variables, the extreme collinearity of observed variables can cause empirical under-identification (Kline, 2011). It can also cause a suppression effect. For example, one variable, such as experience positive emotion in work, may take all the variance and result in insignificant or opposite results on other variables. Some may argue that *meaning in work* is not a stable concept and this may account for the lack of variation in scores. However, the definition used in this study is based on a global view that *meaning in work* is constructed throughout one's whole life influencing individuals' thoughts and behaviors. This can be distinguished from a situational meaning that arises from the workplace (Park, 2010). As such, this global view of *meaning in work* may be more difficult to change as it is a stable concept. Further development of the instrument may bring better results.

On the level of *meaning in work*, we found age-related differences. Notably, young nurses in their 20s had the lowest level of *meaning in work* relative to other age groups. This result is in agreement with previous findings (Borchert & Landherr, 2009; McNeese-Smith & Crook, 2003). For instance, Borchert and Landherr (2009) demonstrated that an older group has a higher level of meaning of work. McNeese-Smith and Crook (2003) also reported that the younger generation of nurses places a higher value of work in relation to economic returns and variety of work. Considering the fact that the current nursing workforce in the US is aging and needs to pipeline younger nurses in the future, lower value placed on *meaning in work* can be problematic. It is possible that younger nurses may have more negative experiences and engage less in nursing, which will negatively influence the quality of care. Thus, more research on *meaning in work* for younger nurses is needed to address this potential problem and to provide better outcomes.

Limitations

The findings here have importance for nursing, but limitations need to be acknowledged. First, the sample is not representative of the population of RNs. This study included only RNs from acute-care hospital settings and RNs from one state (North Carolina) in one country (US). Moreover, the low response rate of the study (37%) further constrains not only the representativeness of the sample, but also the estimated sample size. Second, although there are various rules-of-thumb regarding sample size requirements (Wolf, Harrington, Clark, & Miller, 2013), an adequate sample size is important for SEM because when it is too small, statistical power is reduced, resulting in inaccurate statistical estimates (e.g., standard errors) (Kline, 2011). Our study had sufficient statistical power ($\alpha = .80$) to observe true relationships in the data, but *bias* in the parameter estimates still remained. To mitigate this statistical issue, the SEM models

were simply specified using factor scores as observed variables and lowered the degree of complexity of the SEM model by reducing the number of parameters from 144 to 116.

Implications for Nursing Management

This study argues for the importance of considering intrinsic factors in nursing management. Intrinsic factors, such as *meaning in work*, can function as strong internal resources. Such sources are known as human resources or positive psychological capital in management and organization studies and are important sources for organizational success (Luthans & Youssef, 2004). Although intrinsic factors are not the focus of current interest in nursing management, intrinsic factors internally motivate nurses and thus can have long-term effects on their commitment to their work. In effect, intrinsic motivators can further strengthen nurses in a number of ways. For instance, a nurse who has *meaning in work* may have a better understanding why she or he is caring for patients and how nursing activities are significant. Having a deep understanding of working will allow a nurse to control her or his work and to have a more proactive attitude toward it. These positive work experiences have the potential to lead to high quality care and better patient outcomes.

Conclusion

This study is the first to explore the concept of *meaning in work* in nursing. *Meaning in work* represents existential meaning related to working that fundamentally motivates employees. Our findings provide initial empirical support for *meaning in work* as an intrinsic motivator that can enhance job satisfaction and reduce burnout in nursing. Importantly, this study emphasizes how nurses themselves can be important sources in improving their workforce issues such as job

satisfaction and burnout. Moreover, *meaning in work* may help nurses develop their self-growth and potentially improve patient care.

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Chapter 4

Meaning in work: an intrinsic factor improving work environments and nursing outcomes

Introduction

The nursing work environment is a powerful factor in the improvement of nursing outcomes—increased job satisfaction and decreased burnout (Leiter & Laschinger, 2006; Manojlovich, 2005). As such improving the nursing work environment has been highlighted as an important strategy to solve several nursing workforce issues, including the ongoing nursing shortage and high turnover rate (American Association of Critical-Care Nurses, 2005; Institute of Medicine, 2004). A variety of strategies that facilitate professional nursing practice in hospitals and sustain healthy work environments have been suggested, such as forces of magnetism (Urden & Monarch, 2002), standards of productive work environments (American Association of Critical-Care Nurses, 2005) and principles and elements of healthful work environments (American Organization of Nurse Executives, 2003). Indeed, many hospitals have implemented policies to improve the work environments as a long-term strategy to solve nursing shortages (May, Bazzoli, & Gerland, 2006).

The nursing work environment consist of various elements such as nurses' perceptions of organizational attributes (e.g., workload, nurse staffing, resources), relations with nurse managers, and nurse-physician relationships (American Association of Critical-Care Nurses,

2005). Among various elements for improving the nursing work environment, most researchers have focused on improving extrinsic factors, such as organizational attributes (e.g., nurse staffing) (Alspach, 2009; Kramer & Schmalenberg, 2002). Surprisingly, however, they have overlooked the importance of intrinsic factors, which may in fact more strongly affect the creation of better nursing work environments and lead to more positive nursing outcomes than extrinsic factors. For example, Stordeur and D'Hoore (2007) found that structural features (e.g., number of beds, job description) were not significant determinants of turnover, whereas nurses' perceptions of their work (e.g., meaning of work, job demands and stressors, relationships with nursing management and administration) were highly relevant. These different perceptions may be accounted for by personal attributes, such as personality, affect, and attitude. In particular, positive personal attributes can bring a competitive advantage to organizations by strengthening the inner power of employees and thus play a role as important assets for organizational success (Luthans & Youssef, 2004).

One salient positive personal attribute worth understanding is *meaning in work*, which is defined as 'the discovery of existential meaning from work experience, work itself, and work purpose/goals (Lee, in press).' Although this concept has not been the focus of extant nursing research, *meaning in work* has received considerable attention in management and organizational studies as a positive attribute in improving organizational performance (Dutton, Glynn, & Spreitzer, 2006). In particular, *meaning in work* is positively correlated with perceiving benefits from dealing with stressful events (Britt, Adler, & Bartone, 2001) and experiencing less cynicism (Boudrias, Morin, & Brodeur, 2012). Moreover, positive *meaning in work* is correlated with lower workplace stress (Shanafelt et al., 2012) and increased job satisfaction (Maharaj & Schlechter, 2007; Steger, Littman-Ovadia, Miller, Menger, & Rothmann, 2013). Thus extensive

research points to a possible role of *meaning in work* in the nursing workforce by helping nurses positively perceive their work environments, even within the same work environments, and improving nursing outcomes.

In summary, improving the nursing work environment has received considerable attention in nursing workforce studies. These studies have identified various factors to create healthy and professional nursing practice environments, but intrinsic factors have received considerably less attention than extrinsic factors. Intrinsic factors, such as *meaning in work*, have potential roles in influencing perceptions on the surrounding work environments. This study explores whether *meaning in work* is positively associated with nurses' perceptions of the nursing work environment in an attempt to improve job satisfaction and reduce burnout.

Relationships between *meaning in work* and the nursing work environment

Meaning in work has been suggested as an intrinsic factor that can improve the nursing work environment. The American Association of Critical-Care Nurses (2005) highlighted the recognition of value and meaningfulness of one's contribution to work as one standard for establishing and sustaining healthy work environments. Kushner and Ruffin (2015) also describe meaningfulness as a way to empower healthy practice environments for nurses. They argue that nurse satisfaction can be heightened when meaningfulness is found in the nursing work environment. Although there is no empirical study that explores the relationship between *meaning in work* and the nursing work environment, other studies show that *meaning in work* has a possible role in changing nurses' perceptions of their work environments. For example, Frankl (1968) suggested that individuals can create and modify their perceptions of environments by changing their attitude. This refers to attitudinal values that people can achieve by changing their attitude toward events as a result of discovering meaning.

Relationships between the nursing work environment and nursing outcomes

Many studies have shown that more favorable nursing work environments are associated with better job satisfaction and lower burnout (Atefi, Abdullah, Wong, & Mazlom, 2014; Friese, 2005; Manojlovich, 2005; McHugh & Ma, 2014). To be specific, among various factors that contribute to the nursing work environment, management style (leadership), autonomy, relationships, and adequate staffing and resources have been highly correlated with job satisfaction; while pay and compensation have low correlations with job satisfaction (Irvine & Evans, 1995; Manojlovich & Laschinger, 2007; Smith, Hood, Waldman, & Smith, 2005). Moreover, Manojlovich (2005) found that the practice environment is a predictor of job satisfaction, explaining 39% of the variance in job satisfaction. In terms of the relationship between the nursing work environment and burnout, Friese (2005) found that staffing, manager ability and collegial nurse-physician relations were highly negatively correlated to emotional exhaustion, which is one component of burnout. In particular, staffing was a predictor of emotional exhaustion.

Conceptual model

The conceptual model for this study incorporates *meaning in work*, the nursing work environment, and nurse outcomes (job satisfaction, burnout). In nursing workforce studies, *meaning in work* has been investigated simply as meaning, which is a sub-component of other concepts, such as workplace spirituality (Ashmos & Duchon, 2000), psychosocial work environments (Pejtersen, Kristensen, Borg, & Bjorner, 2010), and psychological empowerment (Spreitzer, 1995). However, this study views *meaning in work* as a stand-alone concept, defining it as ‘the discovery of existential meaning from work experience, work itself, and work purpose/goals (Lee, in press). The nursing work environment indicates the nursing practice

environments, which refers to the organizational characteristics of a work setting that facilitate professional nursing practice (Lake, 2002). Nursing outcomes include job satisfaction and burnout in this study. Job satisfaction refers to the affective orientation that an employee has towards the work (Adams & Bond, 2000; Hackman & Oldham, 1976; Price, 2001). Burnout is a job-related mental state with intense and excessive emotional demand (Maslach, Schaufeli, & Leiter, 2001).

This study proposes a novel consideration for the role of *meaning in work* as an intrinsic factor that contributes to the improvements of the nursing work environment and nursing outcomes. To explore the role of *meaning in work*, this study suggests an alternative relationship of structure-process-outcome. Although most nursing workforce studies follow the Donabedian (1966) model of structure-process-outcome, the uni-directional nature of the model has limited the possible role of processes that can affect structure. Within the model, meaning has been frequently assessed as a process that mediates between structure and outcome. Indeed, Donabedian (1966), himself pointed out the non-linear nature of relationships among structure, process, and outcome. He argued that the construct of “quality of care” can be differently assessed as structure, process, or outcome, depending on how this concept is approached. Building on this idea, the current study suggests a new understanding of the relationship between *meaning in work* and the nursing work environment. As seen in Figure 7, the model proposes hypothesized relationships of how the nursing work environment can potentially mediate the relationship between *meaning in work* and job satisfaction and burnout. Hypotheses are:

H1. There will be a direct positive relationship between *meaning in work* and the nursing work environment.

H2. There will be a positive indirect relationship (mediated by the nursing work environment) between *meaning in work* and job satisfaction.

H3. There will be an inverse indirect relationship (mediated by the nursing work environment) between *meaning in work* and burnout.

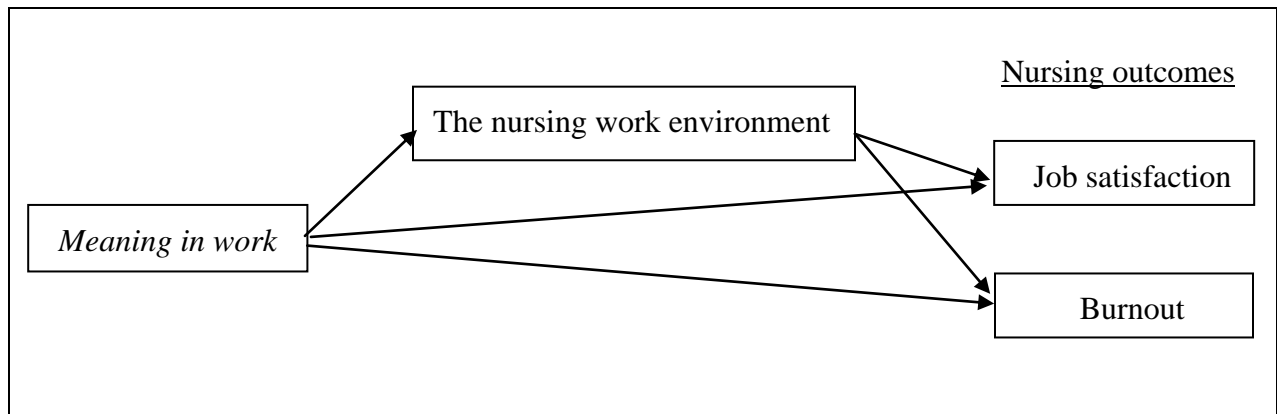


Figure 7. The hypothetical relationships between *meaning in work* and nursing outcomes (job satisfaction, burn-out) through the nursing work environment

Methods

Design

This study used a cross-sectional survey design. The mailed survey questionnaires was implemented following the Dillman method (Dillman, Smyth, & Christian, 2009).

Participants and Setting

We randomly selected a total of 500 registered nurses (RNs) from the North Carolina Board of Nursing. RNs who met inclusion criteria—currently working in acute-care hospital settings and working full-time (over 36 hours per week)—were selected for the study. A sample size of 500 was determined based on a power analysis yielding a power of .8 to test hypotheses

of not-close fit in the SEM (MacCallum, Browne, & Sugawara, 1996), and assuming a response rate of 60% (Dillman et al., 2009).

Data collection/measures

After receiving approval by the Institutional Review Board - Health Sciences & Behavioral Sciences (IRB-HSBS) at the University of Michigan, we mailed the survey to 500 potential respondents. The survey included a cover letter that explained the purpose and importance of this study, demographic questions, and four instruments of (1) a newly developed instrument of *meaning in work*, (2) the Practice Environment Scale of the Nursing Work Index, (3) the short version of the index of job satisfaction, and (4) the Burnout Measure, Short version. As an incentive for participation, a two-dollar bill was also included in each mailing. Participants received a reminder letter after one week and follow-up surveys after one month. Data were collected between October 2014 and March 2015.

Demographic characteristics. We collected information on the demographic characteristics of nurse participants and of the hospitals in which they worked. For nurse characteristics, questions included sex, age, marital status, level of education, certification, and years in practice. We also asked a question about religious affiliation because some studies have investigated *meaning in work* as one dimension of spirituality, a notion which is closely related to religious convictions (Ashmos & Duchon, 2000). For hospital characteristics, questions included type of hospitals (hospital, non-hospital), hospital size (<100, 100-299, 300-400, >400 beds) and magnet status (yes, no).

Measurement of Meaning in work. *Meaning in work* was measured by a newly developed instrument of *meaning in work* (Lee, in review). The new instrument was developed from four existing instruments: the Work and Meaning Inventory (WAMI), Psychological Empowerment

Scale (PES), Copenhagen Psychosocial Questionnaire (COPSOQ), and the spirituality questionnaire. It measures the four constructs of *meaning in work*: (1) experienced positive emotion at work (8 items), (2) meaning from work itself (6 items), (3) work purpose and goals (5 items), and (4) work as a part of life toward a meaningful existence (6 items). The instrument consists of 25 items rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument is internally consistent, with Cronbach's alpha of a total scale = .96, experienced positive emotion at work = .90, meaning from work itself = .80, work purpose and goals = .77, and work as a part of life toward a meaningful existence = .88. The construct validity has been established, with an acceptable CFA model fit (CFI = .907, RMSEA = .080).

Measurement of the nursing work environment. This study used the Practice Environment Scale of the Nursing Work Index (PES-NWI) to measure the nursing work environment (Lake, 2002). The PES-NWI was chosen because it measures theory-based domains of the professional practice environments. The PES-NWI consists of 31 items with five constructs: (1) nurse participation in hospital affairs (9 items), (2) nursing foundations for quality of care (10 items), (3) nurse manager ability, leadership, and support of nurses (5 items), (4) staffing and resource adequacy (4 items), and (5) collegial nurse-physician relations (3 items). Items are rated on a four-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). Previous studies have supported a good internal consistency of the instrument, with Cronbach's alpha ranging from .71 to .93 (Lake, 2002; Manojlovich, 2005). In this study, Cronbach's alpha of a total scale was .95, nurse participation in hospital affairs was .89, nursing foundations for quality of care was .86, nurse manager ability, leadership, and support of nurses was .88, staffing and resource adequacy was .85, and collegial nurse-physician relations was .84. The construct validity of the subscales has been also established by comparing mean scores of nurses in magnet and non-magnet

hospitals (Lake, 2002). The predictive validity has been supported by showing that PES-NWI scores significantly associated with failure to rescue (Friese, Lake, Aiken, Silber, & Sochalski, 2008).

Measurement of Job satisfaction. Job satisfaction was measured by a subset of items from the Index of Job Satisfaction (Brayfield & Rothe, 1951) that was used by Judge, Locke, Durham, and Kluger (1998). This instrument was chosen because it focuses on intrinsic factors of job satisfaction. The instrument contains five items in a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Cronbach alpha coefficients ranging from .88 to .92 have been reported, indicating good reliability (Duffy, Allan, Autin, & Bott, 2013; Duffy, Bott, Allan, Torrey, & Dik, 2012; Judge et al., 1998). The construct validity has been supported (Judge et al., 1998).

Measurement of Burnout. Burnout was measured by the Burnout Measure, Short version (BMS) (Malach-Pines, 2005). We chose this instrument because it has a simple one-dimensional structure that has a high association with emotional exhaustion, a central component of burnout. This instrument consists of 10-items using a seven-point Likert scale ranging from 1 (never) to 7 (always). The scale has good reliability, with Cronbach's alpha, ranging from .85-.92, and high stability, with a 3-month test-retest coefficient of .74 (Malach-Pines, 2005). The face validity and construct validity have also been established (Malach-Pines, 2005).

Data analysis

We analyzed descriptive statistics of demographic characteristics and all variables using the Statistical Package for the Social Sciences (SPSS) version 22.0 software. The hypothesized model was tested using Structural Equation Modeling (SEM) with Stata 13. SEM consists of two components, a measurement model and a structural model, to evaluate how well a conceptual

model fits the data (Kline, 2011). (1) A measurement model for each latent variable was tested using an individual Confirmatory Factor Analysis (CFA). Individual CFAs examine whether observed variables load significantly onto the latent variable. (2) A structural model was specified and tested using a path model. Path analysis examines whether the hypothesized relationships among the latent variables are significant or not. We used the maximum likelihood estimation method for SEM. The typical level of alpha .05 was used for tests of significance.

The full SEM was specified to reflect the hypothesized relationships in the conceptual model. In the full SEM model, a measurement model identified 11 latent variables: (1) four subscales of *meaning in work*: experienced positive emotion at work, meaning from work itself, work purpose and goals, and work as a part of life toward a meaningful existence, (2) five subscales of the nursing work environment: nurse participation in hospital affairs, nursing foundations for quality of care, nurse manager ability, leadership, and support of nurses, staffing and resource adequacy, and collegial nurse-physician relations, (3) job satisfaction, and (4) burnout. In the model, *meaning in work* and the nursing work environment were simplified because of complexity, a small sample size, and convergence problems due to high correlations among subscales: the weighted means of subscales of *meaning in work* and the nursing work environment were used as observed variables. Demographic factors which were significantly correlated with job satisfaction and burnout—marital status, education degree, certification, magnet status, and hospital size—were included in the final SEM model.

Results

Of 185 questionnaires returned (37% response rate), 158 questionnaires were included in the data analysis. Twenty seven questionnaires were excluded because they either did not meet the inclusion criteria (e.g., respondent did not work in a hospital setting) or did not answer

questions on key measures. The degree of missing values on items ranged from 0 to 3.2% missing values; these were imputed in a SEM analysis because data were missing at random.

Descriptive statistics

Table 8 shows descriptive statistics for the participants’ demographic characteristics and main research variables. In a bivariate analysis (Table 9), education and certification were significantly correlated with job satisfaction, while marital status, education, hospital size, and magnet status were significantly correlated with burnout. All correlations among all research variables were significant. All research variables demonstrated acceptable reliability: (1) Cronbach’s α of *meaning in work* was .96. Four sub-scales of *meaning in work* ranged from .77 to .89, (2) Cronbach’s α of the nursing work environment was .95. Five sub-scales of the nursing work environment ranged from .84 to .90, (3) Cronbach’s α of job satisfaction was .90, and (4) Cronbach’s α of burnout was .93.

Table 8. Descriptive statistics: demographic characteristics and main research variables (n = 158)

Variables		n (%)	Mean (SD)
1) Demographic characteristics			
Age		43.2 (12.03)	
	Missing	4 (2.5%)	
Sex	Male	19 (12.0%)	
	Female	137 (86.7%)	
	Missing	2 (1.3%)	
Marital status	Single	28 (17.7%)	
	Married	115 (72.8%)	
	Divorced/widowed/separated	13 (8.2%)	
	Missing	2 (1.3%)	
Belongs to religious organization	Yes, and I attend services regularly.	59 (37.3%)	
	Yes, but I do not attend services regularly.	43 (27.2%)	
	No. I don’t belong to any formal religious organization, but I am very religious.	17 (10.8%)	
	No. I don’t belong to a formal religious organization.	37 (23.4%)	

	Missing	2 (1.3%)	
Education	Diploma in Nursing	7 (4.4%)	
	Associate Degree in Nursing	65 (41.1%)	
	Bachelor's Degree in Nursing	67 (42.4%)	
	Master's Degree in Nursing	6 (3.8%)	
	Doctorate Degree in Nursing	0 (0.0%)	
	Other educational degrees not in Nursing	10 (6.3%)	
	Missing	3 (1.9%)	
Certification by a national nursing specialty organization	Yes	37 (23.4%)	
	No	118 (74.7%)	
	Missing	3 (1.9%)	
RN year			14.1 (10.62)
	Missing	5 (3.2%)	
Magnet status	Yes	91 (57.6%)	
	No	60 (38.0%)	
	N/A	3 (1.9%)	
	Missing	4 (2.5%)	
Hospital size	<100 beds	24 (15.2%)	
	100-299 beds	35 (22.2%)	
	300-400 beds	25 (15.8%)	
	>400 beds	70 (44.3%)	
	Missing	4 (2.5%)	
Variables		Mean (SD)	Potential Range
2) Research variables			
<i>Meaning in work</i>	Experienced positive emotion in work	4.1 (0.62)	1 - 5
	Value from the work	4.3 (0.54)	1 - 5
	Meaningful purpose and goals of work	4.1 (0.63)	1 - 5
	Work as a part of life toward meaningful existence	4.0 (0.64)	1 - 5
	Grand scale	16.5 (2.26)	4 - 20
Nursing work environments	Nurse Participation in Hospital Affairs	2.7 (0.57)	1 - 4
	Nursing Foundations for Quality of Care	3.0 (0.46)	1 - 4
	Nurse Manager Ability, Leadership, and Support of Nurses	2.7 (0.68)	1 - 4
	Staffing and Resource Adequacy	2.3 (0.68)	1 - 4
	Collegial Nurse-Physician Relations	2.8 (0.57)	1 - 4
	Grand scale	13.6 (2.42)	5 - 20
Job satisfaction	Sum	18.1 (4.42)	5 - 25
Burn-out	Mean	3.0 (1.20)	1 - 7

Table 9. Correlations among demographic variables (Kendall's tau) and research variables (Pearson's r)

	<i>Meaning in work</i>					Nursing work environments					Job satisfaction	Burn-out	
	(1)	(2)	(3)	(4)	Overall	(5)	(6)	(7)	(8)	(9)			Overall
Age	.13	.01	.01	.11	.07	-.19**	-.07	-.30**	-.01	-.03	-.15	.00	.07
Sex	.07	.03	.07	.06	.06	.02	.04	-.03	-.03	-.17*	-.04	-.02	.06
Marital status	.03	.05	-.03	.00	.02	-.11	-.05	-.19**	-.14*	.01	-.12	-.08	.21**
Religion	-.05	-.04	.01	-.08	-.04	-.10	-.11	-.05	-.09	.03	-.09	-.04	.04
Education	.06	.08	.12	.15*	.11	.16*	.11	.17**	.12	.02	.17**	.15*	-.14*
Certification	.13*	.12*	.20**	.12	.15*	.14*	.08	.17*	.06	.08	.13*	.22**	-.10
RN year	.02	-.09	-.07	.03	-.03	-.08	-.03	-.17*	.03	-.02	-.07	-.04	.06
Magnet status	.17*	.17*	.22**	.14*	.17*	.26**	.14*	.23**	.12	.06	.20**	.13	-.20**
Hospital size	.02	.06	.08	.00	.04	.24**	.17**	.11	.10	.04	.16**	.07	-.13*
<i>Meaning in work</i>	PosEmo (1)	1											
	MeanWork (2)	.87**	1										
	PurpoGoal (3)	.83**	.80**	1									
	LifeExist (4)	.87**	.78**	.76**	1								
	Overall	.96**	.92**	.91**	.92**	1							
Nursing work environments	RNParti (5)	.51**	.52**	.49**	.47**	.53**	1						
	QualCare (6)	.55**	.54**	.51**	.55**	.58**	.78**	1					
	ManaLeadSup (7)	.51**	.51**	.50**	.45**	.53**	.79**	.65**	1				
	StaffReso (8)	.43**	.35**	.39**	.42**	.43**	.61**	.59**	.64**	1			
	RNPhysi (9)	.48**	.47**	.37**	.43**	.47**	.45**	.51**	.45**	.42**	1		
Overall	.60**	.58**	.55**	.56**	.61**	.88**	.84**	.87**	.81**	.68**	1		
Job satisfaction	.67**	.61**	.60**	.58**	.66**	.51**	.48**	.55**	.59**	.49**	.65**	1	
Burnout	-.53**	-.53**	-.54**	-.42**	-.54**	-.56**	-.46**	-.58**	-.52**	-.47**	-.64**	-.72**	1

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Model testing

The results of individual CFAs— burnout, job satisfaction, four subscales of *meaning in work*, and five subscales of the nursing work environment—showed that the measurement model represented the four research variables well: the observed variables loaded significantly onto each of the four latent variables, with coefficients ranging from .48 to .92. After modification indices were applied, the four individual CFAs had acceptable goodness of fit (CFI = .889 – 1.000, RMSEA = .000 - .080).

Table 10. Direct, indirect, and total effects on the nursing work environment, job satisfaction, and burnout

Endogenous outcome	Exogenous predictors	Direct effect		Indirect effect		Total effect	
		Stand. Coef.	P > z	Stand. Coef.	P > z	Stand. Coef.	P > z
		Nursing work environments	<i>Meaning in work</i>	.77	.000	0	
Job Satisfaction	<i>Meaning in work</i>	1.27	.000	.35	.002	1.62	.000
	Nursing work environments	.45	.001	0		.45	.001
	Marital status	-.25	.029	0		-.25	.029
	Education	.05	.244	0		.05	.244
	Certification	.31	.009	0		.31	.009
	Magnet status	-.02	.597	0		-.02	.597
	Hospital size	.01	.858	0		.01	.858
Burnout	<i>Meaning in work</i>	-.91	.000	-.49	.000	-1.40	.000
	Nursing work environments	-.63	.000	0		-.63	.000
	Marital status	.28	.026	0		.28	.026
	Education	-.09	.082	0		-.09	.082
	Certification	-.04	.776	0		-.04	.776
	Magnet status	-.01	.809	0		-.01	.809
	Hospital size	-.08	.108	0		-.08	.108

The results of the path analysis showed the mediating effect of the nursing work environment on the relationship between *meaning in work* and job satisfaction, and also on the relationship between *meaning in work* and burnout. Table 10 shows direct, indirect, and total

effects on the nursing work environment, job satisfaction, and burnout. Interestingly, the direct effect of *meaning in work* on job satisfaction ($\beta = 1.27$, $SE = .05$) was much stronger than the direct effect of the nursing work environment on job satisfaction ($\beta = .45$, $SE = .05$). Figure 8 presents the significant paths in the structural model. The results supported the three hypotheses: (1) a direct positive relationship between *meaning in work* and the nursing work environment ($\beta = .56$, $SE = .05$), (2) a positive indirect relationship (mediated by the nursing work environment) between *meaning in work* and job satisfaction ($\beta = .35$, $SE = .11$), and (3) an inverse indirect relationship (mediated by the nursing work environment) between *meaning in work* and burnout ($\beta = -.49$, $SE = .13$). The fit of the final model yielded a comparative fit index (CFI) of .967, which meets the criteria for the fitted model ($>.90$) and a root mean square error of approximation (RMSEA) for a residual fit index of .056, which indicates a reasonably close fitting model (Kline, 2011).

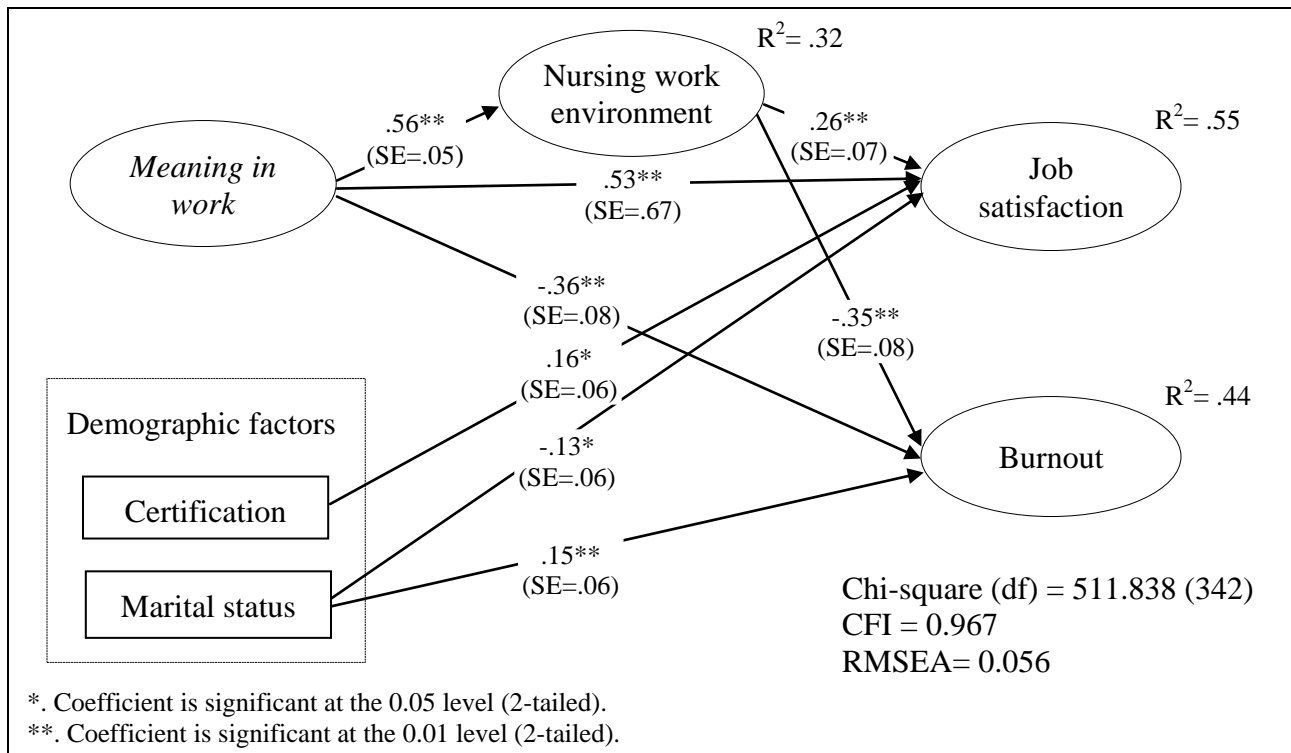


Figure 8. The path model with significant standardized coefficients and standard errors (SE)

Discussion

This study evaluated a conceptual model that correlates *meaning in work* to nursing outcomes (job satisfaction and burnout) through *meaning in work*'s effect on the nursing work environment. The results of SEM supported the proposed hypotheses: (1) there was a direct positive relationship between *meaning in work* and the nursing work environment, (2) the nursing work environment mediated a positive relationship between *meaning in work* and job satisfaction, and (3) the nursing work environment mediated an inverse relationship between *meaning in work* and burnout.

This study is the first to examine the question of whether *meaning in work* is positively associated with nurses' perceptions of the nursing work environment. Our results demonstrate that *meaning in work* is associated with better perceptions of the nursing work environment. Indeed, Calarco (2011) implemented an intervention that applied principles of positive organizational scholarship including *meaning in work*. Even though the intervention was not focused on finding *meaning in work*, the intervention group perceived significantly a better work environment, showing the importance of positive personal attributes in creating positive work environments. These findings are aligned with recommendations for healthy work environments (American Association of Critical-Care Nurses, 2005; Kushner & Ruffin, 2015). For example, the American Association of Critical-Care Nurses (2005) suggested the recognition of the value and meaningfulness of one's contribution to work as one standard for the creation of healthy work environments. Therefore, these findings support the role of *meaning in work* as an intrinsic factor for the improvement of the nursing work environment.

Our findings also provide initial evidence for the mediating role of the nursing work environment on the relationship between *meaning in work* and job satisfaction. Since most

nursing workforce studies have understood meaning as a process that mediates the relationship between structures and outcomes, less recognition has been given to *meaning in work* and how it can influence perceptions of the nursing work environment. However, our path analysis showed that *meaning in work* can positively influence the nursing work environment, and thereby improve job satisfaction. A similar study has also supported a reverse relation of structure and process that process affects structure: Li, Kuo, Huang, Lo, and Wang (2013) reported that structural empowerment mediates the relationship between psychological empowerment, which includes meaning as one component, and job satisfaction for nurses in long-term care facilities. Although more evidence to support the causality of this model is needed, an attempt to explore alternative relationships is meaningful in that it can validate the limitations of uni-directional approaches to structure-process-outcome as Donabedian (1966) pointed out. These findings provide additional evidence of the importance of *meaning in work*, given recent work suggesting that *meaning in work* is not merely process that is influenced by structure, but that it can significantly impact structure and bring better nursing outcomes.

Another important finding in this study is that *meaning in work* negatively influences burnout, mediated by the nursing work environment. In other words, *meaning in work* is inversely associated with burnout through perceptions of the nursing work environment. This finding is consistent with other studies, reporting the impact of meaning on burnout through affecting structure (e.g., structural empowerment, daily hassles). For instance, Greco, Laschinger, and Wong (2006) investigated how structural empowerment mediates the relationships between leaders' empowering behaviors and burnout/engagement. In Greco's study, enhancing meaning was one empowering leadership behavior, implying that *meaning in work* positively associates to the effects of structures on empowering nurses, and thereby

reducing burnout. Boudrias et al. (2012) also found that meaning attenuated the effects of daily hassles on burnout. These results suggest that nurses who discover *meaning in work* can experience less burnout with improved perceptions of surrounding work conditions.

Interestingly, the results of the direct effects on nursing outcomes show that *meaning in work* is a stronger contributor to job satisfaction and burnout than the nursing work environment. Consistent with other studies on job satisfaction and burnout, intrinsic factors (e.g., *meaning in work*) have a greater influence on job satisfaction (Stechmiller & Yarandi, 1992; Yaseen, 2013) and burnout (Knoop, 1994; Stechmiller & Yarandi, 1992) than extrinsic factors. For example, Yaseen (2013) investigated the effects of various types of compensation factors—pay, recognition, promotion opportunity, and meaningful work—on job satisfaction. The study found that only promotion opportunity and perceptions that work was meaningful were significantly associated with job satisfaction: particularly, job satisfaction was mostly explained by meaningful work. This finding suggests that the emphasis on intrinsic factors needs to be re-examined in the nursing workforce, by more fully considering the role of *meaning in work* and intervention opportunities to strengthen nurses' perceived *meaning in work*.

With regard to the contribution of demographic factors to job satisfaction and burnout, our results found that certification and marital status were significantly associated with job satisfaction, and marital status was significantly associated with burnout. To be specific, nurses who were certified and whose marital status was single reported being more satisfied with their jobs. A previous literature review on job satisfaction has shown that education preparation is positively linked to job satisfaction (Hayes, Bonner, & Pryor, 2010), consistent with our findings. Regarding burnout, married or divorced/widowed/separated nurses experienced more burnout. However, this finding is not consistent with previous literature on burnout (Paris &

Hoge, 2010), which reported education, age and working year/hour as significant contributors to burnout.

Although this study provides evidence of the important role of *meaning in work* in the nursing workforce, some limitations need to be considered. One limitation of this study is that the sample did not represent the full population of RNs. This is because the sample was drawn from a single state and participant responses may not be representative. Another limitation is that there were high correlations among the four sub-constructs of *meaning in work* and five sub-constructs of the nursing work environment. These high correlations resulted in extreme collinearity, which can cause empirical under-identification (Kline, 2011). Due to these problems, our data failed to converge in our initial attempt to examine detailed relationships among subscales of *meaning in work*, subscales of the nursing work environment, and nursing outcomes. To mitigate this problem, the SEM model was simplified, using mean scores of subscales of *meaning in work* and subscales of the nursing work environment as observed variables (Kline, 2011). Although the sample size of this study had sufficient power to explain overall relationships among the main variables according to MacCallum et al. (1996), it did not satisfy other sample size requirements. Further studies are needed with larger and more representative samples to understand nuanced relationships among *meaning in work* subscales and the nursing work environment.

Conclusion

This study provides an important extension to previous nursing workforce studies by emphasizing an intrinsic factor for the improvements of the nursing work environment and investigating a mediating role of the nursing work environment on relationships between *meaning in work* and nursing outcomes. Our study indicates that *meaning in work* contributes

positive interpretations of the surrounding work environment, and thus has the potential to contribute to improving job satisfaction and reducing burnout. This positive energy can further facilitate nurses' engagement in caring and decrease a turnover, improving the nursing shortage. And thus *meaning in work* can enhance the quality of care and patient safety, which are the ultimate work outcomes. Interventions to strengthen positive personal attributes, such as *meaning in work*, can help nurses find their *meaning in work* and bring positive outcomes in the nursing workforce. Given the current nursing research that has highlighted extrinsic factors (e.g., structure) as the primary means to solve the nursing workforce issues, the emphasis on intrinsic factors can provide a balance between structural and personal factors. Even though *meaning in work* contains hardiness as constructed throughout one's whole life, *meaning in work* can be diminished by working conditions that demotivate nurses. The balance of intrinsic and extrinsic factors will bring a synergy effect and contribute to a prominent development of the nursing workforce.

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Chapter 5

Conclusion and Implications for research

This dissertation introduced the concept of *meaning in work* in nursing as a positive personal attribute as well as an intrinsic motivator to work in order to contribute to the development of the nursing workforce. To provide empirical evidence for why *meaning in work* is important in nursing, this project investigated the association of *meaning in work* with higher job satisfaction and lower burnout, and indirectly through the nursing work environment.

The review of literature revealed that *meaning in work* has largely been ignored in nursing (Lee, in press) and has been described in a limited way as meaning, which is a component of other concepts (e.g., psychological empowerment). This dissertation provided a comprehensive and multi-dimensional definition of *meaning in work* adapted from a previous study that analyzed *meaning in work* following the concept analysis developed by Walker and Avant (2011): ‘the discovery of existential meaning from work experience, work itself and work purpose/goals (Lee, in press).’ According to this definition, *meaning in work* is an independent concept that is a fundamental force with the potential to motivate employees. Despite this importance, there was no existing instrument that captures core attributes of the new definition. Thus, the first part of this dissertation study sought to develop an instrument to measure *meaning in work* and to test its psychometric properties.

The first paper, *Developing and testing an instrument of meaning in work for nursing*, describes the study to develop an instrument to measure *meaning in work*. Since several different

instruments are available to measure similar concepts to *meaning in work* (e.g., meaning of work, meaningful work) or different aspects of the concept in other disciplines (e.g., management and organizational studies, psychology), we decided to explore all of these to develop a new instrument of *meaning in work*. The study conducted a literature review to identify frequently used instruments that were both reliable and valid. The literature review retrieved a total of 67 studies that assessed meaning in the workplace, and four instruments—the Work and Meaning Inventory (Steger, Dik, & Duffy, 2012), the Psychological Empowerment Scale (Spreitzer, 1995), the Copenhagen Psychosocial Questionnaire (Pejtersen, Kristensen, Borg, & Bjorner, 2010), and the Spirituality Questionnaire (Ashmos & Duchon, 2000)—were selected as sources to develop the new instrument. Items from the four instruments were matched to 11 sub-constructs under the four constructs of *meaning in work*. A confirmatory factor analysis (CFA) was performed to test how items corresponded to the hypothesized factor structure of *meaning in work*. The CFA resulted in an acceptable model fit and good internal reliability. Finally, the instrument of *meaning in work* was developed with 25 items evaluated using a five-point Likert scale.

The second and third portions of this dissertation research sought to investigate the role of *meaning in work* in the nursing workforce. Among several issues in the nursing workforce, the nursing shortage has been highlighted as a critical issue that negatively impacts both nursing and patient outcomes (Institute of Medicine, 2010). Many nursing researchers have studied job satisfaction and burnout as salient nursing outcomes that affect nurse turnover and retention (Duvall & Andrews, 2010; Flinkman, Leino-Kilpi, & Salanterä, 2010; Melo, Barbosa, & Souza, 2011; Toh, Ang, & Devi, 2012). Although previous studies show that intrinsic factors are more influential factors contributing to job satisfaction and reducing burnout than extrinsic factors (Knoop, 1994; Stechmiller & Yarandi, 1992), most nursing studies have primarily focused on extrinsic factors such as the nursing work environment, to bring about better nursing outcomes as well as to solve the nursing shortage (Institute of Medicine, 2004). The second paper in this dissertation sought to

explore the role of *meaning in work* as an intrinsic factor to enhance job satisfaction and to reduce burnout. The third paper sought to determine how *meaning in work* and the nursing work environment differentially affect nursing outcomes. In particular, the study suggested the nursing work environment as a mediator and explored a possible role of *meaning in work* in affecting nurse perceptions of their work environments.

To be specific, the second paper, *Meaning in work: an intrinsic motivator to improve nursing outcomes*, investigated relationships between the four constructs of *meaning in work* and nursing outcomes of job satisfaction and burnout, respectively. As expected, the results supported a positive relationship between *meaning in work* and job satisfaction and an inverse relationship between *meaning in work* and burnout. With regard to the four constructs of *meaning in work*, the study found a positive relationship between ‘experienced positive emotion in work’ and job satisfaction, an inverse relationship between ‘experienced positive emotion in work’ and burnout, and an inverse relationship between ‘meaningful purpose and goals of work’ and burnout. These results provide better explanations of how *meaning in work* influences nursing outcomes: (1) *meaning in work* improves job satisfaction by cultivating positive emotion in relation to work, and (2) *meaning in work* decreases burnout by creating positive emotion in relation to work, purpose and goals of work. However, we also found unexpected results. For example, ‘meaning from work itself’ was not significant in explaining job satisfaction and burnout. The study connected this finding to the trend that young nurses are more likely to place a higher value on high salary or job security and a lower value on *meaning in work* (McNeese-Smith & Crook, 2003). This lower value on *meaning in work* can cause potential problems, such as low work engagement and high turnover (Clausen & Borg, 2010; Steger, Littman-Ovadia, Miller, Menger, & Rothmann, 2013). These problems can negatively influence patient outcomes. Therefore this study suggested that additional research be targeted towards younger nurses exclusively. Another unexpected finding was that ‘work as a part of life

toward meaningful existence' was positively associated with burnout. This finding implies that nurses who consider work as a part of life may have more work-life conflicts.

The third paper, *Meaning in work: a positive personal attribute to improve work environments and nursing outcomes*, tested a hypothesized model that examines whether the nursing work environment mediates relationships between *meaning in work* and nursing outcomes. This model was developed to examine the possible role of *meaning in work* in changing perceptions of the nursing work environment. The results of this study supported the hypothesized model, showing an indirect positive relationship between *meaning in work* and job satisfaction, mediated by the nursing work environment and an indirect inverse relationship between *meaning in work* and burnout, mediated by the nursing work environment. These findings are critical in showing the importance of intrinsic factors in improving the nursing work environment. *Meaning in work* is a positive personal attribute that provides a motivational force to work (Dutton, Glynn, & Spreitzer, 2006). It has a self-initiated and future-oriented meaning and thus can lead employees to actively respond to their environments (Frankl, 1968). However, existing nursing studies have considered meaning as a psychological process that is affected by work environments, and not vice versa (Hochwalder, 2007). Our findings supported that *meaning in work* is not simply a psychological process. It has a possible role in positively influencing nurses' perceptions of the nursing work environment and creating healthy nursing work environments.

Implications and Suggestions for Future Studies

The newly developed instrument of *meaning in work* not only provides a better understanding of the concept, but also may help nursing researchers assess and use the concept. The instrument includes four core attributes of *meaning in work*: experienced positive emotion at work, meaning from work itself, meaningful purpose and goals of work, and perceptions of work as a part of life toward meaningful existence (Lee, in press). These core attributes of *meaning in*

work can guide nurses toward possible ways to find *meaning in work*. For example, nurses can find their meaning when they promote purpose and goals in nursing. Thus, future study could develop interventions that include these core attributes to foster nurses to experience meaningfulness in working and at work and finally to find their existential meaning through nursing. Meaning is not to be given; instead, efforts to achieve it are required. Implementation of such an intervention can provide more opportunities for nurses to become aware of their attributes and develop their strengths.

Because the sample size was too small to test a full SEM, further research with a larger sample and nurses from different settings is needed for instrument refinement and to test the robustness of the instrument. To further refine the instrument, it may be possible to improve model fit by creating a second order factor. This can be done by extending the CFA model, by adding *meaning in work* as a second level latent variable. Because the scores on sub-scales had low variability but high collinearity, a suppression effect may have been responsible for unusual findings with some of the constructs, as mentioned earlier. By entering each construct into the model one at a time, it would be possible to see the relative influence of each construct. Item reduction of the instrument should also be explored. This can be done by examining highly correlated items that are not measuring the same factor, to see if any of them could be removed.

Analysis of qualitative comments could explore how nurses understand the conceptualization of *meaning in work* that has been theoretically driven. This can provide practical understanding of how nurses view *meaning in work* and suggest re-structuring or re-wording of some items. Results of qualitative analysis may also explain high correlations of the four constructs of *meaning in work* that this study found.

This study supported a possible role of *meaning in work* as an intrinsic factor in the nursing workforce. The findings that only two attributes of *meaning in work* were significantly associated with a higher job satisfaction and a lower burnout showed the importance of experiencing positive emotion in work and setting purpose and goals of work in nursing. However, the fact that each of the four attributes was significantly associated with a higher job satisfaction and lower burnout suggests a possible suppression effect among these four attributes. Further study is needed to examine the detailed relationships of the four attributes of *meaning in work* with nursing outcomes, using a refined instrument and a larger sample.

This study proposed an alternative relationship among structure-process-outcome: process influences structure. This innovative idea argues that intrinsic factors, such as *meaning in work*, can function as strong internal resources that can bring success to individuals as well as to organizations. Further study with a longitudinal study design is needed to examine the causality of the model. Testing directionality through longitudinal study can provide strong evidence of the important role of intrinsic factors in the nursing workforce. Another way to test the relative influence of *meaning in work* versus the work environment, is by using simple regression analysis. After refining the instrument of *meaning in work*, further study can examine two different regression models. In the first model, control variables would be entered first, followed by *meaning in work* and then finally the work environment measure. In the second model after entering control variables, the work environment measure would be entered and finally entering *meaning in work*. Differences in the percentage of variance explained in job satisfaction and burnout would suggest whether *meaning in work* or the nursing work environment was more significant

Future studies will explore other variables which influence the concept of *meaning in work*, such as demographic factors, other organizational factors, and other outcomes described below. Research that explores *meaning in work* as a dependent variable should also be done. The results of additional research as suggested here can provide a better understanding of *meaning in work* in nursing.

This dissertation on *meaning in work* in nursing can help nursing administrators and researchers embrace the perspective that intrinsic factors are as important as extrinsic factors in solving nursing workforce issues. It may be possible to convince nursing administrators of the importance of *meaning in work* if it can be shown that an emphasis on intrinsic factors, such as *meaning in work*, can create healthy and professional nursing work environments bringing better nurse and patient outcomes. More research on *meaning in work* is needed to support the salient role of *meaning in work* in the development of the nursing workforce. Existing studies in other areas (e.g., psychology, organizational studies) show various positive outcomes of *meaning in work*, such as increased work engagement, resilience, and performance. These outcomes may also be relevant to nursing. Further study that examines a role of *meaning in work* with these important outcomes will help nursing managers to understand the importance of *meaning in work* and to consider nurses as important human resources to promote high quality care.

Limitations

The dissertation has some limitations. The major limitation was the sample size of the project. The sample size (n= 158) was not enough to test a full SEM model, which can result in inaccurate statistical estimates. To deal with these issues, we simplified the model and improved the accuracy of the results. However, the simplified model could not explain detailed relationships among sub-constructs of variables, limiting our explanations. Another major limitation was the study

design the project used—a cross-sectional descriptive survey design. Particularly, the third paper suggested alternative pathways between structure and process, implying causal relationships. However, the design we used cannot test the causality of the model. Although we could not establish causal directions, the structural model of SEM we used could show causal conclusions from a combination of observational data and theoretical assumptions. The final major limitation was a specific methodological issue in developing an instrument of *meaning in work*. We detected high correlations among the four sub-constructs of *meaning in work*, which can cause empirical under-identification in testing SEM. There are several possible explanations for this issue, such as a small sample size, redundancy of items, or an issue in construction of the concept.

Conclusion

Despite decades of nursing research, the nursing workforce continues to struggle with serious issues such as the nursing shortage, which negatively influence nursing outcomes (e.g., job dissatisfaction, burnout) and patient outcomes (e.g., quality of care, patient safety). This study introduces a novel, understudied concept of *meaning in work* as a positive personal attribute. *Meaning in work* provides an existential reason why nurses are motivated to continue work in their field. Understanding why they are caring for patients help nurses experience more positive emotion in work, place a higher values on their nursing practice, as well as set and attain a higher purpose for their work and goals. The attributes of *meaning in work* can allow nurses to be intrinsically satisfied with their jobs and experience less burnout. Moreover, *meaning in work* can help nurses perceive their work environments in a positive way. These positive experiences may contribute to the development of the nursing workforce which in turn may improve patient outcomes.

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Appendix

Table 11. The newly developed instrument of meaning in work (Lee, in press)

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
1 I have a good sense of what makes my job meaningful.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
2 I have found a meaningful career.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
3 Overall, I have a very independent, self-directed career.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
4 I understand how my work contributes to my life's meaning.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
5 My job activities are personally meaningful to me.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
6 My work helps me better understand myself.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
7 Is your work meaningful?	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
8 I know my work makes a positive difference in the world.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
9 In achieving work* goals, I have made no progress whatsoever.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
10 The work I do is meaningful to me.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
11 I have discovered work that has a satisfying purpose.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
12 The work I do is connected to what I think is important in life.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
13 I understand what gives my work personal meaning.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
14 I see a connection between my work and the larger social good of my community.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
15 My work really makes no difference to the world.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
16 Do you feel motivated and involved in your work?	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
17 I regard my ability to find a meaning purpose, or mission at work* as very great.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
18 My work helps me make sense of the world around me.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
19 The work I do is very important to me.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
20 The work I do serves a greater purpose.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
21 My spirit is energized by my work.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
22 If I should die today, I would feel that my work* has been very worthwhile.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
23 I view my work as contributing to my personal growth.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
24 Do you feel that the work you do is important?	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
25 In work*, I have no goals or aims at all.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

Table 12. The Practice Environment Scale of the Nursing Work Index (Lake, 2002)

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

Table 13. A subset of items from the Index of Job Satisfaction (Judge, Locke, Durham, & Kluger, 1998)

Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1 I feel fairly well satisfied with my present job.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
2 Most days I am enthusiastic about my work.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
3 Each day of work seems like it will never end.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
4 I find real enjoyment in my work.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
5 I consider my job rather unpleasant.	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>

Table 14. The Burnout Measure, Short version (Malach-Pines, 2005)

Statement	Never	Almost never	Rarely	Sometimes	Often	Very often	Always
1 Tired	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
2 Disappointed with people	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
3 Hopeless	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
4 Trapped	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
5 Helpless	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
6 Depressed	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
7 Physically weak/Sickly	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
8 Worthless/Like a failure	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
9 Difficulties sleeping	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
10 "I've had it"	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>

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